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Critical Questions – Contemporary Practice

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INTRODUCTION

Heritages 2025

Critical Questions – Contemporary Practice

A little over 25 years ago, the site of this conference, Maritime Greenwich, London, was inscribed on the UNESCO World Heritage List. Home to the first Palladian building in England, the Royal Naval College by Sir Christopher Wren, the National Maritime Museum, the Old Royal Observatory and the University of Greenwich, it is one of the UK's most important historical sites. It is home to groundbreaking projects in digital heritage, the Laban Conservatoire of Music and Dance, and a variety of major arts and cultural events annually. It is promoted by its 'state-of-the-art' visitor centre and ardently protected by the UK's Listed Buildings and Conservation Acts. It is a quintessential site of world heritage.

However, as a site located in the city of London, it feels the pressures of economic and urban development. It is threatened by the strains of mass tourism and can be at risk of over exposure. It is located near areas of social deprivation and its buildings and parks are in need of continual, and costly, maintenance. Managing the site for local residents, the heritage community and visitors is complex and can be contested. In this regard, Maritime Greenwich is also the epitome of the difficulties faced across the heritage sector, the world over.

Using the World Heritage Site of Maritime Greenwich as a point of departure, this conference sought to explore the critical questions for the heritage sector today from various disciplinary perspectives. This conference proceedings publication thus contains a range of case studies and theoretical readings that cross disciplinary fields, with this volume focused on issues related to the design, planning and management of the built environment.

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DAYLIGHTING IN HIGH MODERNISM: ADVANCING SCIENCE, SOCIAL REFORM, AND AESTHETICS

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INTRODUCTION

High Modernism was closely associated with the quests for natural light and fresh air. Dozens of publications—like Sigfried Giedion's *Befreites Wohnen* (Liberated Dwelling) from 1929 (fig. 1)—celebrated large glass facades, roof terraces and balconies, and access to solar radiation and fresh air, all as general amenities not only for individuals in private houses, but also for workers in so-called mass-housing. Referring to "light air opening" on the book cover, Giedion linked on numerous pages other terms to this triad, including "movement," "vegetation," "orientation to the sun," "freedom," and even "being connected with the rest of the world."[1] Windows and glass seemed to be used synonymously for light, while the opaque wall equated with shadow and darkness: "BEAUTIFUL is a house, which instead of shadow (window piers) has light (window walls)." Giedion observed that "glass (light) more and more replaces the wall (darkness)" and explained that the "DOCTOR, too, demands highest possible dissolution of the walls into glass, freest light entry."[2] The cover photo epitomized this agenda.[3]

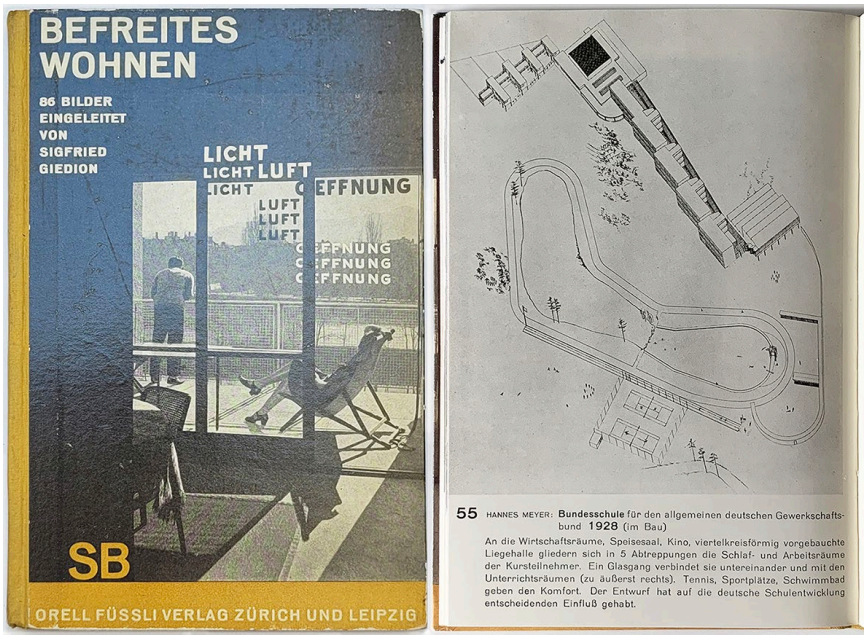

Figure 1. Sigfried Giedion, Befreites Wohnen 1929. Cover and Page showing the ADGB School

The book included the project of a boarding school for the General German Trade Union (ADGB) in Bernau near Berlin, designed by the German Bauhaus under the directorship of Hannes Meyer (fig. 1). Being under construction, Giedion attested that it had a "decisive influence on the German school development."[4] The following text intends to unpack how this building employed daylighting, that is the theory and practice of creating spaces with sufficient, program-supporting, and inspiring illumination through direct and diffused light (sunlight and daylight), lighting contrasts, and considerate inside-outside relationships.

The UNESCO declared the Bauhaus movement a World Heritage in 1996 stating that it "revolutionized architectural and aesthetic thinking and practice in the 20th century."[5] The ADGB School, designed and built between 1928 and 1930, was added to the World Heritage listing in 2017. It is the Bauhaus' most advanced project with respect to integrating daylight in architecture, with daylighting as the underlying strategy to link design, engineering, and social reform.

The Bauhaus' architecture program officially started in 1927, eight years after the school's founding. Architects Hannes Meyer and Hans Wittwer, both hired in this year, immediately implemented attempts toward a scientific- and engineering-based daylighting design process by publishing their design for the St. Petersschule alongside daylighting calculations in the April 1927 issue of the Bauhaus journal. This publication seemed to serve as an introduction of their teaching agenda that "our new forms that arise with functional building have to be building-scientifically justified as much as possible."[6] Calculations for a classroom, a gymnasium, and an art room were presented under the title "calculated evidence of the illuminance of all school spaces" and showed state-of-the-art expertise in calculating interior illuminance levels.[7]

In 1928, Meyer, with Wittwer and Bauhaus students, won the architecture competition for the ADGB School. From early design investigations to the building's completion in May 1930, knowledge on daylight and solar geometry was adopted, the envelope revised, and new products for windows, glass, and light-reflecting surfaces utilized. In the following, three foci intend to show how daylighting unfolded in the ADGB School: first, the building's overall layout, volumes, and orientations; second, the facade and roof design; and third, window and glass products.

OVERALL LAYOUT, VOLUMES, AND ORIENTATIONS

The competition board with the site plan (fig. 2) shows the entire complex arranged in a 45º angle toward the cardinal directions (north is at the top of the board). Each of the program's functional elements is expressed in a separate volumetric unit. The entrance and community unit is located in the south-west, followed toward the north-east by five volumes with bedrooms connected by a long corridor, which then ends at a north-eastern unit with gymnasium, library, and seminar rooms. The teacher housing is staggered from the main entrance toward the south-east.

The right side of the competition board presents three geometrically-constructed solar paths for June 21 at the top, March/September 21 in the middle, and December 21 at the bottom. Three adjacent tables list the altitude and azimuth angles for the day's sunshine hours. Showing solar geometries and the site plan side-by-side in a design competition was quite unique, as if to make the argument that the site plan is directly derived from the solar studies. The building layout proposed that workers who came here to attend a four-week workshop lived with the sun: They arrived at the school in the afternoon when the sun highlighted the entrance, they woke up in their beds with the sun rising between north-east and south-east, they did sports to the cooler orientation of north-east, and they learned in the classrooms facing south-west.

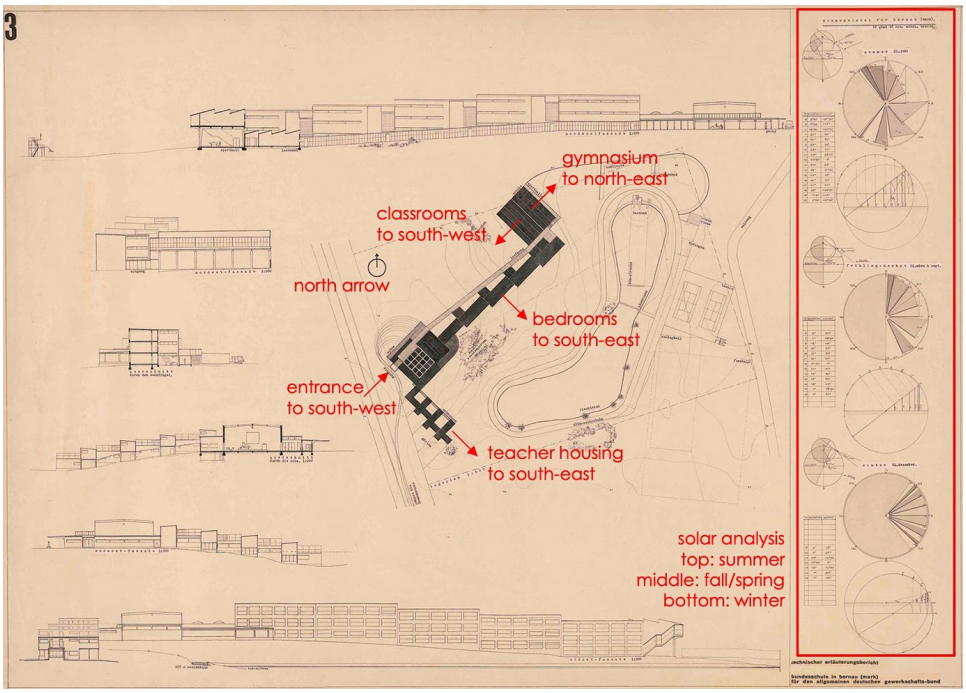

Figure 2. ADGB School. Analysis of the Competition Board (1928). Center: Site Plan. Right: Solar Paths. Bottom: South-East Elevation. Red: Author Notes. Source: Stiftung Bauhaus Dessau

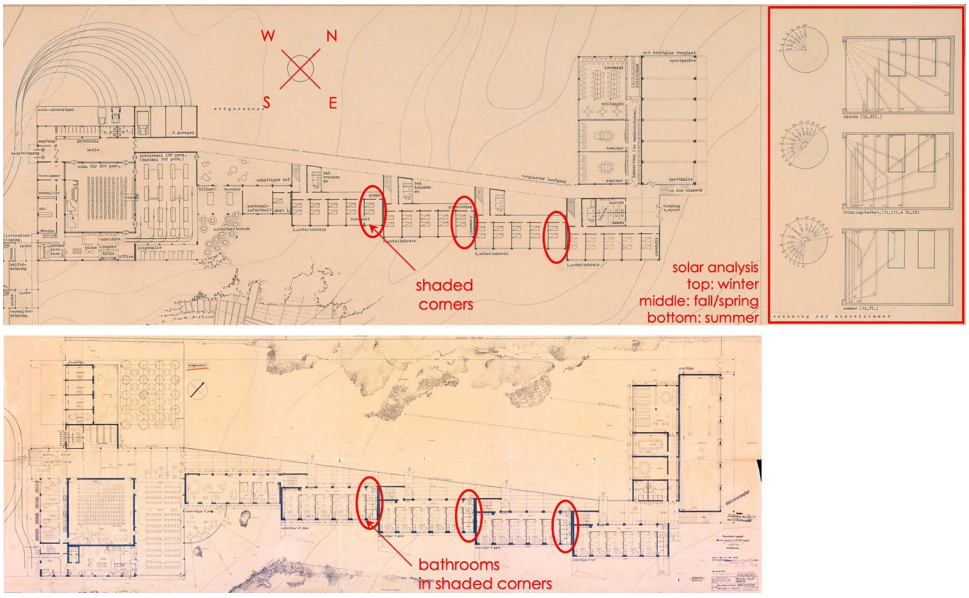

Figure 3. Top: Competition Board Detail with First Floor Plan and Solar Entry Studies, 1928. Bottom: First Floor Plan as Built, 1930. Red: Author Notes. Sources: Stiftung Bauhaus Dessau (top), Stadtarchiv Bernau (bottom).

Another competition board included an analysis of the solar entry through the window into a bedroom (fig. 3 top). It exemplified that in winter, the sun would reach the bedroom's back wall, which would likely be appreciated in the cold weather. In summer, the sun would shine about half into the room and quickly disappear. The competition report described that the "position and arrangement of the housing area was determined by the intention to achieve an optimum of insolation of all 60 bedrooms. […] The position of the beds is calculated based on the most favorable sun diagrams. […] Never did he [the course participant, UP] sleep so hygienically, did he live so surrounded by daylight."[8]

However, the staggering of the bedroom wings would have been disadvantageous for one room in each block: The room directly adjacent to the next step was not hit by the sun when rising between north-east and east, which translated to the six months between March and September. This arrangement, seemingly contradicting with the design intention, was later resolved by moving the shared bathrooms to these locations (fig. 3 bottom).
A third solar study from the competition phase related to the classrooms, for which saw-tooth roofs with glazing facing south-west were proposed. Here, the same method of overlaying a floorplan and solar patches for the equinoxes and solstices was utilized. The analysis, however, revealed a sub-ideal orientation, showing that the sun hit the blackboards and instructors were potentially glared. Two main improvements were introduced between the competition and building phases (fig. 4): First, the classrooms turned 90º so that the blackboards would be less prone to direct solar patches. Through this change, the desks received light from the side rather than from behind the students' backs, thus avoiding that students shade the desks with their own bodies. Second, the roof was changed into a butterfly ceiling reflecting direct sunlight and diffused daylight through the clerestories downwards.

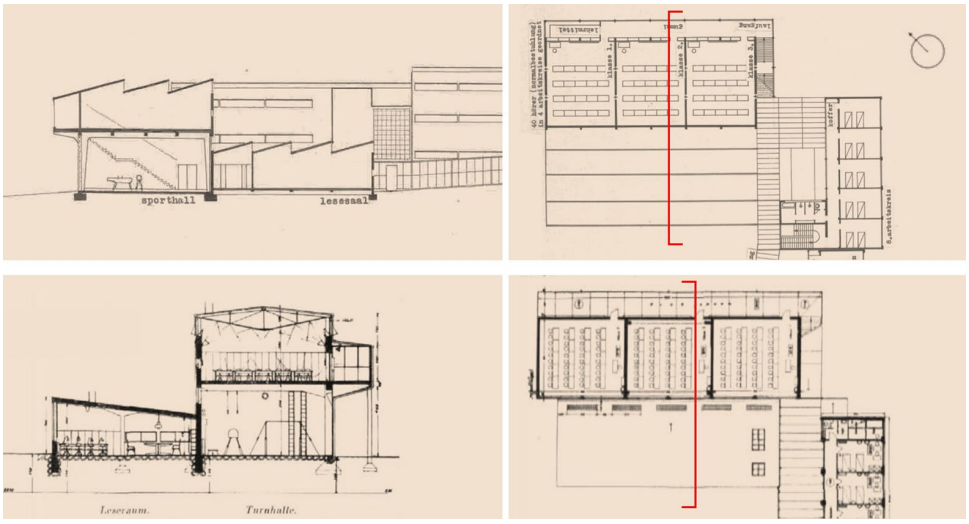

Figure 4. Comparison of Classroom Drawings. Top: Competition Phase, 1928. Bottom: As Built, 1930. (Note that sections point in opposite directions.) Sources: Stiftung Bauhaus Dessau (top), Stadtarchiv Bernau (bottom)

A 1930 photo provides additional information on the carefully selected finishes of the interior surfaces (fig. 6 left). The lower wall area had wood panels, likely good for acoustics, leaving the higher wall area for light reflection. An additional black curtain allowed complete darkening of the room, needed for the projector shown in the photo. Electrical luminaires oriented light to the ceiling, which in turn reflected it indirectly onto the desks.

FAÇADE AND ROOF DESIGN: APERTURE SIZING AND PLACEMENT

The ADGB School fully employed the modernist repertoire of apertures, including horizontal strip windows, large glass walls, glass corners, and skylights, all carefully located depending on program and orientation. The classrooms' long, two-sided clerestories to reflect light from the butterfly ceiling, as described above, worked hand in hand with a horizontal strip window in eye height of sitting people (fig. 4 and 6). The "high sidelight on both sides ensures 50-100 lux day-illuminance on all tables' work surfaces"; the "unusual room covering […] can mnemotechnically help remember the teaching content heard in this room"; and the "one-sided slit-windows" allowed "modified

accommodation of the worker eye, tired of unusual studying, from the writing surface through the distant view to forest edge."[9]

The careful crafting of the envelope is most apparent in the cafeteria with large glazing on three walls and the roof (fig. 5). Glass-concrete arrays, diffusing the light from the sky, span between four of the six structural roof bays,[10] those farthest away from the glass facades. Each of the three glass walls appears differently: The facade opposite the entrance consists of operable windows in steel framing, connected in four horizontal rows by an industrial pivoting mechanism (fig. 5 left and right). This façade contrasts with the large fixed glazing on the left (north-east wall), which draws our unobstructed view into the socializing room (winter garden) and, from there, into the woods. Standing in the cafeteria and turning toward the entrance, we see two layers of glass walls: the first, made of transparent glass, forms an almost invisible boundary between the cafeteria and the corridor; the second, made of translucent view-limiting glass bricks, creates a bright ending of the flowing space (fig. 5 middle). This layering, supported by the diffused light entering through the corridor's glass bricks, provides an even stronger space-merging effect than toward the winter garden. The fourth wall, altered today, had glazing toward the kitchen. The different transparencies, light entries, and light-dark-gradations result in complex overlapping spaces.

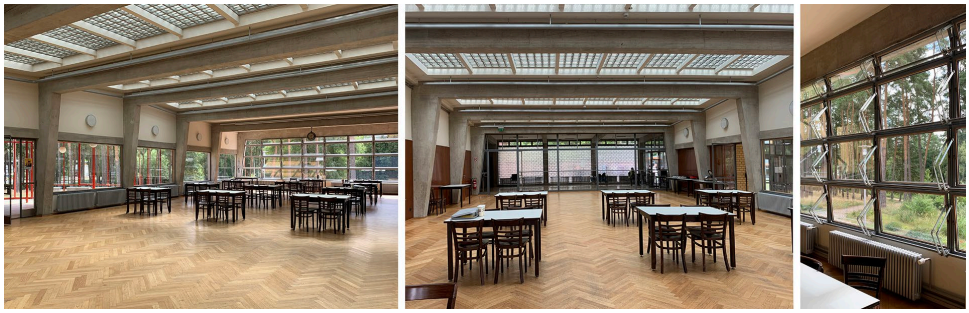

Figure 5. Cafeteria. Views from/toward the Entrance, Detail of Operable Windows. Source: Author

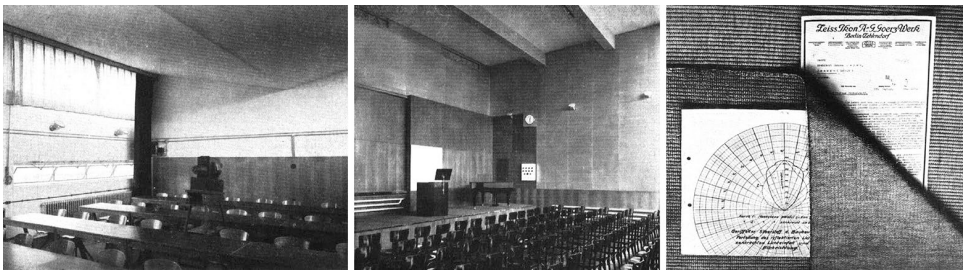

Figure 6. Left to Right: Classroom Interior, Auditorium, Silver Fabric. Source: Walter Peterhans in Zentralblatt der Bauverwaltung 51 (1931) 14: 212-222

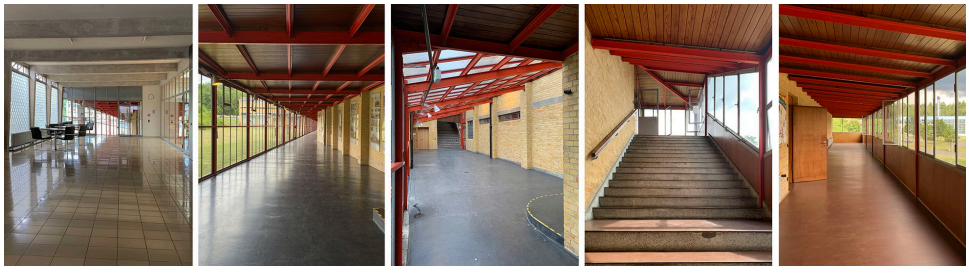

Figure 7. Left to Right: Corridor from Entrance to Seminar Rooms. Source: Author.

In juxtaposition to the cafeteria's complex openness, the adjacent auditorium was designed to be introverted (fig. 6 middle). Although a large north-west facing clerestory provided even daylight,[11]

Bauhaus weaving student Anni Albers was charged to develop a light-reflecting and sound-absorbing fabric for the walls (fig. 6 right). While the fabric is lost, recladding the room and studying its effect on illumination, acoustics, and spatial perception would be a rewarding undertaking.
Another important element is the main corridor that runs like a spine through the entire building to connect all major spaces (figs. 2, 3, and 7). At the entrance, where a large canopy adapted the eye for a lower interior illuminance, bright daylight in the background made the visitor anticipate the main circulation. The corridor's floor-to-ceiling, north-west-facing glass facade allowed for clear orientation inside the building and to the landscape.[12] The red color of the steel structure, also used in the winter garden, marked the threshold between inside and outside.

Figure 8. Teacher Housing. Entrance Glass Bricks, Dining Room, Bedroom. Source: Author

One of the most powerful design strategies in the building is the daylighting of spaces from more than one direction. Aside from the examples shown above, more of these exist, such as the gymnasium and library, and several rooms in the teacher housing wing. In the latter, the living room juxtaposes a large glass wall toward the garden with a clerestory to the street; the dining room contrasts a large window to the outside with an interior glass wall owing daylight from the entrance hall (fig. 8 middle); and a bedroom with a corner window references the staggering configuration of the entire complex (fig. 8 right). The daylight qualities of all of these rooms are exceptional, as they allow varying light atmospheres in the course of a day.

WINDOW AND GLASS PRODUCTS

The architects took the first opportunity, the competition, to express their interest in new building products, including "we-de-" or "wee-dee-sliding windows" (fig. 9 left and middle). While they did not further explain this selection, referencing sliding windows and doors was ubiquitous in the 1920s. They were used in trains and other motorized vehicles and praised by architects, including those at the Bauhaus, for their space-efficiency.[13] Another potential argument referred to the ratio of the frame area to the overall size of the opening: the chosen window had a relatively small frame area, which in turn resulted in more glass and therefore increased sun- and daylight entry.[14] In addition, the main elevation (fig. 2 bottom) shows that the two panels of the sliding window could be moved in a centered position, which optimized air circulation through air entry at the bottom and air exit at the top. Finally, the patented "we-de window," produced by the firm Wender & Dürholt since 1907, provided a smart tilting mechanism for cleaning (fig. 10).[15]

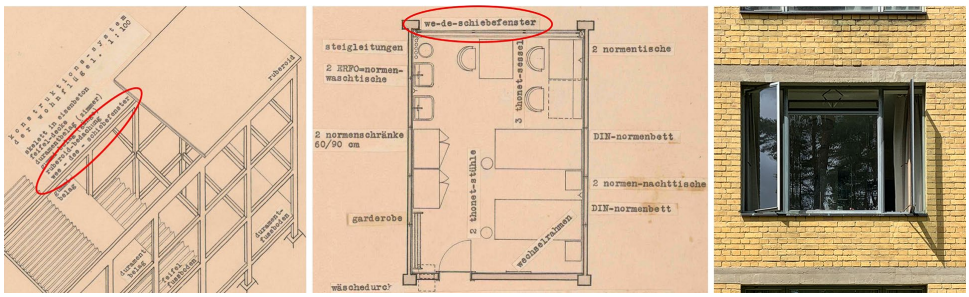

Figure 9. Bedroom "we-de-sliding window" in the Competition Drawings. Left: Built Window (Restored). Sources: Stiftung Bauhaus Dessau, Author.

Figure 10. "We-De-Sliding Window." Source: Der Baumeister 28 (1930) 2: Plate 1/2 and 1: B14

In the end, however, pivoting and hopper windows were employed for many rooms. The bedroom windows had fixed glazing in the center, with vertically pivoting windows at the sides and a horizontal hopper mechanism at the top (fig. 9 right). Windows pivoting around a vertical middle axis were specifically justified as being advantageous for balancing the weight of the glass and for standing into the room with only half of its width.[16]

In addition, the bedroom's pivoting side wings used a special glass with the product name "ultravit" that allowed the transmission of ultra-violet radiation. UV-glass was originally developed under the name "vita glass" in the UK in 1927.[17] Building on research that UV-radiation was germicidal and thus beneficial for plant growth and human health, marketing campaigns for UV-glass specifically targeted architects designing green houses, schools, hospitals, and sanatoria. UV-glass was popular for about a decade, even leading to Aldous Huxley mentioning "vita-glass" in his 1932 *Brave New World* as, in John S. Sadar's words, "both a proxy for technological development and integral to a future culture obsessed with youth and health."[18]

The Bauhaus discovered "vita glass" as early as 1927, reporting about the health-supporting effect of UV-rays in its journal. In 1928, when the ADGB School was already under contract, Bauhaus student Ernst Göhl included "vita glass," along with sliding windows, in his design of a primary school.[19] The use of "ultravit" was mentioned in articles on the ADGB School, seemingly evidencing the high hygienic standard of the school. "Ultravit" was also considered for the ADGB School's quarter-circle winter garden. However, likely because of its higher costs, it was used only selectively.[20]

Publications on the ADGB School also emphasized that the glass blocks for the glass-concrete-roof constructions were produced by the globally-operating Luxfer company. Employed in the cafeteria, lobby and library corridor for their "unrivaled brightness effect and light diffusion,"[21] they seemed to quickly face problems of water leakage and condensation.[22] For the walls, two different types of glass bricks, produced by Siemens, were utilized, one with a plain, the other with a textured surface. While both were translucent, thus allowing diffused light transmission while restricting the view, the textured glass bricks were used in higher-privacy zones, such as bathrooms, or to emphasize a space

boundary, such as described above for the corridor zone (fig. 5 middle, fig. 7 left). Plain glass bricks were used in the teacher houses' entrance halls allowing a little more transparency (fig. 8 left).

EMPLOYING SCIENCE, DESIGNING SOCIAL ENGAGEMENT, CRAFTING SPACES

When the ADGB School was designed, knowledge on the benefits of daylight for health and hygiene was well established. In addition, the Bauhaus teachers and students, with Hans Wittwer at the forefront, developed advanced skills in illuminance calculations and solar orientation derivations.[23] With this knowledge at hand, the Bauhaus designed the winner scheme in the ADGB School competition, relating daylight with the social agenda of building a school for workers. This design strategy of emphasizing the social programs through daylighting became continuously stronger during the revision and construction processes. From investigations of solar orientations to nuanced window sizing and placement, to the selection of window types (fixed/operable, transparent/translucent), and to the definition of interior surfaces (light-reflecting/-absorbing, colors), the ADGB School presents the versatility of this design strategy.

The project exemplifies the UNESCO's general definition of Bauhaus buildings as standing "for an architectural quality that derives from the scientifically-based design methodology and the functional-economic design with social objectives."[24] In the ADGB School, illumination studies were related to specific functions within a larger program, thus making daylighting become part of the functionalist discourse.[25] This functional approach, however, goes far beyond orientation studies and definitions of optimal illuminance levels. The ADGB School's unique spaces show that such design methodology was multi-faceted and also atmosphere-oriented. It included considerate inside-outside relationships; juxtaposing the open and the closed; gradual transparencies and light transmissions by increasing the amount of window frames or selecting different glass products; ad reflection methods through geometry (tilted ceilings) and surfaces (woven fabrics, colors).

Giedion's book related "light air opening" not only to hygienic/medical discourses, fuel savings, visual tasks (reading in schools), or worker efficiency in factories, but also to "freedom" and "the world." Similarly, the ADGB School reveals a much broader understanding of this discourse by crafting spatial choices and moments to experience the day rhythm. As Behne put it already in 1928, the ADGB School presented the "possibility of a life […] rich for all senses and organs."[26] Meyer's definition of the project as "a school of sun therapy"[27] can be read in the same way, as a building responding not only to the dynamic characters of the sun, daylight, and landscape, but also to the dynamic needs of the human beings in it.

NOTES

[1] Sigfried Giedion, *Befreites Wohnen* (Zürich/Leipzig: Füssli, 1929), 5, 12, 14, 15, and captions 11, 83, 85, among others. Here and in the following, all translations are by the author.
[2] Giedion, *Befreites Wohnen*, 5, and captions 81 and 57.
[3] Reto Geiser, in the introduction for the 2019 facsimile edition of *Befreites Wohnen*, points out that Giedion trimmed the original photo to increase the contrast between the cover's dark frame and the bright window (cp. Sigfried Giedion, *Befreites Wohnen* (Zürich: Lars Müller, 2019, 14).
[4] Giedion, *Befreites Wohnen*, figure 55.
[5] https://whc.unesco.org/en/list/729
[6] Letter Meyer to Gropius 28 March 1927 (German). Bauhaus Dessau Archive.
[7] The calculations are based on publications by Henry Harold Higbie (1882–1947), engineering professor at the University of Michigan and president of the Illuminating Engineering Society. Cp. Ute Poerschke, "Aspiring Scientific Design: Hannes Meyer and Hans Wittwer's Petersschule Project and Daylighting Scholarship" ACSA 110th Annual Meeting 2022, 61–66. In the Bauhaus journal, the architects also published their competition entry for the League of Nations building in Geneva, Switzerland, which is organized in the cardinal directions with a strict east-west orientation of the office wing. They claimed that the office floors' height was "calculated based on the illuminance coefficient achieved on the work plane. […] Even the buildings' configuration on site is only derivation of the traffic diagrams, lighting diagrams, insolation diagrams" (Bauhaus, 1 (1927) 4: 6). Daylighting calculations and diagramming were mentioned here as tools for design, but have seemingly not survived in the archives. However, based on the time proximity to the St. Peterschule, they were likely similar to those.
[8] Hannes Meyer, "erläuterungen zum schulprojekt," bauhaus 2 (1928) 2/3: 15.
[9] Archiv Deutsches Architekturmuseum DAM IV. 4 (2) 164-304-004 (German).
[10] In the competition phase, the cafeteria roof had two glass strips running the length of the room.
[11] A letter from Meyer (Bünzel) to Bauhütte Berlin, dated 24 May 1929, stated that "luxfer-oberteile," planned for the auditorium roof, "become unnecessary because of the large window front at the north side." Bundesarchiv, signature RY_23_25_0207 (German). www.bundesarchiv.de, accessed 1 July 2025.
[12] Cp. *bauhaus* 2 (1928) 2/3: 15, stating that the corridor allows "the newcomer quickest orientation and (without wrong-going) access to each building element: apartment, sports, school." (German)
[13] Georg Muche proposed in 1927 that doors and windows produced for trains could be used in buildings (*bauhaus*, 1 (1927) 2: 4). Max Müller, "Fensterkonstruktionen. Die Funktionen der zeitgemäßen Fenster." Deutsche Bauzeitung 66 (1932) 31: 613-618.
[14] A diagram, published in 1939 after the ADGB School's completion, compared such ratios for different windows, and while it cannot serve as the source for the school's façade design, its most light-efficient configuration was the same as the one used in the ADGB School competition. Cp. Otto Völckers, *Glas und Fenster. Ihr Wesen, ihre Geschichte und ihre Bedeutung in der Gegenwart* (Berlin: Bauwelt, 1939), 88. In addition, steel windows, when compared to wood, allowed for thinner frames and thus more glass area. However, the ADGB School competition drawings do not indicate, if the selected we-de-sliding windows were thought to be in wood or steel.
[15] *cp.* https://www.lennep.eu/die-firma-wender-durholt-in-lennep-eine-reminiszenz-teil-ii/;
Müller, "Fensterkonstruktionen," 616.
[16] Cp. Müller, "Fensterkonstruktionen," 617. The bedroom windows were originally produced by the firm Norddraht (Nordische Eisen- und Drahtindustrie, Rostock), which had also produced part of the windows of the Dessau Bauhaus building (*bauhaus* 1 (1927) 4: 3.). Norddraht also produced windows for the classroom wing. Other steel windows were produced by the firms Repal (Reinhold Patzschke, Leipzig) for the teacher housing, parts of the classroom wing, auditorium, and gymnasium; and Höntsch & Co, Dresden, for the main corridor, stair, and classroom corridor. Bundesarchiv, signature RY_23_25 (German), access: www.bundesarchiv.de.
[17] Cp. John Stanislav Sadar, *Through the Looking Glass. Shaping the Modern Body through Glass Architecture 1925-1935* (New York/London: Routledge, 2016). According to Sadar, "vita glass," produced by Chance Bros., was installed in Kew Gardens' Palm House in 1927 (160). Similar products followed with names such as Sanalux, Sun Ray, Vioray, or Helioglass.
[18] Aldous Huxley, *Brave New World* (London: Chatto & Windus, 1932), 189. Sadar, *Looking Glass*, 2016: 178.
[19] "vita-glass." *bauhaus* 1 (1927) 2: 6. "studienarbeit." *bauhaus*, 2 (1928) 4: 11. In addition, Ernst Neufert, former Bauhaus student, mentioned vita-glass in his *Bauentwurfslehre* (Berlin: Bauwelt 1936: 25 and 148).
[20] A letter from 20 July 1929 referred to "ultrafix-glas" (presumably meaning "ultravit") for the bedroom windows. For the potential use of "vita- oder ultravitglas" in the socializing room, cp. letter from 6 June 1929. Bundesarchiv,

signatures RY_23_25_0045 and RY_23_24_0011 (German), access: www.bundesarchiv.de. For a contemporary discussion of UV-glass, see also Völckers 1944: 90.

[21] Paul Liese, “Luxfer-Prismen.” In: Arthur Korn, Glas im Bau und als Gebrauchsgegenstanf, (Berlin: Pollak, 1929), 68. For the history of the Luxfer company, cp. Dietrich Neumann, “‘The Century's Triumph in Lighting’: The Luxfer Prism Companies and Their Contribution to Early Modern Architecture.” Journal of the Society of Architectural Historians 54 (1995) 1: 24–53.
Two window firms advertised in the Bauhaus journal: Fenestra Crittall and Luxfer. Fenestra Crittall advertised in the later issues of 1928 and the first issue of 1929, potentially hoping for a commission at the ADGB School, which didn’t realize because of its insufficient unionization (cp. Bundesarchiv RY_23_25_0020). Luxfer advertised in the last issue of 1928 and throughout 1929, which aligns with the ADGB School’s construction phase.

[22] In a letter from 5 January 1931, Hessler complaint about the air draft in the classrooms and the bedrooms, problems with the cafeteria roof, and too much heat entry in the south-west-facing offices. In a letter from 14 October 1931, Wittwer argued that repairing the roof was less costly than reconstructing it. Bundesarchiv, signatures RY_23_26_0013, RY_23_26_0014, RY_23_26_0203, and RY_23_26_0204.

[23] Cp. also Hannes Meyer, “bauen,” bauhaus 2 (1928) 4: 13: “We calculate the sun incidence angle in the course of the year and related to the latitude of the construction site, and we construct from it the house’s shadow fan in the garden and the sunlight fan of the window in the bedroom. We calculate the daylight illuminance of the working surface in the interior […]. where color seems psychically indispensable for us, we co-calculate its light reflection value.”

[24] https://whc.unesco.org/en/list/729

[25] The project can also serve to show the limitations of calculations and orientation studies. In a letter from 5 January 1931, Hessler complaint about the air draft in the classrooms and the bedrooms, problems with the cafeteria roof, and too much heat entry in the south-west-facing offices. Bundesarchiv, signatures RY_23_26_0013 and RY_23_26_0014 (German), access: www.bundesarchiv.de.

[26] Adolf Behne, “die bundesschule des ADGB in bernau bei berlin.” bauhaus 2 (1928) 2/3: 12.

[27] “Lectures in Vienna 22.4.1929 and Basel 3.5.1929,” in: Hannes Meyer, *Bauen und Gesellschaft. Schriften, Briefe, Projekte* (Dresden: VEB, 1980), 59. Sadar points out that heliotherapy, according to “Sir Henry Gauvain in an April 1927 article in *The Lancet*” targets “changing conditions […] rather than exposure to the singular ideal wavelength of artificial sunlight. […] a normal, healthy life has a fundamentally dynamic condition.” (Sadar, *Looking Glass*, 2016: 161)

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INDUSTRIAL HERITAGE REIMAGINED: A COMPARATIVE ANALYSIS OF 20TH-CENTURY TRANSFORMATIONS IN NORTHERN ITALY AND NORTHERN SPAIN

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INTRODUCTION

Adaptive reuse of industrial heritage sites presents a valuable opportunity for architectural preservation and socio-economic revitalization. However, this process is inherently complex and influenced by region-specific factors such as urban planning policies, cultural attitudes toward heritage, and economic conditions of the regions. Despite the importance of adaptive reuse, a notable gap remains in comparative research examining how different regions approach the transformation of industrial sites. This study focuses on northern Italy and northern Spain, regions with significant industrial histories that have adopted distinct strategies in reusing their industrial heritage. By analyzing case studies from Torino and Ivrea in northern Italy, and Bilbao and Gijón in northern Spain, the research aims to compare the dominant methodologies employed, assess their impact on architectural and urban landscapes, and evaluate socio-economic outcomes such as community engagement, tourism, and economic revitalization. Additionally, the study documents both successes and challenges encountered throughout the adaptive reuse process. Through this comparative analysis, the research contributes insights into how differing regional approaches affect sustainable development and offers lessons that may inform future industrial heritage transformations.

Industrial Heritage

Industrial heritage has emerged as a contested yet increasingly recognized component of sustainable urban development. Rather than merely preserving abandoned sites, recent scholarship highlights the potential of adaptive reuse in revitalizing post-industrial landscapes while incorporating environmental, cultural, and socio-economic considerations.[1] The Massachusetts Institute of Technology's Land Recycling Team categorizes the benefits of industrial site repurposing into economic, social, and environmental domains, emphasizing increased property values, urban competitiveness, job creation, and reduced development pressure on greenfield areas.[2] However, the dominance of economic motivations often overshadows environmental remediation and community inclusion, casting local interests and engagement as liabilities.[3]

In southern and peripheral European contexts, such as Spain and Italy, the redevelopment of industrial heritage has been fragmented and uneven. In Spain, engagement has been strongest in Catalonia and the Basque Country, where industrial memory intersects with regional identity.[4] In some other parts however, initiatives often prioritize tourism over genuine community involvement, as seen in Val de

San Lorenzo, where various heritage projects lacked local participation and failed to resonate with residents.[5] Similarly, Italy's industrial archaeology developed primarily through academic channels with limited grassroots involvement. Despite some advances, redevelopment projects in places like Sesto San Giovanni have been critiqued as erasures of industrial memory.[6]

The growing interest in industrial heritage is also reflected in the emergence of industrial tourism. Yet financial constraints and low community engagement continue to hinder its development, particularly in economically distressed areas.[7] Overall, successful industrial heritage reuse depends not only on spatial or economic transformation but on meaningful integration of local identity, memory, and participation.

Torino

Once the heart of Italy's automotive sector, Turin entered a phase of deep socio-economic turmoil after FIAT drastically reduced its operations in 1982. The city's dependence on a single industrial giant had made it fragile: population numbers dropped, and economic growth halted.[8] Yet rather than distancing itself from this industrial past, Turin embarked on a bold reinvention, reframing it as a launchpad for cultural renewal and innovation.[9]

Central to this transformation was adaptive reuse. Turin's strategically located industrial architecture became a canvas for reimagining urban life. The Lingotto complex, once FIAT's crown jewel, exemplifies this shift. Under Renzo Piano's redesign, it morphed into a dynamic mixed-use hub, blending museums, retail, and educational spaces, proof that industrial heritage could anchor a new civic identity.[10] Similarly, Eataly, housed in a former vermouth factory, merges commerce with cultural programming, framing food consumption as an act of sustainability and local engagement.[11]

Other major sites in the city also embraced this phenomenon. The Officine Grandi Riparazioni (OGR), a former railway repair workshop, now functions as both a cultural venue and a tech incubator, with open layouts designed to spark public interaction, whether through exhibitions or shared dining.[12] Further from the center, Barriera di Milano's EDIT complex repurposes an old cable factory into a collaborative space for co-working and food production. Yet while it promotes inclusivity, hurdles like poor transit access reveal lingering gaps in equitable development in this part of the city.[13]

Despite its successes, Turin's regeneration model also faces its fair share of scrutiny. Private capital has driven much of the change, prompting concerns over who truly benefits.[14] Though many sites are publicly accessible, commercial interests often overshadow social goals. Broader initiatives like the Smart City project have also been accused of prioritizing image over substantive investment in cultural and social infrastructure. Inequalities endure, particularly in areas like Barriera di Milano, where disparities in transit and services persist.

Nevertheless, Turin's approach holds instructive power. Projects like Lingotto, Eataly, OGR, and EDIT are more than just redeveloped spaces; they are living experiments where history, culture, and enterprise intersect. They demonstrate how cities can leverage industrial heritage to build vibrant, inclusive futures, but only if innovation is paired with genuine equity and sustained community commitment.

Ivrea

Heritage conservation has evolved beyond preserving isolated monuments to safeguarding entire urban landscapes, a shift epitomized by the Historic Urban Landscape (HUL) approach.[15] A striking example is Ivrea, Italy, where the 20th-century industrial heritage of the Olivetti company has become central to the city's identity. Founded in 1908 by Camillo Olivetti and later expanded by his son Adriano, the company transformed from manufacturing typewriters to pioneering early computers,

leaving a lasting mark on Ivrea's urban fabric. Adriano Olivetti's visionary leadership blended industrial innovation with social welfare and cultural development, earning the city a spot on Italy's UNESCO Tentative List in 2012.[16]

Adriano's philosophy redefined the role of industry, prioritizing societal well-being over mere profit. His initiatives, ranging from worker housing to cultural programs, reflected a rare fusion of capitalism and humanistic values. Despite his untimely death in 1960, the Olivetti company thrived technologically, notably in computing during the 1970s, before succumbing to global market shifts in the 1980s and 1990s, which led to downsizing and economic decline.

From the 1990s onward, Ivrea's industrial sites were repurposed through cultural initiatives like Officine Culturali ICO (1996-2001), the Catalogue of Cultural Architectural Heritage, and the Open-Air Museum of Modern Architecture (MaAM). Grassroots involvement was pivotal in securing Ivrea's UNESCO nomination, reinforcing the link between heritage conservation and local identity.[17]

Yet challenges persist. Fragmented ownership of former industrial properties, a disconnect between private investors and public entities, have hindered cohesive redevelopment, with bureaucratic hurdles often stalling progress.[18] Critics also warn of the "commodification of industrial heritage," where economic imperatives risk diluting preservation goals.[19]

While Ivrea's residents take pride in their Olivetti heritage, many grapple with nostalgia for a bygone industrial era. This duality shapes how sites are adapted, balancing physical preservation with the intangible legacy of social innovation.[20] However, strict conservation policies sometimes clash with the need for functional reuse, creating friction between historical integrity and urban revitalization.[21]

Furthermore, UNESCO recognition has elevated Ivrea's global standing by attracting heritage tourism and reinforcing civic pride. Yet this designation also imposes regulatory constraints, complicating redevelopment efforts. Unlike Turin's diversified post-industrial model, Ivrea leans heavily on heritage tourism, a strategy that may lack long-term economic viability. Still, the UNESCO status has renewed efforts to reinterpret Olivetti's progressive ideals for the 21st century, proving that industrial heritage remains a living force in shaping Ivrea's future.[22]

Bilbao

Despite the political suppression and cultural marginalization the Basque Country faced under Franco's dictatorship (1939–1975), Bilbao emerged as an industrial powerhouse, with steel production, shipbuilding, and machinery manufacturing driving Spain's economy.[23] This rapid industrialization attracted migrant workers and spurred chaotic urban expansion. While Bilbao industrialized relatively later than other European cities, its growth was explosive, marked by new infrastructure and financial institutions. However, between 1975 and 1995, industrial employment collapsed by nearly 50%, triggering a population exodus as migrants left and surrounding municipalities gained administrative independence. The environmental toll of the post-industrial era was severe, as untreated industrial waste poisoned the Nervión River, leaving behind 340 hectares of polluted brownfields.[24]

The Basque Country's fiscal autonomy proved crucial in Bilbao's revival. Unlike other Spanish regions, it retained control over tax revenues, allowing it to fund ambitious urban renewal projects, including the then-controversial Guggenheim Museum. To coordinate redevelopment, the public agency Bilbao Ria 2000 was established, bringing together local, regional, and national governments. Bilbao Ría 2000 is a public limited company, incorporated in 1992 by the Basque government, the Spanish government, the provincial council of Vizcaya, and the city council of Bilbao, with the aim of managing the regeneration and transformation of degraded areas in the Bilbao metropolitan area. This innovative partnership facilitated land decontamination, infrastructure modernization, and strategic sales to private developers, ensuring a structured yet flexible regeneration process.[25]

Culture became the cornerstone of Bilbao's transformation. The so-called "Guggenheim effect" captured global attention, with Frank Gehry's titanium-clad masterpiece symbolizing the city's rebirth. Other architectural icons, such as Álvaro Siza's university buildings and César Pelli's towers, further elevated Bilbao's skyline. Public art installations along the Nervión River paid homage to its industrial past, while new pedestrian bridges and promenades reconnected the city to its waterfront.[26] However, critics note that the emphasis on spectacle sometimes came at the expense of preserving smaller industrial landmarks, suggesting a need for more nuanced integration of heritage.[27]

Bilbao's model differed from Barcelona's Olympics-driven revival, yet both relied on public-private partnerships and cultural identity to spur growth. Key to Bilbao's success was tourism, fueled by the Guggenheim, economic diversification into knowledge-based industries, and productivity gains from infrastructure and R&D investments. Most strikingly, the Nervión River, once a polluted divider, was transformed into a vibrant civic and cultural artery.

Research indicates that although the Guggenheim Museum continued to attract over a million annual visitors, the long-term success of Bilbao's revitalization plan depended on diversifying its economy beyond cultural tourism.[28] Additionally large-scale projects often sidelined small and medium-sized enterprises, which struggled to adapt to the new service-oriented economy. Unlike Turin's approach, which repurposed industrial sites into innovation hubs, Bilbao's focus on iconic architecture risked neglecting broader economic inclusivity.

Gijón

Gijón exemplifies a compelling case of urban regeneration, marked by its transformation from industrial decline to a revitalized cultural landscape. In the 1940s, this modest coastal town began its rapid industrialization with the establishment of steel giant ENSIDESA and the expansion of El Musel port. However, Franco-era urban development brought haphazard growth, characterized by low-quality construction and real estate speculation, leaving behind a legacy of poor urban planning that still shapes the city today.[29] The closure of the Moreda steel plant in 1980 marked the end of Gijón's industrial golden age, ushering in economic decline, widespread job losses, and urban decay, particularly in western districts dominated by steel and shipbuilding.[30]

Yet from the 1980s onward, Gijón embarked on a different transformation. Many of the former major industrial sites were transformed into parks and green spaces, improving both environmental quality and community connections. Key projects like Cocheras Park (a converted tram depot), Orueta Park (built on a former metallurgical factory site), and the expansive Moreda Park demonstrate this shift. These spaces intentionally preserve industrial heritage through design, incorporating elements of the industrial factories into their landscapes.[31] The 1986 Rañada Plan proved instrumental in this green transition, designating parkland and prioritizing neighbourhood renewal, though integrating these spaces into the dense urban fabric presented ongoing challenges.

Urban regeneration efforts extended beyond parks. The 1985 General Urban Development Plan (PGOU) emphasized heritage conservation and environmental initiatives, including the groundbreaking 1989 Atmospheric Sanitation Plan. Later projects focused on coastal revitalization and tourism development, blending façade restorations with new cultural infrastructure. Recent architectural interventions also reflect a commitment to sustainable, compact urban growth.[32]

Gijón's coastal setting and historical assets offer significant tourism potential, though its industrial past and disjointed urban growth have complicated its development. Public art installations like Eduardo Chillida's *Elogio del Horizonte* have reshaped the city's identity, though some critics argue these works feel disconnected from Gijón's working-class roots.[33] This tension highlights the importance of community engagement in urban art and heritage projects.

Unlike Bilbao's strategy of integrating industrial heritage into cultural renewal, Gijón has prioritized green space development, leading some to question whether opportunities to repurpose industrial landmarks were missed. While EU funding and public-private partnerships have facilitated transitions toward tourism and cultural diversification, ongoing challenges remain in aligning rapid urban development with social cohesion and architectural coherence.[34]

ANALYSIS

Adaptive Reuse Models: Four Diverging Approaches

Across the selected case studies, four dominant models of transformation emerge: hybrid functionality, monumental preservation, iconic placemaking, and ecological urbanism as shown in Figure 1.

Torino exemplifies the "hybrid functionality" model. Projects such as the Lingotto complex and the OGR (Officine Grandi Riparazioni) redevelopment integrate retail, cultural, educational, and hospitality functions within former industrial spaces. These sites retain their industrial character while embedding themselves into the city's economic and social life. The model's strength lies in its economic resilience and urban reintegration, though most of its reliance on private investment raises concerns over equitable public access.

Ivrea, by contrast, represents a "monumental preservation" approach. Its UNESCO designation mandates strict adherence to conservation principles, focusing on architectural authenticity rather than adaptive functionality. This has resulted in limited economic dynamism and functional integration, as many Olivetti-era buildings remain underutilized despite their architectural significance.

Bilbao illustrates the "iconic regeneration" strategy, most notably through the Guggenheim Museum and the broader Abandoibarra redevelopment. These high-profile cultural interventions have reshaped the city's global identity, catalyzed tourism, and initiated widespread urban renewal. However, this approach also risks privileging flagship projects at the expense of more nuanced and inclusive heritage integration.

In Gijón, the transformation leans toward "ecological urbanism." The conversion of derelict shipyards and industrial tracts into parks and green infrastructure, such as Moreda Park and Cocheras Park, emphasizes environmental sustainability and public access. While this model fosters ecological and social benefits, it sometimes lacks economic activation and may underplay the cultural and educational potential of former industrial infrastructure.

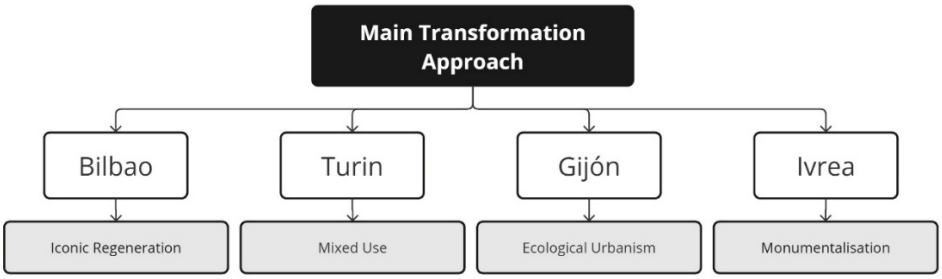

Figure 1. Main Transformation Approach across case studies

Socio-Economic and Cultural Impacts

All four cities experienced distinct socio-economic shifts in the aftermath of redevelopment. Torino effectively repositioned its post-industrial identity by embracing mixed-use, creative industries, and cultural tourism, contributing to a more diversified economic base. Nonetheless, issues of equitable access and sustainable grassroots initiatives remained concerns for residents.

In Ivrea, architectural preservation has been prioritized, yet its reintegration into the wider urban economy remains limited. The city's emphasis on conservation over adaptive reuse has constrained innovation and economic diversification, highlighting the complex trade-off between safeguarding heritage and ensuring long-term viability.

Bilbao's emergence as a global cultural destination has catalyzed rapid growth in tourism and the service sector. However, this success has also revealed structural vulnerabilities, including dependence on cultural capital and the uneven distribution of benefits across socio-economic groups.

Gijón's redevelopment initiatives have bolstered civic participation and improved environmental quality. The conversion of former industrial sites into public green spaces has contributed to community well-being and supported sustainability goals. Yet, some critics note that opportunities for integrating educational and cultural programming linked to the city's industrial heritage were insufficiently explored.

Governance and Community Engagement

Governance models and stakeholder coordination proved to be critical factors across all four cases. In Torino and Bilbao, public-private partnerships (PPPs) enabled substantial capital investment, supporting ambitious urban redevelopment efforts. However, these partnerships also brought commercial pressures that occasionally conflicted with heritage preservation and goals of social inclusivity.

In Ivrea, the strong role of centralized preservation authorities constrained local flexibility, limiting opportunities for context-sensitive adaptation. In contrast, Gijón benefited from grassroots participation and alignment with EU sustainability frameworks, fostering a more bottom-up approach to regeneration. Nonetheless, the absence of strong institutional anchors in Gijón sometimes hindered the scalability and visibility of projects.

Community engagement, somewhat evident in Bilbao and Gijón, highlighted the importance of civic identity and collective memory in shaping adaptive reuse strategies. Still, tensions frequently emerged between top-down branding initiatives and local narratives, underscoring the need for more participatory and inclusive models of heritage governance.

Challenges Across Contexts

Despite their contextual differences, the case studies reveal shared challenges: balancing conservation with functional reuse, securing sustainable funding, managing stakeholder interests, and avoiding the commodification of heritage. For instance, Torino's success depended on the modern functionality and private sector engagement, while Gijón's success lay in ecological integration and cultural resonance with local values.

Bilbao's experience further underscores the need to diversify economic reliance beyond cultural tourism, while Ivrea highlights the limitations of static preservation in a dynamic urban context. These findings affirm the importance of context-sensitive, multi-scalar strategies that integrate heritage with contemporary urban development needs. These challenges are summarised in Figure 2.

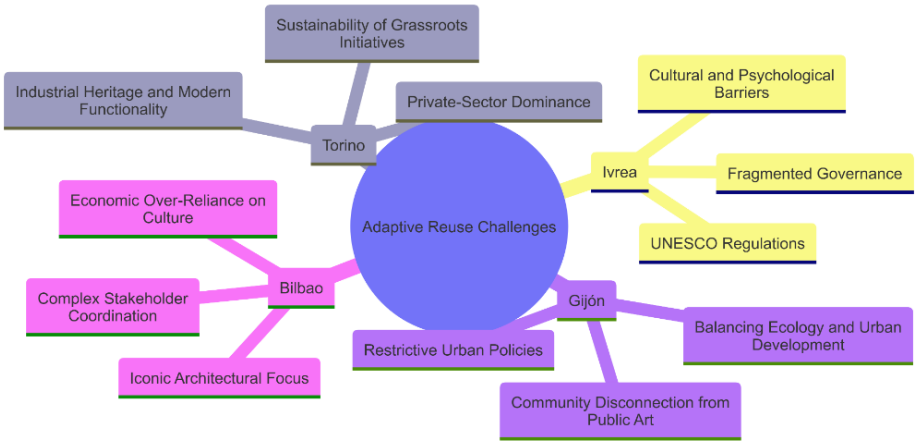

Figure 2. Challenges across case studies

CONCLUSION

Adaptive reuse of industrial heritage is shaped by a multitude of factors, including governance frameworks, economic objectives, and socio-cultural dynamics. This study compares four European cities; Torino, Ivrea, Bilbao, and Gijón, highlighting distinct transformation models: hybrid functionality (Torino), monumental preservation (Ivrea), iconic placemaking (Bilbao), and ecological urbanism (Gijón). These approaches reshape industrial heritage form while reflecting different regional priorities.

In Torino, mixed-use projects like Lingotto support economic diversification, while initiatives such as EDIT complex underscore the value of grassroots engagement. Ivrea's UNESCO-led preservation maintains architectural integrity but limits adaptive flexibility. Bilbao's landmark-focused transformation, led by the Guggenheim, attracted global attention but often overlooked smaller heritage sites and local businesses. Gijón prioritized ecological reuse, converting industrial areas into green public spaces that foster sustainability and civic participation.

Common challenges include fragmented governance, infrastructural gaps, rigid preservation policies, and limited community input. Effective transformation requires integrated planning that balances heritage with economic, social, and environmental goals. These goals may be achieved by incorporating participatory design, equitable partnerships, sustainable funding, and improved mobility in the transformation process.

The research contributes to the comparative framework for assessing industrial reuse and emphasizes the need for flexible, inclusive, and context-sensitive approaches to keep industrial heritage alive in today's cities.

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EARLY REPUBLICAN FOOTBALL STADIUMS IN TURKEY FACED CONSERVATION ISSUES DUE TO MODERNISATION PRESSURE

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INTRODUCTION

The Republican regime attributed significant importance to sports in the context of the modernizing process in the early Republican period (1923-1945). Football stadiums became necessary to facilitate sports activities in cities. Thereupon, the regime invited sports architect Paolo Vietti-Violi to design modern football stadiums, in which he planned the Beşiktaş, Galatasaray, and Fenerbahçe stadiums in Istanbul and the 19 May stadium in Ankara. These stadiums reflected the sports and modern architectural culture of the time. Despite their sporting and modern architectural significance, these stadiums were not perceived as part of the country's heritage equation. They have faced numerous challenges due to their lack of visibility on the heritage agenda. Therefore, due to their ambiguous status, they were partially conserved and converted until the last decades. However, they were largely demolished in recent decades, giving rise to a new entity. Accordingly, concerns regarding the loss of architectural heritage intrinsically linked to a significant aspect of twentieth-century social history arose due to the demolition of whole stadiums and the reconstruction of particular stands. Therefore, these sporting heritages have been converted or demolished so as to adapt to increasing economic demands, media attention, and regulations regarding safety and health. The stadium's questionable fate has left the site with an ambiguous status of sporting heritage. Accordingly, this study examines the challenges posed by their conservation and design. The conclusion of the study will focus on the potential benefits of cultural heritage for football stadiums.

CONSERVATION STADIUMS AS CULTURAL AND SPORTING HERITAGE

Stadiums serve as more than just venues for sporting events; they are significant public spaces that influence the spatial and social identity of the cities they inhabit. In the early 20th century, the establishment of nation-states led to the emergence of sports and their spatial representations in stadiums as venues for the development of collective identities in a wide variety of national and cultural contexts.[1] Football stadiums hold significant value as public structures in the process of a society's modernisation, extending beyond their role as mere venues for sporting events. Stadiums constructed in Turkey during the early Republican era were designed to align with the social transformation objectives of the new regime, reflecting the principles of modern architectural thought. These structures serve as spatial representations of an ideology that elevates physical health and contributes to nation-building, while also situating themselves in the heart of cities, thus becoming

integral components of collective memory.[2] In this sense, the stadiums from the early Republican period serve as more than mere architectural entities; they embody significant cultural heritage and symbolism.

The first generation of football stadiums, 19 May, Beşiktaş, Galatasaray, and Fenerbahçe, designed according to the principles of modern architecture, reflected the architectural insights of their era through their aesthetic designs, spatial configurations, and features, while also acting as a visual representation of national identity. The stadium projects developed with the contributions of Italian architect Paolo Vietti Violi had a significant impact on the design of modern sports structures in Turkey. They were unique structures that embodied the architectural and urban development history of modern Turkey, along with the Republican Regime's sports policies. In this context, the stadiums from the early Republican period represent more than just modern architectural structures; they encapsulate substantial cultural significance and sporting heritage.

The demolition of entire stadiums and the reconstruction of individual stands has raised concerns about the potential loss of monuments that are fundamentally linked to a significant aspect of twentieth-century social history. During the rapid redevelopment phase of the 1990s and early 2000s, football stadiums designated as historic were either demolished or significantly converted.[3] For instance, James Fulton designed the White City Stadium in 1908, the first purpose-designed modern Olympic stadium in London. The stadium, accommodating over 80,000 spectators, was a giant arena for various Olympic sports. However, it was later reduced to a smaller arena due to neglect and was demolished in the 1980s.[4] As time has progressed, the evolving urban dynamics, the increasing number of football club fans, increased economic demands, media attention, and changes in sporting requirements and regulations regarding safety and health have posed significant challenges to preserving these stadiums, which are recognised as cultural and sporting heritage. Several stadiums, despite being within their intended structural lifespan, have been dismantled or replaced with larger and more technologically advanced facilities, mainly due to functional considerations. Sporting heritage, which once thrived within these historical contexts, has been eclipsed by contemporary developments, thereby weakening the community's connection to its past and creating a void where vibrant traditions and shared experiences once flourished.

In this context, the study comprehensively examines the preservation challenges they face. The issues facing these stadiums in terms of their sustainability, architectural integrity, and historical identity will be addressed within the context of structural transformation pressures and urbanisation. The main aim of the study is to emphasise the theoretical benefits that can be achieved by evaluating these structures, not only for their sporting functions but also as cultural and sports heritage buildings.

Concerns over the loss of monuments organically related to a key component of twentieth-century social history emerged as a result of the demolition of whole stadiums and the reconstruction of individual stands.[5] Since the emergence of professionalism in the latter half of the nineteenth century, a permanent football ground has been a fundamental aspect of a football club's identity. Rather than merely functioning as temporary venues for fan gatherings, football stadiums have increasingly evolved into landmarks within the urban landscape, referred to as “sportscapes.”[6] The physical fabric of these grounds offers a distinctive sportscape and serves as a communal focal point that has been valued by generations, emphasising the intrinsic material value of these spaces.[7] Wood highlighted that the heritage sector has markedly neglected the expansion and evolution of sports grounds and facilities, exhibiting a deficiency in proactive or systematic efforts for conservation, which is surprising given the cultural and political significance of sport.[8] Compared to other structures, such as industrial and public buildings, the documentation and preservation of sporting heritage have been inconsistent, inadequate, and perceived as having low status. This lack of attention and resources has failed to recognise the cultural significance of sporting heritage, which has led to its vulnerability and

potential loss over time. On a global scale, TICCIH, ICOMOS, and UNESCO have established distinct criteria aimed at the registration and preservation of modern heritage structures. In 2016, ICOMOS focused on 'the heritage of sport', intending to incorporate 'heritage of sport—modern times' into the historical environment agenda to raise awareness of its importance. In 2002, a pilot study for English Heritage — A Sporting Chance: Extra Time for England's Historic Sports Venues by Gill Chitty and Jason Wood made a significant contribution to the preservation of historic sports venues in England. This study acts as a significant reference for the preservation and evaluation of modern sports heritage. It emphasises the following key points:

· Sports venues are more than mere physical structures; they are deeply connected to social memory, identity, and collecutıve values.

· Sports venues should be regarded as cultural heritage.

· The architecture highlights the necessity of preserving architectural, social, and communal values together.

· Conservation strategies should be formulated in partnership with local communities.[9]

As symbols of cultural heritage, sports venues serve as vital links to shared sporting history, encouraging a sense of self-worth and belonging within local communities. To ensure continuity, it is essential to adopt conservation strategies that engage and empower these communities while recognising their invaluable insights and connections to venues. By prioritising preservation efforts that honour both the physical structures and the narratives they represent, we can ensure these iconic sites are preserved for generations.

STATUS OF SPORTING HERITAGE IN TURKEY

In Turkey, there is no specific legislation regarding the conservation of the first generation of modern stadiums built in the early twentieth century as part of sporting and modern architectural heritage. While there is no dedicated legislation specifically addressing stadiums, there exists legislation that allows for the registration of these structures for preservation purposes. In 1983, the Law on the Conservation of Cultural and Natural Property (2863) was enacted to evaluate whether structures merit preservation based on their architectural, historical, aesthetic, archaeological, and other significant attributes.[10] The legislation failed to encompass the 19 May, Adana, Manisa, Bursa, Galatasaray, and Fenerbahçe stadiums from the early Republican period, despite serving as a significant legal foundation for the protection of immovable cultural assets in Turkey, except for Beşiktaş Stadium. The Beşiktaş Stadium is the only structure partially protected under the 1983 law. The main reason for the exemption is that the sporting and modern architectural values of these structures were long considered outside the definition of cultural heritage.

Additionally, the increasing pressure for modernization in post-1980 Turkey has led to the reconstruction of these structures in accordance with international standards, resulting in a preference for demolition and reconstruction policies over preservation. The failure to recognise sports structures as cultural heritage, combined with delays in registration processes or the complete absence of such processes, has led to the undocumented loss of these important buildings. The fact that local governments and central preservation boards act in accordance with economic interests is also one of the structural reasons for the inability to preserve these stadiums. This situation demonstrates the selective nature of cultural heritage policy in Turkey and the insufficient understanding of the role of sports venues in cultural identity construction.

CONVERSION, DEMOLITION, AND CONSERVATION

19 May Stadium

Ankara 19 May Stadium was designed in 1932 as a national representation structure reflecting the modernization vision of the Republican regime. The stadium was not only a sports venue but also a public structure that embodied the ideological discourses of the new regime. The stadium served as a symbol of national pride and unity, showcasing the regime's commitment to fostering a sense of belonging among its citizens. Through grand architectural designs and large-scale events, it aimed to project an image of strength and stability, reinforcing the ideals that the regime sought to promote. Integrated into the urban fabric and city life, this structure served the modern urbanization strategies of the era with its easy accessibility and multifunctionality. With its functional layout, axial composition, and symmetrical planning, it has offered both aesthetic and structural integrity. While its hierarchical spatial organization is supported by modern architectural elements such as rhythm and repetition, its modern architectural language is embodied in reinforced concrete canopy, columns, and glass surfaces (Figure 1). The design, which is devoid of ornamentation and based on geometric clarity and visual simplicity, is in harmony with the fundamental principles of modern architecture and has also been regarded as a spatial symbol of the Republic's secular, rational, and progressive ideology.

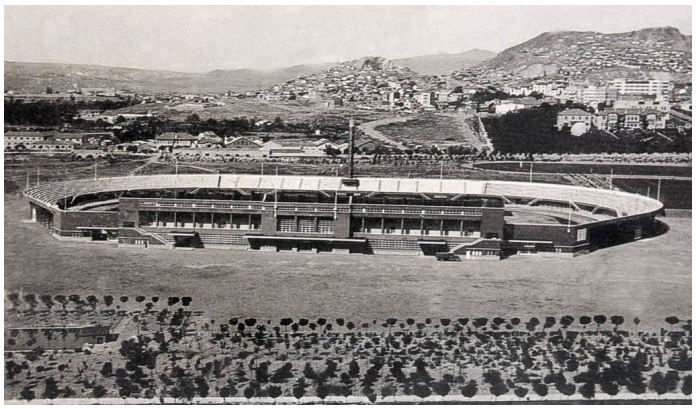

Figure 1. The view of the 19 May stadium (https://www.modamuzayede.com/en/auction/29754/06-nisan-2025/page/2 (accessed July 11, 2025).

However, the stadium has undergone various physical conversions over the years, spurred by the increasing urban population and the expansion of sporting activities since the 1950s (Table 1). In 2012, the plan to demolish the existing structure and build a modern, enclosed stadium was announced to the public, and in 2018, the 82-year-old structure was completely demolished, along with its foundations, stands, and original towers. The Ministry of Environment, Urbanization, and Climate Change, along with the Housing Development Administration (TOKİ), is constructing the third stadium in the world with the longest steel roof span of 285 meters in place of the 19 May Stadium in Ankara (Figure 2). Minister Murat Kurum said, "We are bringing our capital a new stadium with TOKİ." He said, "This modern sports complex, which will bring new stars to Turkish sports and host international organisations, will suit Ankara very well."[11]

This process is as significant a turning point in terms of the physical transformation of the stadium as it is in terms of preserving the architectural heritage of the Republican era. Rather than building new structures at the 19 May Stadium's location, the city's periphery is a viable option. Instead, they demolished this stadium, preserving it as the architectural and sporting heritage of the Republican era under the scope of the Conservation of Cultural and Natural Property (2863). The decision to

demolish the 19 May Stadium to preserve its historical significance reflects a broader commitment to preserving architectural and sporting heritage from the Republican era. By opting for the city's periphery rather than erecting new structures, authorities have acknowledged the importance of maintaining a tangible connection to the past within the urban landscape. This initiative, pursued under Conservation of Cultural and Natural Property (2863), reflects a nuanced understanding of heritage conservation and prioritises cultural identity over modern development. Through this thoughtful approach, the stadium's legacy will continue to resonate with future generations, serving as a poignant reminder of a pivotal era in the capital Ankara's history.

Accordingly, the 19 May Stadium continued to serve Turkish sports until 2018, when the stadium was demolished. Previously, the stadium had a certain transformation that triggered its loss of identity. The iconic Marathon Tower was demolished in 1965. The canopy was demolished, and a new roof was added in 1998.

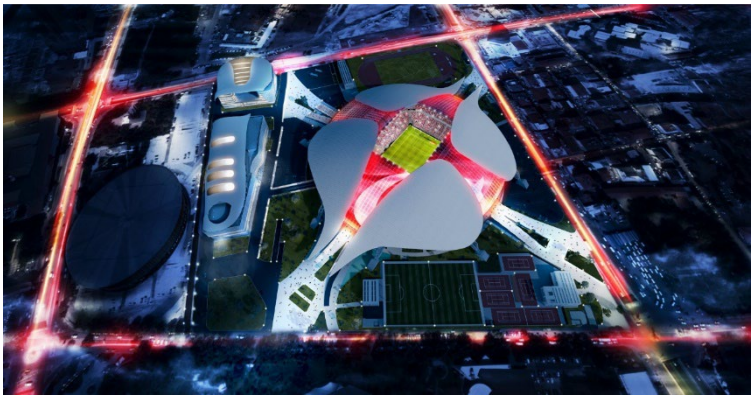

Figure 2. New stadium project (https://www.csb.gov.tr/ankara-nin-yeni-stadyum-kompleksi-hizla-tamamlaniyor-dunyanin-en-uzun-celik-cati-acikligina-sahip-3-uncu-stadyumu-olacak-bakanlik-faaliyetleri-40389 (accessed June 8, 2025).

	Time	Physical Change	Description
Conversion	The 1950s	First capacity increase	New seating areas were added to the stands. The wooden bench system was replaced with a reinforced concrete seating system.
	1960s	Lighting added	A projector lighting system was installed in the stadium for night matches.
	1970s	Additional stands and canopy	A steel-supported canopy was added to the closed stand. Additional rows were installed in the side stands.
	1990s	Scoreboards and turnstiles were added	Electronic scoreboards and entrance turnstiles for security purposes were installed.
	2000s	Stadium maintenance and reinforcement	Reinforcements were made in some sections for earthquake resistance. Partial renovations were carried out as part of the UEFA compliance process.
Demolition	2018	Complete demolition	The 82-year-old stadium was completely demolished. The structure, including its foundations, stands, and towers, was removed.
Conservation		No conservation	-

Table 1. The transformation of the 19 May Stadium over time

Beşiktaş Stadium

Beşiktaş Stadium was designed in 1939 by the Italian architect Paolo Vietti Violi, alongside his Turkish colleagues Fazıl Saffet Aysu and Şinasi Şahingiray.[12] The stadium is one of the spatial reflections of early Republican modernisation policies due to its location, compatible with the natural

topography and its integration into Istanbul's historical and urban fabric. With its dominant position overlooking the Bosphorus and its location parallel to Meclis-i Mebusan Street, it has both integrated into the urban landscape and gained the quality of a social space by providing accessibility to urban life. Its functional layout, axial composition, symmetrical planning, and hierarchical spatial structure have been designed in accordance with the modern architectural principles of the era. In the structure, modern architectural elements such as rhythm and repetition have been combined with modernist aesthetics; aesthetic integrity has been achieved with natural stone cladding used on the façade (Figure 3). While modern architectural solutions are characterised by the reinforced concrete skeleton system and cantilevered canopy structure, the use of modern building materials such as glass, steel, and cladding stone further enhances the modern character of this structure. The architecture of Beşiktaş Stadium emerged as an eclectic combination of classical form and modernist approach.

In addition to its status as a modern architectural significant, the stadium stands in a distinctive role within Turkey's sports heritage, and it has pioneered both the institutionalisation process of Turkish football and the societal acceptance of modern sports culture. The stadium has directly contributed to the development of national football leagues by hosting matches for the teams of Galatasaray and Fenerbahçe, which it helped establish, thereby playing a central role in the spread of football as a venue for matches involving teams from both Istanbul and all of Turkey. In addition, the stadium has strengthened the diplomatic and cultural dimensions of Turkish sports by hosting international tournaments, national team matches, and special ceremonies. Therefore, Beşiktaş Stadium is not just a sports facility; it is a monument of "sports heritage" that has become a part of the collective memory, housing the milestones of Turkish sports history.

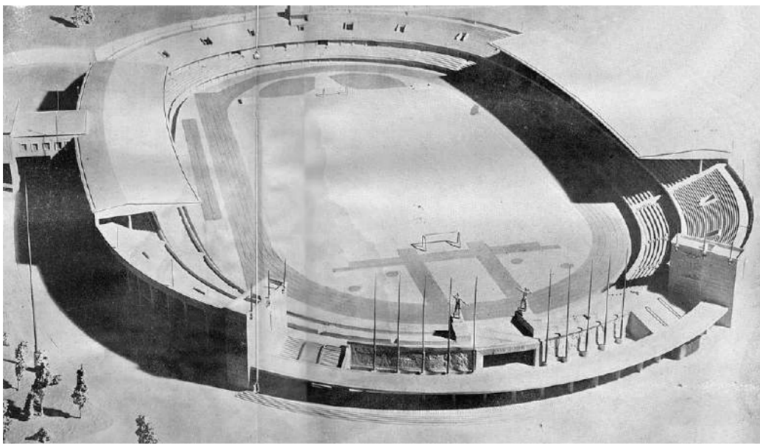

Figure 3. View of Beşiktaş Stadium (https://www.arkiv.com.tr/galeri/detay/201007/1/proje/6013 (accessed January 7, 2025).

In 2005, a registration decision for Beşiktaş Stadium was made by the Cultural and Natural Heritage Preservation Board, which considered the historical value and original architecture of the stadium.[13] However, despite this registration decision, the stadium has been subjected to various physical interventions over time, and structural changes such as roof additions have sparked controversy (Table 2). However, despite objections to this plan, in 2011, the existing stadium was demolished, and permission was granted to build a new stadium that would not disrupt the skyline. Following this process, the demolition started in 2013, and the new stadium, known as Vodafone Park, officially opened its doors in 2016 (Figure 4).

Figure 4. New Beşiktaş Stadium (https://www.arkitera.com/proje/vodafone-arena/ (accessed May 9, 2025)).

	Time	Physical Change	Description
Conversion	1950	A new stand	The "Yeni Açık" stand was built.
	1960s –	Lighting systems	A projector system was set up for night matches.
	1970s	Increasing capacity	Additional seating areas and roof reinforcements were made in the stands.
	2004	Extensive conversion	The tartan track was removed. The ground was lowered by 4 meters. The capacity was increased from 21,500 to 32,145. The wire fences were removed. A steel grandstand cover was added. New turnstiles and media areas have been established.
Demolition	2013 –	Demolition structure	All the stands were demolished.
Conservation			Only the historic "Eski Açık" stand and its towers were preserved.

Table 2. The transformation of the Beşiktaş Stadium over time

Fenerbahçe Stadium

The Fenerbahçe Stadium was designed by the Italian architect Paolo Vietti Violi and constructed in 1955 in the Kadiköy district.[14] The stadium was a notable example of incorporating the principles of modernist architecture into stadium design. Elements such as integration into the urban fabric, harmony with urban life, accessibility, and functional layout have ensured that the stadium is not only a sports venue but also a focal point of the city. Axial composition, symmetrical planning, hierarchical spatial organisation, and the principles of rhythm and repetition form the basis of the spatial order in the structure, while functional forms with clean lines are supported by modern materials such as reinforced concrete. The reinforced concrete skeleton system and canopies made of metal sheets bear traces of technological advancement in the structure's load-bearing and covering systems. The symbolic U-shaped arrangement of the stands and the regular repetition of columns, seating steps, and facade openings reinforce the structural rhythm and visual consistency of the building (Figure 5). The

architectural expression has been strengthened with asymmetric facade designs; it is positioned as a sports structure reflecting the modern public structure of the republican regime without any claim to special monumentality. This approach is directly related to Istanbul's evolving urban and social dynamics.

The conversion of the stadium reflects broader trends in architectural design and urban development in Turkey, highlighting the shift towards modernisation and enhanced functionality (Table 3). Each phase of renovation aimed to increase seating capacity and sought to improve the overall spectator experience. The introduction of partially covered canopies in the 1965 modifications exemplifies an early recognition of the need for spectator comfort, while the extensive redesign undertaken between 1999 and 2006 underscores a commitment to contemporary architectural practices. This period was a major break from traditional designs, embracing innovative materials and construction methods that align with international standards (Figure 6). Moreover, these transformations are indicative of a growing awareness of safety regulations and the importance of accessibility. The modern amenities incorporated into the stadium, such as improved seating arrangements, hospitality areas, and enhanced facilities for those with disabilities, reflect a holistic approach to stadium design.

Figure 5. The view of the Fenerbahçe stadium (https://www.fenerbahce.org/kulup/tarihce (accessed May 28, 2025).

Figure 6. The aerial view of the Fenerbahçe stadium (https://beinsports.com.tr/fotogaleri/statlarin-eski-ve-yeni-halleri (accessed May 9, 2025))

	Time	Physical Change	Description
Conversion	1965	Stadium capacity was increased, and canopies were added	Partially covered stands were added.
	1982	Capacity was increased again.	New regulations aimed at modernisation were implemented.
	1999–2006	Gradual complete reconstruction of the stands	The stadium was completely demolished and rebuilt. Each stand was built one by one.
	After 2015	Digital screens, VIP areas, and media rooms were added.	It was made compliant with UEFA standards.
Demolition			It was gradually reconstructed
Conservation		No conservation	-

Table 3. The transformation of the Fenerbahçe Stadium over time

Galatasaray Stadium

The Galatasaray Stadium, like Beşiktaş Stadium, was designed in 1939 by the Italian architect Paolo Vietti Violi, along with his Turkish colleagues Fazıl Saffet Aysu and Şinasi Şahingiray.[15] The stadium stands out as an example of a sports structure shaped by modernist architectural principles since the 1950s, integrated with the urban context. The integration with the urban fabric and the rhythm of life has made the stadium a significant public focal point in the Mecidiyeköy neighbourhood, where it is located. Functional layout, axial composition, symmetrical planning, and hierarchical spatial structure have played a decisive role in the architectural organisation of the stadium. The regular rhythm and repetition of the support columns have ensured the structural integrity of the building while also strengthening its visual continuity. This structure, where aesthetic and technical requirements converge, incorporated complex architectural solutions based on spectator capacity. The reinforced concrete skeleton system, completed with modern building materials, this stadium not only represents the modern architectural language but also reflects the political and social expectations of the era. In this context, the structure has witnessed both the changing socio-urban dynamics of Istanbul and Turkey's modernisation process on an architectural level (Figure 7).

Initially serving with simple stands and a dirt surface, the stadium underwent various physical transformations over time due to the increasing spectator demand and the professionalisation of football (Table 4). In 1972, it was converted to a grass surface, and in the 1980s, the grandstand infrastructure was reinforced and supported with reinforced concrete systems. In the 1990s, partial compliance with modern stadium standards was achieved through seating installation and security systems. With the installation of the lighting system in 1997, night matches became possible; however, capacity deficiencies limited the stadium's lifespan, ultimately leading to its demolition. As part of the new stadium project initiated in 2004, Ali Sami Yen was closed in 2010 and demolished in 2011. The same year, the new stadium, built in Seyrantepe, was opened as a multi-purpose sports complex with a capacity of approximately 52,000 people, meeting UEFA standards. High-rise structures were constructed at the location of the stadium in the Mecidiyeköy district (Figure 8).

Figure 7. The aerial view of the Galatasaray Stadium (https://www.instagram.com/p/DIE6xMOtRxa/ (accessed May 10, 2025).

Figure 8. The view of high-rise structures in the area of the Galatasaray Stadium in the Mecidiyeköy district in Istanbul (https://x.com/M_UfukTekin/status/1177223224687497216 (accessed May 10, 2025).

	Time	Physical Change	Description
Conversion	1971	The playing field was covered with short grass	The dirt field was removed and replaced with a grass field.
	1997	The lighting system was installed	A projector system was added for night matches.
	2000s	Planned to increase the capacity	Project work was initiated to meet the increasing demand, but it could not be implemented.
	2010	The stadium was closed	The stadium was rendered unusable after the last match.
Demolition	After 2011	Ali Sami Yen Stadium was demolished.	The construction of office and mixed-use buildings began in its place.
Conservation		No conservation	-

Table 4. The transformation of the Galatasaray Stadium over time

DISCUSSION

Stadiums that have been constructed in Turkey since the latter half of the 20th century ought to be regarded not merely as structures in which sporting events are carried out, but rather as spatial representations of the modernisation ideology that was prevalent during that period. These structures' architectural formations and their ties to public life make them worthy of consideration as modern architectural and sports heritage. In Turkey, the preservation of stadiums, as specified in the law on the Conservation of Cultural and Natural Property (2863), which addresses both cultural and natural heritage, has not been registered. When it comes to structures, such as the 19 May Stadium, the stadiums of Beşiktaş, Galatasaray, and Fenerbahçe, this situation becomes especially noticeable.

Ankara 19 May Stadium is a modern sports structure ideologically built to carry the emphasis on physical education and national unity of the early Republican period. Paolo Vietti-Violi's architectural design, with its symmetrical planning, axial arrangement, and ceremonial space concept, reflects the modern architectural understanding of the period.[16] However, the building was used for many years without being registered and was demolished in 2018 on the grounds of structural issues. This demolition has resulted in both the loss of modern architectural heritage without documentation and the discontinuity of sports heritage. A new stadium with a capacity of 45 thousand has been built in place of the 19 May Stadium by the ruling party, the Justice and Development Party (Figure 2). The new sports complex was named Ankara Stadium. The changing name of the stadium was considered a political decision that destroyed the existing values of the Republican Regime. For Mansur Yavaş, the Mayor of Ankara Metropolitan Municipality, demolishing and changing the name is not acceptable. He notes that "The stadium's name, 19 May Stadium, should stay unchanged. A city lives with its memory; we do not want to destroy the existing values and replace them with another name."[17] In 2009, the Ministry of Public Works and Settlement prepared a technical report about the stadium, in which it was documented that there were cracks in the structural system of the stadium. According to the report, it would be a risk unless the structural system was maintained and repaired.[18] For Yergün, this report prepared a base for the demolition of the 19 May Stadium.[19] The Chamber of Architects Ankara Branch applied to the Ankara No. 2 Cultural Heritage Preservation Board so as to ensure the preservation of Ankara 19 May Stadium, one of the symbolic structures of the Republic period, as a whole under the scope of Law No. 2863 on the Conservation of Cultural and Natural Property. However, the board removed the 'cultural property to be protected' annotation of the Ankara 19 May Stadium with the decision of the board in July 2017. The Chamber of Architects Ankara Branch declared that they took this board decision to the judiciary. About this subject, the president of the chamber, Tezcan Karakuş Candan, pointed out that it was a political decision in which the stadium witnessed the Republican Regime, thereby it was demolished.[20] She stated that "The Ankara National Stadium, or 19 May Stadium, is the first example of a stadium created with the declaration of the

Republic as a place of perspective that secures the health of future generations and shapes the destiny of the country via sports."[21] In 1980, Law 2302, to celebrate the Atatürk Centennial and establish the Atatürk Cultural Centre. The law included which sports centre included a hippodrome and stadium, and recreation areas, large-scale open space and green areas were organised based on the master plan of Ankara by German urban planner Hermann Jansen was accepted as Atatürk Cultural Centre areas. According to the law, the stadium was located in the second region (Figure 9). In Article 3 of the law, Atatürk Cultural Centre areas are defined as: "In this area, there is the Atatürk Cultural Centre, which consists of places introducing the history of the War of Independence, Turkish Folk Culture and arts, various museums, various stages and meeting halls, exhibition areas, archives and libraries, workshops and similar places."[22] Referring to this article, Candan claimed that the stadium must be protected:

It must be viewed 19 May Stadium, which was built during the period when the regime was established with the proclamation of the Republic, as spatial, social and representative spaces of the Republic ideology…. In addition to being a place that contributes to Ankara's urban memory, it is also necessary to protect it due to its memorial and historical value.[23]

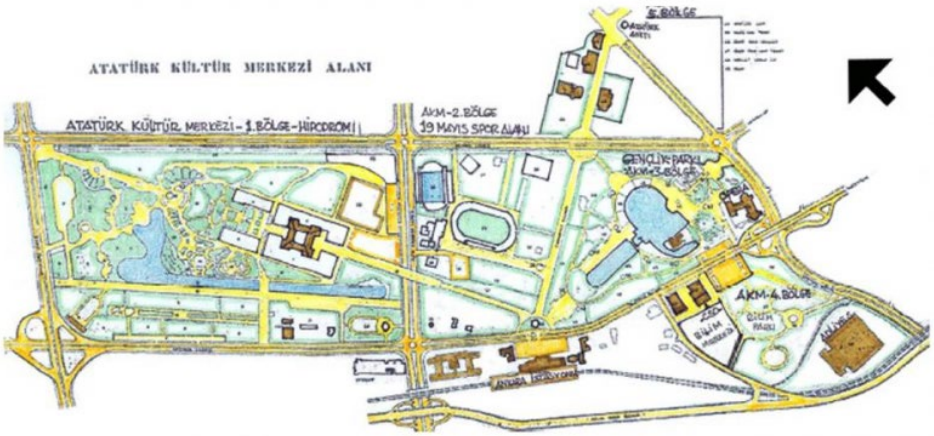

Figure 9. Atatürk Cultural Center Areas (Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, tatürk Kültür Merkezi Alanı Ortak Akıl Çalıştayı, 28 April 2014, https://csb.gov.tr/ataturk-kultur-merkezi-nin-gelecegi-ortak-akil-ile-belirleniyor-haber-12829 (accessed 18 December 2023)).

Similarly, Beşiktaş Stadium has become one of the important examples of modern architectural heritage with its unique positioning with the Bosphorus silhouette, its reinforced concrete skeleton system, and its relationship with the urban fabric. However, the mere registration of the sea facade and the demolition and reconstruction of the remaining mass have led to the symbolic preservation of this heritage (Figure 3).[24] The necessity of a holistic preservation approach in modern architectural heritage has been overlooked, and the stadium's sports memory has not been integrated into the new structure.

During the demolition process of Beşiktaş Stadium, only the seafront facade was included in the preservation scope instead of the entire structure. Despite the registration decision made by the Cultural and Natural Heritage Preservation Board, the remaining parts of the stadium were completely demolished; in the newly constructed stadium, only the sea facade was reinterpreted and used in terms of architectural integrity and historical memory. This situation reveals that the conservation approach has been limited and applied only at a symbolic level.

Galatasaray Stadium, since the 1960s, has become an integral part of Istanbul's urban memory, particularly after the 1980s, when it evolved into a public sports landmark with the emergence of a

vibrant fan culture. However, the demolition was preferred by evaluating the structure's limited capacity, transportation difficulties, and economic potential. The absence of any original elements in the new structure has irreversibly erased both the stadium's architectural identity and its place in the collective memory.[25] Fenerbahçe Stadium, unlike other examples, has remained in its original location; however, it has largely lost its original architectural character during this process. The structure, which was gradually modernised, was largely stripped of its reinforced concrete and modernist design traces while complying with UEFA standards. The stadium's evolution has resulted in the invisibility of modern architectural heritage; although the structure continues to function as a sports venue, its heritage quality has faded.

The complicated relationship between modern architecture and sports heritage in Turkey reveals both the challenges and triumphs of stadium design. Each stadium not only serves as a functional space for football but also embodies a rich narrative that intertwines community identity with architectural innovation. As Turkey continues to develop its sporting infrastructure, recognising the importance of preserving this dual legacy will be key to creating spaces that resonate with both contemporary needs and historical significance. Despite their significant historical and cultural importance, certain factors necessitated the authorities to decide to demolish and rebuild these stadiums.

- Delayed or Nonexistent Protection Decisions: These structures, which could be considered modern architectural and sporting heritage, have been used for a long time without being registered. Even if it is registered, Beşiktaş, this decision did not provide comprehensive protection; only symbolic elements like the facade were preserved.
- Presentation of Inadequate Restoration Alternatives: Due to the buildings not meeting modern needs, demolition was preferred instead of restoration. Technical reports have generally been prepared in the direction of "reconstruction.
- Economic and Commercial Pressures: The inclusion of revenue-generating functions (shopping malls, VIP areas, parking lots, restaurants) in new stadiums has encouraged the demolition of existing structures because they do not possess this potential.

CONCLUSION

All these examples show that the intersection between modern architectural heritage and sports heritage in Turkey is not sufficiently defined, and that preservation policies mostly operate with a focus on renovation and reconstruction. However, international conservation theories emphasise that sports structures are unique types of heritage that should be preserved due to both their physical presence and the cultural significance shaped by social experiences. In this context, stadiums should not be considered solely in terms of functional transformation; they should be addressed in conjunction with the principles of urban memory, collective memory, and architectural continuity. Otherwise, not only the structures but also the historical layers of a society's sports culture are at risk of being lost. As an outcome, these examples demonstrate that stadium-based transformation strategies in Turkey generate major disturbances:

- Relocation and Urban Memory Disruption: As in the case of Ali Sami Yen, stadiums have been moved away from the city centre, severing their connection with the urban memory. The spatial continuity of sports heritage has been neglected.
- The Weak Relationship of New Structures with Historical and Architectural Context: Even though the new stadiums are built with contemporary techniques, they do not reflect the cultural, symbolic, and formal heritage of the old structure. In the Beşiktaş stadium, only the seafront has been reused; the other elements have been completely erased.

Sporting heritages have been subjected to a variety of difficulties inasmuch as sports are not more visible on the historical environment agenda in Turkey. The vast majority of sports buildings were omission in Turkey. Therefore, stadiums with sporting heritage values that had been established in the early Republican era have been transformed or demolished so as to adapt to increasing economic demands, media attention, and regulations regarding safety and health. Also, they are often subject to pressure for capital investment such as shopping malls, new housing, or other development. Thereupon, in Turkey, there is a necessity for legislation to govern and resource allocation for the use and conservation of sports heritage. Instead of demolishing it, it was essential to preserve and carry it on to future generations by providing the necessary maintenance. Besides historical value, it was also necessary to protect it due to its memorial value. It turned out, the heritagization of the stadium remained negligible. These stadiums may be preserved and used as public parks in the city instead of being demolished and rebuilt. They were valuable cultural artefacts with current architectural and sporting significance. As an element of the city's master plan for growth, the new building may be built on the outskirts.

NOTES

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[4] Geraint John, Rod Sheard, and Ben Vickery, *Stadia: The Populous Design and Development Guide* (London: Routledge, 2013), 6.
[5] An Archaeology of Sport: Theory, Method and Practice,” paper presented at *Theoretical Archaeology Group Conference 2014*, organised by Paul Murtagh and Phil Richardson, 23.
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BALKAN VERNACULAR HERITAGE FROM THE PERSPECTIVE OF DIVERSE STORYTELLING TRADITIONS

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INTRODUCTION

If one were to observe the historical construction of a traditional dwelling in the rural western Balkan region of southeast Europe, you might encounter some common sights; carpenters on its ridges, chanting verses of longevity and prosperity for the new homeowners, or neighbours decorating the timber beams with gifts for the builders. These occurrences can be considered a folk version of the religious ceremony in which a priest sanctifies the home during key stages of its construction.

This paper explores vernacular spaces in the Western Balkans as an imaginary linkage between the individual dwelling, the neighbourhood, and the community. Historically inhabited by diverse ethnic groups, these physical spaces have changed in terms of building materials, design, and use. However, we argue that certain storytelling traditions – mixing Orthodox and Bogomil Christian beliefs with animistic notions of inhabiting spirits – reveal how people have sought to keep spaces meaningful amid shifting lifestyles, religious doctrines, and socio-cultural narratives prior to modernisation.

The harsh mountainous region has long been inhabited by various minor ethnic groups, creating an amalgam of cultural traits that form the present Turlak regional culture with its own language, rituals, and stories. This paper elucidates the role of folk storytelling as an intangible tradition that helps people understand, manipulate, and enjoy space by nurturing an imaginary spatial mapping.

Methodology

The methodology consists of 3D scanning, measured drawing, and photographic recording of seven houses (mid- to late 19th century) in the Bulgarian villages of Stakevtsi and Chuprene, conducted in October 2024. The houses were selected according to the criterion of minimal transformation of their interiors and exteriors. Elderly respondents from both villages participated in focus group interviews concerning house-building rituals and related folklore storytelling. For the analysis of the human–space–nature–spirit relationship, the theory of play classification was applied.[1]

REGIONAL CONTEXT: MIXTURE OF DIVERSE ETHNIC GROUPS

The Turlak regional subculture developed in the western part of the Balkan Mountains (Fig. 1) – an area now divided between Bulgaria and Serbia. Much of the Balkan Peninsula was under Ottoman rule for nearly five centuries (14th-19th centuries), forming a strongly multi-ethnic and diverse structure. A map of the Balkans from 1900 lists eleven nationalities[2] distributed across clusters of predominantly Greek, Bulgarian, Albanian, Serbo-Croatian, and Romanian populations. The name of

the Balkan Mountains, which lent their name to the entire peninsula, derives from the Turkish word *balkan*, meaning 'old mountain'.[3] Owing to its favourable conditions for cattle, sheep, and goat breeding, the range is likely one of the oldest pastoral regions in Europe.[4]

With its excellent supply of timber, wildlife, and mineral resources,[5] the Balkan mountain region has become a rich palimpsest of cultural layering and diffusion. Ancient Thracian, Roman, Byzantine, Ottoman, and Bulgarian storytelling traditions[6] have merged into an intricate intangible heritage that sustains creativity and resilience during the long, harsh winters.

Human habitation in the mountains reveals two contrasting trends. During times of crisis (such as foreign occupation, war, or natural disaster), settlements expanded uphill to higher altitudes,[7] which benefited pastoral communities whose shepherds needed to remain close to their families. In times of prosperity, settlements spread across flatter lowland areas, while high-altitude villages suffered depopulation and decline. In our survey area, this pattern is evident – the degree of depopulation is proportional to altitude, with the highest villages having the fewest residents. Once the backbone of the regional economy and culture, Balkan mountain villages have undergone severe decline in both Bulgaria and Serbia.[8]

Nomadism as a way of life characterises not only pastoralism but also certain ethnic groups such as the Karakachans, Vlachs, and Roma, who facilitated the diffusion of beliefs and cultural traditions.[9] Once a polytheistic domain where Slavic gods intermingled with the nomadic Proto-Bulgarian pantheon, the region later integrated elements of Christianity, Judaism, and Islam within a pluralistic cosmology. The harsh environment encouraged a pragmatic spirituality, valuing divine efficacy over doctrinal purity. Many pre-Christian rites were Christianised – such as Svetac in Serbia – or fused with Christian celebrations in Bulgaria.

Our study region is home to the Turlak ethnic group, which possesses a distinct dialect, folklore, and vernacular construction methods using natural materials.

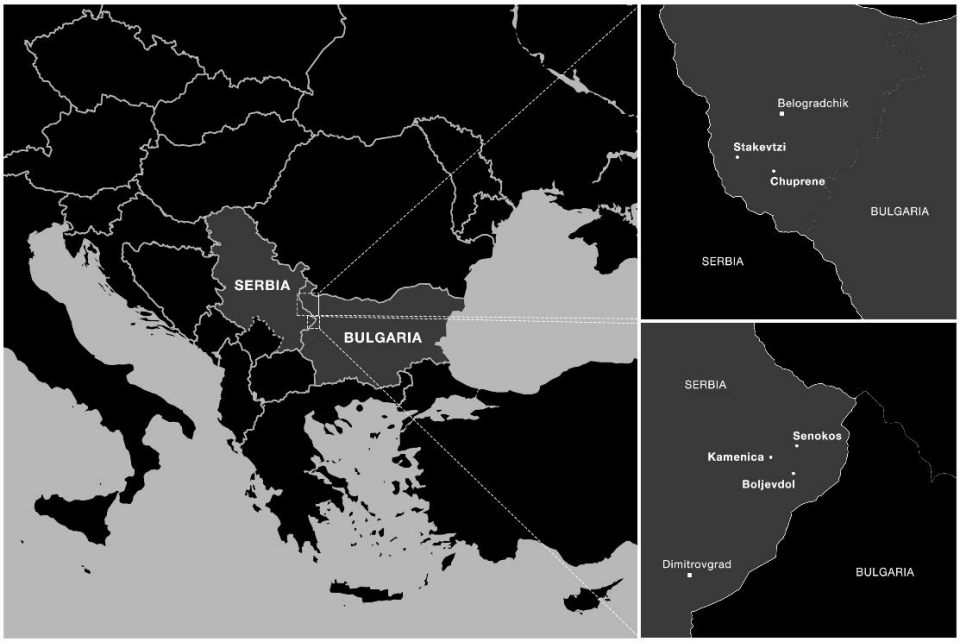

Figure 1. Maps of the study area (left) and the surveyed villages (right) (drawn by S. Brooks)

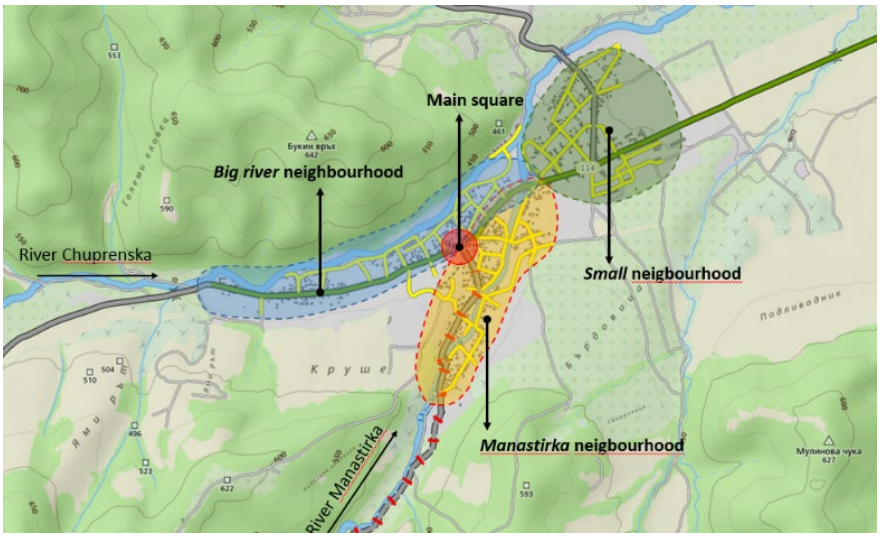

Figure 2. Basic plan of Chuprene village (map by A. Karapandzeva)

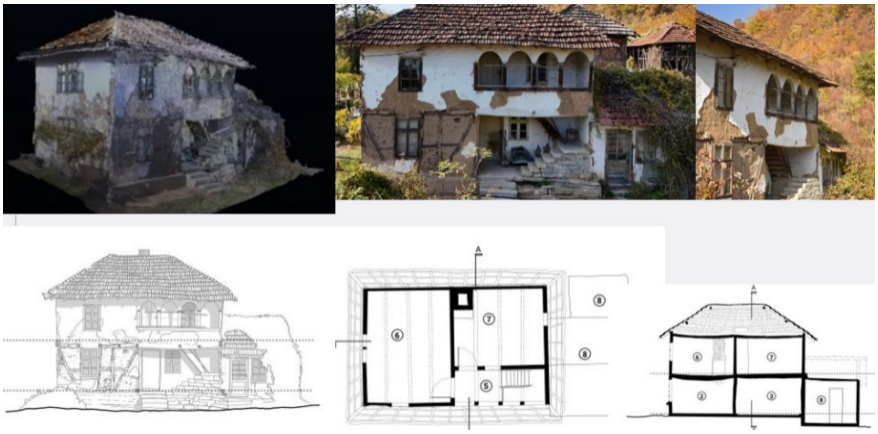

Figure 3. Architectural survey of Ranchinski house, Chuprene (authors' team). Interior is shown in Fig.8

Spirit name	Benevolent	Malevolent	both
Genderache	●		
Karakondjula			●
Krosnoyazlitza	●		
Bulina	●		
Kyuvalo		●	
Tenatz		●	
Torbalan		●	
Navie cat		●	

Figure 4. Turlak words for benevolent/malevolent spirits (based on interviews)

Figure 5. Spirits are associated with spaces within and outside of the house (M. Metalkova)

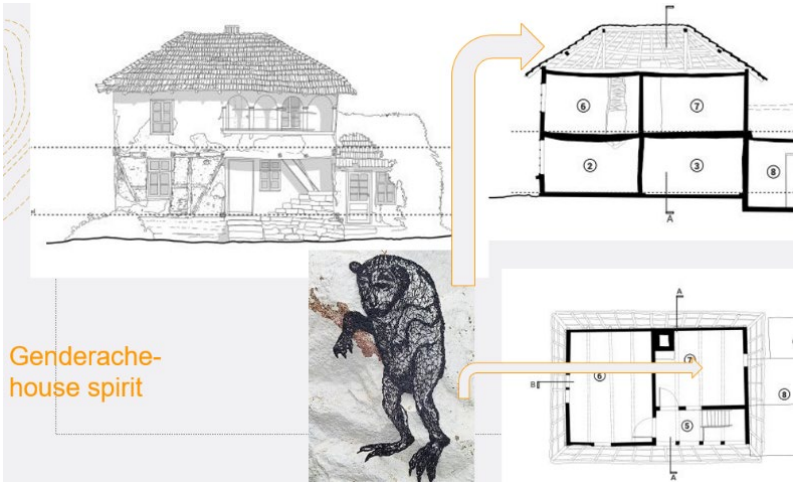

Figure 6. The main house guardian spirit inhabits the roof and fireplace (M. Metalkova)

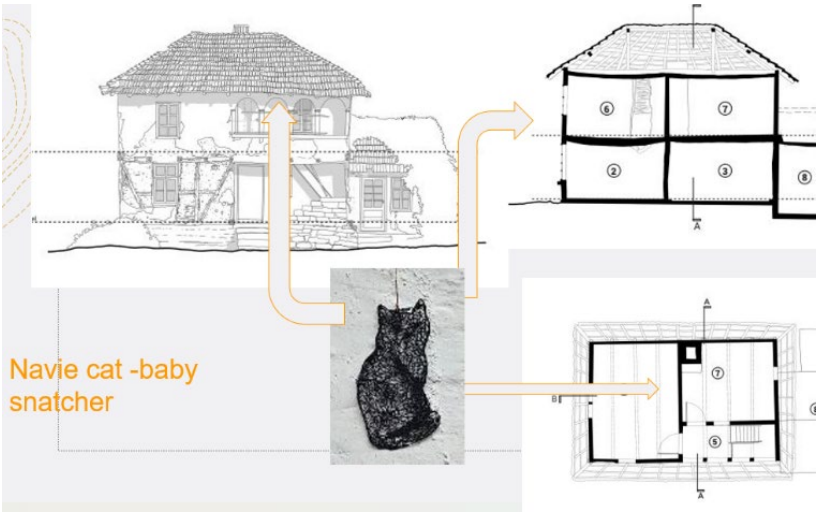

Figure 7. Baby snatcher Navie cat comes to the bedroom (M. Metalkova)

Figure 8. The bedroom in Ranchinski house lastly inhabited by wasps (photo by M. Metalkova)

Figure 9. Local church interior ambience (photo by S. Brooks)

MAPPING HOUSES AND SPIRITS AS SPATIAL MARKERS

Our study focused on the Bulgarian villages of Chuprene and Stakevtsi as representatives of Turlak regional culture. Chuprene lies in a river valley of the Western Balkans and is subdivided into three neighbourhoods (Fig. 2), following the division of the river into two smaller streams. Most houses face either the main street or the stream and have stone foundations, timber frames with infill walls plastered in white, and red-tiled roofs (Fig. 3). A south-facing verandah on the upper floor, often with an arched timber arcade, displays wooden posts carved in the distinctive style of the carpenter who built the house.

During preliminary discussions with our main contact—a retired teacher with relatives in both villages—she noted that the Turlaks have numerous words in their dialect to describe various spirits inhabiting the house, yard, neighbourhood, forest, and mountains. Nine of these spirits (Fig. 4) were included in our focused interviews, during which respondents identified the spatial domains associated with each. Some spirits appear in Slavic anthologies and others in Bulgarian mythology.[10] Parallels can be traced between these spirits and the hierarchies of Christian Orthodoxy, the Bogomil

belief system that flourished in medieval times, and certain Islamic concepts of djinn and ritual practices.[11]

HIERARCHY OF SPIRITS WITHIN EASTERN ORTHODOX CHRISTIANITY

The British Library holds two 14th-century Gospels from Vidin—the region to which Chuprene and Stakevtsi historically belonged. The *Vidin Gospel* contains modest decoration, while the Gospel of Tsar Ivan Alexander is richly illustrated with biblical scenes.[12]

Eastern Orthodox Christianity developed a complex hierarchy of benevolent spirits (Fig. 9,10), comprising the Holy Spirit and nine orders of angels, mirrored by nine levels of malevolent demons in hell. In the *Gospel of Ivan Alexander*, *seraphim* and *cherubim* are depicted – seraphim with six wings and cherubim with many eyes.

The Bogomils believed that the Devil created humankind, leading to their fierce persecution by the official Church. Many sought refuge in the rock formations of the Western Balkan Mountains before migrating westwards toward Italy and France.

Figure 10. Seraphim *angel spirit in the* Gospel of Ivan Aleksander. *(photo by M.Metalkova)*

SPIRITS IN CONTEMPORARY TURLAK MEMORY

Thanks to our respondents in Chuprene and Stakevtsi, it was possible to map several supernatural beings believed to inhabit domestic and natural spaces.

Genderache (Fig. 6) is a household guardian spirit who protects the home and usually resides beneath the roof. When angered, he makes noise in the ceiling, prompting the inhabitants to appease him by tidying the living room, cleaning the fireplace, and leaving food as an offering. In Slavic mythology, he is known as *stopan* ('host') and resembles a small elderly man.

Navie (Fig. 7) was described by respondents from Serbian villages as a black cat that drinks the blood of newborns. To protect infants, parents place the baby between mother and father during sleep.

The dragon (*zmei* in Bulgarian, *zmaj* in Serbian) represents a cross-cultural mythical creature originating in antiquity through literary and artistic transmission – from Herodotus and Pliny the Elder to Byzantine iconography, where it symbolised divine protection.[13] By the 10th–11th centuries, via textile and metalwork, the dragon became a major motif in both the Ottoman Empire (as a sign of victory and protection) and Western European heraldry. In the Turlak region, golden *zmei* or *grifon* figures appear on church iconostases as protective emblems. A local legend recounts that a dragon

once guarded Chuprene village in exchange for a maiden bride. In Serbian mythology, the *zmaj* abducts young women and carries them to a castle neither in heaven nor on earth.[14]

SPATIAL REPRESENTATION FROM HOUSE TO MOUNTAIN: IMAGINED VERSUS PHYSICAL SPACE OF THE TURLAK AND THE IMPACT OF INVENTED NATIONAL BOUNDARIES

The variety of spirits can be mapped according to their spatial domains (Fig. 5). Some co-inhabit the house with humans; others visit occasionally; still others dwell on bridges, graveyards, water mills, fields, forests, or mountain rocks.

Living in the harsh highlands, the Turlak ethnic group developed an intricate system of spatial markers personified as spirits – forming a survival strategy within nature. Through the beliefs and rituals associated with house and home, these intangible traditions provided meaning to life in the expansive, often isolating mountain landscape where human survival depended on animals, trees, and flora. By humanising nature through a pantheon of spirits, ambiguity and playfulness entered daily life, helping adults educate children, alleviate solitude, and transform a hostile environment into a socialised, inhabitable world (Fig.8).

Caillois interprets social structures as forms of play and behaviour as a manifestation of play's categories.[15] Following his division – *agon* (competition), *alea* (chance), *mimicry* (simulation), and *ilinx* (vertigo) – Caillois proposes that the human–space–spirit continuum of the Turlak *modus vivendi* constitutes a nomadic, pastoral form of a place-centred game, constantly reinvented to cope with the challenges of living with animals in nature.

In this context, the pantheon of spirits acts as a set of flexible 'stem cells': adaptable elements employed according to circumstance. They sustain the spirit of play within daily life, allowing the small physical space of the house to extend imaginatively toward the limitless terrain of the neighbourhood, village, and mountain landscape that ensured the livelihood of herders and their families.

It is interesting to note that the playful roles of the spirits' stories can be related to the real issues once faced by mountain communities. The *Navie* cat, for instance, may reflect the experience of many early newborn deaths and the belief that close physical contact between parents and infants (*skinship*) could prevent them. The *Genderache*'s warnings to maintain fire, order, and cleanliness may be understood in connection with the constant danger of fire in timber-built structures, which frequently led to the loss of homes and lives.

A summary of the relationship between spirits, spatial domains, and play typology (Table 1) demonstrates a clear link between space, community vitality and safety, and the creation of an imaginary set of orientation markers that help ensure safe and healthy movement between the village, its outskirts, and the vast mountain terrain required for pastoral life.

Spirit name	Category of use (Caillois' four groups)	Space	Issue to help solve
Genderache	Competition/stimulation	Fireplace, roof	Maintaining fire, order, and cleanliness
Navie	Vertigo/stimulation	Bedroom	Protection and survival of newborns
Zmei	Chance/competition	Mountain rock	Protection, safety of young women
Bulina	Chance/ stimulation	Garden trees	Warning against physical and moral danger
Kyuvalo	Stimulation/chance	Forest	Guidance on parenthood and good practice
Talasam	Vertigo/stimulation	Water mill	Safety while walking
Karakondjula	Stimulation/ vertigo	Street, house	Child safety
Tenatz	Vertigo/chance	Graveyard	Respect for the dead
Krosnoyazlitza	Competition/stimulation	Street, public spaces	Child safety

Table 1. Turlak spirits as related to space, community issues and types of play

IN A COMPARATIVE CONTEXT: FOLKLORE IN THE BRITISH ISLES

A comparative perspective helps situate Turlak beliefs within a broader European framework of domestic spirituality. In the British Isles, as in the Balkans, folklore reveals a long and layered tradition of spirits, creatures, and superstitions intimately tied to the home and surrounding landscape. These beliefs reflect a worldview in which the house is not merely a shelter but a living, spiritually active environment shaped by relationships between humans and unseen presences.

Among the most well-known household spirits is the *brownie* – a small, helpful being said to inhabit rural homes, especially in Scotland and northern England. Brownies were believed to work silently at night, tidying rooms, tending to animals, and finishing spinning or baking left unfinished by the family. Yet they were highly sensitive: if offered clothing or insulted, they would disappear sometimes returning in darker forms such as the boggart, a troublesome spirit blamed for poltergeist-like disturbances.

Comparable figures appear across the British Isles: the *bwbach* in Wales, the *hob* in the Midlands, and the *lubber fiend* in southern England. All combine domestic labour with moral ambiguity, oscillating between helpful and harmful depending on the household's conduct.

Protective folk practices were widespread. Shoes were concealed within walls, witch bottles buried under thresholds, and apotropaic marks carved into timber. These small acts of domestic protection reflect a belief that homes could be infiltrated by invisible forces such as spirits, fairies or witches, and as such required ritual management. Such practices often coexisted with Christianity, forming a layered cosmology where prayer, superstition, and folk magic intertwined.

Beyond the house, the rural British landscape is filled with tales of spectral animals, haunted estates, and fairies dwelling near wells, hearths, or trees – entities that respected boundaries and punished

transgression. Many of these beings were closely tied to agricultural cycles and the natural calendar, reinforcing the spiritual interdependence of house and field.

What emerges is a shared pattern: domestic life as a site of cohabitation between human and other-than-human beings – a fragile balance maintained through offerings, rituals, and mutual respect. This worldview, seeing the house as a porous, spiritually negotiated space, resonates strongly with the traditions of the Turlak region and its complex cosmology of *talasŭmi*, *karakondzhula*, and guardian spirits that populate the deep map of the Balkan home.

CONCLUDING DISCUSSION

Having surveyed, through architectural methods, some of the oldest vernacular houses in the Turlak villages on both sides of the Bulgarian–Serbian border, and having interviewed residents about house transformations, building rituals, and spiritual narratives, several observations can be drawn.

Mostly between 120 to 150 years old, the study houses were built using timber from nearby forests and stone from local rivers and outcrops. Their timber posts and beams often bear decorative carvings that serve as each carpenter's distinctive "signature". The spatial organisation is simple and functional, largely following the typology of *Stara planina* houses elsewhere in the mountain region.

These modest, practical dwellings were well adapted to the lifestyle of mountain villagers whose livelihoods depended on pastoralism – tending goats, sheep, and cattle while moving continually between hills, peaks, and valleys to ensure year-round pasture.

Physically constrained by a semi-nomadic lifestyle and harsh winters, the building culture reflects frugal and sensitive human intervention within nature. As people spent most of their time outdoors herding animals, farming small plots and gathering herbs, they developed a sophisticated imaginary geography in which stones, trees, rocks, and waterfalls were inhabited by spirits. These beliefs helped humanise the severe natural conditions essential to their survival. A rich pantheon of spirits associated with the house, garden, street, outskirts, graveyard, and pasture provided a playful yet meaningful framework for educating children, coping with hardship, and sustaining community life.

The establishment of a national border dividing the Turlak region between Bulgaria and Serbia led to the fragmentation of traditional ties, livelihoods, language, and building culture. Serbian state policies provided little support to the Turlak pastoral communities, and the decline of Bulgarian language and identity is clearly visible. Yet some elderly villagers on the Serbian side have deliberately preserved their heritage, maintaining their houses without modern "improvements". These homes now offer a rare glimpse into a past way of life; one sustained through a unique combination of beliefs, humour and an intimate coexistence of humans with both domestic and wild animals.

ACKNOWLEDGMENTS

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The team benefited greatly from collaboration with local architects in Bulgaria and Serbia, NGOs such as *Balkan Arhitrav*, as well as local residents and municipal authorities. The project was conducted under a Memorandum of Understanding between the Bulgarian National Institute of Immovable Cultural Heritage and the University of Portsmouth.

NOTES

[1] Roger Caillois. *Man, Play and Games*. University of Illinois Press, 2001.
[2] Turks, Magyars, Italians, Slovenes, Germans and Serbo-Croatian Muslims-Bosnyaks are listed as ethnic groups to complete the 'carpet' of mixed settlements in the peninsula.
[3] In Bulgaria and Serbia it is called *Stara planina*- Old mountain, however the peninsula is called Balkanski poluostrov- Balkan pensinsula.
[4] Nomadic shepherding as one of the oldest occupations rooted in pastoralist animal husbandry started in Central Asia, the Balkans and the Mediterranean region and it survives until mid-20th century in the Balkans (Kasabova,2025).
[5] The name of the village Chuprene is associated with the copper mine near it known since Roman period and used by the Romans. There are archaeological remains since pre-historic time. It may have been settled by Saxon ore miners in the Middle Ages.
[6] These cultures roughly correspond to the following historic periods – Thracian culture -3500BC until ancient classical Greek culture period- 800-300BC, followed by ancient Roman period- 800BC -500AD. Byzantine empire is from late antiquity until the Fall of Constantinople in 1453 AD. 1st Bulgarian kingdom exists from 7th to 11th centuries AD, 2nd Bulgarian kingdom period- 1185 to 1422. Ottoman empire- 15-19th centuries. Bulgaria, Serbia and Romania became independent states at the end of 19th century.
[7] The story of Stakevtzi creation of the settlement is said to be about three brothers, fleeing Turkish invasion who went uphill the mountains to form three different villages named after them- Stayko formed Stakevtzi, while Lalko established Lalkin-grad and Krachun – the village of Krachimir. All our respondents confirmed this story. Settling at a higher altitude has the advantage of being hardly accessible for any rulers and authorities, so it is often related to a particular perception of independence and freedom from the mainstream political rulers within the whole history of the region. Sometimes it brought fierce persecution and punishment by authoritarian regimes – In medieval time, Bogomilism heretics were fiercely persecuted by the Christian church both Eastern and Western. After a part of the Western Balkan Outlands was given to Serbia after WW1 there was a process of planned neglect and discrimination against Bulgarian ethnic groups in the mountain villages.
[8] Nowadays mountain villages in both Bulgaria and Serbia suffer of heavy depopulation and economic decline. This region is one of the poorest regions in Europe according to standard of living. In Bulgaria, every year at least five villages remain without any residents and their buildings suffer decay and destruction. In the last 15 years there is a slow U-turn trend where young families from Europe, UK and Bulgaria decide to return to live' a slow life' as a healthy environment to bring up children or retired couples decide to enjoy better house and garden lifestyle. ;
Chavdar Mladenov and Margarita Ilieva. "The depopulation of the Bulgarian villages." In *Bulletin of Geography. Socio-economic Series No. 17*, 99–107. 2012. http://dx.doi.org/10.2478/v10089-012-0010-8 ;
Ninoslav Ćirić and Ana Stanojević. "Marginalization of the rural cultural areas of Serbia and the possibility of their sustainable regeneration through the application of good European practice." In *Proceedings of the VIIth conference on architectural heritage - Cultural landscape*, 93-103. Belgrade, 2016.
[9] *Karakachans* were a nomadic pastoral group speaking Greek, well known for the black wool clothes they wore. They are famous for the heritage *karakachan* black sheep and their *karakachan* dogs to take care of sheeps and they were travelling all over different mountain areas of the Balkan peninsula looking for pastures. *Turlak* ethnic group is named sometimes white dressed group as they wore white woolen clothes from the white sheeps they bred. *Vlachs* are Romanian speaking nomadic ethnic group and *Roma* are Gypsy ethnic groups with a few subgroups who also travel all over the peninsula -some of them even nowadays. After the Balkan wars in early 20th century the end of the Ottoman empire and the establishment of national borders led to the expel and relocation of large part of populations from one country to another. The multi-ethnic character of Balkan peninsula cities and villages came to an end and it affected the livelihood of pastoral ethnic groups who could not use their pastures divided by borders.
[10] Flavio Rigonat. *Fairies & Demons: glossary of mythical creatures in Serbian folklore.* Belgrade: LOM, 2016.;
Anani Stoynev. *Bulgarian mythology. Encyclopedic dictionary*. Sofia: Zahari Stoyanov, 2006
[11] *Bogomilism* is essentially a dualistic doctrine: according to their teachings, God created and rules the spiritual part of the world, and Satan (his son) the material who occupies an inferior place. Later they believed that God and Satan as eternal opponents.
[12] The representation of various types of animals in the Gospel is an interesting venue for cultural transmission to explore as many animals continue to bear certain symbolic meaning from antiquity being well integrated within East Orthodox Christianity.

[13] Daniel Fokas. *Representations of animals and fantastic creatures in the art within Bulgarian lands from 9th to 14th centuries.* Sofia*:* Bulgarian Academy of Sciences, 2024.
[14] Flavio Rigonat. *Fairies & Demons: glossary of mythical creatures in Serbian folklore.* Belgrade: LOM, 2016.
[15]Roger Caillois. *Man, Play and Games*. University of Illinois Press, 2001.

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TRANSFORMATION OF CULTURAL HERITAGE OVER TIME – CURRENT DEVELOPMENTS

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INTRODUCTION

The transformation of cultural heritage has become a central theme in contemporary urban and regional development. Cultural heritage no longer serves merely as a bearer of historical identity but increasingly gains importance as a driver for sustainable innovation, social integration, and future-oriented living environments. In particular, historically evolved places offer diverse opportunities to shape urban and regional development in ways that are livable, innovative, and sustainable.

In Golm, a district of Potsdam, the focus lies on how cultural identity and architectural traditions can be reconciled with the demands of sustainable and forward-looking use. Against the backdrop of increasing urban dynamics and societal transformation processes, integrative concepts that preserve historic building fabric while enabling innovative uses are becoming ever more significant.

Between Tradition and Innovation

Since the 19th century, Golm has undergone profound transformations – from a predominantly agrarian community to a military and security service facility, and finally to a dynamic center for science with both university and non-university research institutions. Initially, Golm was primarily known for its agricultural structures, which shaped the daily life of the local community. However, significant changes began in the 19th century, which had a lasting impact on the area. The strategic location and growing militarization led to Golm being used for military and security purposes. During the 20th century, the area continued to develop and became increasingly shaped by scientific institutions. Today, Golm is a vibrant and progressive scientific hub, home to both universities and numerous non-university research institutions.

This transformation has been not only functional but also spatial and culturally formative. In particular, the architectural remnants of the past—such as former military barracks, sacred buildings, and historic villas—now form an integral part of an ongoing urban redevelopment process that carefully balances preservation with renewal.

Current projects such as the heritage-sensitive restoration of the *Alte Dorfkirche* (Old Village Church) the conservation and restoration of the *Villa with Outbuilding* on the Ehrenpfortenberg, and the urban planning of the *"Neue Mitte Golm"* (New Center of Golm)—demonstrate how historical structures can be thoughtfully developed and integrated into contemporary urban planning strategies.

Historical Development of Golm

Golm is a district of Potsdam, the capital of the German state of Brandenburg. The toponym “Golm” originates from Slavic settlement in the region between the 9th and 11th centuries.[1] The first documented references appear in 1289, when Golm was still a predominantly agricultural village. For centuries, agrarian activity shaped the economic and social structure of the settlement.[2] With the arrival of the railway and proximity to the royal residence city of Potsdam, Golm developed into a popular excursion destination for the urban bourgeoisie during the 19th century.[3]

The 20th century marked a profound shift in the use and character of the area. During the National Socialist era, military installations were constructed, which were later repurposed and expanded during the GDR period by the Ministry for State Security as training facilities. This period saw extensive construction activity, particularly the establishment of barracks and institutional buildings.[4]

Following German reunification, a new chapter in Golm's development began. In 1991, the site was established as a campus of the University of Potsdam.[5] Concurrently, numerous non-university research institutions settled in the newly emerging Potsdamer Science Park.[6]

A defining feature of this transformation has been the careful adaptive reuse of historical structures. Former military buildings have been renovated, in some cases converted, and adapted to meet the needs of modern research facilities. This process managed to preserve much of the historical fabric while enabling forward-looking, functional use. The conversion of military infrastructure into academic institutions stands not only as a symbol of societal change but also as an example of successful heritage conservation within the context of functional reurbanization.

The establishment of the university and research institutions has significantly influenced both the physical appearance and the social composition of Golm. New residential areas, retail infrastructure, transportation links, and the Potsdam Science Park represent a spatial expansion of the traditional village core. Today, Golm is characterized by a unique juxtaposition of its rural village nucleus, preserved historical architecture, and contemporary scientific institutions. Its development exemplifies an ongoing dialogue between historical continuity and future-oriented urban use. [7]

Heritage Conservation and Sustainability: The Ehrenpfortenberg Villa Ensemble

An exemplary case of preserving cultural identity and architectural heritage in Golm is the conservation and restoration of the listed *Villa with Outbuilding* on the Ehrenpfortenberg, which now serves as both a residence and a restoration studio. The restoration involved not only the meticulous conservation and refurbishment of structural elements such as timber beams, windows, and doors but also the careful reconstruction of ornamental details based on historical references. The restoration of the façades followed original design templates, reflecting a clear commitment to preserving the built cultural heritage.[8]

Particular attention was given to the floral ornamentation adorning the façades, featuring motifs such as vines, roses, and stylized flowers. These decorative elements reference Golm’s agrarian history and symbolize the close relationship between its inhabitants and the natural environment. They are more than mere embellishments; they represent Golm’s historical rootedness in agricultural practices, especially viticulture and hop cultivation. These are further complemented by anthropomorphic representations, including smiling and weeping crescent moons and a sun motif on the south and west façades. These symbols allude to the cyclical nature of life and the rhythms of the natural world. [9]

At the same time, the restoration of this ensemble highlights the challenges that arise at the intersection of heritage preservation and contemporary energy-efficiency requirements. Within the broader context of the energy transition, efforts have been made to pursue sustainable modernization. These include feasibility studies and pilot implementations of technologies such as photovoltaic systems, heat pumps, and the integration of historical and modern heating systems. Such interventions

illustrate the inherent tension between maintaining historical authenticity and adapting to modern energy standards—a balancing act that is emblematic of current developments in heritage conservation. [10]

These considerations build upon the previously discussed themes of transformation, conservation and restoration practices, societal change, and urban development, and are further expanded in this contribution through the lens of the historic *Alte Dorfkirche*. In the context of the *Neue Mitte Golm* project, it becomes evident that urban innovation—such as the development of sustainable infrastructure, including bicycle paths—can exist in a productive dialogue with historical contexts. The preservation of cultural heritage is thus not understood as a static act of museal conservation, but as a dynamic process in which tradition and progress are equally integrated.

Figure 1. (Left) Old Church during the conservation (Right) Old Church and New Church"Kaiserkirche": Photo: B.Kozub

The Old Village Church in Golm: History, Structural Condition, and Prospects for Cultural Revitalization

The *Alte Dorfkirche* in Golm[11] represents a central element of the locality's cultural heritage and has shaped the historical townscape since the 13th century. Building archaeological studies have identified several different construction phases, through which the church's present form has evolved.[12]

The church is a single-storey structure built on a strip foundation, with plastered brick walls and a hipped roof over the nave. The tower is constructed in a half-timbered style and topped with a tented roof. In the apse area, numerous fieldstones and sections of medieval masonry in monastery format remain visible, offering tangible insights into the building's earliest layers. Ceilings and roof structures are made of timber, joined using traditional tenon and nail joints. The roofing varies both in structure and material: the nave features a crown covering of plain tiles, whereas the tower's tented roof is clad with plain tiles in double covering. These architectural elements not only reflect the church's long construction history but also embody the craftsmanship of different building periods.

A structural assessment carried out from 2019 revealed significant damage to the building.[13]

In addition to severe moisture penetration and fungal infestation, structural deficiencies were identified that posed a threat to the building's stability. Between 2020 and 2022, comprehensive technical surveys were conducted,[14] public and ecclesiastical funding was applied for, and initial conservation measures were initiated. Particularly noteworthy is the high level of civic engagement—such as the "roof tile donation" campaign—which played a crucial role in launching the restoration efforts and underlined the project's strong local support. [15]

Since 2024,[16] the church has been undergoing extensive renovation and restoration– as illustrated in Figure 1. Carpentry work on the roof truss and tower has already been completed, and new windows and doors have been commissioned. Current measures include the repair of the roof, restoration of load-bearing wooden elements, sustainable moisture control, and redesign of the access path. Future plans envisage additional interventions, including energy-efficient upgrades such as the installation of a heat pump in the bell tower, underfloor heating with insulating fill, thermal insulation in the ceiling, and connection to potable water and sewage systems. The interior is to retain its historical layering: exposed masonry and remnants of the original plaster will be preserved and left visible.[17]

The restoration and conservation aim to repurpose the church for multifunctional use as a cultural and social venue. It is intended to accommodate events such as readings, concerts, and community activities, thereby re-establishing the Old Village Church as a place of collective identity. Its preservation represents not merely a technical undertaking, but also a cultural symbol of continuity amid change. The project exemplifies how heritage-sensitive restoration, civic engagement, and sustainable infrastructure planning can be synergistically integrated to foster development in rural contexts.[18]

Figure 2. (Left) Old village center, (Right) Residential area and university campus Aerial view Golm. Photo Falcon Crest Air

"Neue Mitte" Urban Development between Tradition and Future

Potsdam/Golm is undergoing a dynamic transformation, primarily driven by the expansion of scientific institutions, the development of new residential areas, and the growth of the university campus. These processes have resulted in a fragmented urban structure composed of the historical village core, the science campus, and newly established housing developments. As a consequence, the historical center around the village church is increasingly losing its role as a central place of identification.

To guide this transformation, an integrated framework plan was developed for the so-called "*Neue Mitte Golm"*. The objective is to establish a multifunctional, accessible, and identity-defining town centre that integrates the spatially and functionally distinct parts of Golm – the historic village, the university and science park, and the new residential areas.

Beyond addressing infrastructural gaps, the New Center is envisioned as a social and cultural hub. The overarching goal is the creation of an inclusive, sustainable urban space that integrates previously disconnected "islands" within Golm and fosters social participation.

A defining feature of the planning process is its participatory approach: local residents, students, researchers, entrepreneurs, and civic organizations were involved early and continuously through public forums, workshops, and surveys. The New Center Golm thus serves as a model for integrated urban development that addresses spatial, social, and functional dimensions alike, while emphasizing the importance of participatory processes in managing urban transformation.[19]

Sustainable Infrastructure and Integrative Urban Development

The spatial transformation of the Potsdam district of Golm exemplifies how historical structures can be integrated into sustainable urban development processes. The baroque Lindenallee,[20] originally designed as a representative avenue,[21] is now partially used as a cycling route. This repurposing not only connects the historical structure with modern mobility requirements but also serves as a structural link between the city center and the scientific hub of Golm.[22]

The expansion of the cycle path in 2024, carried out in the course of the renovation of the adjacent transport infrastructure, strengthens the promotion of low-emission modes of transport and contributes to the development of a climate-resilient and transport-policy-sustainable infrastructure.

Beyond this specific measure, Golm follows a holistic vision of sustainable urban development, integrating ecological, functional, and social dimensions. Key areas of action include energy-efficient building, the preservation and promotion of urban biodiversity, the strengthening of active mobility forms, and the social integration of residential areas. The development perspective aims for high spatial adaptability, addressing the diverse needs of residents, students, academic staff, employees from neighboring companies, as well as commuters and visitors.

CONCLUSION

The *Alte Dorfkirche* (Old Church) in Golm is not only a historical building but also a significant part of an integrated educational space that conveys history in a tangible and experiential way. Nestled within a network of modern residential areas, the university, and the science park, it becomes a part of a dynamic environment where tradition and innovation are intertwined. The sustainable transformation of cultural heritage in Golm illustrates how heritage preservation can harmoniously interact with modern urban development and civic engagement.

The Golm example demonstrates that cultural heritage should not be viewed as a static relic of the past but as a living resource offering opportunities for innovation, social cohesion, and high quality of life. This integrative approach represents a forward-looking model for how historical values can be meaningfully incorporated into modern urban society.

A further significant aspect of Golm's development is the ongoing realization of the *"Neue Mitte Golm"* (New Golm Center). At the core of the New Center is the ambition to create a hub where innovation, education, and community life intersect. This will not only foster collaboration between academic and entrepreneurial actors but also contribute to social integration by offering spaces for cultural exchange and community engagement. With its focus on sustainability, the *"Neue Mitte Golm"* aims to be a model for smart city development that balances historical heritage with the needs of a rapidly evolving society.

In conclusion, the holistic development of Golm, from its historical landmarks to the New Golm Center, presents a blueprint for integrating heritage, sustainability, and modern urban living. It offers a model for how cities can honor their past while shaping a resilient, inclusive, and future-oriented urban landscape.[23]

NOTES

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PRESERVING AND REINTERPRETING MULTILAYERED HERITAGE: A CONTEMPORARY FRAMEWORK FOR HAGIA SOPHIA

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INTRODUCTION

This study examines the processes of preserving, reinterpreting, and evaluating the multilayered cultural heritage of Hagia Sophia in a contemporary context. Throughout its historical trajectory, Hagia Sophia has assumed diverse functions during the Byzantine, Ottoman, and Republican periods, evolving in response to the aesthetic, religious, and social needs of each era. In this regard, its architectural, artistic, and cultural elements serve as a significant reference point for understanding historical continuity and dynamics of transformation. The study employs photography as a method to document this layered structure, highlight its spatial and aesthetic characteristics, and reinterpret it through the perspectives of contemporary art, architecture, and design. Photography is considered not only as a documentation tool but also as a method of creative interpretation. This approach establishes a bridge between preserving the historical traces of Hagia Sophia and linking them to contemporary practices. Documenting the architectural details and artistic elements of the structure through photography enables the transfer of its cultural diversity and contextual richness into current artistic and design practices. The documentary and creative potential of photography underscores Hagia Sophia's historical significance while simultaneously offering inspiration for the future. In conclusion, the necessity of an interdisciplinary approach to the preservation and reinterpretation of Hagia Sophia's cultural heritage is emphasized. The integration of photography with art and design projects demonstrates its efficacy as a powerful tool in revealing the historical, aesthetic, and symbolic values of Hagia Sophia. This study provides a methodological framework for preserving and reimagining cultural heritage in a contemporary context, using Hagia Sophia as a case study.

Research Problem

Throughout history, Hagia Sophia has sustained its existence as a multilayered spatial structure bearing the symbolic weight of various belief systems, political powers, and cultural narratives. It has predominantly been interpreted through these representations. This study aims to reinterpret the multilayered heritage of Hagia Sophia within a contemporary framework, foregrounding women's production as a site of cultural memory and heritage.

Scope of The Study

This study focuses on visual readings of the illustrations produced during the restoration of Hagia Sophia in the reign of Sultan Abdülmecid, specifically those created by the Fossati brothers. In addition, it includes an analysis of the paintings of Abdülmecid Effendi himself—who appears as the sole painter figure of the period. Through these visual materials, the study explores the traces and implications of women's production within the cultural and representational framework of Hagia Sophia.

Figure 1. An Illustrated Manuscript of the Great Hagia Sophia, Produced in London from Multiple Perspectives under the Direction of Architect Fossati During the Reign of Sultan Abdülmecid, 1852, Ministry of Culture and Tourism, Presidency of the Turkish Manuscripts Institution[1]

This study focuses on the multilayered structure of Hagia Sophia—one of Turkey's most significant cultural heritage sites—through the lens of women's production within the context of social life. It aims to reflect and reinterpret the contributions of women that may have played a role in the formation of Hagia Sophia but were historically excluded from representation due to the lack of documentation. Although it is known that women were involved in artistic and artisanal practices during both the Byzantine and Ottoman periods, these contributions are not always visible or accessible in certain areas of the historical narrative.

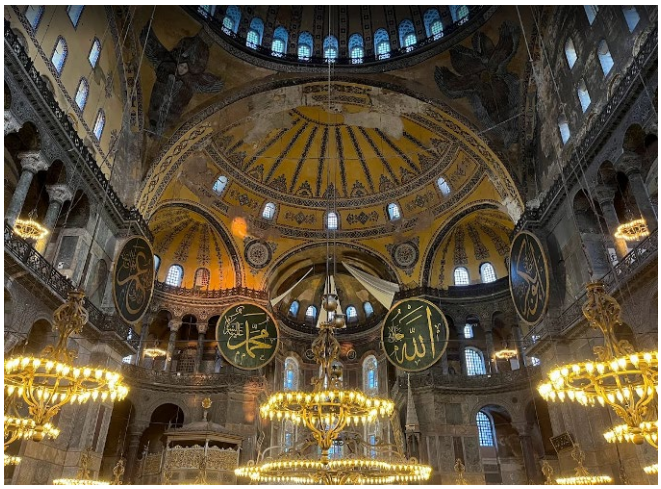


Figure 2. Photographer Feyza Nur Dişkaya, Hagia Sophia, 2023

Research Questions

1) How can the historical layers of Hagia Sophia be reinterpreted through a contemporary interpretive photographic approach?
2) Can women's production be directly or indirectly interpreted through architectural details of Hagia Sophia by means of photographic methodology?

VISUAL READINGS OF FOSSATI'S DRAWİNGS

Al-Farabi (d. 950), who reinterpreted the philosophical traditions of Plato, Aristotle, and Neoplatonism within the framework of Islamic belief and culture, developed a systematic and coherent philosophical system based on Aristotelian logic. He argued that invisible, symbolic, and silent forms of knowledge are also part of the realm of existence. The theoretical framework of the study is shaped by the intersection of Aristotle's concept of mimesis (representation) and Al-Farabi's perspective on the multilayered nature of meaning. Sultan Abdülmecid (1823-1861) requested the restoration of Hagia Sophia, and the Fossati brothers, Swiss-Italian architects Gaspare and Giuseppe Fossati, were invited to Istanbul for this purpose. Between 1847 and 1849, they carried out a comprehensive restoration, during which they reinforced the structure, renewed decorative elements, and produced numerous drawings and illustrations documenting the architectural and interior details of the building. These images were not merely technical documents but also reflected the artistic sensibilities of the period and an Orientalist perspective on Hagia Sophia. The drawings were later published in London and attracted significant interest across Europe.

The visual productions of the Fossati brothers related to Hagia Sophia go beyond architectural documentation, offering representations that simultaneously render visible the historical, cultural, and social layers of the space. These drawings can be regarded not only as technical records of the restoration process, but also as interpretive documents reflecting nineteenth-century perceptions of space and modes of representation. In this context, Henri Lefebvre's concept of the social production of space provides a significant theoretical framework for reading Fossati's visual material. According to Lefebvre, space is not merely a physical structure or a visual object; rather, it is a phenomenon continuously produced through social practices, representations, and everyday experiences. The positioning of figures within Fossati's depictions of Hagia Sophia can be interpreted as a visual counterpart to this process of production. Human presence, bodily scale, and traces of everyday use transform Hagia Sophia from a fixed and monumental architectural object into a space that is lived, experienced, and socially produced.[2]

Beatriz Colomina's approach, which conceptualizes architecture as a medium of representation and communication, makes it possible to interpret Fossati's drawings of Hagia Sophia not merely as documentary records, but as visual discourses that shape how space is seen and understood. In this context, architectural drawing functions not as a neutral mode of transmission, but as a representational practice that reproduces and rearticulates the public and cultural meanings of space.[3]

Figure 3.1. Hagia Sophia drawings by Gaspard Fossati

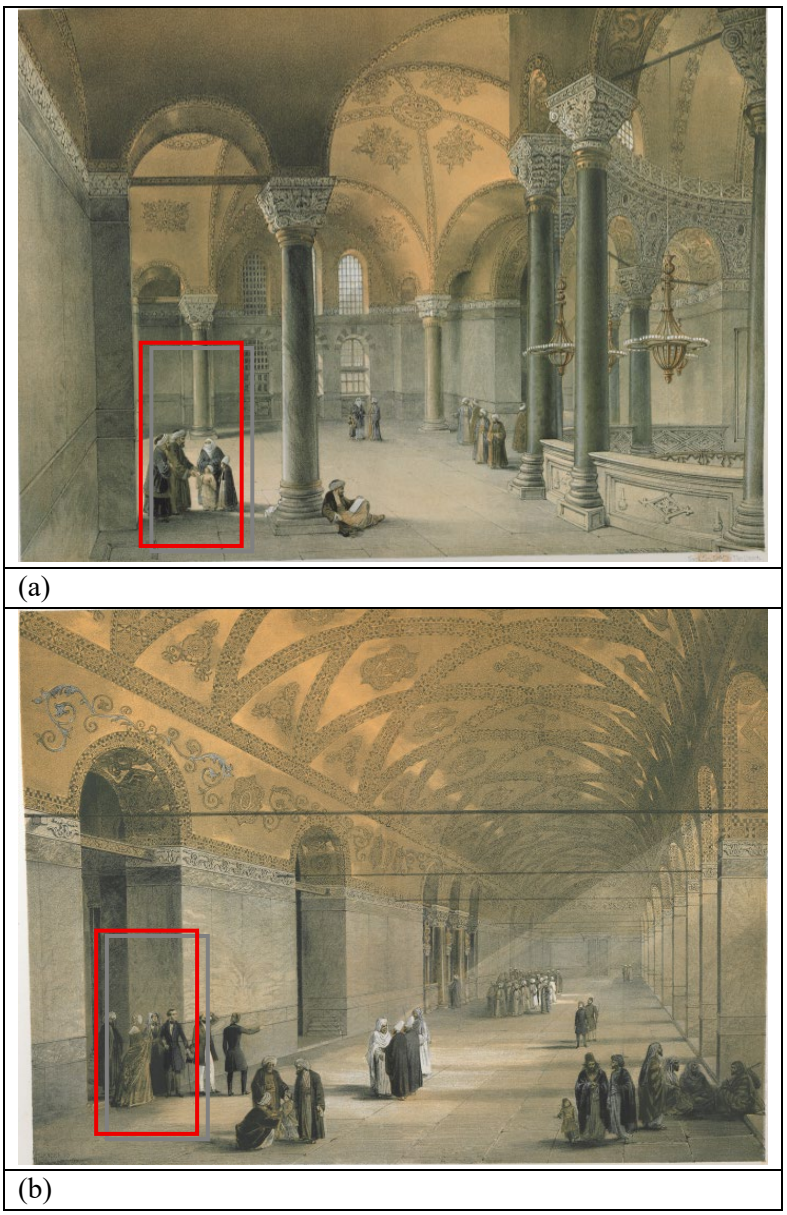
The images 3.1-3.5 represent the visual memory of the restoration process carried out in the 19th century. Fossati's approach demonstrates that Hagia Sophia was conceived not merely as a structure requiring technical intervention, but as a multidimensional cultural entity in which historical, cultural, and aesthetic layers coexist. In this context, these depictions can be regarded as early visual counterparts of the axes of preservation, reinterpretation, and evaluation emphasized in this study. In the images, the space is depicted with a dense, inward-oriented, and serene atmosphere. While the high-vaulted structure preserves the monumentality of Byzantine architecture, elements such as chandeliers, carpets, and the attire of the figures associated with the Ottoman period reveal a multilayered cultural continuity. Architecture is thus approached as a lived and experienced space. The documentary capacity of photography or, in Fossati's case, pictorial representation records not only structural elements but also the relationship between human presence and architectural space.

Figure 3.2. Hagia Sophia drawings by Gaspard Fossati

From this perspective, Erwin Panofsky's concept of perspective as a symbolic form provides a critical framework for further interpreting Fossati's visual representations. According to Panofsky, perspective is not a neutral or purely technical device, but a culturally and historically constructed mode of seeing that reflects specific intellectual and ideological conditions. In Fossati's drawings of Hagia Sophia, the organization of depth, scale, and spatial hierarchy can therefore be understood not merely as an accurate rendering of architectural reality, but as a representational strategy shaped by nineteenth-century European visual conventions. The perspectival construction of the interior directs the viewer's gaze, structures spatial perception, and produces a particular understanding of monumentality and order. In this sense, Fossati's images do not simply depict Hagia Sophia; they actively participate in the symbolic production of space, translating the building's multilayered architectural reality into a coherent visual narrative aligned with contemporary modes of representation.[4]

Women, Space, and Visibility

The image 3.3-3.4 represent that by placing these figures at the center or along the periphery of the expansive and rhythmic spatial composition, Fossati demonstrates that the building is not merely an architectural shell but an interior actively used and experienced. This approach makes visible the relationship between architecture and everyday practices. In one of the images presented in the table in image 3.3 (b), a female figure likely dressed in Victorian-era attire is depicted within the interior of Hagia Sophia.



(a)

(b)

Figure 3.3. Hagia Sophia drawings by Gaspard Fossati

In the upper image, the positioning of the figures along the depth axis of the space reinforces the continuity of perspective while directing the viewer's gaze toward the interior. This compositional strategy transforms the interior of Hagia Sophia from a static representation into a narrative that generates a sense of temporal and spatial continuity. Human presence functions as both the measure and the witness of this continuity. These figural focal points further reveal that Fossati's representational approach extends beyond aesthetic depiction and operates simultaneously as a documentary strategy. The juxtaposition of structural elements such as columns, arches, and vault with the human body records the social dimension of architecture. Consequently, the space is approached not solely as a historical monument, but as a living cultural environment whose meaning is activated through human presence.

Female figures can be interpreted as an interface between the architectural monumentality of Hagia Sophia and social life. Positioned neither fully at the center nor entirely at the margins, these figures simultaneously represent the public and everyday character of the space. The historical continuity of Hagia Sophia is thus established not only through structural transformations but also through such

modes of social use. Within the total of twenty-four images depicted by Fossati, female figures representing different sociological identities appear in only three works.

Figure 3.4. Hagia Sophia drawings by Gaspard Fossati

In this context, the limited visibility of female figures in Fossati's drawings necessitates a reconsideration of the relationship between space and representation from a sociological perspective. The appearance of women in only a small number of depictions indicates that their presence within the interior of Hagia Sophia occupies a position that is neither fully central nor entirely excluded. These figures can be interpreted as intermediary elements situated between monumental architecture and everyday life, simultaneously revealing both the symbolic and lived dimensions of the space.

Figure 3.5. Hagia Sophia drawings by Gaspard Fossati

The representation of Ottoman or Western female figures within the interior of Hagia Sophia should not be understood merely as a figural choice, but rather as a significant indicator of how the space was socially used and by whom it was rendered visible. Female figures expose the tension between Hagia Sophia's public, institutional, and monumental identity and its everyday practices of use. This condition demonstrates that architectural space is produced not only through physical form, but also through social norms and cultural codes. Such a sociological reading allows the material components of Hagia Sophia's interior particularly carpets to be considered not solely as decorative or functional elements, but as fundamental components that regulate modes of spatial use and body space relations. Just as the positioning of female figures within the space points to social visibility and practices of use, material elements such as carpets shape the everyday experience of the space through acts of movement, gathering, and pause.

The limited and selective representation of female figures within Fossati's visual repertoire should be understood not merely as a figural absence, but as an indicator of a structural relationship between production, visibility, and spatial experience. While women are predominantly positioned at the periphery of Hagia Sophia's monumental interior, they assume a central role in the material and everyday organization of the space through processes of production. This paradoxical condition clearly reveals the historically marginalized yet indispensable nature of women's labor, which enables the continuity of the space.

In this context, carpet production emerges not simply as a craft or decorative practice, but as a fundamental field of production directly associated with women's labor, shaping both the use and experience of space. The carpets supplied for Hagia Sophia most likely from Uşak function as products of anonymous and often undocumented female labor, forming a ground that regulates bodily movement, gathering, stillness, and practices of worship within the monumental interior. Thus, even

when women are represented only in a limited figural manner, they become primary agents in the construction of space through the material culture they produce. This situation demonstrates that architectural space should be read not only through what is visibly represented, but also through invisible processes of production. Women's presence within the interior of Hagia Sophia is established less through representation than through production; while their bodies are frequently excluded from visual narratives, their labor becomes embedded in the everyday experience of the space. In this sense, carpets can be interpreted as silent yet enduring traces of women's labor within the architectural setting. Ultimately, this asymmetrical relationship between women's production and visibility offers a critical lens for understanding the sociological and cultural continuity of Hagia Sophia. Rather than being merely figures represented in a limited manner within the space, women emerge as actors who continuously reconstruct and re-signify the space through their productive practices. This perspective makes it possible to approach Hagia Sophia not only as an architectural and historical monument, but as a living space shaped through relationships of gender, labor, and material culture.

THE MATTER OF CARPET

Alongside the restoration of the mosque, the renewal of its carpets was also brought to the agenda. In the imperial decree dated 8 January 1848, it was deemed appropriate that the existing carpets in good and new condition be placed in the *son cemaat mahalli* (last congregation area), while the remaining ones be distributed to certain waqf properties whose financial means were insufficient. At the same time, it was decided to procure ten thousand *zirâ_(57-90cm)* of new carpets from Uşak for Hagia Sophia Mosque.[5]

Uşak Carpets and Production of The Carpets

Uşak and its surrounding region became the creator of early Ottoman period carpets in the 15th century and emerged as a major carpet-weaving center during the Ottoman era. As a result of the capitulations granted in the 1500s, foreign ambassadors arriving in the empire were given the right to trade within Ottoman territories, enabling these carpets to gain recognition abroad. In Europe, prominent families commissioned famous painters to create their portraits while featuring Uşak carpets as decorative elements on walls, floors, and tables. The carpets depicted in the paintings of renowned artists such as Hans Holbein and Lorenzo Lotto came to be known by the painters' names thus called "Lotto" and "Holbein" carpets. During the reign of Sultan Suleiman the Magnificent, Uşak carpets gained great significance. Master weavers brought from Azerbaijan began weaving carpets unique to Uşak with new styles. To preserve the quality and distinctive features of these carpets, Anatolian muftis were appointed to oversee production, ensuring that weaving continued under strict supervision. The patterns were designed by court artists (*nakkaş*) and ornamental art masters, earning them the title of "palace carpets." Spanning from Ottoman palaces to European castles, from mosques to churches, the Uşak carpet was more than a carpet it became a legendary symbol of prestige. Historic Uşak carpets are today exhibited in many museums, including; The Louvre Museum, Paris, The Bardini Museum, Florence, The Metropolitan Museum of Art, New York, The Philadelphia Museum of Art, The Victoria and Albert Museum, London, The National Gallery of Art, The Hungarian National Museum, Budapest, The Museum of Turkish and Islamic Arts, Istanbul, The Museum of Islamic Art, Berlin, The National Museum of Kuwait, The Vakıf Carpet Museum, Istanbul, The Mevlana Museum, Konya. Medallion Uşak carpets were produced in the 16th century. The great variety and richness of medallion types in Uşak carpets reflect the mastery and creative power of Turkish artisans. The center of the carpet is marked by a large medallion, while the corners are defined by quarter medallions.[6]

This flourishing tradition of Uşak carpet weaving was sustained largely through the skilled labor of women. In both rural households and workshops, weaving was a craft passed down from mother to daughter, embedding artistic knowledge and technical expertise within the domestic sphere. Women were responsible not only for the meticulous knotting process but also for dye preparation, yarn spinning, and the preservation of traditional motifs. Their work ensured the continuity of weaving techniques and the authenticity of designs, making them the invisible custodians of a cultural heritage that adorned both imperial spaces and European salons. Despite their central role in production, historical narratives and visual representations have often overlooked these female artisans, leaving their contributions woven silently into the fabric of the carpets themselves.

The Role of Women in Production of Carpet

Uşak carpets, with their deep-rooted history extending from the Ottoman period to the present day, are regarded as among the most significant examples of Turkish carpet weaving. Holding a distinguished place within the Anatolian tradition of handicrafts, these carpets possess substantial aesthetic as well as cultural value. As illustrated in image 4 (b),[7] Uşak carpet production particularly in the traditional period bore the distinctive imprint of women's craftsmanship. In Anatolia, hand weaving was a skill taught to women and girls from childhood, forming an important part of both marriage preparations and the woven textiles used in daily life.[8] Women's roles in the weaving process extend beyond the technical aspects of production to encompass the preservation of aesthetic preferences, motif knowledge, and traditional modes of production. In this context, carpet weaving can be understood as a cultural practice transmitted across generations through women's labor. Despite this central role, women's labor has often been addressed only indirectly in historical narratives, and their decisive contributions to production processes have remained largely invisible. This situation underscores the need to evaluate material culture not solely through its finished products, but also through the processes of production and the social actors involved in these processes. The example of carpet production thus offers an important analytical framework for making visible the impact of women's labor on the formation of architectural and cultural spaces.

(a) (b)

Figure 4. (a) Women carpet weavers, Carpet weaving, as documented in a photograph dated 1890, (b) A woman weaving a Uşak carpet

From a technical and material perspective, a carpet is a woven textile produced through the knotting of pile yarns onto warp and weft threads according to a predetermined pattern, resulting in a surface with a desired pile height. Primarily used as a floor covering and in certain contexts also as a wall hanging the carpet establishes a direct physical and symbolic relationship between the human body and architectural space. Beyond its functional role, the carpet operates as a cultural carrier through which patterns, techniques, and meanings are transmitted across generations; in this respect, it

constitutes both a material and a social artifact. This process of production can be concretely observed in image 4 (a), which documents carpet weaving practice through a photograph dated to 1890.[9]

CARPET ANALYSIS AND THE CONNECTION BETWEEN WOMEN'S PPRODUCTION AND HAGIA SOPHIA

Case Study: Goethe in the Harem / Mütalaa

The painting *Goethe in the Harem / Mütalaa* by Prince/Caliph Abdülmecid Effendi not only captures an intimate moment from the social life of women in the Ottoman palace but also embeds within its composition a material trace of women's labor, revealing connections between the domestic sphere, artisanal production, and imperial commissions such as the Uşak carpets for Hagia Sophia.

Figure 5. Abdülmecid Effendi, Goethe in the Harem, oil on canvas, Ankara, Museum of Painting and Sculpture, Date of Production: AH 1336 (1918), Detail of the carpet shown in the painting (re-framed)

The work entitled *Goethe in the Harem / Mütalaa*, which articulates the personal artistic approach of Prince/Caliph Abdülmecid Efendi, is also regarded as his masterpiece defining his position within the Orientalist art movement. Beginning with the pose of the figüre reflecting the characteristics of Classicism in figurative representation it is evident that the artist closely examined the figure in detail and interpreted it accordingly. At the same time, it can be observed that he studied the spatial constructions specifically designed for compositions within the Orientalist art movement with great care, internalized these principles, and applied them in his works. In addition to being a member of the imperial court, Prince/Caliph Abdülmecid Efendi also produced works in a manner akin to that of a court painter, freely moving within the palace and depicting scenes that reflect the secluded life of the Ottoman court. As a crown prince deeply embedded in palace life, he was able to illuminate his era and the daily life of the Ottoman Palace far more freely than an officially appointed court painter. In this context, he documented a wide range of aspects of palace life, from the clothing worn by princesses to the books they read and the music they listened to. In *Goethe in the Harem / Mütalaa*, Abdülmecid Efendi depicted a scene drawn from the life of a princess living in the Ottoman harem in the late nineteenth century, rendered through an Orientalist artistic sensibility. The princess is portrayed reclining on a red Moroccan leather armchair within a room whose walls are covered with carpets and wood paneling. The opened and read letters placed beside a vase on the small table next to her indicate the close relationship maintained by the princesses with the outside world. In the painting *Goethe in the Harem / Mütalaa*, the princess posing for the artist is depicted wearing an olive-green dress, defined by a deep décolletage, exposed arms, and a sash emphasizing the waist, all articulated through the folds of a translucent fabric. On her feet are decorative shoes reflecting French fashion.

Holding a book by Goethe in her hand, the princess is shown pausing her reading, gazing attentively and thoughtfully into space with a self-assured demeanor. Abdülmecid Efendi's chief consort, Şehsuvar Kadınefendi, is also portrayed reclining on an armchair. As shown in image 5, the young woman is dressed in a short-sleeved, low-necked, long dress and wears a pair of heeled shoes. Her hair is gathered, and she wears a pearl necklace around her neck. While holding her necklace with one hand, Kadınefendi reads Goethe's *Faust* with the other. On the small table beside the armchair are letters and a vase. In the background, at the upper right, an inscription within a frame can be read in Persian: *"Mur-u hane hut hükm-ü Süleyman dared"* ("If there is an ant in a house, Solomon's rule does not prevail"). Additionally, the date 1917 is inscribed in Ottoman script. In the upper left corner appears the tughra-style signature "Abdülmecid bin Aziz Han," with the dates 1336–1333 written below in Ottoman numerals. Despite the presence of these dates, all existing publications have claimed that the painting is undated.[10]

The work *Goethe in the Harem / Mütalaa* demonstrates that Abdülmecid Efendi reinterpreted the Orientalist tradition from an internal perspective. In the painting, the female figure is presented not as a passive object of representation, but as a subject who reads, thinks, and engages with the outside world. The harem interior is constructed not merely as a decorative setting, but as a lived space shaped through material culture and everyday practices, articulated by elements such as carpets, furniture, and daily objects. In this respect, the work constitutes a significant visual document that reveals women's visibility, intellectual presence, and relationship to production within the Ottoman palace. The carpet depicted in the background of the painting exhibits the characteristic features of **Medallion Uşak Carpets** in terms of composition, color palette, and motif craftsmanship. The large central medallion, quarter-medallion-like motifs in the corners, the strong contrast between the dark ground and the red outlining, and the simplified floral form reflect the defining elements of Uşak carpets produced from the 16th 17th centuries onward. The use of natural dyes yielding dark brown/green grounds, beige tones, and red contours corresponds to the aesthetic preferences of the period, while its placement on the wall underscores the carpet's function not only as a utilitarian object but also as a symbol of status. The inclusion of this carpet in the painting enriches the palace setting aesthetically, while also functioning as an indirect reference to the invisible presence of women's labor. In Uşak and its surrounding region, the tradition of carpet weaving particularly in the 19th-century carpets produced for the restoration of Hagia Sophia was largely shaped by women. They played a central role in every stage of production, from spinning and dyeing yarn to knotting and preserving patterns, thereby creating textiles that adorned both imperial palaces and sacred spaces. Thus, the carpet in *Goethe in the Harem / Mütalaa* is not merely a decorative element but, as in the case of Hagia Sophia, a symbolic indicator of women's role as producers within the cultural fabric of the empire. In this way, the painting transcends its function as a visual record of the social life of palace women, making visible through art the deep-rooted Anatolian weaving tradition and the indispensable labor of women behind it. In this context, *Goethe in the Harem / Mütalaa* not only offers a visual record of the social life of women in the Ottoman palace but, through the carpet depicted in the composition, also serves as an indicator that, as in the case of the Uşak carpets produced for the 19th-century restoration of Hagia Sophia, materializes the invisible yet indispensable presence of women in the production process.

The artist's works provide rare visual evidence of the enclosed spatial, social, and material dimensions of palace life; in particular, they render visible in detail the everyday experiences of women within the harem, the organization of interior spaces, and the objects in use. The paintings of Abdülmecid Efendi should be understood not merely as aesthetic compositions, but also as visual documents that record the cultural codes, material environment, and gender-related practices of the late Ottoman court.[11]

CONCLUSION

In conclusion, the presence and productive production of women during the Ottoman period can be clearly observed, particularly in textile and craft traditions such as carpet weaving. These forms of material culture not only embody aesthetic and functional values but also reflect the often-overlooked contributions of women within the socio-economic structure of the Ottoman Empire. Within the framework of pre-Republican Turkish art sociology, such contributions become increasingly legible through visual and material indicators, offering significant insights into the dynamics of artistic and cultural production. From this perspective, cultural objects such as Ottoman carpets, which show the traces of women's production, are not only elements of national heritage but also integral components of global heritage narratives. For instance, Ottoman carpets and artifacts held in museums and collections in London today serve as silent witnesses to women's production that has entered international circulation. The ways in which these materials are exhibited offer an important opportunity to both render the identities of their producers visible and to critically reassess the dimensions of heritage itself.

Within this broader cultural and theoretical context, Goethe's textual world and the cultural connotations of the color red generate a shared field of meaning within the painting., Goethe's textual world and the cultural connotations of the color red generate a shared field of meaning within the painting. Both elements nourish concepts of individual consciousness, power, and visibility, thereby contributing to the positioning of the female figure not as a passive object of representation but as an intellectual and cultural subject. Consequently, *Goethe in the Harem / Mütalaa* establishes a representational plane that, through a multilayered rereading of literary content, color symbolism, and social identity, renders visible the active role of women in carpet production.

NOTES

[1.]Gaspare Fossati, Aya Sofia, Constantinople: As Recently Restored by Order of H. M. the Sultan Abdul Medjid, from the Original Drawings by Chevalier Gaspard Fossati, lithographed by Louis Haghe (London: R. and D. Colnaghi, 1852

[2.]Henri Lefebvre, The Production of Space, Turkish trans. Mekânın Üretimi, trans. Işık Ergüden (Istanbul: Sel Publishing, 2014).

[3.]Beatriz Colomina, Privacy and Publicity: Modern Architecture as Mass Media (Cambridge, MA: MIT Press, 1994).

[4.]Erwin Panofsky, Perspective as Symbolic Form, Turkish trans. Perspektif: Simgesel Bir Biçim, trans. Orhan Düz (İstanbul: Metis Yayınları, 2018).

[5.]Ahmet Akgündüz, Said Öztürk, and Yasin Baş, From Church to Museum: Hagia Sophia Mosque (Istanbul: Ottoman Research Foundation Publications, 2006).

[6.]"Uşak Carpets," Kültür Portalı, accessed August 10, 2025,
https://www.kulturportali.gov.tr/turkiye/usak/nealinir/usak-halilari

[7.] Uşak carpet, accessed February 10, 2026,
https://tr.wikipedia.org/wiki/Dosya:U%C5%9Fak_Hal%C4%B1s%C4%B1.jpg

[8.]Sümeyye Güllü and Okan Çatır, "A Qualified Research on the Development, Characteristics and Tourism Influence of Uşak Carpet Weaving Art," Social Sciences Studies Journal (SSSJournal) 3, no. 10 (2017): 1285–1302..

[9.]Carpet, accessed Fevbruary 10, 2026, https://tr.wikipedia.org/wiki/Hal%C4%B1

[10.]Ankara State Museum of Painting and Sculpture, Haremde Goethe, artwork details, accessed August 10, 2025, https://arhm.ktb.gov.tr/artworks/detail/80/haremde-goethe.

[11.]Eylem Yağbasan, Halife Abdülmecid Efendi ve Sanatı (Master's thesis, Hacettepe University, Institute of Social Sciences, Ankara, 2004), 216.

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DECONSTRUCTING MEMORY: RETHINKING KENTER THEATRE AS A MULTILAYERED CULTURAL HERITAGE

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INTRODUCTION

As two researchers working on cultural heritage and conservation, positioned within the academic and cultural contexts that shape our own interpretive frameworks, we often discussed the discursive foundations of preservation theory. The constraints of certain established charters, doctrines, and practical examples, within a theory that must adapt to time and context, led us to consider how the concepts of heritage and preservation could be rearticulated constructed rather than fixed or universal through alternative discourses. One day, while watching a documentary on Netflix about Yıldız Kenter (Figure 1), one of Turkey's most prominent and masterful theatre actors, we realized how profoundly the Kenter Theatre has come to be constituted as heritage structure and its meaning shifting across time, user and governmental agenda. Despite likely failing to meet many of the formal regulations, bylaws, and rules typically required for heritage designation, the theatre embodies a narrative that speaks to the cultural, artistic, political, and educational history of Turkey's modern era. When we looked into the condition of the theatre after the passing of its founders, Yıldız Kenter and her brother Müşfik Kenter, we discovered a contradictory situation regarding its recognition as a heritage site. In 2019, Kenter Theatre was opened to privatization; however, thanks to the public awareness raised by theatre professionals who had been trained or had worked there, it was purchased by the Istanbul Metropolitan Municipality in 2020.

Figure 1. Poster of Netflix Documentary "Caniko".

Kenter Theatre was built in 1968 under the leadership of Yıldız and Müşfik Kenter, aiming to address the chronic lack of performance venues for independent theatre initiatives in Turkey.[1] The building, partially funded through private sponsorship, was designed to support both performance and pedagogical use, featuring a compact stage, integrated foyer, and an auditorium (Figure 2) with 303 seats.[2] According to multiple sources, the theatre's architect was Metin Hepgüler, who completed the project in 1968 after a prolonged construction phase. Interior decor and stage design were handled by Bülent Erbaşar.[3] Theatre's spatial qualities—shaped under the close supervision and artistic direction of Yıldız Kenter herself—reflected more than functional considerations; they embodied a social vision.[4] In this sense, the architecture itself became performative, not in a theatrical sense, but in Derridean terms—it instituted meaning through absence, through what had to be negotiated socially within and beyond its physical boundaries.[5]

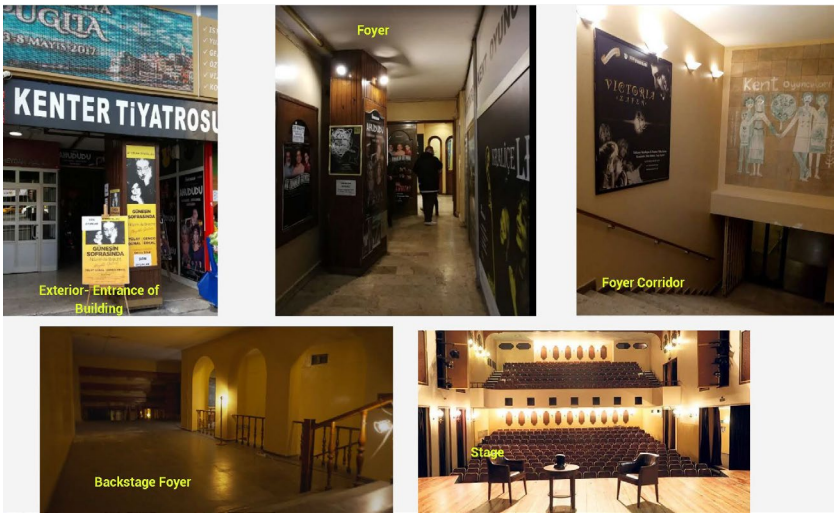

Figure 2. Interior of Kenter Theatre.

Beyond its architectural presence, the Kenter Theatre served as a rehearsal-based pedagogical site where performance and education were closely intertwined. As Karaaḥmet emphasizes, the theatre was envisioned not only as a venue but also as a learning space, with acting education integrated into its operational rhythms. Yıldız Kenter's training in the United States, supported by a Rockefeller Foundation fellowship, enabled her to introduce contemporary acting pedagogy into Turkish theatre practice.[6] These transnational models emphasized learning through doing, blurring the lines between rehearsal and instruction. As such, the Kenter stage functioned as a site of embodied pedagogy, where meaning was generated not from a fixed curriculum but through an iterative, interpretive process, what Derrida would call différance.[7]

Kenter Theatre also played a vital artistic role by hosting a vast repertoire ranging from Western classics such as Hamlet and The Seagull to politically charged Turkish productions.[8] Through its repertoire, the theatre engaged not just with dramatic texts but also with broader questions of aesthetic representation and political presence. In this context, the space operated as what Rancière calls a distribution of the sensible, a framework where the visibility of subjects and the sayability of narratives are politically structured.[9] Furthermore, many performances left affective and ideological residues traces, in Derrida's terms that continued to shape how the space was remembered and experienced.[10] Even the plays that were censored or suppressed contributed to this layered memorial function.

This experience prompted us to ask: How can the Kenter Theatre be rethought as a cultural heritage site, not through its fixed material presence, but through its dynamic and layered memory structure, using a post-structuralist lens? What constitutes heritage if not legal recognition or material preservation alone? What happens when the cultural and historical value of a space emerges not from its architectural form, but from its role as a site of memory, performance, and affective resonance?

To explore these questions, this paper adopts a post-structuralist methodological approach grounded in critical spatial reading. Rather than relying on traditional heritage assessment methods that privilege material integrity, we draw on Jacques Derrida's theory of deconstruction to examine how meaning, memory, and cultural value are produced, deferred, and contested in space. In particular, Derrida's concept of différance (the perpetual deferral of meaning) and trace (the lingering effect of what is no longer materially present) offer critical tools for rethinking what is remembered, what is excluded, and what remains negotiable in heritage discourse.

The case of Kenter Theatre illustrates how cultural value often resides not in physical permanence but in the ephemeral residues of past performances, pedagogical encounters, and community attachment. These intangible aspects, what Derrida would call traces—are not easily codified by institutional heritage criteria, yet they constitute the lived experience of cultural memory. Kenter Theatre, in this sense, is not a static monument but a palimpsest of meaning, continuously rewritten through rehearsal, remembrance, and reinterpretation.

Accordingly, this study treats space not as a neutral container but as an active, discursively produced site. By employing deconstruction as a theoretical and methodological lens, we propose a reimagining of preservation: not as the maintenance of fixed forms, but as an ethical and interpretive engagement with the multiplicity of stories that spaces carry.

Post Structuralism and Cultural Heritage

Jacques Derrida's deconstruction concept radically challenges traditional assumptions about meaning and explicitly rejects the idea of a fixed or transcendental origin. For Derrida, meaning is always conditional; it does not exist independently of context or representation but is constructed within a system of differences.[11] Central to his critique is the idea of the impossibility of fixed meaning, which suggests that no interpretation can achieve absolute certainty or stability.

The concept of différance lies at the core of this philosophical stance. Différance describes the dual processes of deferral and differentiation, which together continually postpone the realization of definitive meanings.[12] According to Derrida, meaning never arrives at a destination but continuously evolves through interactions between what is present and what is absent, what is explicitly stated and what remains implicitly unsaid. Thus, every act of interpretation involves an ongoing deferral, pushing ultimate meaning indefinitely into the future.

Moreover, Derrida argues that any text or cultural space is subject to internal contradictions that necessitate continuous reinterpretation and re-production of meaning. No text, narrative, or cultural site can escape these inherent tensions; they are continually destabilized by alternative interpretations that challenge the dominant meanings.[13] These suppressed meanings, described by Derrida as "traces," remain embedded within the dominant narrative, continually threatening to resurface and challenge its stability.

When applied to cultural heritage, Derrida's deconstruction invites a radical critique of conventional conservation methods (Figure 3). Traditional approaches often aim to preserve a supposed fixed authenticity, treating the physical structure as the sole bearer of meaning. However, this view assumes that meaning is inherent and immutable, an idea directly opposed to Derrida's philosophy. From a deconstructive perspective, such conservation practices are exclusionary, as institutional decisions determine which narratives are preserved and which are omitted.[14]

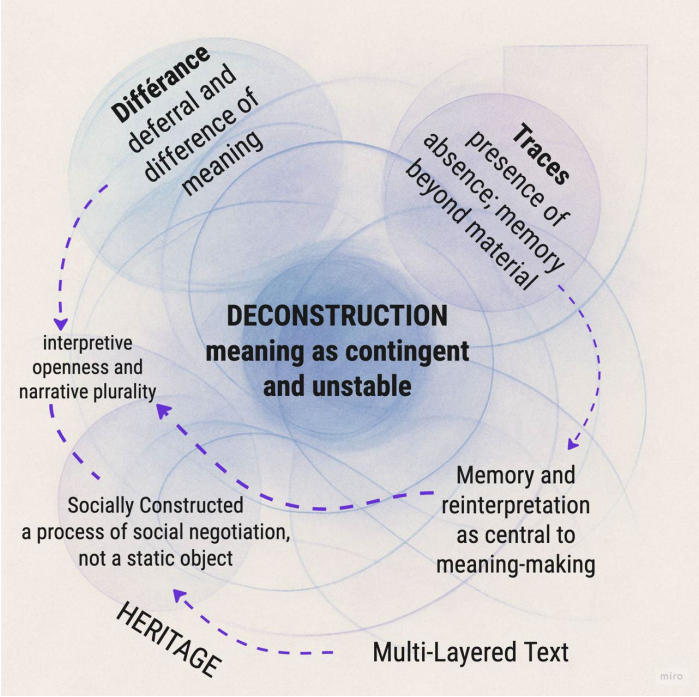

Figure 3. Methodology of deconstruction and cultural heritage

This theoretical perspective aligns with contemporary approaches, particularly those concerning living heritage and intangible cultural heritage, which posit that heritage is not a fixed and immutable structure, but rather a process through which historical structures continually evolve and gain new meaning within society.[15] Jacques Derrida's concept of différance, in particular, parallels contemporary approaches that emphasize that cultural heritage is not limited to physical objects and structures but is shaped by social interactions.[16] Within this framework, the meaning of cultural heritage is dynamically formed and transformed through memory, community practices, and ongoing reinterpretation.

Doreen Massey's spatial theory makes an important contribution to Derrida's perspective. Massey conceptualizes space as a multitude of parallel, open-ended narratives; a "simultaneity of stories-so-far".[17] This perspective directly supports Derrida's view of meaning as unstable and deferred. Therefore, heritage structures are not the carrier of a singular reality, but an active and dynamic narrative space shaped by overlapping temporalities, practices, and interpretations. For example, a theater is not only an architectural structure, but also a point where performative histories, audience experiences, and institutional memories intersect. Each of these contributes to a layered, ever-evolving narrative.

Dolores Hayden draws similar conclusions about urban spaces. She emphasizes that these spaces are repositories of collective memory shaped by the everyday lives and experiences of the people who use them.[18] She argues that "ordinary places... are reservoirs of collective memory". By focusing on the lived and remembered aspects of places, this perspective challenges approaches to conservation that privilege monumental or official narratives. It supports a rethinking of conservation not as the preservation of fixed meaning, but as the preservation of the diversity of interpretation, social memory, and cultural practices from a Derridian perspective.

Furthermore, Derrida's concept of treating space as a readable text offers a significant insight into heritage conservation studies. Roland Barthes argued that cultural artifacts function as texts open to multiple readings and interpretations.[19] Henri Lefebvre also viewed space as a socially produced and interpretable structure.[20] Drawing inspiration from the perspectives of Barthes and Lefebvre, this approach positions heritage sites as multilayered texts within a Derridean framework. This perspective rejects the idea of singular historical realities and instead argues that heritage sites accumulate diverse, sometimes even conflicting, interpretations and experiences over time.

Consequently, Derrida's approach inherently critiques traditional conservation theories and approaches focused primarily on fixed physical conservation. Such models obscure the political and interpretive dimensions of heritage: What is preserved? Who decides? And why? Deconstruction urges a shift from technical preservation toward critical reflection on meaning-making, narrative power, and exclusion.[21]

Importantly, Derrida does not advocate the abandonment of meaning but encourages continuous questioning of how certain meanings become institutionalized and privileged. In the field of cultural heritage, this calls for interpretive openness, the integration of marginalized narratives, and a sustained interrogation of what counts as heritage—and for whom.

THE CASE OF KENTER THEATRE

Historical and Cultural Background

The Kent Oyuncuları ensemble, formed by Yıldız and Müşfik Kenter, sought to create a permanent base that would serve as both a performance venue and a pedagogical institution. According to Karaahmet, Yıldız Kenter herself played a leading role not only in the artistic but also in the spatial conceptualization of the building, making critical decisions about layout, use, and public engagement.[22]

Kenter Theatre is one of the first private theatres to hold an important place in Turkey's cultural and artistic life. The Republican period, along with the impacts of the challenging war years, also witnessed efforts to develop various art forms. Theatre, as one of these art forms, made significant progress in Turkish theatre during the first 20 years after the establishment of the Republic, through foreign artists invited to Turkey and the translation of foreign plays. However, as ideological divisions of the time began to affect the plays and the voices of the artists, private theatres started to be established. Kenter Theatre also holds an important place in Turkey's cultural, artistic, and theatrical life. Founded in 1968 by Yıldız and Muşfik Kenter, this theatre became a turning point in the

development of Turkish theatre and set an example in the struggle for the existence of private theatres.[23]

The idea for establishing a permanent theatre venue emerged from Yıldız Kenter's pedagogical and artistic vision, influenced by her training at the American Theatre Wing and the Actors Studio under a Rockefeller Foundation fellowship. The theatre responded to the chronic shortage of rehearsal and performance spaces for private companies in Istanbul and was built with financial contributions from private donors, business circles, and cultural patrons.[24]

The establishment of Kenter Theatre was filled with numerous challenges. Yıldız Kenter faced various difficulties due to the lack of a proper venue and had to work with limited resources when staging plays. During this process, Kenter sought support for the construction of the theatre building, receiving assistance from the business world and various institutions.[25]

The theatre held its opening with Shakespeare's Hamlet, strengthening its position in Istanbul's cultural life and contributing to its international recognition. Hosting a wide range of both Turkish and foreign plays, this stage became more than just a theatre venue; it evolved into a school where young actors could perform and receive theatre training.

A Multifunctional Cultural Hub: Education, Stage, and Memory

Kenter Theatre functioned simultaneously as a stage, a school, and a cultural memory site. Its 303-seat auditorium, rehearsal rooms, and integrated foyer layout supported a continuous dialogue between education and performance. The building was not just a venue but a full-fledged pedagogical laboratory where generations of actors were trained through rehearsal-centered learning. The permeability between stage and classroom spaces enabled an organic transfer of knowledge.

The establishment of Kenter Theatre was filled with numerous challenges. Yıldız Kenter faced various difficulties due to the lack of a proper venue and had to work with limited resources when staging plays. During this process, Kenter sought support for the construction of the theatre building, receiving assistance from the business world and various institutions.[26]

The building also became a cultural landmark embedded in Istanbul's collective memory. It hosted not only plays but also workshops, festivals, and public talks, accumulating multiple layers of narrative, identity, and emotional attachment over decades.

Theatre and Politics in Turkey (1960s-1980s)

Turkish theatre was an important form of political expression in Türkiye during the 1960s and 1980s. Social movements and theatre were sociaologically linked, and that cultural practitioners aligned with left wing ideologies opposed to governments of the time transformed performences and venues into arenas of [27] argues that social movements and theatre were sociologically linked, and that cultural practitioners aligned with left wing ideologies opposed to the governments of the time transformed performances and venues into arenas of resistance. The establishment and development of Kenter Theatre must be situated within the broader political climate of Turkey in the 1960s and 1970s. During this time, theatre served as a platform for political commentary, particularly within private and independent venues that were less constrained by state regulation. Kenter Theatre engaged with this tradition, staging both Western canonical works and politically engaged Turkish plays. The repertoire reflected the socio-political tensions of the era, and censorship pressures occasionally shaped the selection or alteration of texts.

Turkish theatre in this period operated within a space of cultural negotiation, navigating between modernist aspirations and authoritarian constraints.[28] Kenter Theatre exemplified this duality, striving for artistic excellence while resisting cultural erasure. The ensemble's commitment to aesthetic and

ideological integrity made the theatre a key node in the politicized cultural field of late 20th-century Turkey.

Tangible and Intangible Layers

Contrary to earlier misattributions, Kenter Theatre was designed by architect Metin Hepgüler and completed in 1968 after a protracted development process.[29] Hepgüler's architectural approach emphasized functional clarity through a rational, compact auditorium layout with strong sightlines, accompanied by an adjacent foyer that enabled direct and fluid audience circulation. The theatre was conceived as a purpose-built space, embracing both pedagogical and performative hybridity from its inception.

The interior architectural design and stage aesthetics were developed by Bülent Erbaşar, whose scenographic contributions significantly shaped the artistic and spatial atmosphere of the theatre.[30] His design vision foregrounded modularity, flexibility, and emotional resonance, allowing the space to accommodate various forms of production while maintaining a coherent and recognizable identity.

The spatial relationship between the foyer and the auditorium played a central role in fostering audience engagement. As Karaahmet observes, the theatre's entrance sequence, intimate scale, and the subtle articulation of spatial transitions cultivated a sense of proximity and belonging. The foyer functioned not only as a transitional space but also as a social and pedagogical interface, enhancing the theatre's permeability and its embeddedness in everyday cultural life.[31]

Each performance at Kenter Theatre may be understood as an ephemeral act of meaning-making, inscribing temporary yet powerful narratives onto the architectural space. Drawing on Derrida's notion of différance, the plays performed here deferred fixed interpretations and instead fostered a dynamic, evolving cultural role for the theatre.[32] Political stagings, experimental works, and even censored performances contributed to a multiplicity of narratives that exceeded the limits of conventional architectural documentation.

Over time, Kenter Theatre has come to embody a rich archive of lived experiences. Audiences returned not only to see new performances but to reconnect with a familiar spatial and emotional setting. As Gürer (2022) highlights, the repetition of visits and the intergenerational transmission of memories have transformed the theatre into a site of affective investment and collective memory. This intangible heritage forms a vital component of the theatre's broader cultural significance.

A Post-Structuralist Reading

Kenter Theatre, when read through a Derridean lens, appears not as a stable object but as a site of contested and shifting meaning. The material building coexists with its semantic instability: each performance, rehearsal, and even threat of closure rewrites its identity.[33]

In 2019, the theatre faced closure and possible demolition as part of a broader trend of urban privatization. This moment of institutional crisis revealed the vulnerability of heritage sites not aligned with official preservation criteria. Yet, civic resistance, including advocacy from theatre professionals and public mobilization, led to the building's acquisition by the Istanbul Metropolitan Municipality in 2020.[34]

The Derridean concept of trace helps articulate how meaning in Kenter Theatre is sustained even in the absence of its presence. Plays that were never performed, workshops that were cancelled, and silenced political gestures leave their mark in spatial and cultural memory.[35] These absences operate as constitutive elements of the theatre's significance.

From a deconstructive perspective, conservation should not aim to fix meaning or restore an original state, but rather to protect the multiplicity of interpretations. Kenter Theatre becomes a palimpsest, a layered space where cultural value arises from contradiction, reiteration, and affective residue. This

challenges dominant preservation paradigms that prioritize material continuity over experiential richness.[36]

RETHINKING PRESERVATION THROUGH DECONSTRUCTION

Traditional heritage preservation has often prioritized the physical integrity of buildings, assuming that architectural form inherently conveys historical meaning. Rooted in Enlightenment notions of history as linear and stable, this material-centered approach reduces preservation to a technical act of maintaining fabric rather than engaging with the multiplicity of meanings a place may hold.[37] Yet, as Derrida argues, meaning is never fixed; it is always deferred, fragmented, and shaped as much by exclusion as by inclusion.[38] Focusing solely on the visible and material risks reinforcing dominant narratives while marginalizing ephemeral, performative, or contested interpretations.

The Kenter Theatre exemplifies the limitations of this approach. Its cultural significance extends beyond architecture to layers of performance, memory, pedagogy, and social interaction. A Derridean lens suggests that preservation should remain open to the changing narratives continually inscribed onto a site. In this way, the site becomes a palimpsest, where traces of past meanings coexist with present and future reinterpretations.[39] Conservation strategies must therefore be interpretive and dialogic rather than static or didactic.

This perspective aligns with the "living heritage" framework, which views heritage as dynamic and processual. UNESCO defines intangible heritage as practices, expressions, knowledge, and skills continually recreated by communities.[40] Preservation thus involves sustaining the conditions for continuity and transformation, rather than conserving isolated physical elements. Derrida's concept of différance reinforces this by showing how meaning arises through temporal delay and social negotiation, rather than being embedded in material objects.[41]

Deconstruction, in this sense, is not only a critical method but also a viable preservation strategy. It frames conservation as an open-ended rewriting that accepts incompleteness, multiplicity, and contradiction. Instead of enforcing a singular, idealized past, deconstructive preservation embraces instability, encouraging new readings through interpretive installations, community storytelling, and participatory programs that continually reactivate a site's relevance and complexity.

CONCLUSION

This paper demonstrates that preservation of cultural heritage sites like the Kenter Theatre requires moving beyond material conservation to embrace the dynamic, layered meanings embedded in performance, memory, and community engagement. By employing a deconstructive approach, preservation can accommodate multiplicity and change, allowing heritage to remain a living process rather than a static monument.

The deconstructive approach presented here is not a rejection of preservation, but a call to expand it, to see heritage as an evolving dialogue between past and present. This perspective encourages flexibility, inclusivity, and an openness to change, allowing heritage to maintain its relevance in a rapidly transforming cultural landscape.

Future preservation efforts could benefit from integrating deconstruction into policy and practice, ensuring that heritage sites are not only protected as objects but sustained as living, meaning-rich spaces. In doing so, we shift from preservation as stasis to preservation as a dynamic process, one that honors the multiplicity of voices, experiences, and interpretations that make heritage truly alive.

NOTES

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TECHNOSCAPE OF MT. FUJI: HOW NATURAL RESOURCES HAVE SHAPED THE SUBLIME LANDSCAPE OF PAPER AND PULP INDUSTRY

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INTRODUCTION

Background and Objectives of the Study

Mount Fuji has reigned as a representative mountain of Japan since ancient times. Its magnificent appearance has frequently been depicted in literature and travelogues from the ancient period (Nara and Heian periods), such as in the Man'yōshū[1] and The Tale of the Bamboo Cutter,[2] and in waka and haiku since the medieval period (Kamakura period). In the world of painting, Katsushika Hokusai's "Thirty-six Views of Mount Fuji" from 19th century is renowned and is still beloved worldwide as a representative work of art with enthusiasts all over the globe.

On the other hand, Mount Fuji has been revered as a sacred mountain since ancient times and worshipped by many Japanese people as an object of faith.[3] As an active volcano that has repeatedly erupted, symbolizing major disasters, Mount Fuji was viewed with a sense of awe. At the same time, the entire mountain was regarded as a "god" and became associated with ancient mountain Buddhism (Shugendō[4]). Its existence can truly be described as "ambivalent." This faith became particularly popular after the medieval period, and in the early modern period, it was popularized through the formation of "Fuji-kō".[5] They established branch shrines of the Fuji Sengen Shrine—with Mount Fuji as the goshintai (sacred body)—in various locations and set up yōhaijo (places of worship) from which to revere the distant mountain. [6] Furthermore, in regions where Mount Fuji is visible, it has maintained deep ties to daily life, such as by using the way clouds form around it to predict the weather.[7] In 2013, 25 components, including Mount Fuji itself, surrounding shrines, the Fuji Five Lakes, Oshino Hakkai, and Miho no Matsubara, were registered as a UNESCO World Cultural Heritage site under the title "Fujisan, Sacred Place and Source of Artistic Inspiration."

In the modern era, however, the area around Mount Fuji, especially Fuji City in Shizuoka Prefecture, located about 25 km south of the mountain, developed into a leading paper and pulp industry town. This was built upon a tradition of washi (Japanese paper) production dating back to the Edo period, with machine paper-making beginning around 1880, utilizing the area's high-quality spring water and abundant river power. Today, a large number of paper and pulp factories are concentrated in the area, creating a large-scale industrial landscape (technoscape) against the backdrop of majestic Mount Fuji (Figure 1).

This study aims to manifest the history of the development of paper and pulp industry in the area around Mount Fuji, which developed based on local natural resources. It also seeks to illuminate the

reality of the technoscape formed by these facilities and the changes in how people have evaluated it. The research will specifically focus on how the technoscape has been generated in juxtaposition with the pre-existing landscape of Mount Fuji. By also examining contemporary photography contests and the use of this landscape as a tourism resource, the study intends to reveal the potential of Mount Fuji's technoscape as a new form of regional identity.

Figure 1. Industrial Landscape with the backdrop of Mt. Fuji (Fuji-City). Photo by Author.

Research Methodology

In this study, we will organize the history of paper and pulp industry's development in Fuji City, focusing on its connection to the natural resources present in the area that served as its foundation. We will particularly focus on the existence of spring water, which was a crucial locational factor, and clarify the regional significance of each spring water space through on-site surveys. These springs all originate from Mount Fuji's melted snow, and we will focus on the fact that, in parallel with the deification of Mount Fuji, the spring water also took on animistic qualities and was positioned as an object of faith.

Furthermore, this study will focus on how the technoscape of the paper and pulp industry, formed by utilizing natural resources originating from Mount Fuji, has been inadvertently juxtaposed with the mountain's beautiful appearance. We aim to clarify the shifts in public interpretation of this "composite landscape," which can be seen as a blend of the artificial and the natural, or the ancient and the modern. We will pay particular attention to landscape policies implemented by the local government and to photography exhibitions and tourism events organized by both government and private organizations. By gathering detailed information on these initiatives, we will clarify the significance of the technoscape as a new regional identity.

Previous Research

Numerous studies have been conducted on the deification and worship of Mount Fuji, as well as on related artworks. While scholars such as Hiromi Shimada[8] and H. Byron Earhart[9] have clarified the realities of these phenomena, they have not addressed the mountain's connection to modern industry. On the subject of the categorization of sacred springs in Japan, there is a study by Okada that covers

756 existing spring-water sites across the country.[10] Although the sites included in this study overlap with our research area, the study does not connect them to the animism of the sacred mountain, Mount volcanoial city in Japan, and research on various modern industries such as limestone mining.[11] However, the specific case of Fuji City has not been researched.

MOUNT FUJI'S SPRING WATER AND ANIMISM: SACRED SPRINGS AND SENGEN SHRINE

The lower part of Mount Fuji, which is composed of highly permeable basaltic lava flows and volcanic sand and gravel, contains an impermeable layer known as the "old Fuji mudflow layer." This creates what can be described as a "natural filter and dam," where rain and snow that fall on Mount Fuji are filtered by the upper strata. After permeating, they are blocked by the impermeable layer, forming an "aquifer." This groundwater then slowly descends the slope and emerges on the surface as spring water at breaks in the strata or at the ends of lava flows.[12] Fuji City is situated at the end of this lava flow, making it a major point where abundant groundwater from Mount Fuji springs forth.

The study by Okada[13] has shown that in various parts of Japan, spring water is considered sacred and has long been a place of worship for local communities. The spring water in Fuji City is no exception, and we have confirmed that a variety of local places of worship have been formed around each spring (Figure 2). We identified nine such springs in Fuji City that are associated with local beliefs. These include Takifudo (Waterfall Acala), which has a legend that promises to heal warts if one prays and splashes the spring water on oneself; Oyashiki Spring, where the area around the spring's water god shrine has become a public square for local residents, complete with flower beds and benches; and a spring at Youmeiji Temple, which features a statue of Benzai-ten.[14]

Figure 2. Sacred Water Springs in Fuji City (Photo by Author)
(Left) Takifudo (Waterfall Acala) (RA) Oyashiki Spring
(RB) Beizai-ten at Youmeiji Temple

Figure 3. Sengen Shrines with Sacred Water Springs around Mt. Fuji (Photo by Author)
(LA) Fujisan Hongu Sengen Shrine Spring Pond (Fujinomiya City)
(RA) Kitaguchi Hongu Fuji Sengen Shrine Purification Font (Fijiyoshida City)
(LB) Omuro Sengen Shrine Purification Font (with lava-made Mt. Fuji) (Fijiyoshida City)
(RB) Onuma Sengen Shrine Purification Font (Nishikatsura Town)

Furthermore, it is said that there are over 1,300 "Fuji Sengen Shrines" across Japan.[15] We have confirmed that at least seven of these shrines located around Mount Fuji use spring water (melted snow) from the mountain as the holy water for their purification fonts and as Goshinsui (Divine Water).

The spring water at Fujisan Hongu Sengen Shrine in Fujinomiya City forms the Wakutamaike (meaning "Jewel-Springing Pond"). At the northwestern edge of this pond, the Mizuya Shrine was built to enshrine the deity who presides over the spring water. This sacred water has long been used for misogi (ritual purification) by climbers of Mount Fuji (Figure 3 (LA)). It is said that in 27 BC, Emperor Suinin chose this location—where Mount Fuji's melted snow springs forth—to build the main hall of the Sengen Shrine in order to appease the "god of fire" of the volcano.[16]

Similary, at Kitaguchi Hongu Fuji Sengen Shrine and Onuma Sengen Shrine, spring water is also used in the purification fonts, however, each is equipped with a dragon-headed spout (Figure 3 (RA, RB)). As environmental anthropologist Veronica Strang points out, the dragon has long been recognized as a deity that presides over water in many parts of the world. [17] While dragons are a frequent motif on purification fonts at temples and shrines in Japan, their presence here can be interpreted as a deification of the spring water itself, which originates from the sacred mountain of Fuji.

Furthermore, it is noteworthy that at Omuro Sengen Shrine, the dragon-headed spout of the purification font is placed on top of a miniature Mt. Fuji made of lava (Figure 3 (LB)).[18] Mount Fuji is a dormant volcano, and its entire area is formed by numerous lava flows. In this shrine, it can be said that the sanctity of the spring water and the sacredness of the deified Mount Fuji are simultaneously expressed within the space of the purification font.

DEVELOPMENT OF THE PAPER AND PULP INDUSTRY IN FUJI CITY

Fuji City has long been a region with a thriving paper industry, particularly washi production. One of the main reasons was the abundant spring water from Mount Fuji and the area's numerous rivers. The paper and pulp industry, which developed in the modern era,[19] requires a large volume of pure water with few impurities and a stable temperature for pulp production and paper-making processes. The spring water and river water in Fuji City were ideal for this, as their volume remained stable throughout the year.

Against this geographical backdrop, Fuji Paper Manufacturing Ltd. (now Oji F-Tex Co., Ltd.; Figure 4) opened the first factory in the Iriyamase district in 1890, after which many other companies quickly followed suit, constructing paper and pulp factories one after another. In 1949, the Gakunan Railway, a freight line connecting the city's paper factories with its port, began operations. Subsequently, in 1964, the large-scale modern port of Tagonoura was opened, establishing an effective logistics system that integrated the railway and the port. This allowed Fuji City to develop into one of Japan's leading paper and pulp industrial cities.

Meanwhile, the abundant river flow was initially used as a power source for paper mills. Subsequently, paper and pulp companies, along with metal production companies, constructed a series of hydroelectric power plants in the area, promoting the electrification of power. Many hydroelectric power plants built before the war are still operating in the region around Mount Fuji. Many of these, such as the Okubo Power Station by Yokkaichi Paper Mfg. Ltd., were constructed by paper companies. While some were later acquired by power companies, they continue to form a distinctive technoscape alongside the paper and pulp factories (Figure 4).

Figure 4 Paper and Pulp Industry in Fuji City (Photo by Author)
(L) Former Fuji Paper Mfg. Ltd. (now Oji F-Tex Ltd.) First Mill (1890)
(R) Naganuki Weir for Okubo Power Station of former Yokkaichi Paper Mfg. Ltd. (1911)

INTERPRETATION OF THE TECHNOSCAPE IN FUJI CITY: FROM REJECTION TO RE-EVALUATION

In Fuji City, the coexistence of the magnificent Mount Fuji, which has brought people inspiration and affection since ancient times, and the newly erected industrial landscape of smokestacks and factory plants has led to complex discussions. It is easy to imagine that technoscape could not be entirely dismissed as a nuisance, especially since the paper and pulp industry has been a powerful driver of Fuji City's economy since the modern era. It has brought prosperity and employment opportunities to the people and significantly contributed to the development of infrastructure such as railways, roads, and ports. How, then, has Fuji City's technoscape of Mount Fuji been perceived? In this chapter, we aim to clarify the evolution of this landscape's interpretation—as a symbol of local identity or even as a form of cultural heritage—by examining past administrative landscape policies and events held by companies and private organizations.

Negative Interpretations Until the 1990s: The "Zero Smokestack Strategy" and the Technoscape as a Target for "Improvement"

It became clear that local perceptions of the technoscape were quite negative until recent years. Particularly in the 1990s, as social interest in landscapes grew, the city took measures such as having drawings painted on the surfaces of paper mill smokestacks, which were seen as significantly damaging the existing view. Furthermore, initiatives aimed at erasing or mitigating the industrial landscape continued, including the "Zero Smokestack Strategy" (2002-2007), which used subsidies from the prefecture and city to remove unnecessary smokestacks.

However, a contrasting movement can also be observed. Around 1994, Fuji Municipal Government began exploring the idea of "community building by leveraging smokestacks" with a "reversal of thinking." The city started painting the smokestacks in bright colors and exploring a new identity as a "Factory Park City" by opening factories as museums, among other measures. In a sense, this could be seen as a compromise that abandoned the goal of completely erasing the smokestack landscape.

The Technoscape in the "Mt. Fuji 100 Landscapes Photo Contest"

In constrast, it became apparent that a much more positive perspective on the technoscape began to emerge around 2002. Fuji City held a public photo contest titled "Mt. Fuji 100 Landscapes" (likely inspired by Katsushika Hokusai's "Thirty-six Views of Mount Fuji"). A piece titled "Mount Fuji hazy with factory smoke" was selected as a winner. Subsequently, since 2006, the "Mt. Fuji 100 Landscapes Photo Contest" has been held annually by the Fuji Chamber of Commerce and Industry, and we have confirmed that works featuring the technoscape frequently appear in it.

By calculating the percentage of winning entries featuring the technoscape every five years, it was found that they consistently appeared at a rate of approximately 6-8% annually. Specifically, Night Technoscape accounted for 1-3% and Day Technoscape for 4-7% (Figure 5 (L)). A closer look reveals that the proportion of Night Technoscape images has increased since around 2013, suggesting a likely influence from the promotional efforts of the private group "Fuji Kojo Yakei Club" (Fuji Factory Night View Club), which will be discussed later.

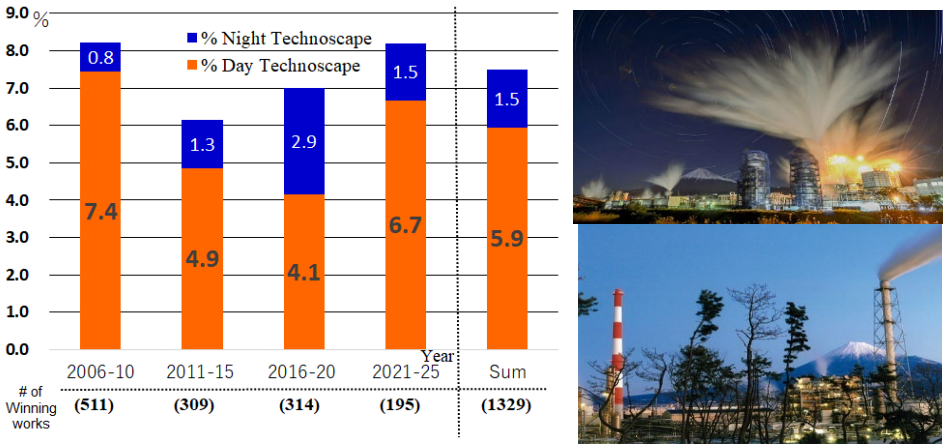

Figure 5. Transition of percentage (L) and examples of technoscape photos that won the Mt. Fuji 100 Landscape Photo Contest(R) https://www.fujisan-kkb.jp/gallery/

Industrial Tourism and Night Technoscape Tours

In 2011, the "Industrial Tourism Workshop in Shizuoka" was held by the Shizuoka Prefectural Government and the private organization "Japan Tourism Association." Along with factory tours, a special event was held to view the nightscape of the industrial zone from the aforementioned Gakunan Railways. This sparked interest in the night technoscape along the railway line.

In 2013, a photo exhibition with the night technoscape as its theme was held. The following year, in 2014, the "Mt. Fuji City Promotion Office" was established within the Fuji Municipal Government to promote night technoscape tourism. Following this, various tourism initiatives were launched, including the start of night technoscape tours by the Fuji Chamber of Commerce and Industry in 2014 and the launch of a night technoscape promotion truck by Fuji Municipal Government in 2016. In 2015, the Fuji Chamber of Commerce and Industry created and published the "Fuji Night Technoscape MAP." The Gakunan Railway continues to be used on these tours as an ideal viewpoint for observing the night technoscape (Figure 6).

In 2012, a local photography enthusiast group called the "Fuji Night Technoscape Club" was formed, and since then, they have continuously published excellent works on social media. Their activities were valuable because they discovered the beauty of Fuji City's night technoscape and acted as a driving force in popularizing it among the public. Indeed, members of this club were involved in the creation of the Night Technoscape MAP and the planning of the Night Technoscape tours mentioned above, making them true pioneers in this field.

Figure 6. Night Technoscape Tour utilizing the Gakunan Railway (Photo by Author)

Community Events by the Paper and Pulp Industry

Beginning in 2009, the local paper company Corelex Shin-ei has held the "Fureai Kami Matsuri" (Paper Friendship Festival). This event, which aims to deepen ties between the company and local residents while also raising awareness about environmental issues and recycling, has been a great success every year. It features activities such as a toilet paper stacking competition (where a "Mount Fuji" made of toilet paper is constructed), children's attractions, and special sales on toilet paper. Paper is an extremely familiar product in daily life, but through such events, the paper and pulp industry itself has become an accessible presence for residents (Figure 7(L)).

Furthermore, since 2024, the Fuji Chamber of Commerce and Industry has been hosting an intriguing event called the "Chimney (Smokestack) Santa Christmas Festival." It's a Christmas festival that creatively reimagines the red and white stripes of the obstacle markings on tall chimneys—mandated by the Aviation Act—as the colors of Santa Claus. The event features various attractions, including a Christmas market, a kids' park, and illustration art (Figure 7(R)). This festival, which celebrates the image of the chimney, is an example of the attachment that exists between the technoscape and local

residents, and between companies and the community. It can be argued that events like this further deepen this local attachment.

Figure 7. Community Events Related to the Paper and Pulp Industry
(L) Fuji Paper Festival (2009-) (Photo by Author)
(R) Chimney (Smokestack) Santa Christmas Festival (2024-) https://entotsu-santa.jimdosite.com/

CONCLUSIONS

This study has clarified the following four points.

1) Development History of Paper & Pulp industry driven by Mt. Fuji's abundant Water resources

2) Negative Interpretation of Technoscape until the 1990s, and its reevaluation through civic engagement and media since 2000s

3) Cultural heritage recognition and tourism utilization of technoscape through photo contests, night technoscape tours, and local events

4) Technoscape as Fusion landscape of nature and industry, faith and culture, as a foundation of local identity

It should be noted that the perspective on the landscape, which places value on the beautiful form of Mount Fuji with the technoscape in the foreground—as pointed out in this study—may at first seem like a "novel view" generated in the modern era. However, this can be considered a continuation of the aesthetic proposed by Katsushika Hokusai 200 years ago, which we can call the "creation of new landscapes through the substitution of context."

In his "36 Views of Mt. Fuji," published around 1830, Katsushika Hokusai created new scenic value for Mount Fuji by changing (substituting) the "foreground," such as with high waves off the coast, the unfinished wooden frame of a cooper's barrel, or a waterwheel in a rural village. This was a point already made by landscape scholar Yoshio Nakamura.[20] Hokusai masterfully depicted 36 views of Mount Fuji by gathering a variety of "foregrounds" from the pre-modern era. In the modern era, the technoscape can be considered to serve this role of the foreground just as effectively. At the very least, the people of Fuji City have been quick to realize this potential, transforming it into artistic works and establishing it as a part of their regional identity. In this sense, the landscape of Mount Fuji

viewed through the technoscape can be called a modern version of the "36 Views of Mt. Fuji," and it represents an excellent continuation of Hokusai's aesthetic in the contemporary world.

Figure 8 Creation of New Landscape Value for Mount Fuji through the Substitution of Foreground Contexts
(L) Katsushika Hokusai, 36 Views of Mt. Fuji (c.1830)
(R) Contemporary Landscape of Mt. Fuji with technoscape (Photo by Author)

ACKNOWLEDGEMENT
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NOTES

[1.] The oldest existing anthology of Japanese poetry. *When I go out to the shore of Tago, I see it gleaming white.Snow is falling on the lofty peak of Fuji.*
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PROXIMITY, PERIPHERIES, AND PRESERVATION: NEGOTIATING THE URBAN FIELD OF HERITAGE

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INTRODUCTION

For heritage sites situated at the intersection of ongoing urban changes, preservation strategies frequently come into tension with the city's metabolic needs, its social transformations, economic growth, and urban planning policies. These conflicts are often framed through a visual logic, where disturbance is measured against a fixed aesthetic continuity. The question is no longer just whether a site is preserved, but what kind of visual narrative is being upheld and who defines the threshold of acceptable change in urban heritage sites.

The paper focuses on architectural approaches to heritage in urban sites in Belgium, specifically industrial heritage sites in Brussels and Ghent. Contemporary architects, landscape architects, and urban designers in Belgium exert a distinct influence on bridging the old and the new. They integrate nature, participatory initiatives, and public space into heritage work, making historic sites more relevant to the present and more connected to their surroundings. These approaches recognize the diverse values of heritage, through acknowledging the physical and spatial difficulties of making a past structure well adapted to present needs. The efforts of these preservation strategies show influence of different actors and stakeholders, attending to the voices of communities who enact the present memory of preserved history.

The Belgium case studies presented in the paper contribute to a more dynamic conception of heritage preservation in the urban environment: one where the peripheries of heritage sites are not zones of restriction but of potential expansion and engagement; where proximity between neighbourhoods and heritage sites generates unexpected dialogues; and where valuing the temporality and fluidity, rather than permanence of elements in urban preservation opens into dialogues around sustainability, use, and public participation.

CONSERVATION THEORIES AND ARCHITECTURAL PRESERVATION

In classical conservation theories, heritage is framed around historic and aesthetic values that are intrinsic to the heritage object of interest and therefore susceptible to distortion in restoration.[1] Viollet-le-Duc advanced preservation as a discipline requiring both scientific knowledge of building techniques and refined aesthetic judgment.[2] When the discrepancy of use between heritage buildings and new constructions widened in the 20th century under globalization forces and economic pressure, theorists like Lewis Mumford question the static view of monuments and reconsider the environment as responsive to the demands of the present, rather than being immobilized in a state of the past.[3]

Contemporary theories of conservation expanded the notion of heritage, of what to preserve and who to preserve them. Muñoz-Viñas emphasizes that conservation is not a neutral activity, and its decision-making process has been constructed by experts with their agendas and biases.[4] Acknowledging this subjectivity offers an opportunity to reframe heritage according to intersubjective criteria established by a broader public - those most directly affected by preservation.[5] Conservation theories shift to recognize the dynamic and continual process of preserving, situated increasingly in the complex and broadening social context and cultural sphere, rather than treating heritage as isolated artifacts.[6]

From the perspective of architects and architectural critics, some viewed it as an ideological opportunity to return to a declaration of valuing context and the local, as a means of elevating the cultural significance of its production. This is evident in Rem Koolhaas's lecture in 2009, "Preservation is overtaking us" in which he declares preservation as a "refuge" to escape from starchitecture.[7] Instead of producing new forms to generate meaning, which has been undermined by rapid obsolescence, architects could start to generate other forms of mediation in relation to preservation.[8] "Formless aesthetics", from electric light to multimedia devices, are design interventions to generate new layers of value and interests for heritage.[9] Moreover, concepts such as adaptive reuse, circular construction, and sustainable conservation have become central to driving architecture discourse. Under these social, cultural, and technological forces, preservation discourse enters more complex relationships enforced by the present, under the scrutiny of broader social factors.

URBAN HERITAGE: THE LIMITS OF THE CORE-PERIPHERY MODEL

In urban discourse, the relationship between a heritage site, granted special attention and protection, and its more heterogeneous surroundings is often framed through a core-periphery logic. Originating in socio-economic geography, Immanuel Wallerstein's World-Systems Theory (1974)[10] and John Friedmann's Core-Periphery Model (1966)[11] describe how dominant cores accumulate resources, capital, and symbolic authority, while peripheral zones are subordinated and instrumentalized. In heritage practice, this logic persists: it is common to position heritage sites as the core, their surroundings as periphery. The result is a spatial hierarchy in which meaning radiates outward from the core, and the periphery's value is defined primarily through its service to the core.

This rigid core-periphery distinction is evident in UNESCO's operational framing. Sites inscribed on the World Heritage List must demonstrate "Outstanding Universal Value" (OUV), qualities deemed of exceptional significance to all humanity.[12] Buffer Zones, established to safeguard these values, impose strict visual and planning controls. While intended to protect a global resource, they can also freeze urban conditions on the local level. The 2009 delisting of the Dresden Elbe Valley in Germany after the construction of the Waldschlösschen Bridge illustrates this tension. Despite the bridge's functional role in easing traffic congestion, it was judged visually disruptive to the continuity of the landscape.[13] Here, aesthetic harmony, as defined by distant authorities, outweighed local infrastructural needs.

The setup of boundaries and core-periphery raise important questions: does the public truly experience "visual harmony," or are these criteria products of centralized "truth enforcement"?[14] Heidegger's notion that infrastructure, like a bridge, can "gather" a place rather than divide it points to the limitations of purely visual preservation logics.[15]

Shifts in heritage discourse already suggest alternative models to the core-periphery binary. From the Venice Charter (1964), with its strict definition with authenticity, to the Nara Document on Authenticity (1994), which recognized cultural relativity and context-specific values, there has been a move toward flexibility within conservation authorities. Moreover, emerging ideas from critics and

theories have reframed heritage through a social lens. Rodney Harrison defines heritage as both tangible and intangible, entangled with language, memory, ritual, and use.[16] Laurajane Smith's critique of the "Authorized Heritage Discourse" foregrounds heritage as performative, created through acts of engagement rather than passively inherited.[17]

Binary thinking of center versus periphery, monument versus everyday, and continuity and change can limit the ways we understand and work with heritage in cities. It positions the core as self-contained, its authenticity threatened by encroaching surroundings, rather than seeing it as contingent upon, and co-constituted with, its urban context. Inverting this relationship, or softening the boundary between core and periphery, allows us to approach heritage as embedded, dynamic, and responsive to multiple narratives. These perspectives open the peripheries of urban heritage sites to reinterpretation-not as static buffers or zones of control, but as evolving urban tissues.

BELGIUM: CONCERTED EFFORTS IN PRESERVATION

In Belgium, the transformation of the past and the reuse of materials have been central not only to the work of scholars and architects, but also to a wide range of institutions, both public and private. Sites of heritage values, from industrial complexes and monumental structures to smaller-scale historic buildings, are treated as valuable resources.

The Bouwmeester Maître Architecte (BMA), the government architect of the Brussels-Capital Region, organizes competitions and distributes grants that directly address topics of reuse.[18] Pioneer companies in reclaimed building materials, such as Rotor DC and BC Materials, focus on circularity and logistical implementation. The Flanders Heritage Agency develops legal frameworks and cultural records of heritage protection for governments, professionals, and citizens alike.

In 2023, the Flanders Architecture Institute and Hasselt University organized the international colloquium As Found: Experiments in Preservation, which highlighted distinct design methodologies for architectural preservation. These consistent efforts, grounded in both the limits and the possibilities of preservation, are shaped by the contributions of diverse social groups and individuals. Together, they sustain a vibrant, ongoing discussion around heritage in Belgium.

ADAPTIVE PERIPHERIES: COLLABORATIVE PRACTICES

Over the past twenty years, the Brussels Canal area, just fifteen-minutes walking distance away from the city center of Brussels, witnessed coordinated efforts to reinvent industrial heritage sites as living, productive infrastructures. Initiatives like the Canal Open Plan bring together urban.brussels (building permits), perspectives.brussels (planning agency), SAU-MSI (urban development corporation), and professionals including architects and the Bouwmeester Maître Architecte.[19] These institutional planning efforts with a strong research focus, coupled with growing private investments, have driven developments that integrate historical industrial historic zones into the everyday urban life.

A prominent example of this collaborative dynamic is the transformation of Tour & Taxis. Located at the northern edge of the canal zone, the site has evolved from derelict industrial relic to an ensemble of varied typologies — activity sheds, food halls, event venues, offices, and open green spaces. Built between 1904 and 1907 as a former freight and custom hub, Tour & Taxi reflected the Flemish Renaissance traditions, while exploiting new innovative use of cast-iron, reinforced concrete, steel, and glass.[20] Falling into disuse by the 1980s, its future remained uncertain for decades.

In 2014, developer Nextensa initiated a series of interventions. Of these interventions, Gare Maritime received international attention. Once Europe's largest freight station, the building was transformed by Neutelings-Riedijk Architects into what they describe as "a city where it never rains." The project preserves the iron-and-glass industrial structure and its generous feelings of light and space, inserting twelve reversible cross-laminated timber (CLT) pavilions to house mixed-use programs, such as

offices, retail, a food hall, and events spaces.[21] These were arranged along a linear "boulevard" lined with gardens. As the largest CLT project in Europe, Gare Maritime achieves energy neutrality through roof solar arrays (17,000 m²), geothermal heating, rainwater recycling, and smart ventilation.[22] It earned high acclaim, including the European Heritage Awards and nominations for the EU Mies Award.

The adaptive reuse of Gare Maritime embodies a periphery reimagined. On-site observations reveal how its connection to the Quai des Brumes-Nevelkade playground brings families and visitors in and out of the building, softening the threshold between monumental interior and public open space. The halls no longer function as static monuments but as frameworks for public life, accommodating greenery, food, and events that invite active participation. Notably, everyday use does not occupy the entirety of the vast hall evenly. Activity is most vibrant at the interface with the park, where kiosks, sound, and play concentrate. These "sets" of activities demonstrate how daily rhythms reshape heritage meaning.

Adjacent to Gare Maritime is the Tour & Taxis Park. Bureau Bas Smets employs ideas of living systems and microclimatic interventions to create local ecologies that shape human interactions with industrial heritage. Their vision for the new 12-hectare park is to connect it to the Brussel's hydrography system of tributaries, in which rainwater is collected and drained to the river Senne.[23] The preexisting industrial ground, layered with impermeable gravel, was deconstructed and filtered into rough gravel, fine sand, and topsoil.[24] These materials were reused on-site to sculpt slopes and infiltration basins, eliminating the need for imported soil. Over 3,000 pioneer trees and 300 slower-growing species were planted, both to create shade and to gradually improve soil health.[25] This integration of ecological processes into landscapes of a heritage industrial site gives the site contextual capacity to serve as a climate-responsive, resource-conscious public space.

Other projects in the canal zone reinforce the role of heritage as an active, interconnected network. COOP in Anderlecht blends heritage reuse with social programming. The forthcoming Kanal-Centre Pompidou envisions the adaptive reuse of a former Citroën garage into a cultural hub. In the coming years, more interventions are transforming the industrial heritage to catalyze broader urban activities.

Along the Brussels Canal, the traditional core-periphery divide gives way to a vision of industrial heritage connected by arrays of urban and natural relations. This aligns with Salvador Muñoz-Viñas's concept of "sustainable conservation", treating heritage as cultural capital shaped through dialogue among public, officials, and diverse actors.[26] Heritage site is situated as in an extended sphere, ecologically, socially, and spatially embedded in the urban fabric.

DISSONANT PROXIMITY: SHARING AND INHABITING

Preservation cannot come from a purely technical standpoint, nor does a preserved site need to conform to a perceived ideal of perfection. Material contrasts between old and new, the interplay between enclosed spaces and those exposed to the wear of use and nature, can generate a productive tension in proximity that reanimates heritage. Ghent offers numerous examples of this coexistence, where historic structures and contemporary interventions overlap, sometimes ambiguously. Certain sites oscillate between being valued as heritage and being seen as derelict spaces in need of repair. These projects reveal how incomplete or "as found" conditions can become a source of meaning. Abandoned factories become urban voids that invite reinterpretation from the perspectives of those directly affected by preservation decisions.

The Bijgaardehof cohousing project occupies the former brownfield of the Malmar Factory. One of the largest cohousing developments in Flanders, the project integrates environmental and social sustainability with adaptive reuse. Architecture firm &bogdan led a thirteen-year co-creation process involving three cohousing groups, aligning architectural strategies with user needs.[27] The 59 housing

units are accompanied by a neighborhood health center and a network of indoor and outdoor communal spaces. Circular construction principles were central: bricks from the demolished factory were cleaned and reused; tiles from the old structure found new life in communal kitchens and play areas.[28] Within the roofless remains of the factory, rain is allowed to fall freely. Part of the factory structure is left for the forces of nature. Brownfield remediation has turned the ground into a permeable open space that blends with an adjacent park. Another section of the structure is used for urban agriculture. The project demonstrates how urban densification can reinforce a site's identity by maintaining active ties to its industrial past and becoming a productive site for present needs.

In the city's southwest, the former De Porre textile factory abandoned in the 1980s has been transformed by Vandriessche Architecten into a public park for Sogent, the urban development agency of Ghent. Preservation takes the form of selective retention and reinterpretation: fragments of walls and structures remain as porous thresholds for exploration and playground. The factory's cooling towers have been kept as landmarks. The preserved steam turbine, enclosed in a glass pavilion, now functions as a small-scale museum, surrounded by a shallow pond where children play. The approach has been described as "sprezzatura," or studied chaos.[29] Permeation, porosity, and flexibility offered for an urban void allow discovery and spontaneous meeting. The most monumental section of the concrete factory structures has been left to nature, its surfaces overtaken by vegetation, forming a dramatic backdrop to everyday community life.

These projects show attitudes of preservation beyond a kind of fixation of context, that resists rigid contextual replication or material exactitude. Preservation is treated as a negotiation in which architectural dissonance is embraced as part of the dialogue between past and present. The autonomy of the program starts to gain forces and vitality from within, giving the buildings in proximity to the heritage a character of its own. This layered context invites the public to look at heritage sites as a potential urban void that is capable of handling multiple meanings and recognitions. Industrial heritage can be read in more complex ways, responsive to both history and contemporary life.

PRESERVATION EXPERIMENTS IN CIRCULARITY

Behind the scenes of Belgium's architectural transformation are innovative design practices which actively reorganize preservation logistics. In Brussels, Rotor is a cooperative design practice pioneering projects that utilize reclaimed elements. Their spin-off, Rotor DC, serves as a deconstruction and materials reclamation hub. In the Recypark project, Rotor collaborated with 51N4E and successfully convinced the developer to purchase timber arches salvaged from a demolished equestrian center in Liège. In the Zinneke initiative, Rotor's expertise in audit and reuse inventory enabled partners, including architects, developers, and specialized contractors to formulate circular design strategies, with 12% of the applied materials by mass consisting of reused materials.[30] Rotor's logistical framework and supply-chain infrastructure support innovation and encourage discussions around construction and deconstruction. This behind-the-scenes expertise exemplifies new preservation thinking and foregrounds experimental approaches to circularity in heritage conservation.

CONCLUSION

This paper, grounded in the observations and research of Belgium reuse in recent decades, examines how collaborative efforts reshape the integration of industrial heritage into the contemporary urban setting. Rethinking the proximity of heritage, the blurred boundaries between center and periphery, and experiments in preservation are the major concerns framing this study. The Belgium case studies point toward a more nuanced understanding of heritage in the city. Heritage sites become spaces for extension and interaction rather than restriction. Adjacency between historic industrial sites and their

surrounding neighborhoods sparks new, often unforeseen forms of exchange. The shifting and temporary qualities of urban fabric invite deeper conversations about sustainability, use, and shared authorship in preservation.

In Adaptive Peripheries, the transformation of Tour & Taxis and Gare Maritime illustrates how enclosed heritage structures can be ecologically and socially re-anchored through spatial connections with its surrounding context. The work of Bureau Bas Smets in the adjacent park extends this dialogue to living systems and material reuse on a territorial scale. In Ghent, Bijgaardehof Cohousing and De Porre Transformation frame heritage as an open negotiation, where “as found” conditions and selective remediation encourage both designers and residents to imagine the urban ground as flexible and collective. Preservation here is less about restoring a fixed image of perfection and more about enabling new uses within fragments and voids, allowing the dissonance of old and new to be part of the cultural reading. Finally, Rotor’s operations in projects like Recypark and Zinneke reveal the logistical infrastructures of circularity, from supply chains and material auditing to ongoing discussions between professionals and users to maximize the potential of experimental preservation.

Together, these projects dismantle the binary between core and periphery, monumental and every day. By attending to communities, temporality, and local conditions, preservation efforts in Belgium reveal that heritage values emerge through adaptive and collaborative practices, embedded in both everyday use and within a long-term social and environmental vision for the city.

NOTES

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ADAPTIVE REUSE FOR HISTORIC CHURCHES: MAPPING INTERNATIONAL PRACTICES FOR APPLICATION TO AOTEAROA NEW ZEALAND

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INTRODUCTION

The Canterbury earthquake sequence (2010-2011) in the city of Christchurch, New Zealand highlighted the vulnerabilities of historic unreinforced masonry (URM) churches arising from inherent construction characteristics such as large open spatial volumes with limited supporting structure, high mass walls, and irregular plan geometry. The national Building (Earthquake-prone Buildings) Amendment Act 2016 mandated urgent processes for seismic upgrade to be undertaken by building owners including church councils. However, declining church congregations along with the significant economic costs of the required seismic retrofit works pose major challenges for the future of these buildings and sites. The 2023 census revealed 51.6 % of New Zealand's population identified as having no religion, an increase from 48.2% (2018) and 41.9% (2013).[1] The 2018 census demonstrated the highest reported religious affiliations were: Anglican (314,913 people), Christian nfd (Christian but with no denomination specified) (307,926 people), Roman Catholic (295,743 people), and Presbyterian (221,199 people), while the 2023 data revealed a 4.2% decline in the Christian population since 2018.[2] Māori are well-represented in contemporary faith-based communities, strengthened by long traditions of spirituality.[3] Interestingly, the Faith and Belief Study Te Patapātai Whakapono revealed that 72% of respondents reported that churches are highly or somewhat valued for providing disaster relief and 71% for providing a place for community.[4]

We employ a literature review using a systematic approach to investigate the scope of international discourse concerning adaptive reuse of underused historic churches to identify associated impacts on cultural heritage values, cost implications, and emerging intersections with regenerative design thinking strategies. James Douglas describes building adaptation as “any work to a building over and above maintenance to change its capacity, function or performance (i.e. any intervention to adjust, reuse or upgrade a building to suit new conditions).”[5] The ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value 2010 is the benchmark for heritage conservation practice and processes in New Zealand and addresses the concept of adaptive reuse through ‘Article 21. Adaptation’ where a minimal degree of change is recommended, together with reversibility and compatibility.[6] There is growing discourse regarding the links between building adaptation and regenerative design, as the reuse of existing buildings offers many environmental benefits.[7]

Regenerative design is defined as “approaches that support the co-evolution of human and natural systems [...] It is not the building that is ‘regenerated’ […] but by the ways that the act of building can be a catalyst for positive change within the unique ‘place’”.[8] Scholar Liliane Wong also supports these views and considers the place of adaptive reuse against the backdrop of the climate crisis.[9] Through this study, we aim to establish guiding principles based on international precedent for consideration with contextual drivers, in pursuing the opportunities offered by adaptive reuse for historic church properties.

Figure 10. Reuse of Carmo Convent ruins as the Carmo Archaeological Museum and public space following the 1755 Lisbon earthquake (Vallis, 2022)

METHODS

We conducted a literature review using a systematic approach to assess the state of the art in adaptive reuse practices for historic churches, with reference to the methodology outlined by Snyder.[10] The review results are organized thematically to inform core factors for adaptive reuse of historic churches, to inform further investigation and application in Aotearoa New Zealand.

Search Strategy

Search strings were developed around three themes informed by the research questions: (i) adaptive reuse and related terms (as defined by Douglas and the ICOMOS New Zealand Charter), (ii) historic or heritage churches, and (iii) economic cost. Searches were performed in April–May 2025 with no restrictions on publication date or geographic scope. Two databases, Scopus (Advanced Search) and Google Scholar were queried using the search string:

("adaptive reuse" OR "adaptive re-use" OR "building adaptation") ("historic church" OR "heritage church") (cost OR costs OR "economic feasibility" OR "financial viability" OR "cost-benefit" OR "capital investment")

Eligibility Criteria and Screening

The searches were conducted between April – May 2025 and did not impose any restrictions of date range or geographic scope of the search results. Records were included if they discussed adaptive reuse of historic churches and addressed economic or cost-related considerations. Both academic and grey literature were considered. Publications not in English or lacking full text were excluded. Screening was conducted in two stages: (1) title, abstract, and keyword review; (2) full-text assessment for relevance.

Search Results and Selection

The searches returned 215 records (192 from Google Scholar, 23 from Scopus). After removing 13 duplicates, 202 records remained.

RESULTS

Following title, abstract, and keyword screening, 53 publications were included for in-depth review. These comprised: 17 journal articles, 6 conference outputs, 15 master's degree outputs (13 thesis/dissertation, 2 Master's degree reports), 8 doctoral theses/dissertations, 1 unspecified dissertation, 3 books, 2 book chapters, and 1 academic report. The initial scoping also revealed that whereas some search results make reference to sustainability dimensions of adaptive reuse, the scoping searches revealed virtually no reference to the intersections between adaptive reuse of historic churches and regenerative design strategies, highlighting potential for further studies. We find there is a growing discourse on the adaptive reuse of historic churches, as is evident from an increase in the number of academic publications and grey literature from 2015 to the present time, predominantly driven by debate in the United Kingdom, North America, and Canada (Table 1).

Reference	Date	Location	Publication Type
Miller, M	2025	Scotland	Journal Article
Lindblad, H		Sweden	
Shipman, C., & Siemiatycki, M.	2024	Canada	Journal Article
Ellis, J.R. & Marcheskie, R., L.		U.S.	
Zhou, S.		Canada	Dissertation (Doctoral)
Walter, N.		U.K.	Book Chapter
Liddo, F.D., Morano, P., & Tajani, F.	2023	Italy	Journal Article
Walter, N.		U.K.	
Volzone, R., Fontes, J.L., & Ruivo, J.		-	Book
Webster, M.E.		U.S.	Dissertation (Doctoral)
Hassan, M.		-	Book Chapter
Loren-Méndez, M.; Garcia-Cadasola, M., Djokić, V., Nikezić, A., Sakantamis, S., Philokyprou, M., Sorbo, E.		-	Book
Lynch, N. & LeDrew, R.	2022	Canada	Journal Article
Senior, T. J., Metcalfe, T., McClean, S., Wilson, A.; Bowen, S.; Ailes, M.; McGregor, E.		U.K.	
Romanova, Y.		Netherlands	Thesis (Master's)
Steele, M.G.,	2021	U.K.	Dissertation (Doctoral)
Nyström, M.		Sweden	Journal Article
Sedova, A.		-	Conference Paper
Sedova, A.			
Nyström, M.		Sweden	Thesis (Doctoral)
Ling, D.		Canada	Thesis (Master's)
Saxby, S.	2020	U.K.	Thesis (Doctoral)
Erdman S.		Canada	Report (Master's)
Baugh, S.		Canada	Thesis (Master's)
Krishna, A., & Hall, E.		U.S.	Journal Article
Hefnawy, S.A. E.F.S		-	
Martins, A.M.T; Cano, M.T.P; Adell,E.M.		Portugal	Conference Paper
Martone, A.	2017	European Union	Report
Kelly, K.L.	2016	U.S.	Dissertation (unspecified)
Lynch, N.		Canada	Journal Article
Oluwafemi, A.K.	2015	U.K.	Journal Article
Phelps, J.R.	2014	U.S.	Journal Article
Amayu, E.		Canada	Report (Master's)
Neilson, M.	2013	Canada	Thesis (Master's)
Lyons, L.		U.S.	
Mirza-Avakyan, G.		U.S.	
Rahbarianyazd, R., Hourakhsh Ahmad, N., Doratli, N.		North Cyprus	Conference Paper
Makrodimitri,M.; Campbell, J.		U.K.	
Larkham, P.J. & Nasr, J.E.	2012	U.K.	Journal Article
Lenz, S.C.		U.S.	Thesis (Master's)
Deathridge, K.			Dissertation (Doctoral)
Mileo, F			Thesis (Master's)
DiBello, T.S.	2011	U.S.	Thesis (Master's)
Nagel, R.M.		U.S	
Choi, E.	2010	U.S.	Journal Article
Choi, E.		U.S.	Dissertation (Doctoral)
Hunter, S.S.		U.S.	Thesis (Master's)
Mørk, M.I.	2008	Norway	Conference Paper
Ahn, Y.K.	2009	U.S.	Dissertation (Doctoral)
Douglas, J.	2006	-	Book
Kiley, C.J.	2004	U.S.	Thesis (Master's)
Maxson, C.	2003	U.S.	Journal Article
Hessey, M.R.	1996	U.K.	Dissertation (Master's)

Table 5. Summary of Literature Search Results

Adaptive reuse of churches is not a new concept and can be traced to the post-war era, and has subsequently entailed the interaction of contextual motivations, benefits, risks, and financial incentives (Table 2). A dominant theme evident across the literature search results are the entwined roles of stakeholders in the decision-making process for church adaptive reuse. While the term ‘stakeholder’ is rarely defined, the discourse makes references to five core groups: church governing bodies and congregations, local and central government, public community, heritage professionals, and potential property developers (Table 2).

Literature Themes	Church Governing Bodies (property owners); Congregations	Local and Central Government	Public Community	Heritage Professionals	Potential Developers
Motivations, Historical Narratives and Emergence of Contemporary Practices	Institutional reforms Decreasing clergy and congregations Insufficient revenue and increasing maintenance costs	Support community cohesion	Evolving religious affiliation of local populations Collective memory and associations with local churches Support community cohesion	Support community cohesion	Unique development opportunities
Benefits	Opportunity for revitalising underused assets and revenue gain; Provide contemporary uses in keeping with religious social missions	Utilise widespread underused properties and sites within a given territorial jurisdiction; Support community cohesion	Gaining needed community amenities; Enhance community resilience through collective decision-making	Raise awareness of community heritage; Support community cohesion	Provide a distinctive marketable product, targeting a specific consumer category
Challenges and Risks	Potential loss of traditional worship spaces Privatization of religious heritage properties	Zoning changes or re-zoning needed due to new or mixed uses Potential inadequate public funding mechanisms	Potential gentrification Potential conflicts arising from collective decision-making	Multiple stakeholder priorities Restriction due to existing heritage designations	Multiple stakeholder priorities Restriction due to existing heritage designations Extent of financial returns
Financial Incentives	Opportunity for public-private partnership schemes Provision of public subsidies and tax abatement	Provision of public subsidies and tax abatement Potential increased property values for surrounding properties	Opportunity for public-private partnership schemes Philanthropic foundations; crowd-sourcing funding Collective Buy-Out Potential increased property values for surrounding properties due to enhanced amenity	-	Opportunity for public-private partnership schemes Provision of public subsidies and tax abatement
Regenerative Design Strategies and Recommended Decision-Making Criteria	Contribute to existing societal and environmental crisis needs through adaptive reuse as a revitalisation strategy Placemaking strategies	Utilise existing resources	Utilise existing resources Co-Design “Serendipitous conservation”	Contribute to existing societal and environmental crisis needs through adaptive reuse as a revitalisation strategy Placemaking strategies	Contribute to existing societal and environmental crisis needs through adaptive reuse as a revitalisation strategy

Table 6. Interaction of contextual motivations, benefits, risks, and financial incentives for stakeholders

Motivations, Historical Narratives, and Emergence of Contemporary Practices

Global traditions of church adaptive reuse are characterised by historic events, institutional transformation, suburbanization, and a general trend towards secularization that is akin to the New Zealand context.[11] Saxby investigates closures by the Church of England from 1830 and the rise of the 'redundant church' during the latter twentieth century that contributed to the 'conserve and convert' paradigm.[12] Urban public safety emerged as a core concern, in addition to the historic, symbolic, and spiritual roles played by church buildings following World War II where extensive damage occurred.[13] Lindblad reports that while the trend towards secularisation is observed in the Nordic region and other European countries, churches in Sweden receives legislative protection and State-funded support for heritage conservation.[14] Across the Atlantic, Mirza-Avakyan reflects on the falling rates of church attendance during twentieth century, leading to church and parish school closures or mergers, in combination with a shortage of active priests.[15]

Public perception of the history associated with older buildings and proposed reuse schemes are an essential considerations in determining the scope of adaptation.[16] For example, Webster considers the underacknowledged role of Black communities in leading conservation efforts, while Lyons discusses allocation of new use to a significant historic church informed by association with the Civil Rights Movement.[17] Krishna and Hall also draw attention to the practice of faith-to-faith conversion of abandoned churches, prompted by changing religious affiliations and increased suburbanization.[18] Hence the scope of adaptation strategies ranging from building conversion through to inclusion of additional uses is apparent and presents varied options for New Zealand's underused churches. Erdman offers insights from Canada, specifically redevelopment of religious sites to build housing and community facilities, while continuing to host religious worship.[19] While churches and communities in rural settings also confront a decline in active clergy members and congregation numbers, Neilson highlights the popularity of adaptive reuse, demolition and vacancy, potentially due to lesser political force relating to zoning or planning changes.[20] Walter proposes a 'narrative' approach given that close relationships between people and place require acceptance of potential changes that occur with the passing of time, informing a "living heritage".[21]

Benefits, Challenges and Risks, and Policy Implications

Many churches already provide social services such as food banks, art programs, youth and elderly citizen initiatives. Scholars reflect on these roles to evaluate benefits and challenges of adaptive reuse for contemporary commercial, cultural, and residential uses, noting a lacking discourse on the topic.[22] Mixed-use church redevelopment through privatization and subsequent conversion to upscale loft apartments proves a popular strategy in Canadian cities to address the housing crisis.[23] Greater awareness of the possibilities offered by creative mixed-use building models is required, in addition to assessment of redevelopment impacts to avoid gentrification and displacement of smaller-scale public amenities. Shipman and Siemiatycki and Lynch and LeDrew consider creative-mixed use redevelopment of churches to integrate social services and public spaces, recognizing that cross-sectoral partnerships with relevant social organisations can offer opportunities for cohesion, while varied funding sources are more accessible to support redevelopment costs.[24] Acknowledging that not every church can be adaptively reused due to insufficient market demand, Kelly also emphasizes the close relationships required between developers and communities for successful outcomes.[25] Using the example of a church-museum partnership, Nyström calls for careful evaluation of tourism demand with community needs, and prioritization of non-state heritage actor insights.[26] Considering contextual planning and regulatory barriers such as potential misalignment between zoning bylaws is needed to inform adaptive reuse schemes, discussed by Dibello, Amayu, and Maxson.[27]

Financial Incentives

Financial incentives for adaptive reuse require assessing structural condition of the building, legislative requirements, extent of developable land, and alignment in the vision of stakeholders.[28] Deconsecrated buildings may take on secular purposes, however private investors are commonly apprehensive due to anticipated challenges arising from heritage designation.[29] Moreover, Martone points out that contemporary social reuse schemes that satisfy their own economic self-sustainability are commonly unable to also generate the substantial financial investment needed for remediating the church building.[30] In contrast, Choi references the provision of public subsidies including brownfield remediation grants and tax abatement, noting increased local property prices following an adaptive reuse project.[31] While historic rehabilitation tax credits were established during the 1970s, Phelps acknowledges challenges in access due to non-profit status and lacking income tax exposure of church institutions.[32] Nevertheless, collective decision-making about the use of resources is empowered by legal tools such as the Community Right to Buy, and can enhance community resilience.[33] Public private partnerships (PPP) can emerge from potential multiple uses and stakeholders required for raising adequate project funds, such as philanthropic grants and community crowdsourcing. To inform these decisions, Di Liddo et al. offers a logic-operative methodology where new building uses are determined based on market demand and supply.[34] More research is required to examine externalities arising from adaptive reuse schemes, in relation to boosting local economies and engendering a sense of community.[35]

Regenerative Design Strategies and Recommended Decision-Making Criteria

Acknowledging Elefante's view that "the greenest building is…one that is already built", perceiving cultural heritage as 'living' can serve as a catalyst for social, economic, and cultural sustainability globally and within the New Zealand national context.[36] Multiple studies emphasize the synergies that exist between adaptive reuse schemes and broader goals of sustainable conservation, with reference to economic, social, environmental, and cultural pillars.[37] Postsecular scholarship represents an emerging sociospatial convergence of religion and secularism in cities, resulting sharing of spaces by religious and non-religious groups and growing roles of faith-based organisations in neighborhood regeneration schemes.[38] Functional conversion requires insertion of contemporary amenities such as heating or ventilation technologies within the historic building fabric that can prove challenging.[39] Martone stresses the importance of the value proposition informing business models and sustainability offerings, while Hassan recommends reuse strategies are founded on minimal intervention and reversibility of additions where possible.[40] Digitalisation proves valuable resources as Senior et al. present 'slow technology' co-design, placemaking strategies for underutilized rural churches.[41] Methodologies for decision-making relating are based on evaluating significant heritage characteristics and values-based assessment for recommending appropriate reuse.[42] Nevertheless, it is important to also acknowledge 'serendipitous conservation' whereby communities purchase and adapt vacant churches albeit without conservation goals.

DISCUSSION

During the nineteenth century, New Zealand's churches fulfilled the religious and social needs of European colonial communities, and the concentration of Gothic Revival timber churches are acknowledged for the collective cultural heritage value.[43] The Canterbury earthquake sequence proved a recent, albeit not singular risk to historic churches, forming part of a long history of natural hazards.[44] This study extends previous projects conducted by the researchers, focused on Anglican Churches in the Waikato and Taranaki regions.[45] Research by Marotta et al. generated a national inventory of religious buildings including approximately 297 URM churches.[46] Preceding studies

investigated adaptive reuse for underused historic buildings across select provincial centres in Aotearoa New Zealand but there is scarce investigation of broad contextual benefits and challenges for historic churches despite their proliferation across the country.[47] While the sale of churches has grown due to decreasing congregations and increasing maintenance costs, there is a lack of discourse examining the possibilities offered by adaptive reuse schemes for historic church properties facing economic challenges.[48]

Key challenges concerning the future of historic churches in New Zealand are costly seismic remediation works, increased secularization, and rising maintenance expenses. The findings outlined in this paper highlight that adaptive reuse can offer various avenues for accessing public and private resources to remediate vulnerable churches. Adaptive reuse for New Zealand's historic churches would involve a similar range of stakeholders referenced in this paper and learnings from this study demanding further research in the national context include:

- Analysing postsecular opportunities arising from adaptive reuse of historic churches (e.g. role of faith-based organisations in urban regeneration schemes)
- Scoping and policy analysis of existing funding mechanisms and partnership opportunities (e.g. considering collective buyouts and other tangible positive externalities)
- Stakeholder perceptions of benefits, risks, costs (developers, communities, public authorities)

SUMMARY AND CONCLUSIONS

The Canterbury earthquake sequence (2010-2011) in Christchurch, New Zealand presented challenges for the owners of damaged historic church properties and communities with undamaged yet vulnerable and underused buildings. Mandated seismic strengthening costs, ongoing maintenance costs, and secularisation can leave church communities struggling to ensure continuity of use for often recognisable neighbourhood church landmarks. Given the lack of local discourse addressing these needs, we conducted a literature review to systematically map learnings and opportunities offered by international adaptive reuse schemes for historic churches. Key findings reveal a growing discourse on the adaptive reuse of historic churches, with an increase in the number of academic publications and grey literature from 2015 to 2025, predominantly deriving from studies based in the United Kingdom, North American, and Canadian contexts. While the earliest search result dates to 1996, discussions concerning adaptive reuse of churches arose during the decades following World War II and in response to institutional change.

Decision-making occurs within a common group of stakeholders and results from intersecting contextual motivations, benefits, risks, and financial incentives. Across these contexts, common benefits arising from the adaptive reuse of historic churches include the revitalization of underused assets and gaining much-needed community amenities that can support greater community cohesion. In contrast, common drawbacks include potential loss of traditional worship spaces and the privatization and gentrification of former communal spaces, while updated zoning regulations may be required for adaptive reuse schemes to occur. Taken together, these processes require support from multiple stakeholder groups ranging from church owners, local government, and potential developers for example, calling for collective decision-making strategies. While it is evident that targeted financial mechanisms such as public subsidies and tax abatement are required to fund adaptive reuse schemes, it is important to explore the full range of added value in addressing broader sustainability and environmental goals associated with reusing existing buildings, as an alternative to demolition and constructing new buildings.

A limitation of this study is that the database searches are restricted to indexed academic and grey literature that is accessible in English. Further review examining the history of building adaptation

and reuse is likely to reveal much longer and earlier cultural traditions. Expanding the study scope to include local community buildings such as Māori marae would be valuable in the Aotearoa New Zealand context to understand gaps in contemporary needs to inform church reuse. Evaluation of decision-making factors through case studies is also required to elucidate stakeholder roles. From this study, it is apparent that future adaptive reuse schemes for historic churches require close alignment across planning legislation and funding sources, driven by clear stakeholder vision.

NOTES

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MATERIALITY AND CULTURE OF A SACRED SPACE. THE CHURCH AND CONVENT OF SANTA MARIA CORTEORLANDINI IN HISTORICAL AND CONTEMPORARY PERSPECTIVES

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INTRODUCTION

The progressive decommissioning of ecclesiastical buildings has emerged as a significant phenomenon in recent years within the Italian context. The slow yet complex sociocultural transformations associated with secularisation[1] are increasingly translating into pressing architectural challenges, particularly concerning the understanding, conservation, and documentation of extensive ecclesiastical complexes that have been largely deprived of their communities.

Many of these buildings now approach a state of semi-abandonment, as the religious communities that historically inhabited and maintained them are diminishing due to the ageing of clerical or monastic personnel, without adequate generational renewal. This process often unfolds quietly, as the decline of ecclesiastical communities is paralleled by the gradual disappearance of the lay communities traditionally associated with these spaces. While these transformations may appear gradual from a social perspective, their architectural consequences are often abrupt and difficult to anticipate.

Numerous churches maintain a tangible and prominent role within their historic urban contexts,[2] owing to their scale, spatial organisation, and cultural-historical values deeply interwoven with those of the surrounding urban fabric. Although such values transcend purely liturgical functions, the loss of the communities historically responsible for their management constitutes a significant risk factor. In the absence of continuous monitoring of their conservation state, minor maintenance issues are more likely to escalate rapidly, leading to more severe deterioration.

The church and convent of Santa Maria Corteorlandini (Figure 1), located in the historic centre of Lucca, provide a paradigmatic example of the transformative dynamics and crises affecting religious heritage. For over a thousand years, the complex has actively contributed to the morphological and functional definition of its urban surroundings.[3] Its current condition, which can be characterised as near abandonment, has created a rupture with the surrounding context and presents conservation challenges related to both the rapid worsening of ordinary maintenance issues and more complex structural processes.

Figure 11. The Church and Convent of Santa Maria Corteorlandini (author, 2025).

Within this framework, the analysis of the Santa Maria Corteorlandini complex enables an exploration of the relationship between social transformation and architectural persistence, emphasising the central importance of historical and material knowledge in managing transitional processes affecting religious heritage.

Through this case study, the research outlines a methodology for investigating ecclesiastical assets during the decommissioning process. This methodology is based on an integrated approach that combines the reconstruction of the complex's architectural history with on-site diagnostic surveys. The analysis begins with a material-based assessment, namely the direct observation of constructional and technical features, and critically engages with documentary and archival sources. The objective is to provide a comprehensive and in-depth interpretation of the site, thereby establishing a solid foundation for the accurate assessment of its conservation condition.[4]

INSTITUTIONAL FRAMEWORK AND RESEARCH APPROACH

This research constitutes a segment of the author's doctoral programme at the Università Iuav di Venezia and has been undertaken through a collaborative effort involving both public and private sector actors. The doctoral project is co-funded by a private partner,[5] which provides concrete case studies, technical support, and opportunities for dialogue between academic research and professional practice. Within this framework, the Santa Maria Corteorlandini complex was selected as a case study due to an ongoing project involving YUPPIES Services,[6] which offers a valuable opportunity to investigate material aspects and on-site construction processes that are often difficult to access in the absence of direct engagement with active design projects.

The research also benefits from the collaboration of the *Soprintendenza ABAP for the provinces of Lucca and Massa Carrara,*[7] which is the promoter and responsible authority for the ongoing interventions on the complex. The property is publicly owned and managed by the *Fondo Edifici di Culto* (FEC).[8] This multilayered institutional framework constitutes a particularly valuable component of the research, serving as a virtuous example of interinstitutional cooperation and providing a concrete platform for the exchange of knowledge and best practices between the professional and academic spheres.

SANTA MARIA CORTEORLANDINI: CRITICAL READING OF HISTORICAL SOURCES

The earliest attestation of the church dates back to 1187, as recorded on an inscription within the building commemorating its reconstruction.[9] However, the presence of an earlier church is certain, likely dating to the eighth century and situated near the properties of the Rolandinghi family. In the twelfth century, this family concentrated their holdings in a specific area of the city known as *Curtis Rolandinga*, a term denoting the existence of a unified aristocratic building complex composed of multiple structures.[10]

Figure 12. Architectural elements dating back to the medieval period are visible on the southern façade and the apses of the lateral aisles (author, 2025).

Although some medieval features of the building remain visible, such as the stone portal with lions on top of columns on the southern front and the external configuration of the side-aisle apses (Figure 2), the most substantial historiographical elaboration concerning Santa Maria Corteorlandini focuses on the period following 1580. In that year, the church was designated as the principal seat of the Congregation of the Clerics Regular of the Mother of God, founded by Giovanni Leonardi in 1574.[11] The architectural transformations that the church underwent in the following centuries are closely connected to the historical events of the Congregation itself, which, through its narratives, progressively integrated these modifications into a coherent identity discourse aimed at establishing continuity between the evolution of the religious institution and the physical one of its principal place of worship.

The *Croniche* by Cesare Franciotti[12] vividly describe the political tensions and hostility of the Lucchese authorities during the early decades of the Congregation's existence, which led to Giovanni Leonardi's exile as early as 1584 for disturbing public order. At the same time, the Congregation was unable to acquire the lands adjacent to the church until the founder died in 1609, and in the years immediately following its settlement, was forced to construct the convent above the existing church structure.

In the same period, a general phase of renewal of the ecclesiastical building began, consistent with the new standards dictated by the Council of Trent.[13] This need was particularly pronounced within a community born from the spirit of the Counter-Reformation, whose founder, during his exile in Rome, developed strong ties with Philip Neri and papal circles, to the extent that Pope Clement VIII appointed him as apostolic visitor to several Benedictine abbeys with the task of reforming their practices.[14] However, due to ongoing tensions with the local authorities, the architectural transformations of Santa Maria Corteorlandini undertaken between the late sixteenth and early seventeenth centuries followed a narrative that balanced functional and practical needs with the spiritual aspiration to express architecturally the ecclesiastical renewal embodied by the Congregation.

Figure 13. View of the church's interior hall, showing the monolithic Carrara marble columns installed at the end of the 16th century (author, 2025).

The replacement of the church's internal pillars with new Carrara marble columns (Figure 3) exemplifies this approach.[15] An inscription[16] at the northern entrance of the church commemorates the sudden collapse of a pillar on Christmas night in the year 1600. This structural failure is plausible, considering the recent addition of an upper floor for the convent and the structural issues that continue to affect the building today, caused by the particular subsoil conditions of Lucca, where underground aquifers lead to intermittent subsidence and ground swelling.[17] Nevertheless, the symbolic value of the date and the decision to replace all the internal pillars, and not merely the damaged one, with high-quality, monolithic marble elements suggest an intention "to adorn and enlarge the church" that goes beyond mere structural consolidation.

This balance between functional and symbolic considerations is also evident in the construction of the new façade, despite the absence of definitive archival information. In 1606, while the replacement of the internal pillars was still underway, the Congregation resolved to extend the church by adding another bay and consequently demolishing the previous façade.[18] This intervention addressed the liturgical need to add a choir for the Congregation's clerics, aligned with the aims of the Counter-Reformation.[19] The elevated choir space at the counter-façade was already in use by 1609[20], and in a 1637 property survey,[21] the façade appears in its current configuration, clad in San Giuliano marble (Figure 4).

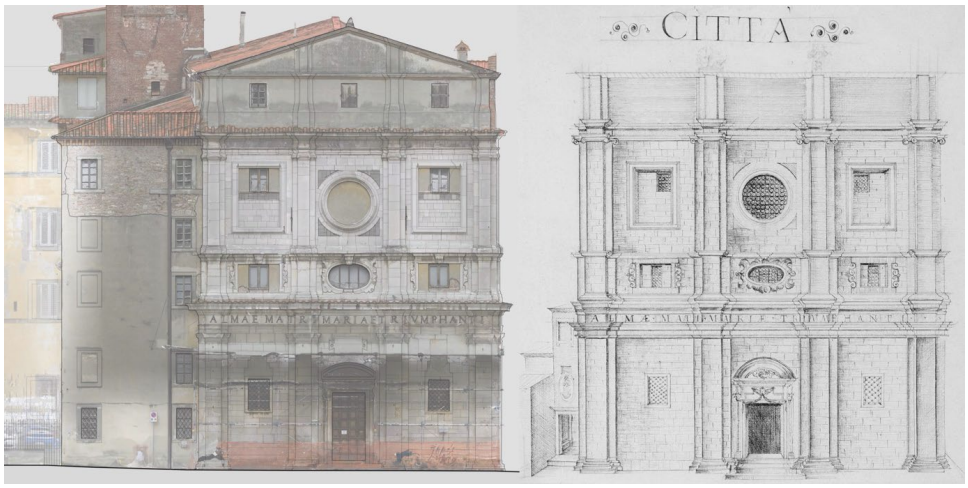

Figure 14. Comparison between the photogrammetric survey of the façade on the left (author, 2025) and the survey carried out in 1637 on the right (Paulo Natalini, Archivio di Stato di Lucca, Enti Religiosi Soppressi, 2980).

In both the replacement of the internal columns and the cladding of the façade, the use of marble functions as a symbolic assertion by the Congregation, not merely justifiable by structural or functional requirements, and represents a profound departure from the city's other religious buildings. During the seventeenth century, after the founder's death, the Congregation succeeded in acquiring the lands adjacent to the church, initiating the construction of a convent complex that gradually expanded to occupy the entire block.[22] A plan included in the 1637 property survey reveals the configuration of the convent at this stage, the result of successive interventions made in accordance with land availability and acquisitions. These included the construction of buildings serving the Congregation's expanding secular educational activities. The convent's layout was ultimately consolidated through a comprehensive reorganisation of the spaces according to a unified design, realised between 1682 and 1699,[23] resulting in the configuration of the complex that remains observable today.

METHODS AND DATA ACQUISITION

The clerics played an active role in translating the post-Tridentine renewal principles, which had animated the spirit of the Congregation since its foundation, into architectural form. By examining the literary sources they produced over the centuries to narrate their own history, it is possible to retrace the transformative phases of the building and associate them with their respective contemporary social contexts. Alongside this internal literary production, archival records provide direct evidence of construction activities, often personally supervised by the religious community. This is particularly evident in the reconstruction of the convent at the end of the seventeenth century, for which the accounting books preserved at the *Archivio di Stato* di Lucca document the progress of the works on a month-by-month basis between 1682 and 1699. Through the archives of *Soprintendenza*, it is also possible to reconstruct the chronology of twentieth-century restorations, including structural consolidation interventions carried out in the 1950s to address crack patterns similar to those observed today.[24] In many cases, however, it is not possible to reconstruct in detail the extent or modalities of these restoration works, due to the absence of a local community with direct historical memory.

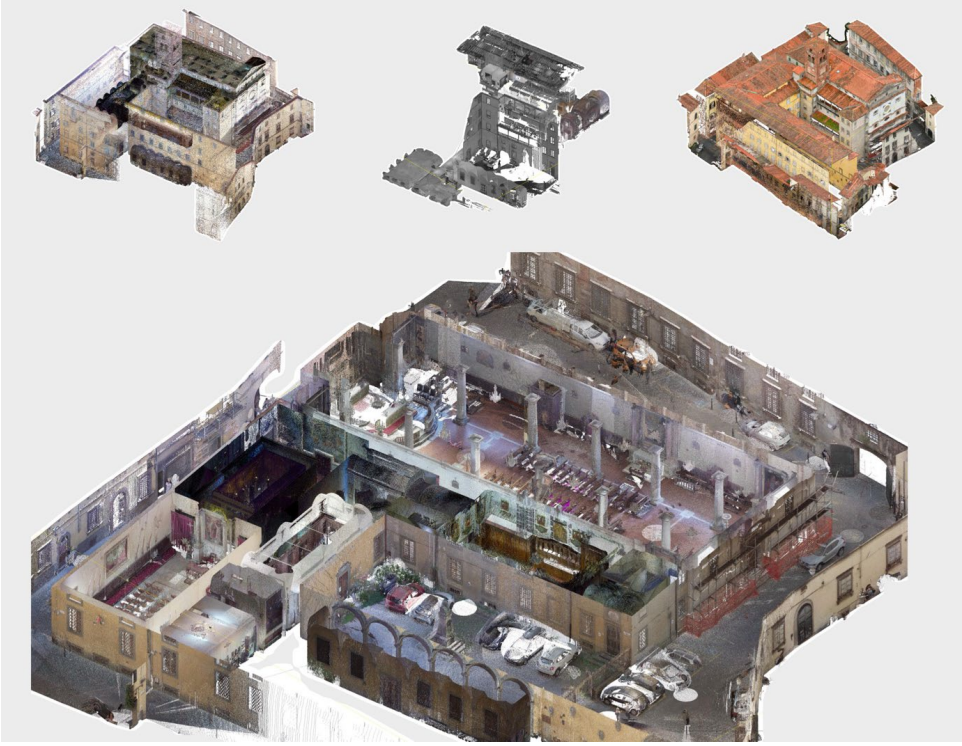

Figure 15. Point clouds derived from the geometric survey campaign. Above, from left to right: the point cloud obtained using TLS systems, the point cloud obtained using SLAM systems, and the point cloud produced through aerial photogrammetry. Below is a section of the ground floor of the overall point cloud (Yuppies Services and the author, 2024).

In parallel with the historical investigation, on-site survey campaigns were conducted to provide a comprehensive understanding of the building's current state of conservation. The results of these campaigns, directly compared with the archival research, enabled a material validation of the various construction phases.[25]

A comprehensive geometric survey formed the basis for structuring a framework that could be referenced in subsequent analyses. The data acquisition methodology integrated the creation of a unified topographic control network, within which laser scanning data were georeferenced (Figure 5). The scanning process employed both terrestrial laser scanners (TLS) for larger and more detailed spaces, such as the church nave, and mobile laser scanners (SLAM), which reduced acquisition times for smaller convent rooms and facilitated vertical connections between floors via staircases.[26] The exterior façades and specific interior spaces, including the choir vaults, were documented through photogrammetric surveys. When integrated with the laser point cloud, these provided enhanced surface materiality details and a detailed mapping of the existing crack patterns[27] (Figure 6).

Figure 16. Geometric and material restitution of the church's southern front, derived from the interpolation of data obtained through the processing of the laser-scanning and photogrammetric surveys (Yuppies Services and the author, 2024).

Subsequently, the geometric and material survey data were combined with the results of the historical investigation to guide further diagnostic and material analyses at specific, high-priority locations, thereby reducing the need for destructive testing to the minimum required for assessing the building's structural behaviour.[28] These investigations included wall stratigraphy tests to record masonry typologies and the bonding of load-bearing walls, mortar joint analysis, endoscopic inspections for assessing floor structural layers, and direct non-destructive sonic testing to estimate the quality and mechanical properties of the masonry. Finally, sonic tests were conducted on all existing tie rods within the church to assess their tensioning.

INTERPRETATION

The integration of data derived from experimental investigations with those obtained through the critical historical reconstruction of the building, within a model defined by the geometric survey, enabled the correlation of the current structural conditions with the seventeenth-century expansions. The church enlargement, carried out through the demolition of the façade and the addition of an extra bay, is not bonded to the pre-existing masonry, as confirmed by inspections conducted near the choir. This architectural element does not function as part of an integrated box-like structural system but exhibits its own independent behaviour, which, due to the presence of underground aquifers, results in periodic movements. Over time, these have caused the tilting of the internal columns of the added bay and the development of significant crack patterns in the frescoed choir vaults.

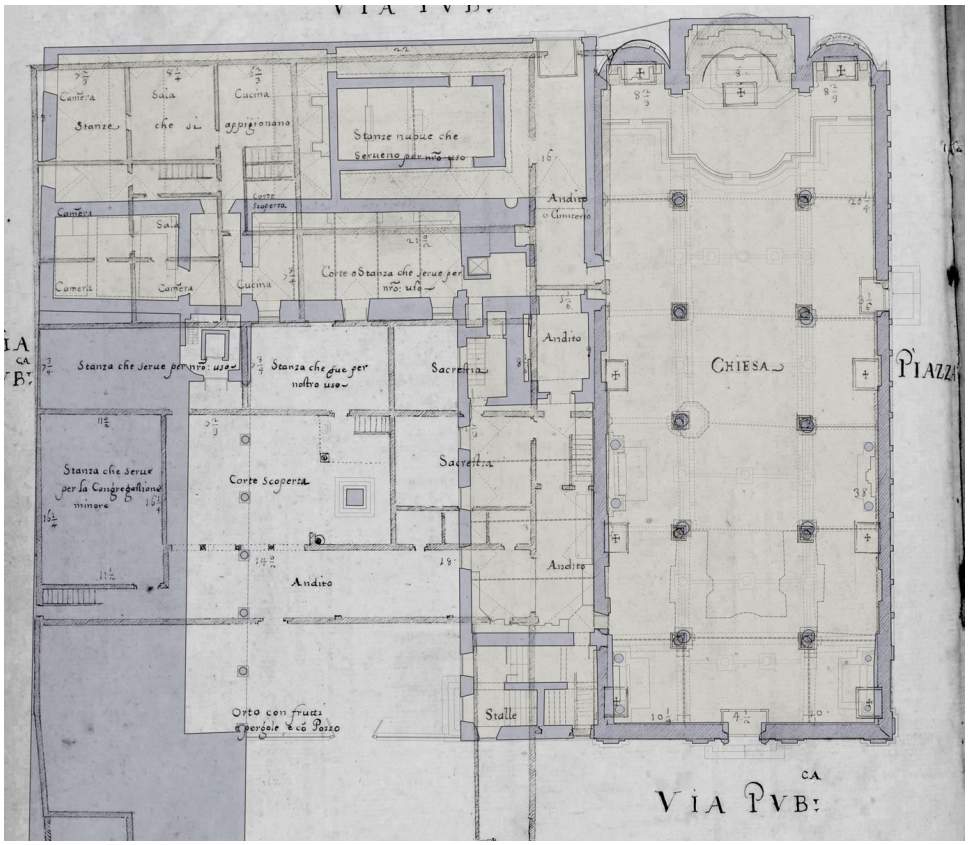

Figure 17. Overlay of the current geometric survey and the layout of the convent in 1637 (author, 2025).

Similarly, by comparing the current survey with both the tensioning of the tie-rods and the 1637 cadastral record, it is possible to observe that the portions of the complex most affected by divergent forces correspond to the subsidiary spaces added to the church during the late seventeenth-century works, featuring new foundations not based on pre-existing structures (Figure 7).

In parallel with the localised tests, extensive non-destructive investigations were conducted to characterise the overall behaviour of the architectural system. Direct ultrasonic testing was employed to estimate the mechanical quality and homogeneity of the main masonry walls. Additionally, the tensioning of all the metal tie rods within the building was verified through sonic tests, which aimed to assess the effectiveness of these structural safety elements. This latter analysis deepened the understanding of potential active structural mechanisms, revealing that the stress conditions are consistent with the historical construction logic, while also highlighting criticalities at the junctions between the volumes added during the seventeenth-century transformations.[29]

In this context, the constructive materiality investigated through the diagnostic techniques described is not only instrumental for assessing the conservation state but also represents, within the framework of this research, a key for interpreting the relationship between structure and meaning.[30] For example, the monolithic nature of the nave columns does not merely provide a technical solution aimed at increased stability but also constitutes a formal and symbolic choice, architecturally expressing an abstract idea of the sacred space's solidity and preciousness. Similarly, the juxtaposition of the marble façade with the church body can be interpreted as both a compositional outcome of the functional addition of the choir and a visual and identity statement, coherent with the Congregation's intent to represent its role through a contemporary monumental language.

The construction of the convent above the main liturgical hall has evident static implications on the underlying vaulted structure, but also reflects an anomalous architectural solution rooted in a strong tension between the ecclesiastical institution and the political administration of the city of Lucca between the sixteenth and seventeenth centuries. The complexity of this configuration, revealed through the integration of structural analysis and historical-critical interpretation, illustrates how architectural choices embodied meanings that were not exclusively functional but also expressive of the negotiation dynamics between spiritual and civil powers.

These elevated convent spaces, now in a state of semi-abandonment, highlight the contrast between the symbolic and decorative density of the liturgical hall and the fragility of the contiguous areas, which have become marginal with the progressive loss of their functions. This discontinuity is now increasingly evident in the contrast between the sacred space of the church and the disused upper spaces, which face growing deterioration due to the absence of regular maintenance (Figure 8).

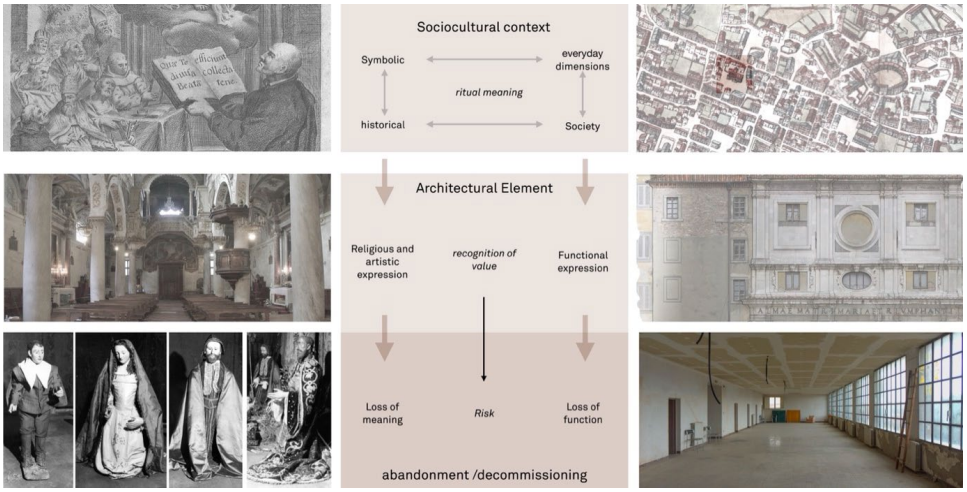

Figure 18. Summary diagram of the values and risks associated with the Church of Santa Maria Corteorlandini. Top row: on the left, a representation of Saint Giovanni Leonardi, and on the right, a detail of the map of the city of Lucca from Civitates Orbis Terrarum, in the view by Braun and Hogenberg, 1570–1588. Middle row: the interior columns and the façade, architectural elements in marble. Bottom row: the 17th-century Nativity scene still preserved inside the church, with valuable silk garments from the same period, and the currently disused space on the top floor of the convent.

CONCLUSION: TOWARDS A METHODOLOGICAL FRAMEWORK FOR ECCLESIASTICAL HERITAGE

The analysis undertaken has highlighted how the church and convent of Santa Maria Corteorlandini constitute a stratified architectural organism, the result of a historically rooted evolution, whose specificity makes any attempt to generalise conservation interventions unfeasible. As with many ecclesiastical buildings in the Italian context, the coexistence of successive construction phases and the introduction of heterogeneous materials—further complicated by the use of modern techniques such as reinforced concrete or steel in twentieth-century restoration interventions—creates a complex framework that requires case-specific considerations.[31]

Even within the densely populated urban contexts of Lucca, characterised by a conspicuous ecclesiastical heritage, typological differentiation prevents the formulation of uniform operational criteria. Nevertheless, the Santa Maria Corteorlandini case study demonstrates the potential for developing a transferable analytical and cognitive framework, grounded in the integration of geometric and material surveys, in situ diagnostic investigations, and the historical-critical

interpretation of archival sources. The aim is not to standardise conservation strategies but to outline a structured operational protocol for collecting, correlating, and interpreting historical, technical, and construction data. A holistic approach, based on multidisciplinary knowledge derived from different scientific contributions, is indispensable for addressing the conservation challenges of decommissioned ecclesiastical heritage.

In this particular category of heritage, the analysis cannot exclude a thorough recognition of the cultural dimension of the built environment, in its symbolic, functional, ritual, and artistic expressions[32] (Figure 8). Moreover, the architectural forms resulting from these processes exhibit such complexity that on-site investigations require specific, carefully calibrated decision-making processes, tools, and technologies.[33]

In the case study presented, the methodological approach adopted enabled the development of a scientific narrative of the architectural and structural evolution of the complex, supporting the ongoing design activities while simultaneously proposing an interpretative model adaptable to similar contexts.

In this sense, the experience at Santa Maria Corteorlandini represents a contribution to defining methodological tools for the restoration design of ecclesiastical heritage in transformation. Through historical research and on-site investigations, it has been possible to construct a clear and articulated scientific narrative of the architectural and structural evolution of the complex. This framework has proven effective in supporting decision-making within the ongoing restoration works, providing a solid interpretative foundation based on diagnostic data and historical-critical readings. At the same time, direct engagement with the ongoing conservation work has validated the applied methodology, providing in-field verification of its efficacy.

This elaboration of a scientific narrative of the complex's architectural and structural evolution not only supports the current design activities but also proposes a methodological approach to technical analysis and knowledge acquisition that can be adapted to analogous ecclesiastical contexts, particularly those where decommissioning threatens the loss of cultural and historical value.

NOTES

[1] Luca Diotallevi, 'Lettura Sociologica e Pastorale del Fenomeno della Dismissione di Chiese', in *Dio Non Abita più Qui? Dismissione di Luoghi di Culto e Gestione Integrata dei Beni Culturali Ecclesiastici = Doesn't God Dwell Here Anymore? Decommissioning Places of Worship and Integrated Management of Ecclesiastical Cultural Heritage*, ed. Fabrizio Capanni, Convegno internazionale Dio non abita più qui? Dismissione di luoghi di culto e gestione integrata dei beni culturali ecclesiastici, Roma (Artemide, 2019).

[2] Todd H. Weir, 'Heritage Discourse and Religious Change in Contemporary Europe', in *The Bloomsbury Handbook of Religion and Heritage in Contemporary Europe*, 1st ed. (Bloomsbury Publishing Plc, 2023), https://doi.org/10.5040/9781350251410.ch-003.

[3] Vittorio Pascucci, *L'allusivo Iconografico in Santa Maria Corteorlandini* (Edizioni San Marco, 1996).

[4] Andrea Longhi, 'Il ruolo contemporaneo delle chiese storiche, tra processi di appropriazione, patrimonializzazione e abbandono', *IN_BO. Ricerche e progetti per il territorio* la città e l'architettura (July 2017): 30-43 Paginazione, 30-43 Paginazione, https://doi.org/10.6092/ISSN.2036-1602/7185.

[5] Doctoral fellowship funded under Italian Ministerial Decree No. 117 dated 2 March 2023. These are three-year "innovative doctoral scholarships" co-financed 50:50 between the Ministry of University and Research (MUR) using European NextGenerationEU/PNRR funds and private-sector companies. Designed to support Mission 4 Component 2 "From Research to Enterprise", Investment 3.3, the programme aims to foster doctoral training closely aligned with enterprise innovation needs, including mandatory placements in industry and abroad (6–18 months), and incentivises companies to hire doctoral researchers. https://www.mur.gov.it/it/atti-e-normativa/decreto-ministeriale-n-117-del-02032023

[6] YUPPIES Services is the private company that co-finance the doctoral fellowship. It is an engineering and architectural firm based in Modena (Italy), https://www.yuppies.it.

[7] *Soprintendenza Archeologia, Belle Arti e Paesaggio per le province di Lucca e Massa Carrara*. It is the local office of the Ministry of Culture that coordinates the ongoing project on Santa Maria Corteorlandini.

[8] *Fondo Edifici di Culto* (FEC) is a fund of the Italian Ministry of the Interior responsible for the management, conservation, and restoration of approximately 840 ecclesiastical buildings and related cultural assets that became State property following 19th-century secularisation laws. These sites remain used for worship while being maintained as part of Italy's historical and artistic heritage, https://www.interno.gov.it/it/ministero/dipartimenti/dipartimento-liberta-civili-e-limmigrazione/patrimonio-fondo-edifici-culto.

[9] The inscription reads in Latin as follows: "In 1187, the perfidious Saracens, under the reign of the warrior Saladin, seized the sepulchre, the temple, and the cross of Christ. In the following year, on 2 August, the reconstruction of this church — which praises Christ the Lord, the Son of the Blessed Mary, Vito, Blasius, Concordius, Cerbonius, and Alexius — was begun anew from the foundations. Master Guido built this work." An analysis of the inscription is provided in: Isa Belli Barsali, *Guida di Lucca*, 2. ed. (Pacini Fazzi, 1970), http://id.sbn.it/bid/SBL0616352.

[10] Paolo Tomei, *Milites Elegantes. le Strutture Aristocratiche Nel Territorio Lucchese (800-1100 C.)*, 1st ed, Reti Medievali E-Book Series, v. 34 (Firenze University Press, 2019), 129.

[11] Cesare Franciotti, *Cronache della Congregazione dei Chierici Regolari della Madre di Dio*, ed. Vittorio Pascucci (San Marco litotipo, 2008), 115.

[12] Cesare Franciotti (fl. late 16th–early 17th century) was a member of the Congregation of the Mother of God in Lucca and author of its Chronicles, recounting the congregation's history from its foundation in 1574 to 1606, later edited in the volume curated by Cesare Pascucci (Franciotti, 2008).

[13] The architectural implications of the Counter-Reformation can be identified and studied through the following publications: Massimo Firpo, 'Rethinking "Catholic Reform" and "Counter-Reformation": What Happened in Early Modern Catholicism—a View from Italy', *Journal of Early Modern History* 20, no. 3 (2016): 293–312, https://doi.org/10.1163/15700658-12342506; Mary Laven, '3. Encountering the Counter-Reformation', *Renaissance Quarterly* 59, no. 3 (2006): 706–20, https://doi.org/10.1353/ren.2008.0398; Francesco Repishti and Richard V. Schofield, *Architettura e Controriforma: I Dibattiti per la Facciata del Duomo di Milano, 1582-1682*, Documenti Di Architettura 153 (Electa, 2004).

[14] Silvano Giordano, 'Giovanni Leonardi, santo - Enciclopedia', Treccani, accessed 25 July 2025, https://www.treccani.it/enciclopedia/santo-giovanni-leonardi_(Dizionario-Biografico)/.

[15] 'Records of Contracts for the Supply of Marble Columns from the Carrara Quarries', S. Maria Corteorlandini, Raccolte speciali, S. Maria Cortelandini detta S. Maria Nera , b.17, fasc.29, Archivio di Stato di Lucca (State Archives of Lucca).

[16] From Pascucci, *L'allusivo Iconografico in Santa Maria Corteorlandini*. "Whoever you are who have come here, stop for a moment, read, and with us give thanks to God and to the Blessed Virgin. In the year of Our Lord 1600, when the sacred rites of the Nativity of Christ had been completed, which at midnight, as usual, with a very great gathering of people had been celebrated in this church, the faithful had just returned to their homes and the religious to the upper floor of the house, when the first column on the right, upon which most of the building rested, was fractured on one side and by its weight could have crushed very many people. But by a great miracle of God and of the Blessed Virgin, not only did it not strike anyone, but it fully sustained the same mass of the building and even offered the occasion to adorn and enlarge the church […]."

[17] Raffaello Nardi et al., 'Geologia e Idrogeologia della Pianura di Lucca; Geology and Hydrogeology of the Lucca Plain', *Geografia Fisica E Dinamica Quaternaria* 10, no. 1 (1987): 132–60.

[18] Costantino Ceccanti, 'Agostino Lupi, Architetto "Serliano" a Lucca', *Notiziario Annuale LUK Studi e Attività Della Fondazione Ragghianti* Nuova serie, no. 27 (2021): 51–67.

[19] Unlike the main Counter-Reformation interventions, in the church of Santa Maria Corteorlandini the choir was not positioned behind the altar but at the counter-façade. This choice was likely dictated by the impossibility of enlarging the church at the apse area due to the presence of a dense urban fabric. On the subject of choirs in the Tuscan context, reference can be made to the following publication: Arnaldo Morelli, 'Per Ornamento e Servizio": Organi e Sistemazioni Architettoniche nelle Chiese Toscane del Rinascimento', *I Tatti Studies* VII (1997): 279–303.

[20] Franciotti, *Cronache della Congregazione dei Chierici Regolari della Madre di Dio,* 190.

[21] Drawing of the façade, in "Survey of all the immovable goods pertaining to our Monastery and Convent of St. Mary Corteorlandini" [Martilogio di tutti li beni stabbili attenenti al nostro Monastero e Convento di S. Maria Cort'Orlandini], 1637, Paulo Natalini, Archivio di Stato di Lucca, Enti Religiosi Soppressi, 2980.

[22] Ground floor plan, in "Survey of all the immovable goods pertaining to our Monastery and Convent of St. Mary Corteorlandini" [Martilogio di tutti li beni stabbili attenenti al nostro Monastero e Convento di S. Maria Cort'Orlandini], 1637, Paulo Natalini, Archivio di Stato di Lucca, Enti Religiosi Soppressi, 2980.

[23] Master Ledger for the Building Works [Libro (Maestro) di Conti per la fabbrica della Casa di S. M.a Cortelandini] (1682-1687), Archivio di Stato di Lucca, Raccolte speciali, S. Maria Cortelandini, b.8.

[24] Soprintendenza Archeologia, Belle Arti e Paesaggio per le province di Lucca e Massa Carrara, Archivio Monumentale, E 34/1.

[25] The methodological approach combining historical sources and on-site analyses is also presented in the following publication, which concerns a research study on a former church in Verona: Emanuela Sorbo et al., 'Church of San Pietro Martire in Verona: A Conservation-Oriented Approach between Historical and Structural Interpretation', preprint, Elsevier BV, 2025, https://doi.org/10.2139/ssrn.5363807.

[26] Andrea Di Filippo et al., 'Use of a Wearable Mobile Laser System in Seamless Indoor 3D Mapping of a Complex Historical Site', *Remote Sensing* 10, no. 12 (2018): 1897, https://doi.org/10.3390/rs10121897.

[27] Yahya Alshawabkeh and Ahmad Baik, 'Integration of Photogrammetry and Laser Scanning for Enhancing Scan-to-HBIM Modeling of Al Ula Heritage Site', *Heritage Science* 11, no. 1 (2023), https://doi.org/10.1186/s40494-023-00997-2.

[28] Fabrizio Antonelli et al., 'Original or Post-War Paintings? The Fixed Wooden Scenery of the Teatro Olimpico in Vicenza: A Guided Multidisciplinary Approach Based on Scientific Analyses and HBIM', *Heritage Science* 12, no. 1 (2024): 205, https://doi.org/10.1186/s40494-024-01307-0.

[29] A correlation between the tensile state of iron tie-rods and the evolutionary phases of the building is discussed in: Grigor Angjeliu et al., 'Structural Assessment of Iron Tie Rods Based on Numerical Modelling and Experimental Observations in Milan Cathedral', *Engineering Structures* 206 (March 2020): 109690, https://doi.org/10.1016/j.engstruct.2019.109690.

[30] Rachel Douglas-Jones et al., 'Science, Value and Material Decay in the Conservation of Historic Environments', *Journal of Cultural Heritage* 21 (September 2016): 823–33, https://doi.org/10.1016/j.culher.2016.03.007.

[31]Giovanni Carbonara, 'Archeologia, Architettura e Restauro: Problemi di Conservazione e Presentazione', *"L'archeologia in Italia: La Sfida con La Realtà" Ricerca, Tutela, Valorizzazione, Gestione. Bologna, 1 Dicembre 2015* (Bologna), Aedon, 2017, https://aedon.mulino.it/atti/2017/archeologia_in_italia/carbonara.pdf.

[32] Andrea Longhi, *Storie di chiese, storie di comunità: progetti, cantieri, architetture* (Gamgemi editore, 2017).

[33] Vlatko Bosiljkov et al., 'An Integrated Diagnostic Approach for the Assessment of Historic Masonry Structures', *Journal of Cultural Heritage* 11, no. 3 (2010): 239–49, https://doi.org/10.1016/j.culher.2009.11.007. Grazia Brunetta et al., 'Territorial Resilience: Toward a Proactive Meaning for Spatial Planning', *Sustainability* 11, no. 8 (2019): 2286, https://doi.org/10.3390/su11082286.

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ARCHITECTURAL EXPERIMENTATION IN THE INDUSTRIAL AGE: FOR A CRITICAL EXAMINATION OF TANGIBLE AND INTANGIBLE VALUES ON HYBRID STRUCTURAL SYSTEMS IN 19TH-CENTURY TEXTILE MILLS

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INTRODUCTION

The nineteenth century marks a period of significant technical, technological, and cultural experimentation.[1] Between the late 19th and early 20th centuries, the process of industrial revolution fostered a typological redefinition of industrial architecture, characterised by a constructional language closely linked to the organisation of manufacturing activities. From the mid-nineteenth century onwards, building types and construction techniques were reinterpreted considering new production requirements, establishing a structural relationship between spatial organisation and the technological components of the factory.[2] The need to adapt the organisation to workflow, mechanisation, and production led to the development of design paradigms based on functionality, modularity, and the integration of form and production logic.[3]

Within the broader paradigmatic shift[4] affecting both the conception of industrial buildings[5] and, more generally, typological theory in architecture,[6] the wool mill assumes a particularly significant role in shaping the transition towards a functionally determined and technically innovative architecture.[7] These buildings represent some of the earliest examples of design specifically oriented towards mechanised production,[8] introducing novel construction solutions – such as cast-iron load-bearing structures and wide, unobstructed spans – conceived to accommodate textile machinery and optimise the organisation of labour according to principles of industrial efficiency.[9]

Beyond their technical and constructional dimension, wool mills played a significant role in shaping the urban landscape and transforming the socio-economic system.[10] Strategically located near watercourses or railway infrastructure, they became integrated with residential settlements for workers – the so-called workers' villages – contributing to the formation of new geographies of labour and production. This process testifies to how the wool mill evolved into not only a productive infrastructure but also a symbol of technological, cultural, and social progress.[11]

The Architecture of the Woollen Mill

Between the early nineteenth century and the first decades of the twentieth century, the textile industrial building – and particularly the woollen mill – emerged as an autonomous architectural type, with features specifically designed to respond more rationally to the demands of mechanised wool production. From a typological and constructional perspective, the woollen mill typically featured a solid external envelope, usually constructed with load-bearing masonry, and an internal frame structure comprising cast-iron columns and timber floors.[12] This configuration offered a balance between robustness and spatial flexibility, raising both technical and theoretical questions regarding structural resistance and the modular organisation of space across multiple levels.[13]

In its early development, the prevalent model was the multi-storey longitudinal building, which resulted from the sequential vertical arrangement of production phases. The spatial organisation followed a linear and functional logic aimed at optimising operational flow.[14] With the introduction and subsequent spread of new energy sources, such as steam and electricity, designers gradually moved away from strictly linear layouts, experimenting with more flexible spatial arrangements.[15]

One particularly turning point in the typology examined is given by the introduction of the horizontally developed factory building with a sawtooth (shed) roof. This distinctive serrated form allowed natural light to penetrate evenly into the workspaces, improving working conditions and increasing productivity.[16]

The growing circulation of technical and construction manuals played a key role in standardising and disseminating building techniques across national borders,[17] substantially contributing to the rationalisation of industrial architecture.[18] These compendia (Figure 1) codified construction methods, dimensional norms, and performance criteria associated with new materials, including cast iron, wrought iron, later Portland cement, and steel.[19] By formalising design and structural practices, they enabled the typological replication of industrial buildings and encouraged the spread of production and construction models at a transnational scale.[20] In this sense, nineteenth-century technical literature functioned as a reference scientific model for technological transfer, integrating empirical knowledge with principles of rational mechanics,[21] and anticipating early forms of technological globalisation in the building sector. In this sense, nineteenth-century technical literature functioned as an epistemological tool for technological transfer, integrating empirical knowledge with principles of rational mechanics.[22] The woollen mill can be understood as an intermediate architectural device – an expression of a liminal condition between functional innovation, driven by the needs of industrial production, and enduring constructive and formal traditions. Industrial load-bearing frames often coexisted with massive perimeter masonry walls that reflected established architectural codes of the pre-existing urban context. Within this framework, the decorative elements applied to façades acquired symbolic and identity-forming value, acting as morphological and cultural mediators to ease the integration of new industrial architecture into the historical fabric of the city.

With the advent of the twentieth century, the introduction and eventual dominance of reinforced concrete marked a decisive break in how industrial space was conceived and built, opening new compositional and performance possibilities.

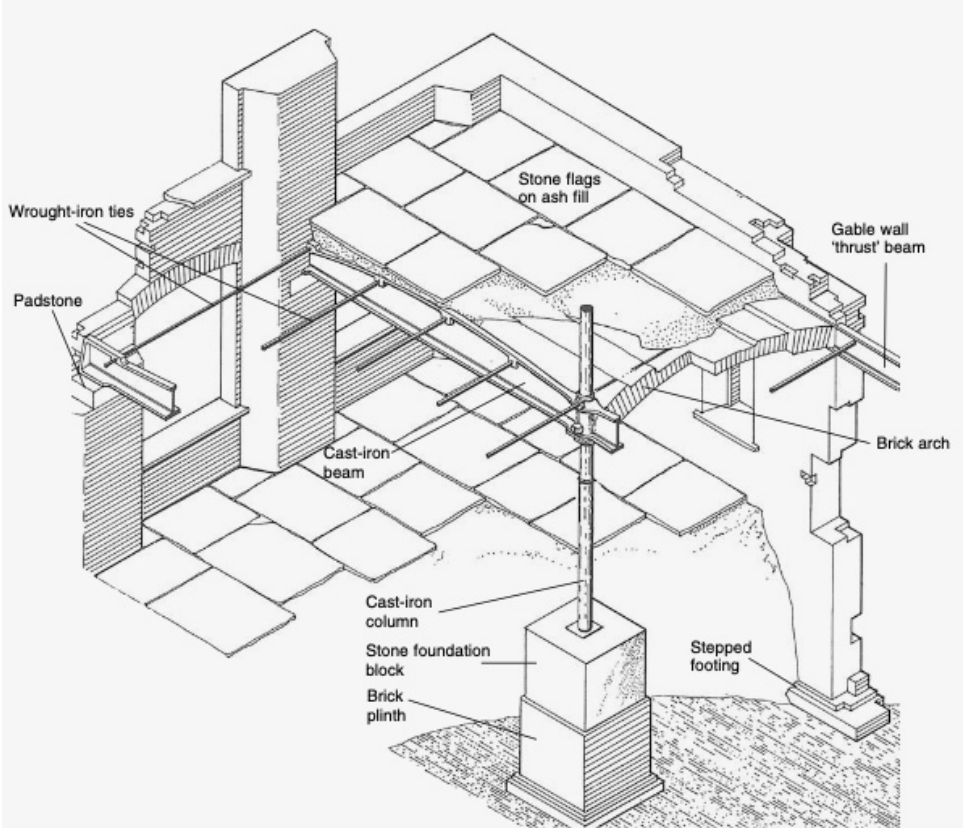

Figure 19. Havelock Cotton Mill, Manchester (1845), iron framing. Edited copy available on Swailes, Tom, and Joe Marsh. Structural Appraisal of Iron-Framed Textile Mills. ICE Design and Practice Guides. London: Thomas Telford, 1998, Figure 2.18, p. 17.

Among the earliest significant examples of hybrid experimentation combining masonry construction with metal frame structures supported by cast iron, two notable cases within the typology under examination are the Shrewsbury Flaxmill Maltings in Spring Gardens (United Kingdom) and the Salford Twist Mill in Manchester (United Kingdom). Designed by Charles Bage and inaugurated in 1797, the Shrewsbury Flaxmill Maltings (Figure 2), originally known as the Ditherington Flax Mill, is widely recognised as the first industrial building with a fully iron-framed structural system.[23] The main building features a floor plan of approximately 54 by 12 metres, spread across five storeys, supported by an orthogonal grid of cast-iron columns connected by horizontal iron beams, upon which brick vaults rest. This constructional arrangement allows for a clear distinction between the load-bearing frame and the enclosing walls, introducing a modular and repeatable approach to both spatial organisation and construction processes. A Boulton & Watt steam engine powered the mechanical transmission system. Vertical shafts housed the main transmission lines, which transferred motion to the upper floors via pulleys and belts, integrating functionally with the structural grid.

Throughout the nineteenth century, the complex transformed into a maltings facility (in operation from 1897 to 1987), which led to several functional alterations, including the partial closure of original openings. During the twentieth century, the building served as a temporary military barracks before being decommissioned.

The restoration process, launched in the 21st century under the direction of *Historic England,*[24] followed a conservation-focused structural approach. The project carried out targeted interventions to preserve the historical construction elements and to return the complex to the local community.[25] Reopened in 2022 as a multifunctional centre, the Flaxmill Maltings now stands as a landmark case

study in the regeneration of British industrial heritage and the conservation of disused industrial architecture.

Figure 20. Shrewsbury Flaxmill Maltings di Spring Gardens (UK). Edited copy available on: https://historicengland.org.uk/whats-new/news/shrewsbury-flaxmill-maltings-opens/

Built between 1799 and 1800, the Salford Twist Mill in Manchester (Figure 3) followed only a few years after the Flaxmill. With its seven storeys and hollow cast-iron columns, the building housed an innovative steam heating system integrated into the structural supports. In 1805, it became the first cotton mill to feature gas lighting, marking a significant shift towards night-time production autonomy. The internal layout followed a tripartite plan, divided by rows of bolted cast-iron columns and beams, supporting segmented brick vaults designed to be fire-resistant. The design addressed criteria of safety, mechanical efficiency, and the integration of energy systems. Although dismantled in the nineteenth century, the building is now considered an archetype of the English industrial construction revolution. In 2016, archaeological excavations carried out by the University of Salford[26] uncovered remains of the structure, helping to clarify key construction details of the building.

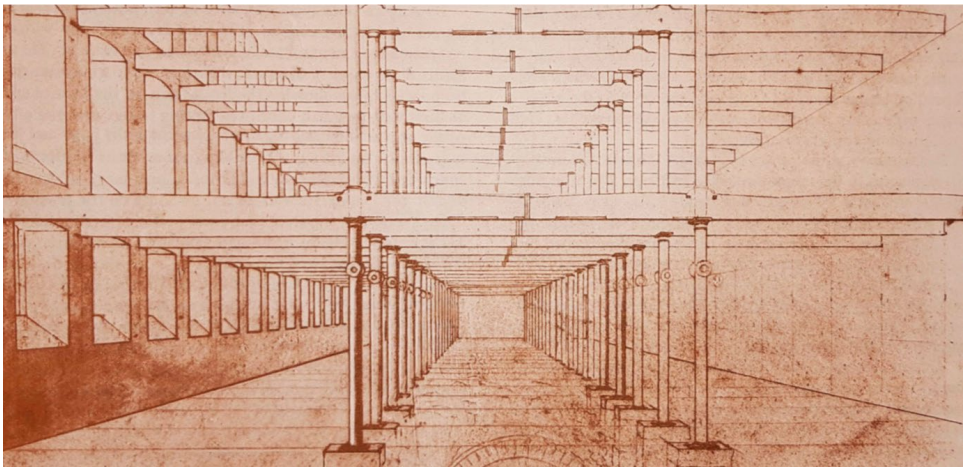

Figure 21. Salford Twist Mill, Manchester, 1799-1801 (Detail). Perspective view of the frame structure designed by William Creighton. Edited copy available on: Miller, Ian. 'Salford Twist Mill: Uncovering an Iconic Textile Factory'. Industrial Archaeology Review 46, no. 1 (January 2024): 18–34. https://doi.org/10.1080/03090728.2024.2357425.

Origins of Italian Wool Industrial Architecture: Archetypes and Transformations between the 19th and 20th Centuries

The spread of industrialisation in Italy, though later than in Northern European contexts, triggered a significant reconfiguration of production paradigms, labour organisation, and territorial structures.[27] Within this transformative dynamic, the textile sector—particularly wool manufacturing—played a pivotal role, contributing to the development of some of the first and most significant Italian industrial districts between the second half of the 19th century and the early decades of the 20th century.[28] It is worth noting that the Italian industrialisation process[29] emerged from a pre-existing economic system comprising a network of proto-industrial workshops, often located in rural areas. These production facilities were closely integrated into the agricultural landscape, both in terms of energy supply—relying on local hydraulic resources—and workforce composition, which followed a seasonal logic aligned with the agricultural cycle.[30] This configuration reveals the distinctive character of the Italian model of industrialisation, marked by a high degree of hybridisation between agricultural and manufacturing systems.[31]

Among the regions where industrialisation took on particularly significant characteristics, the Biella district stands out as one of the epicentres of wool manufacturing development. In this context, factories such as that of Fratelli Piacenza—founded in the 18th century and mechanised early in the 19th—serve as emblematic examples of large-scale textile industrialisation.

At the same time, the Veneto region also witnessed the rise of relevant production centres.[32] Among these, the Lanificio Rossi in Schio,[33] founded in 1817 and systematically expanded and industrially rationalised by Alessandro Rossi[34] in the second half of the 19th century, emerged as one of the most advanced woollen manufacturing sites of the era. With a sizeable workforce, the complex functioned as a prototype company town, anticipating integrated planning strategies—spanning industrial, urban, and social dimensions—that would become paradigmatic in the 20th century. Also, in Schio, other notable manufacturing initiatives emerged, such as the Lanificio Cazzola, which was active from the mid-19th century, and the Lanificio Conte,[35] whose origins date back to the late 18th century. The latter underwent significant expansion between 1863 and 1906, during which new factory buildings were constructed using the Hennebique reinforced concrete system. Today, this complex is undergoing adaptive reuse for cultural purposes and stands as a key example of industrial archaeology, now protected and enhanced as part of heritage conservation efforts.

In Lombardy,[36] particularly in Val Gandino (Bergamo), the Lanificio Motta offers another important example of productive transformation. Active for over a century, this site provides valuable insight into the typological and technological evolution of Lombard textile manufacturing.

Finally, the Lanificio Paoletti in Follina (Treviso) offers a particularly emblematic case. Operative since 1795,[37] it represents a rare example of productive continuity from the proto-industrial period to the present day, maintaining a strong synthesis between traditional technical and artisanal knowledge and ongoing technological innovation.

RESEARCH AIMS

The contribution represents an initial phase in the dissemination of research activities carried out during the development of a doctoral thesis, part of the National PhD Programme in Heritage Science (PhD-HS.it), promoted by Sapienza University of Rome.[38] The thesis aims to define a methodology for studying and analysing the structural behaviour and conservation state of the wool mill as an architectural typology, which developed between the late 19th and early 20th centuries. The objective is to establish a multidisciplinary methodological approach, grounded in both theoretical and numerical modelling of heterogeneous traditional materials, and structured across different scales of analysis: from the material level to individual structural elements, and ultimately to the whole

building.[39] The research process integrates historical, architectural, constructional, and material analyses with assessments of the residual performance of structural systems, utilising advanced diagnostic and simulation tools. This approach aims to provide comparative criteria for a better understanding of degradation and vulnerability phenomena, as well as to define the limits and potential of conservation and restoration interventions.[40] Within this framework, the research aims to contribute to the expansion of knowledge for the protection, conservation, and enhancement of historic industrial heritage.

INDUSTRIAL HERITAGE AS A FIELD OF STUDY: METHODOLOGICAL APPROACHES

The study of disused industrial heritage represents a pivotal field of investigation, as it enables the intersection of cultural identities and productive memory with social, economic, and biographical dynamic.[41] At the same time, it allows for the systematisation of a body of material traces linked to a specific phase of architectural production—one in which construction practices diverged radically from tradition.

The methodological framework (Figure 4) outlined in this research takes the form of a multidisciplinary knowledge-building process,[42] aimed at analysing the structural behaviour of multi-storey buildings with load-bearing masonry structures, typical of wool industry architecture. The adopted methodology rests on an inductive epistemological foundation, whereby the construction of technical and scientific knowledge arises through the systematic observation of real cases and their comparative analysis. The goal is to define theoretical and operational models applicable to similar contexts.

The initial phase of the research involves identifying and selecting representative buildings, chosen based on their typological, constructional, and historical significance. These case studies serve as the starting point for a critical examination of structural configurations, with a particular focus on the inherent vulnerabilities[43] resulting from the construction techniques employed in multi-storey wool mills. During this phase, the investigation also focuses on reconstructing the original construction logic—often rooted in local technical and artisanal knowledge—not always formalised in contemporary manuals, yet constituting a material and immaterial cultural heritage integral to this architectural typology.

The in-situ investigation will adopt an integrated approach, combining geometric, material, and structural surveys with non-destructive diagnostic techniques. This approach will allow for the acquisition of empirical data to assess the conservation state, identify construction-related vulnerabilities, and analyse the behaviour of masonry structures under horizontal actions. These data will form the basis for a typological-structural classification of buildings, grounded in morphological, constructional, and mechanical parameters, to identify patterns of vulnerability and establish a shared knowledge framework. The process will conclude with the development of a streamlined yet scientifically grounded operational protocol, presented as a technical-evaluative form. This tool intends to support professionals and heritage authorities in preliminary diagnostics, conservation, and the valorisation of industrial built heritage. The protocol also aims to promote the recognition of this heritage in its intangible dimension, contributing to the definition of a scientifically validated, shared assessment practice—capable of being replicated and adapted across similar contexts.

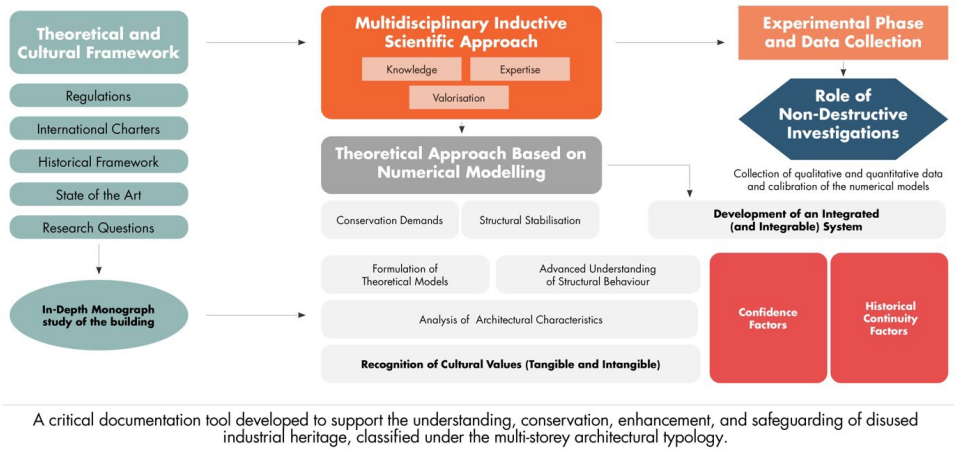

Figure 22. Overview of the Operational Methodology Proposed in the Research Study.

A key international reference in the scientific literature, closely aligned with the methodology proposed in this research, is the publication *The Heritage of the Textile Industry,*[44] released in 2022 and promoted by TICCIH (The International Committee for the Conservation of Industrial Heritage) in collaboration with ICOMOS. This work contributes to ongoing efforts to preserve, document, and valorise industrial heritage on a global scale.

The publication systematically and multidimensionally explores the historical evolution, architectural, technological, and social characteristics, as well as the cultural significance of the global textile industrial heritage. A central feature of the study is the development of a global comparative inventory, which catalogues over 600 sites across 67 countries, each representative of various stages in the evolution and different branches of textile production.

This inventory enables a structured classification of case studies based on documentary, technological, architectural, and cultural attributes, highlighting the exceptional features that make these sites emblematic from technical, productive, historical, and territorial perspectives.

The study proves particularly relevant to the methodology proposed in this research, as it provides a selected and scientifically validated base of international case studies against which the effectiveness and transferability of the developed methodological approach may later be positioned and assessed.

Although it represents a valuable first step in international mapping, the study reveals a still partial coverage of the industrial heritage landscape—particularly concerning the British context.[45] Further investigations conducted in the United Kingdom[46] show that the number of sites historically associated with wool production is significantly higher than currently recorded. This discrepancy highlights the need for additional comparative and integrative research at the territorial scale.

DISCUSSION

The study of 19th-century textile industrial architecture requires a critical and interpretive approach to the concept of authenticity,[47] —one that is no longer tied exclusively to material substance, but instead extended to the immaterial dimensions of cultural, technological, social, and identity-based values. These structures, the result of a period of intense technical experimentation and productive transformation, represent not only the material legacy of a now-historicised industrial revolution, but also carriers of cultural, social, and identity meanings that must be understood, documented, and passed on to future generations. The charters and international documents on conservation developed over the past decades reflect this evolution. The *Nizhny Tagil Charter for the Industrial Heritage* (2003),[48] adopted by TICCIH, marked a turning point by recognising the uniqueness of industrial heritage and grounding conservation practices in respect for the technological, functional, and

contextual specificities of each site.[49] Subsequently, the *Dublin Principles* (2011),[50] produced through collaboration between ICOMOS and TICCIH, reaffirmed the need to preserve not only material structures, but also the intangible values associated with work practices, production processes, and the socio-economic relationships embodied by these places.

Therefore, the authenticity of industrial sites emerges as a plural quality that involves more than preserving original physical elements—such as materials, construction techniques, and building types. It also relies on the ability to convey historical settlement logics, structural innovations, and functional uses. The *Nara+20 Document* (2014)[51] strengthens this approach by urging professionals to evaluate authenticity within the framework of cultural diversity and context. This approach recognises the legitimacy of multiple interpretations of heritage and encourages intervention strategies that respond to the complexity of cultural values. This viewpoint becomes especially relevant when addressing the hybrid structural systems developed during the 19th century. Professionals who intervene in these structures must go beyond technical restoration and instead cultivate a deep understanding of the historical meanings embedded in these buildings, along with their ongoing ability to communicate cultural significance.

This context highlights the need to develop an integrated (and integrable) system for the knowledge, management, and valorisation of industrial heritage based on the systematic collection of historical, constructional, technological, and documentary data. Such a framework serves as a strategic tool for implementing planned conservation policies,[52] that support not only material preservation but also the cultural, economic, and social valorisation of heritage sites.[53] By promoting digitalisation and ensuring the interoperability of databases, while applying multidisciplinary methods of analysis (including historical-archival, structural, and material studies), it is possible to generate a layered understanding of heritage. This approach also enables to define design criteria aligned with sustainability and reversibility principles, ensuring responsible and informed conservation strategies.

This approach aligns with the principles of the Faro Convention (2005),[54] which recognises cultural heritage as a collective and dynamic resource that strengthens belonging, social cohesion, and civic participation. In this perspective, the enhancement of industrial sites is not merely a technical or aesthetic matter. However, it forms part of a broader cultural strategy aimed at constructing a shared memory and promoting urban regeneration processes rooted in the identity of place.

CONCLUSION

Preserving the layered memory embedded in buildings tied to industrial development requires a critical reading aimed at identifying design actions that allow society to recognise their tangible and intangible cultural values in contemporary society.[55] From this perspective, the doctoral research project positions itself as a multidisciplinary path for building knowledge. It seeks to create an interpretative tool that reconciles the demands of conservation with the essential requirements of structural safety. The research project unfolds within an integrated methodological framework, promoting the convergence of different fields of knowledge and their critical interpretation.[56] This approach proposes to integrate, alongside the objective confidence factors codified in current technical regulations, permanence factors associated with the methodological moment of recognising cultural values. The project, therefore, defines a theoretical pathway with practical aims, focusing on shaping a mindset that directs the development of possible methodologies for historical-constructional and structural analysis. These methodologies serve as an informed and conscious foundation for designing effective and respectful interventions. Founded on a "monographic study of the work"[57] built on the creation of a systematic inventory of materials, techniques, and knowledge related to the architectural structure, this approach treats the building both as a subject of protection and as a witness to a shared cultural identity.

In conclusion, the architecture of the woollen mill emerges as the result of a complex synthesis of productive function, technological innovation, and formal experimentation. It stands not only as an exemplary testimony to the evolution of construction techniques and industrial processes but also as a reflection of a precise spatial conception of the *heterotopia of labour,*[58] —where light, ventilation, materials, and functional organisation come together in a coherent configuration, rich in both symbolic and operational value. Today, this heritage plays a crucial role in understanding the history of industrial architecture and in preserving the cultural memory of the regions that contributed to the processes of manufacturing modernization.[59]

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FACADE OPENING CLASSIFICATION OF 1850-1930 COLONIAL HOUSE IN SILAY CITY USING GESTALT PRINCIPLES AND FEATURE ANALYSIS

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INTRODUCTION

The conservation of colonial heritage houses in Silay City is complicated by the interplay of preservation objectives, which include the preservation of architectural authenticity, the recognition of cultural hybridity, and the maintaining of the social meanings inherent in the design. In the context of the facades, which are the most visible and recognizable aspect of the building's architectural heritage and public image, can these objectives be simultaneously achieved? In many cases, traditional conservation prioritizes formal and material aspects, concentrating on the building as a whole rather than examining significant components like doors and windows,[1] which comprise the majority of the façade's surface area. This paper examines the way facade openings express a composite architectural language that has been driven by colonial influence, local adaptation, and periods of economic prosperity.

Silay City as a heritage zone

Silay City is a third-class municipality in Western Visayas with a land area of 2,020.80 hectares. It has earned the designation of "Negros' intellectual and cultural hub" due to its exceptional collection of historical mansions constructed during the height of Philippine sugar industry.[2] These mansions, where wealthy sugar families have lived for generations, have a significant impact on the socioeconomic and political affairs of Negros and have brought distinction to their hometown.

The National Historical Commission of the Philippines notes that these houses, constructed between 1850 and 1930, date from either the Spanish colonial period, the American colonial period, or a mix of historical styles, and possess significant cultural, social, architectural and artistic value.[3] These heritage houses are also unique in that the majority were not designed by professional architects but instead were shaped by 381 years of cultural and technological exchange with foreign traditions. As such, these structures can be interpreted as articulations of complex architectural language.

Since the official declaration of Silay heritage zone as a National Historical Landmark in 1990, which granted it legal protection and conservation status, most of the heritage houses on Silay have preserved their historic facades as a conservation priority.[4] In many cases, new structural layers have been introduced to protect the original elements of its architectural heritage, while the old facades have been left intact as part of the ongoing effort to preserve and maintain these colonial-era

residences. Although the majority of these properties have retained housing as their primary function, there are some that have already been influenced by changes in land use and no longer correspond to their original type, altering the building interior to fit its current use. Such modifications, while adaptive, may have resulted in the possible loss of important information about the fabric behind the façade. As far as the façade is concerned, it can be assumed that its properties are preserved to a greater extent in terms of integrity and authenticity.

With the sustained attention being given to façade preservation in Silay, it is crucial to examine the architectural elements that have remained visible and largely intact over time. In this light, the investigation conducted in this study focused on the façade of selected ancestral houses, with doors and windows serving as a primary building components for the elevation analysis. The research will categorize their visual arrangement since these components are significant contributors to the focal point and visual appeal of the elevation.[5]

METHODOLOGY

The methodology employed in this study follows a descriptive qualitative approach. It includes organizing typological subsets in chronological order, applying Gestalt theory[6] to assess composition, patterns, and construction technologies, and classifying colonial residential façade openings by comparing critical common features across samples using a Venn diagram. These stages of analysis were used to identify the façade attributes that were prominent during each period. Additionally, colors are used to represent these basic façade elements, allowing them to be considered independently and collectively to form the facade.

To apply this methodology, four representative samples were selected for this study based on significant historical periods in the development of Silay City's domestic architecture. These range from the Spanish *bahay na bato,* or literally "house of stone", to the stylistic development of architectural forms during the American period. All of these buildings, including those within the heritage zone, incorporate tropical elements into their architectural design, reflecting adaptations to local climate and environment.

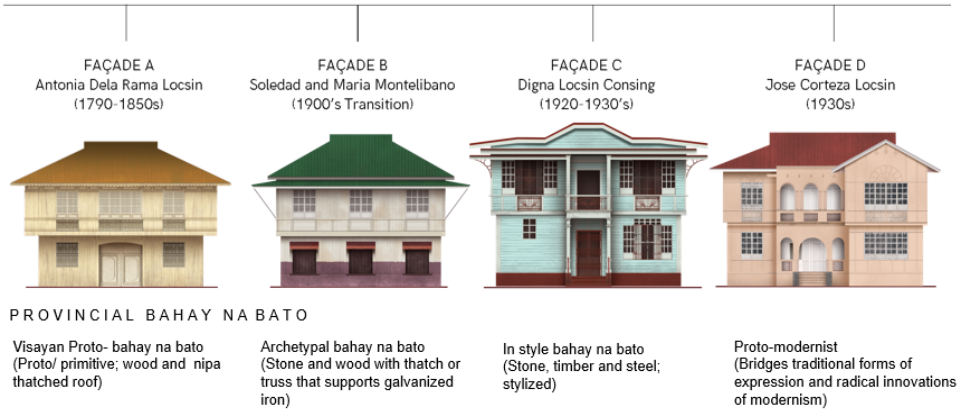

Figure 1. Representative samples of provincial bahay na bato.

In this study, the analysis will assist in improving the accuracy of the seriation, or the chronological ordering of façade openings as architectural components, as well as in refining the method for determining the façade characteristics of each colonial-era residences in any location and at any period in architectural history, which is important information for historic preservation. In addition, the symbolic, utilitarian, and socio-cultural significance of windows and doors, which are often disregarded in architectural research, will be examined.[7] This will complement the formal and stylistic

qualities inherent in these features, as understanding these layers will allow for more thorough interpretation of the built heritage.

APPLICATION OF GESTALT THEORY OF PERCEPTION

The application of Gestalt theory offers a framework for understanding how the different façade elements of traditional Filipino houses, particularly the Silay houses constructed during the Spanish and American colonial periods, are perceived as unified compositions. By examining how features are grouped according to the laws of proximity, closure, symmetry, and continuity, this research reveals how stylistic variations and cultural meanings are expressed through the arrangement of facade components. For instance, the law of proximity demonstrates how windows and doors are arranged to promote a sense of harmony, while closure enables us to perceive disconnected shapes as complete forms. The design achieves balance and coherence due to the symmetry and similarities that reflect the practical and cultural changes of each period. Continuity illustrates interdependence in various architectural details throughout history. Collectively, these patterns show how the facades are both a response to changing times and an extension of tradition in Negrense domestic architecture.

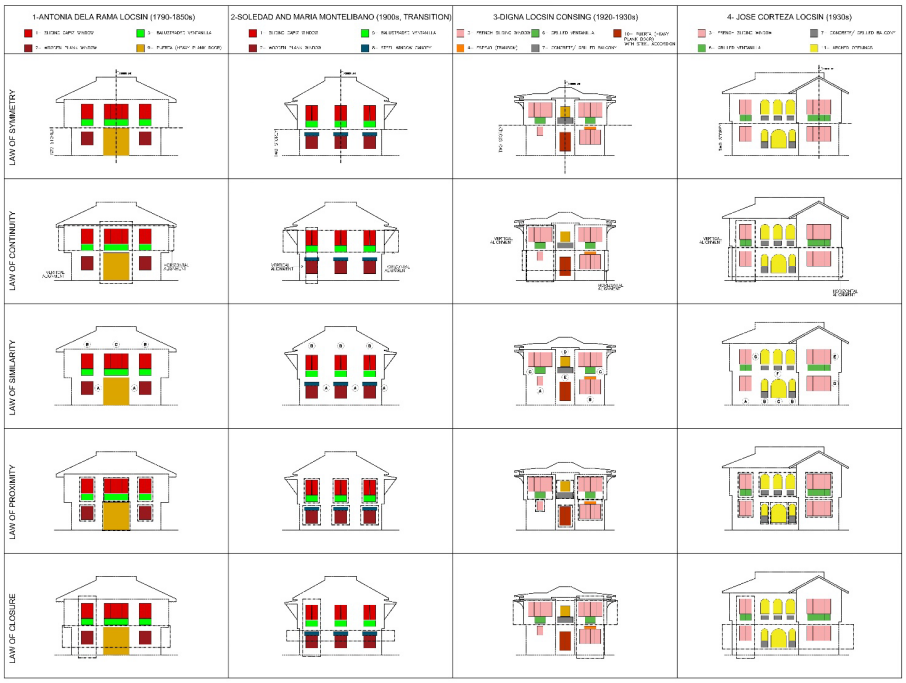

Figure 2. Analysis of the colonial façade openings using Gestalt laws of symmetry, continuity, similarity and closure

Symmetry

Based on observation and comparative case study analysis, the colonial houses constructed during the Spanish period typically display equally spaced façade features on either side of the central axis, with symmetry often consisting of two units. This symmetrical arrangement persisted in many Silay houses built during the transitional period between the Spanish and American rule. However, while some houses from the pre-American era may still exhibit symmetrical window placement, the majority reveal an uneven façade symmetry, signaling a gradual departure from the earlier design convention.

Continuity

In terms of continuity, the façade openings of colonial houses constructed between the Spanish and American periods exhibit a high degree of vertical and horizontal alignment. This structural continuity reinforces visual cohesion throughout the facade, which links architectural elements in a manner that supports the perception of a unified whole.

Similarity

Window elements from the mid-19th century to the early 20th century can be classified into two principal groups based on their size and spacing, with a single entrance at the facade typically providing access to the *zaguan*- the ground floor space beneath the *bahay na bato*. While the openings introduced during the American period following the transitional phase offer more variation, with some facades featuring five (5) to seven (7) groupings of openings. These changes point to an increased willingness to depart from the more conservative traditions established during the Spanish period.

Proximity

The Capiz sliding window, balustraded *ventanilla* (the smaller opening beneath the larger window), and *puerta* (heavy plank door) are typically positioned in close proximity to form a *zaguan* in a *bahay na bato*. This grouping reinforces the perception of functional and stylistic unity at the ground-floor level.

Closure

With respect to closure, regardless of the historical period, the components of the facade openings rarely form a complete line; however, the eye instinctively links them, recognizing that they are related in part because they may in principle form a line and hence a shape. However, an exception is observed in Facade C, where the ground-floor small window disrupts the expected alignment potentially necessitating an alternative interpretation. Even in this case however, the grouping of the elements still contributes to the completion of the facade form.

Collectively, these results illustrate the continuity and evolution of the heritage houses in Silay. The norms of symmetry, alignment, and closely grouped components was established by the Spanish-era building regulations. Contrarily, greater diversity was introduced throughout the transitional and American periods, demonstrating how aesthetic preferences and functional needs have evolved over time.

COMMON FEATURE ANALYSIS

Expanding from the Gestalt-based observations, a comparison of common façade features shown in the Venn diagram below, which was guided following Chan's descriptive approach for style identification,[8] further clarifies how specific design elements were retained, adapted, or replaced during the course of history.

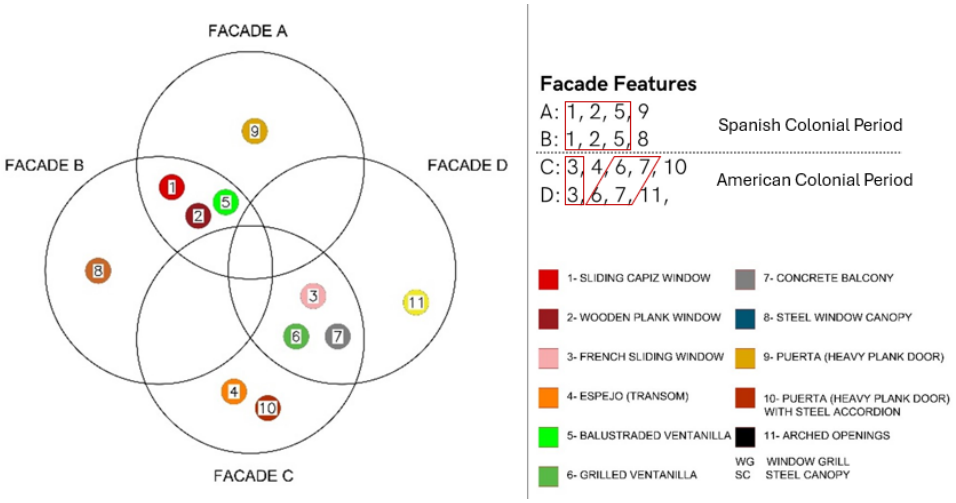

Figure 3. Venn diagram of common features and coding of facade elements

The Antonia Dela Rama ancestral house (Facade A), constructed between 1790 and 1850, and the Maria Soledad Montelibano Ancestral House (Facade B), which was built in the early 1900s, share three features in common: the sliding Capiz window, balustraded *ventanilla*, and wooden plank window. While Façade B also incorporates American period elements, including a steel window canopy (sombrero ng bintana), a steel main roof, and a secondary roof supported by steel brackets. These coexist with traditional *bahay na bato* elements such as the *ventanilla* and sliding Capiz window are adopted. This illustrates transitional phase where inherited Spanish-era components were combined with new materials and construction techniques.

In contrast, Facades A and B are distinct from Facades C and D which is indicative of a more pronounced American-period influences. The Jose Corteza Locsin Ancestral House (Facade D) and Digna Consing Locsin Ancestral House (Facade C) share characteristics that are typical of the American period, such as French sliding windows, grilled *ventanilla*, and concrete balconies. While Facade C retains the espejo (transom) from the Spanish colonial tradition, Facade D incorporates additional American-period innovations, such as carport and arched openings that connect to the porch and balcony. These variations reveal a complex interplay of stylistic layering in which architectural identity is negotiated between the persistence of tradition and the adaptation to modern fundamental needs, resulting in a more eclectic architectural expression.

DISCUSSION

The heritage houses in Silay reflect the influence of the Spanish period *bahay na bato*, which have been reinterpreted to adapt to the local climate. The earliest examples follow European engineering traditions, with fully stone-built walls and clay tiled roofs. Over time, the practicality of using locally available materials was integrated, leading to hybrid construction methods. The ground floor retained its masonry walls and integrated hardwood interior columns, while timber-framed second floor reduced the risk of collapse during earthquakes. This evolution addressed recurring hazards of fire and earthquakes.

Post-1880 Decree and Material Transformation

A major transformation occurred after the July 1880 earthquake, where a post-1880 construction decree was mandated the replacement of heavy clay tiles with galvanized iron sheets, significantly altering the roof profile and weight.[9] Despite such material changes, key architectural elements persisted. Doors remained constructed of heavy timber, and windows continued their muti-layer

composition: sliding Capiz shell panels topped with *espejo* (transom windows) and persiana (louver shutters), functioning together for climate control, light regulation, and privacy. Below the main sill, *ventanillas* were incorporated to allow low-level ventilation. These openings concentrated on the second floor, where the living spaces were located. Their placement not only enhanced comfort but also conveyed social prestige, as they were opened during religious processions, allowing affluent families to view festivities from an elevated position.

American Period Innovations and Continuity

The introduction of concrete and steel during the American colonial period marked a shift in construction practices. Reinforce concrete became a preferred material, yet the development of new residential models remained largely a local initiative.[10] New models adapted their Spanish period precedents by integrating modern materials and techniques while retaining familiar spatial and compositional patterns. In this context, the sliding windows evolved to incorporate colored glass, a material that is also applied to door panels, reflecting both material innovation and continuity of form.

CONCLUSION

The colonial domestic prototypes of Silay City are influenced by a variety of elements, including climate, building materials, period of construction, colonial powers, and socio-economic conditions. A mutual feature of these houses is their two-storey structure with facades finished in local wood. Their standard floor-to-floor height ranges from 3.5 to 4.5 meters, both originated in response to the tropical climate of the region.[11]

At the turn of the 20th century, architectural reproduction has made use of materials like steel, a primary import from the United States used in both larger structures and residential construction. In Silay City, a similar approach was taken, and corrugated roofing and steel bars were integrated not only for ornamental purposes but also as concrete reinforcement. As a result, the facades of certain American colonial houses combine the use of native wood and concrete. Glass windows were also introduced as an alternative way to sliding Capiz windows, and over time, the wood-and-stone style lost popularity.

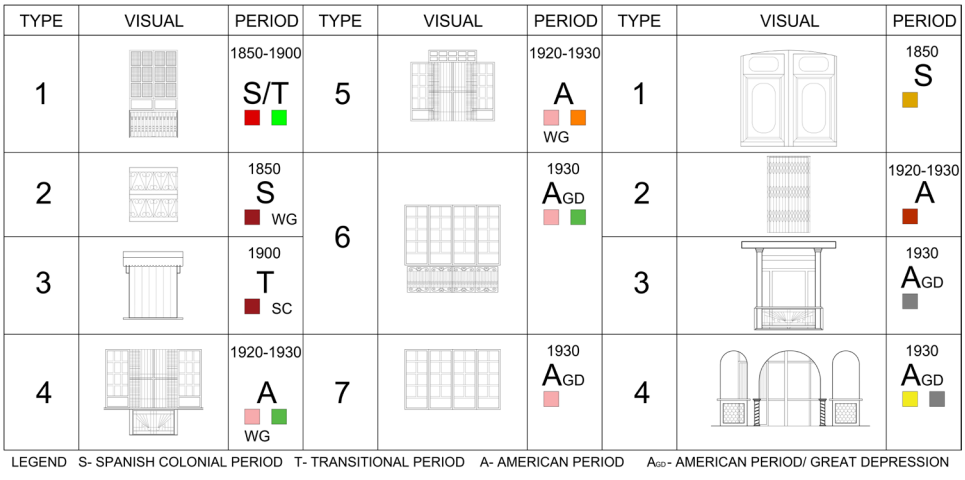

Figure 4. Door and Window Types

The evolution of doors and windows presents a tangible record of this architectural adaptation across colonial periods. Spanish colonial openings emphasized climate responsiveness, symbolism and craftsmanship, seen in the Capiz windows with *ventanillas* and heavy planked door designed to balance ventilation, lighting and social display. Following the 1880 decree, lighter panel windows

with *media agua* roofs were introduced, blending traditional forms for enhanced protection from extreme weather. Under the American colonial influence, glass sliding windows became prominent, often paired with *rehas* (iron grilles), *espejos* or grilled *ventanilla*, while door diversified into steel accordion types, panel sliding doors with steel railings, and later concrete-screened balcony.

Despite the shifts in material technology, from stone to reinforced concrete, from Capiz shell to glass, from clay tiles to galvanized iron, the design of these openings retained its core functions for climate control and security and as medium of social and cultural expression. This continuity amid technological and stylistic change, emphasizes the resilience of local architectural identity in the presence of imported colonial models.

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[8] Chiu Shui Chan, “Can Style Be Measured?,” *Design Studies* 21, no. 3 (May 1, 2000): 277–91, https://doi.org/10.1016/S0142-694X(99)00011-3.
[9] Gerard Lico and Mary Delia Tomacruz, “Infrastructures of Colonial Modernity: Public Works in Manila from the Late 19th to the Early 20th Centuries,” *Es.Pa.Syo Journal of Philippine Architecture and Allied Arts* 6 (2015): 1–25.
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REGENERATION OF URBAN CULTURAL LANDSCAPES: A CASE STUDY OF AYODHYA

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INTRODUCTION

Urban cultural landscapes, as defined by UNESCO, embody the interplay of nature and human creativity, evolving through environmental, social, and cultural forces. In living heritage cities, they are dynamic systems where tangible elements—architecture, public spaces, and ecological corridors—interweave with intangible traditions of ritual, craft, and performance. Their regeneration demands a careful balance between conservation and transformation, ensuring contemporary interventions deepen rather than dilute cultural resonance.

Cultural landscape of India is a 'profusely storied landscape, thickly so, intensely so', and 'the land is filled with encoded meanings and long traditions of cultural memory'.[1] Within this rich tapestry, Ayodhya counted among one of the seven most scared and salvation-endowing cities of the India (i.e. Ayodhya, Mathura, Maya-Haridvar, Kashi, Kanchi, Avantika-Ujjain, Puri, Dvarka), is situated on the right bank of the holy river Sarayu (Ghaghara, a tributary of the Ganga) at a distance of 7 km east from Faizabad city.[2] In the popular memory, it is the place where the seventh avatar of Vishnu, Sri Ram took birth in Treta Yug.[3] Ayodhya simultaneously holds cardinal importance for diverse faiths, including Buddhism, Jainism, and Islam. Its physical legacy is monumental, encompassing temples, kunds (ritual water tanks), an array of riverside ghats, and the iconic circumambulatory circuits. No less significant is its intangible heritage: the city reverberates with ritual enactments like Ramleela, sacred processions, culinary traditions, and the artisanal craft.

Since the 2019 Supreme Court verdict enabling the Ram Janmabhoomi temple's construction, Ayodhya has seen visitation soar from 20 million to over 160 million annually, transforming it into a global pilgrimage hub. This unprecedented influx has amplified its spiritual prominence but also overburdened infrastructure, fueled unregulated growth into heritage precincts, and eroded sacred landscapes through encroachment, hydrological disruption, and commodification. Social continuity has been further strained by property demolitions and resident displacement. Regeneration is thus imperative—to balance heritage conservation and community well-being with the operational demands of mass pilgrimage. This study proposes an integrated framework for Ayodhya's core precincts, aiming to assess heritage conditions, identify challenges and opportunities, and develop context-sensitive strategies to safeguard cultural authenticity while sustaining its stature as a global spiritual capital.

Ayodhya's Context and Evolution

Ayodhya is a layered cultural landscape in the truest UNESCO sense—its form and meaning shaped by the long interplay between ecological systems and human devotion. The origin of Ayodhya lies in Ramkot, built on a hillock surrounded by the Sarayu River on three sides. This hill–water dyad is an archetypal pattern, repeated within Ayodhya kshetra and at other pilgrim sites throughout India.[4] Situated on the monsoon-fed alluvial plains of the Saryu River, its gentle west–east slope and fertile soils determined the siting of ghats, kunds, and circumambulatory routes that continue to anchor religious life. Over more than three millennia, successive cultural strata have been inscribed upon this landscape: the Kosala kingdom's sacred capital (c. 1500–1000 BCE) and legendary birthplace of Rama; Buddhist monastic geographies from the time of the Buddha; Jain heritage through the birth of five Tirthankaras; Indo–Islamic architecture under the Nawabs of Awadh; and colonial-era administrative and infrastructural overlays. This accumulation has produced a densely stratified urban palimpsest where diverse faiths and narratives coexist—sometimes in harmony, sometimes in contestation.

Today, Ayodhya's monumental assets include thousands of temples, the storied 108 kunds, extensive river ghats, and the 5 Kosi and 14 Kosi parikrama circuits, all inseparably linked to its intangible heritage of festivals, ritual performances, devotional music, and sacred cuisine. Water bodies—kunds (masonry tanks with steps), sars/sarovar (ponds), the holy River Sarayu and the rivulet Tilodaki—were linked with specific episodes in Ramkatha.[5]

The city's connectivity now extends far beyond its historical catchment: regionally and nationally it is linked via NH 27 and a modernised railway terminal handling up to 50,000 passengers daily, while the newly inaugurated Maharshi Valmiki International Airport, 11.5 kilometres from the Ram Mandir, positions it directly within global pilgrimage networks. This accessibility, coupled with a Master Plan 2047 vision of becoming a "Global Spiritual Capital," has placed Ayodhya at the intersection of heritage stewardship and international tourism economies. Yet this transformation carries risks: hydrological systems sustaining the kunds are disrupted, pilgrimage corridors face encroachment, and rapid commercialisation compresses living traditions into consumable spectacle. Ayodhya thus stands as both an emblem of India's plural and storied heritage and a test case for whether a sacred city can modernise at a global scale without eroding the ecological and cultural systems that define its identity.

METHODOLOGY

To ground the regeneration framework in empirical evidence, the study adopted a multi-scalar methodology combining spatial analysis, field surveys, and stakeholder consultations. Mapping the cultural landscape is the first step in developing a conservation proposal for heritage protection and management. It entails site reading and documentation of topography and site hydrology, vegetation communities, historic buildings, open spaces, and circulation networks; site management based upon determination of conservation zone boundaries, and partial or complete restoration of significant landscape features; and site planning and design of heritage trail systems and their amenities, alongside development of community infrastructure with local participation. [6]

Field surveys were conducted across four core precincts—Parikrama Routes, Ghats Precinct, Ramkot Precinct, and Kunds Precinct—using transect walks, pedestrian counts, activity mapping, and infrastructure audits. Tangible heritage assets were geo-tagged and assessed for structural condition, material integrity, and spatial setting. Intangible heritage was documented through interviews with residents, tourists, temple custodians, and local artisans, focusing on ritual practices, performance traditions, and craft-based livelihoods. A total of 100 respondents, evenly split between residents and visitors, provided insights on accessibility, facilities, and the cultural experience of Ayodhya. This integrated approach ensured that the analysis captured both the physical distribution of heritage assets

and the lived meanings attached to them, forming the basis for the precinct-specific regeneration strategies proposed in this study.

TANGIBLE HERITAGE OF AYODHYA

The idea of a heritage zone is rooted in recognising areas that embody both ancient and living religious sites, maintaining the continuity of age-old traditions and serving as a fundamental resource for inclusive heritage development.[7] Ayodhya's urban cultural landscape was mapped through participatory interviews with residents and tourists, using sketch exercises to capture sites of personal and cultural significance. Residents prioritised sacred nodes woven into daily life—temples, ghats, kunds, and processional routes—while tourists emphasised iconic, visually striking destinations such as Ram ki Paidi and the parikrama circuits. These perspectives, integrated with spatial and land use data, produced a composite map (Figure 1) that reflects both the physical distribution of heritage assets and the layered meanings ascribed to them by different user groups.

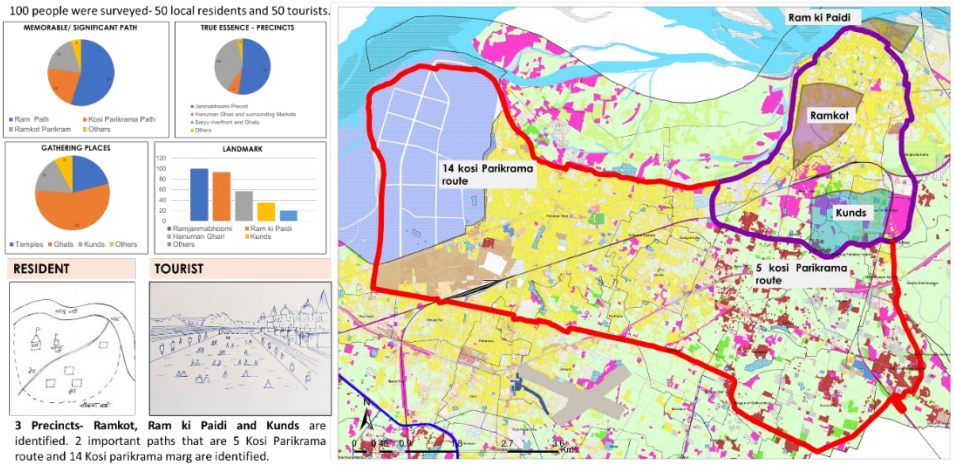


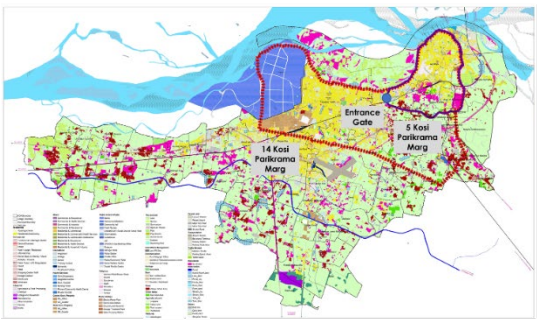
Figure 23. Mapping of Urban Cultural Landscapes of Ayodhya

Further analysis showed that each precinct carries its own distinct challenges and opportunities, demanding targeted strategies that together advance Ayodhya's vision as a global spiritual capital.

Parikrama Routes

The 5 Kosi and 14 Kosi Parikrama routes form the ceremonial arteries of Ayodhya's sacred landscape, part of a larger constellation of five concentric pilgrimage circuits that preserve the city's sacred geography and embody a three-tiered cosmogonic worldview. Anchored by ancient shrines, temples, and water bodies, these routes are not merely physical paths but ritual mandalas—reenacted annually through sacred processions, hymns, and communal chanting. The 14 Kosi circuit, traditionally undertaken during the Kartik month, draws over 3 million pilgrims in a single day, while the 5 Kosi loop connects key tirthas within the city's immediate hinterland. Yet field surveys reveal critical infrastructural deficits: the 14 Kosi route offers pedestrian access along just 4% of its 42 km length, and the 5 Kosi only 10.4% of its 16 km. Amenities are scarce—a couple of toilets on each route, no potable water points, minimal seating, and inadequate waste disposal. Encroachments and ad hoc stalls further constrict movement, particularly during peak pilgrimages. However, the generous right-of-way along outer segments and the presence of strategically located vacant parcels offer significant scope to enhance circulation, comfort, and pilgrim experience, unlocking the possibility of

continuous, well-serviced ceremonial corridors that respect the routes' historic and spiritual significance.



5 Kosi Parikrama Route	
Facilities	Numbers
Toilets	2
Water Points	0
Seatings	3
Dustbins	3

5 Kosi Parikrama Route		
Footpaths	Length	Percentage
Present (Ghats)	1.5	10.30%
Present (Roads)	0	0
Absent	14.5	89.70%
Total	16	100 %

14 Kosi Parikrama Route	
Facilities	Numbers
Toilets	2
Water Points	0
Seatings	4
Dustbins	7

14 Kosi Parikrama Route		
Footpaths	Length	Percentage
Present (Ghats)	1.68	4.0 %
Present (Roads)	0	0
Absent	40.32	96.0 %
Total	42	100 %

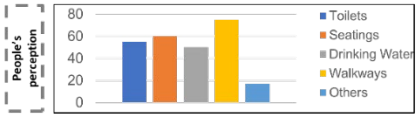
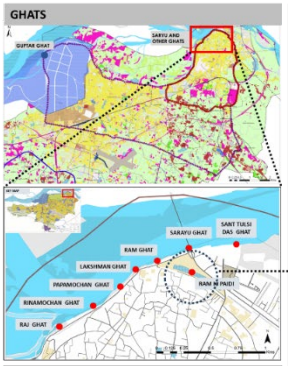


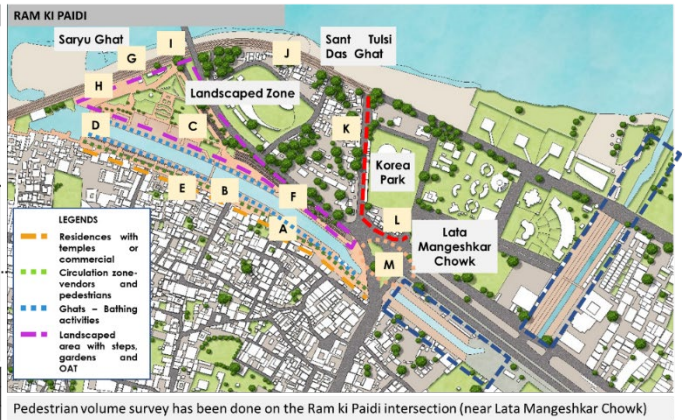
Figure 24. Parikrama Routes

Ghats Precinct

The Ghats Precinct, where Ayodhya meets the Saryu, is the city's ceremonial theatre and a vital component of its sacred geography. These riverfront platforms—such as Ram Ki Paidi, Svaragadvara Ghat, Guptar Ghat, Naya Ghat, Raj Ghat, Laxman Ghat, and Janki Ghat—are not only architectural elements but also active ritual stages for purification, daily aartis, festival immersions, and religious processions, many tied to episodes from the Ramayana and the lives of revered saints. Ram Ki Paidi alone attracts over 12,000 visitors per peak hour, yet footfall drops sharply beyond its immediate zone, leaving many historically significant ghats underutilised. Vendor encroachment constricts movement, while basic facilities such as cloakrooms, changing areas, and secure storage remain absent. Recent uniform repainting has brought visual consistency but often at the cost of historic materiality. The river edge holds untapped potential for enhancing both functionality and visitor experience, with scope to revive underused ghats, activate the waterfront beyond peak hours, and strengthen the ecological health of the Saryu—ensuring the precinct continues to serve as a living interface between the city, the river, and its spiritual traditions.



Footfall survey on various ghats		
Ghats	Morning P-H	Evening P-H
Ram Ki paidi	12454	5820
Saryu Ghat	7650	4870
Ram Ghat	3670	2380
Lakshman Ghat	2490	600
Papmochan Ghat	1320	420
Rinmochan Ghat	780	210
Raj Ghat	430	120



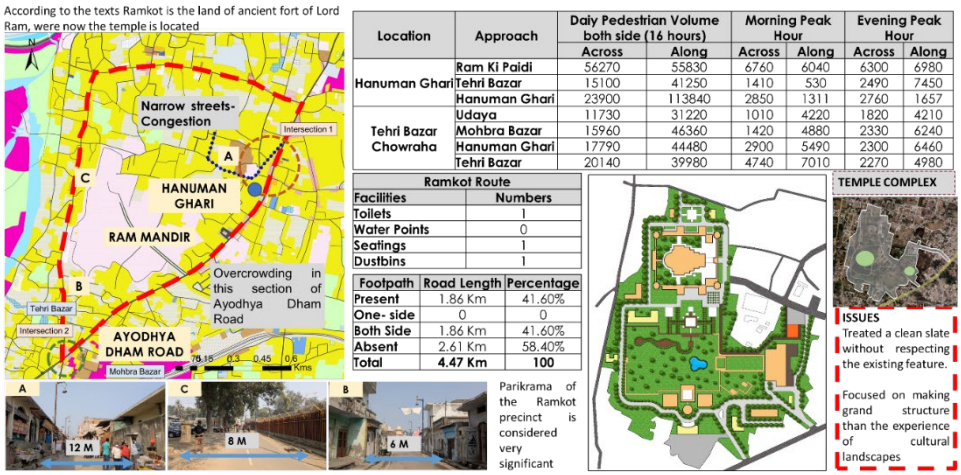
Pedestrian volume survey has been done on the Ram ki Paidi intersection (near Lata Mangeshkar Chowk)

Location	Approach	Daily Pedestrian Volume both side (16 hours)		Morning Peak Hour		Evening Peak Hour	
		Across	Along	Across	Along	Across	Along
Ram Ki Paidi	Hanuman Ghari	4090	5790	670	1170	370	410
	Bypass	2040	4460	240	590	120	270
	Katra	3410	5900	260	590	310	440

Figure 25. Ghats of Ayodhya

Ramkot Precinct

The Ramkot Precinct, Ayodhya's spiritual core, is anchored by the Ram Janmabhoomi Temple Complex, Hanuman Garhi, Kanak Bhawan, and Nageshwarnath Temple—each steeped in layered devotional and architectural significance. This dense constellation of shrines draws massive daily footfalls, with Ramjanmabhoomi alone receiving over 113,000 visitors. The resulting congestion, particularly at Tehri Bazar Chowraha, is compounded by discontinuous footpaths and a lack of spatial cues reflecting Ramayana associations. While these conditions strain movement and visitor experience, the precinct's concentration of high-value sacred sites offers exceptional potential for integrated circulation management and thematic enhancements that reinforce its symbolic centrality.



Location	Approach	Daiy Pedestrian Volume both side (16 hours)		Morning Peak Hour		Evening Peak Hour	
		Across	Along	Across	Along	Across	Along
Hanuman Ghari	Ram Ki Paidi	56270	55830	6760	6040	6300	6980
	Tehri Bazar	15100	41250	1410	530	2490	7450
	Hanuman Ghari	23900	113840	2850	1311	2760	1657
Tehri Bazar Chowraha	Udaya	11730	31220	1010	4220	1820	4210
	Mohbra Bazar	15960	46360	1420	4880	2330	6240
	Hanuman Ghari	17790	44480	2900	5490	2300	6460
	Tehri Bazar	20140	39980	4740	7010	2270	4980

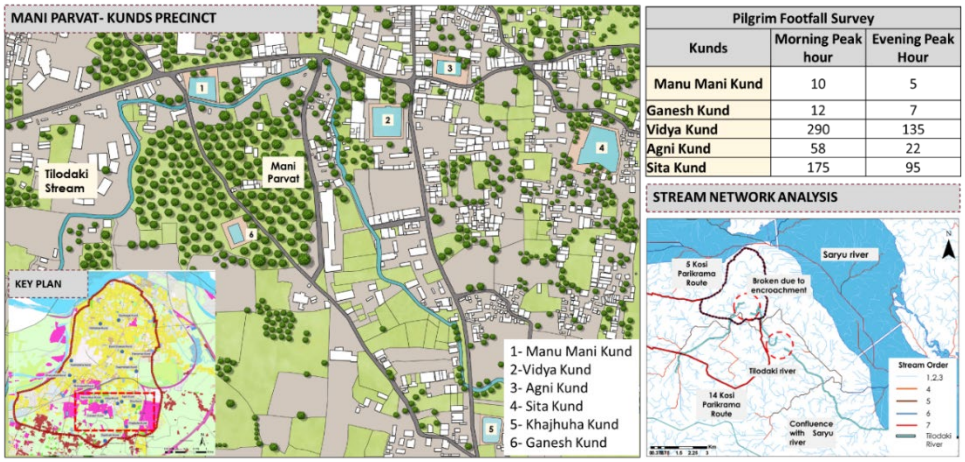
Ramkot Route	
Facilities	Numbers
Toilets	1
Water Points	0
Seatings	1
Dustbins	1

Footpath	Road Length	Percentage
Present	1.86 Km	41.60%
One- side	0	0
Both Side	1.86 Km	41.60%
Absent	2.61 Km	58.40%
Total	4.47 Km	100

Figure 26. Ramkot Precinct

Mani Parvat- Kunds Precinct

Ayodhya's 108 kunds—ritual water tanks or stepped ponds—dot the city with spiritual symbolism and historic depth. They are revered pilgrimage stops and are believed to hold purificatory powers. Water is essential to all Hindu rituals for its purificatory role in physical and moral cleansing, and in its capacity to transfer, transport, and transform impurities.[8] Once integral to the city's water management, these temple-framed tanks embodied a fusion of religious function and ecological design, hosting sacred baths, Vedic rites, and philosophical gatherings.



Pilgrim Footfall Survey		
Kunds	Morning Peak hour	Evening Peak Hour
Manu Mani Kund	10	5
Ganesh Kund	12	7
Vidya Kund	290	135
Agni Kund	58	22
Sita Kund	175	95

Figure 27. Kunds Precinct

The identified precinct, anchored by Mani Parvat and few kunds, holds some of Ayodhya's most neglected heritage. Of six principal kunds, only Vidya and Sita Kund remain active; others suffer from stagnation, algal growth, and structural decline. The Tilodaki stream, once their lifeline, is blocked by encroachment, severing hydrological continuity. Footfall is low, owing to degraded infrastructure and limited visitor awareness. Yet, the area holds substantial spatial and ecological potential, with vacant land and historic water bodies that could be reactivated to strengthen cultural activity, restore hydrological connections, and re-establish the precinct as a vibrant blue–green link within Ayodhya's sacred landscape.

INTANGIBLE HERITAGE OF AYODHYA

Ayodhya's intangible heritage is the living pulse of its cultural landscape, sustained through a dense network of rituals, performances, and artisanal practices. Epic enactments such as *Ramleela* animate the city during festival seasons, while daily rituals, kirtans, and processions infuse sacred meaning into its streets and riverfronts. Oral storytelling traditions like *Rama Katha*, devotional music, and folk dances such as *Lok Nritya* serve as vessels of cultural memory, transmitting collective identity across generations. Memory and narratives share images and spatial structures; storytelling is therefore an easy and natural way to remember the past.[9] This continuity is not limited to staged events but flows into everyday life—whether through sacred cuisine prepared for offerings, artisanal crafts linked to religious observances, or informal gatherings where local histories are recounted. Yet, these practices are increasingly challenged by commercialization, seasonal concentration of activity, and the absence of dignified, dedicated spaces for performance and craft. Without targeted support, the city risks losing the authenticity and depth of the very traditions that animate its tangible heritage.

REGENERATION FRAMEWORK

Regenerative urbanism planning principles can be applied towards rejuvenating Ayodhya's degraded cultural landscape. The cherished image of Ayodhya rising above the waters of Sarayu surrounded by garden groves and the archetypal shrine-kund-vatika represents a cultural landscape made potent and auspicious with the divine presence of gods and sages.[10] The regeneration framework is anchored in three interlinked pillars: sacred narrative integration, ecological urbanism, and community-rooted stewardship. Sacred narrative integration embeds Ramayana episodes into the city's spatial fabric. Ecological urbanism restores Ayodhya's blue–green systems as both ecological assets and cultural infrastructure. Community-rooted stewardship ensures regeneration remains an evolving, participatory process.

Parikrama Routes

Regeneration of the Parikrama Routes focuses on transforming them from intermittently accessible paths into continuous, amenity-rich ceremonial corridors. Road widening to 24 metres along low-density segments and 16 metres in constrained areas would permit the integration of segregated pedestrian and e-rickshaw lanes, ensuring safe and uninterrupted movement during peak pilgrimages. Pilgrim nodes at intervals of 200–250 metres would house toilets, drinking water points, shaded seating, and vending bays, replacing the current ad hoc stalls.

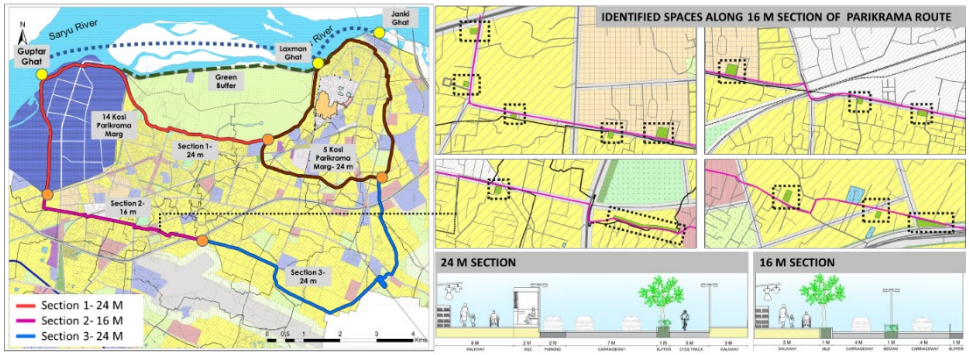


Figure 28. Proposals for Parikrama Routes of Ayodhya

Landscape buffers planted with peepal, neem, jamun, and palash would provide shade while reinforcing the sacred character. Where widening is impractical, adjacent vacant parcels could be developed as micro-amenity hubs, preserving the continuity of the ritual journey. Interpretive signage along the routes would narrate their historical and spiritual significance, deepening pilgrims' engagement beyond the act of circumambulation.

Ghats Precinct

The Ghats Precinct regeneration aims to balance ceremonial gravitas with functional efficiency.

Figure 29. Proposals for Ram Ki Paidi Area of Ayodhya

Ram ki Paidi and surrounding ghats would be pedestrianised, with vehicular movement restricted to peripheral access points. A fixed vending system, incorporating 1.5-metre-wide bays along defined

stretches, would create orderly movement. A complete street is planned for culturally resonant market for crafts, offerings, and local cuisine along with the designated vending zones for informal vendors. Ferry services linking Ram ki Paidi, Laxman Ghat, and Guptar Ghat would redistribute visitor flow and activate underused ghats. The evening economy would be enhanced through activities like curated boat tableaux illustrating episodes from the Ramayana, complemented by lighting and soundscapes. Ecological measures, including biofiltration wetlands at bathing channel outfalls, would maintain water purity while respecting ritual requirements. Seating terraces, shaded walkways, and interpretive installations would extend the precinct's use across times of day and seasons.

Rmkot Precinct

In the Ramkot Precinct, regeneration prioritises congestion relief, narrative integration, and ceremonial coherence. Strategic land acquisition adjacent to Hanuman Ghari would allow the expansion of pilgrim holding areas and integration of cloakrooms, rest facilities, and shaded waiting zones.

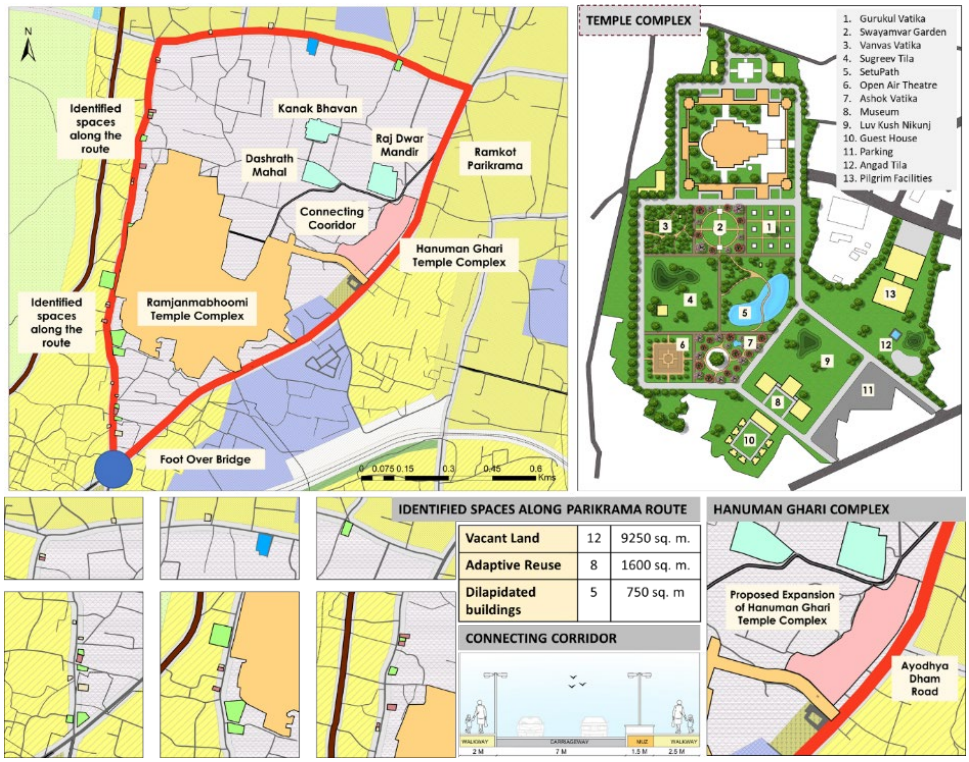


Figure 30. Proposals Ramkot Precinct of Ayodhya

Pedestrian continuity would be achieved through widened footpaths and the installation of foot overbridges at conflict-heavy nodes like Tehri Bazar Chowraha, ensuring safe movement without disrupting processional routes. Landscape design for the Ramjanmabhoomi Temple Complex would draw from the Ayodhya Mahatmya typologies: van (forest groves), vatika (gardens of devotion), tila (sacred mounds), kund (water bodies), and kunj (secluded bowers), each anchoring mythological references in tangible form. Adaptive reuse of dilapidated structures along the parikrama route would create interpretive pause points, artisan workshops, and pilgrim amenities, weaving heritage and functionality into a cohesive spatial narrative.

Kunds Precinct

The Kunds Precinct regeneration hinges on hydrological restoration and cultural reactivation. The Tilodaki stream would be cleared of encroachments, its course re-established and flanked by a three-metre vegetated buffer of culturally symbolic species. Hydrological connectivity to the kunds would be restored, enabling year-round water quality suitable for ritual use. A continuous heritage trail along the Tilodaki river, approximately one kilometre in length, would link the principal kunds—Manu Mani, Vidya, Agni, Sita, Khajhuha, and Ganesh—integrating shaded walkways, seating, and interpretive signage. A small heritage market along the trail would activate the space daily, ensuring the precinct's use extends beyond festival periods Vacant parcels would be developed into multipurpose festival grounds and parking areas, accommodating seasonal events such as the Shravan Jhula Mela. Overall road connectivity would be improved. By coupling blue–green infrastructure with cultural programming, the kunds would regain their role as both sacred and social nodes.

Figure 31. Proposals for Mani Parvat- Kunds Precinct of Ayodhya

Intangible Heritage

The regeneration of Ayodhya's intangible heritage aspires to embed its living traditions within accessible, dignified, and well-curated cultural settings. Expanding the city's event calendar to bridge seasonal lulls would sustain vibrancy year-round, with thematic festivals—such as a Ramayana Literature and Film Festival, a Crafts and Culinary Fair, or a Classical and Folk Performance Week—broadening visitor profiles and dispersing tourism benefits across the calendar.

Cultural zones strategically located within key precincts, including the Ram ki Paidi heritage market and Mani Parvat grounds, could evolve into permanent stages for performance, craft demonstration, and storytelling, adaptable through modular infrastructure and responsive lighting. Along pilgrimage corridors and riverfronts, interpretive installations would contextualise oral traditions and ritual narratives, enabling cultural transmission beyond the immediacy of live events.

The sacred economy could be invigorated by clustering artisans and culinary vendors into organised heritage markets with coherent branding, intuitive wayfinding, and visitor amenities. Apprenticeship models led by master practitioners, coordinated through Local Heritage Councils, would secure skill

continuity for future generations. Collectively, these strategies would reposition intangible heritage from a seasonal spectacle to a continuous, immersive force shaping Ayodhya's identity, economy, and cultural diplomacy.

Governance Model

A multi-tier governance model is proposed, with a Heritage Regeneration Council as the apex policy-making body, a Heritage Management Committee as the implementation arm, and Local Heritage Councils as the grassroots interface. This structure ensures both top-down coordination and bottom-up participation. The Integrated Command and Control Centre (ICCC) would manage crowd flow, waste collection, and environmental monitoring in real time, using data from sensors, cameras, and community reporting.

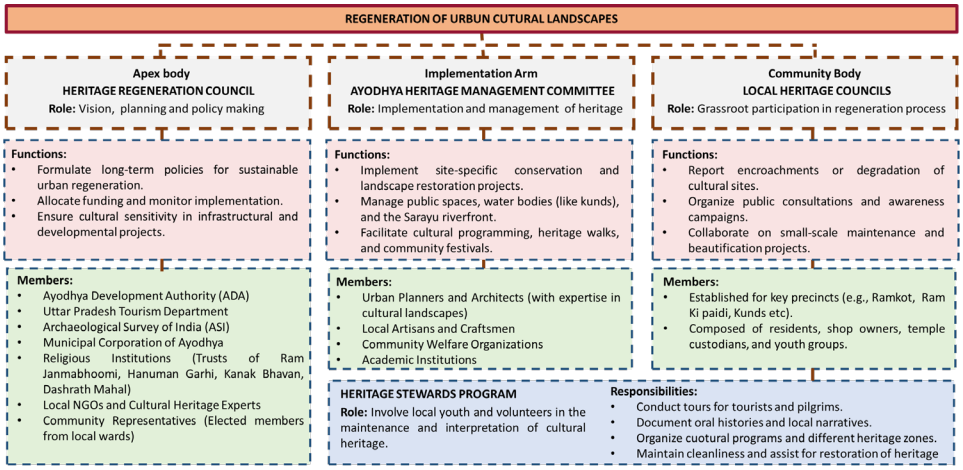


Figure 32. Community Based Institutional model for Regeneration of Ayodhya

Funding would come from a mix of government grants, public–private partnerships, contributions from temple trusts, and crowdfunding campaigns targeted at specific projects such as kund restoration or heritage signage. This diversified model reduces reliance on a single source and fosters a sense of collective ownership.

CONCLUSION

Ayodhya's cultural landscape is a living system where tangible and intangible heritage intertwine. Its regeneration cannot be reduced to beautification or isolated restoration projects; rather, it requires a holistic approach that integrates narrative heritage, ecological resilience, and community agency. The precinct-based model outlined here offers a replicable framework for other heritage cities confronting the dual pressures of rapid urbanization and mass tourism. By grounding interventions in both cultural memory and contemporary needs, Ayodhya can sustain its identity as a global spiritual capital while improving the lived experience of residents and visitors alike.

NOTES

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SULEYMANIYE ROW SHOPS: A CONTESTED HERITAGE SITE

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INTRODUCTION

The Süleymaniye Mosque Complex (1550–1557), designed by Mimar Sinan for Sultan Süleyman the Magnificent, was among the largest Ottoman külliyes, encompassing a mosque, tombs, madrasas, a hospital, a caravanserai, and commercial structures. Within this context, the Süleymaniye Row Shops (Dökmeciler Çarşısı) benefited from the interdependence of commerce and religion. While revenues from rents financed the upkeep of the mosque, artisans took advantage of the prestige of proximity to Sinan's monumental work.

This paper explores the contested heritage of the Süleymaniye Row Shops, restored between 2018 and 2024 as part of Istanbul Metropolitan Municipality's IBB Miras initiative and reopened as the Istanbul Design Museum in 2024. While the project represents a significant architectural conservation achievement, its outcomes raise critical questions about social heritage, adaptive reuse, and the alignment between conservation policy and community needs. Drawing on archival research, architectural reports, and visual documentation, this study traces the transformation of the Row Shops from the Ottoman Dökmeciler Çarşısı to a contemporary cultural hub. The findings reveal persistent tensions between physical preservation and the displacement of living traditions, highlighting the risks of museumification and touristification in fragile historic districts.

This paper situates the Istanbul Design Museum project within the broader debate of the Historic Urban Landscape (HUL) and aims to contribute to the literature on sustainable heritage practices. It asks questions such as: How can heritage projects balance the preservation of material authenticity with the continuation of intangible cultural practices? To what extent does the Istanbul Design Museum respond to the community's needs? It argues for participatory and inclusive heritage management models that integrate local communities, crafts, and intangible traditions into conservation practice. Ultimately, it proposes the Süleymaniye Row Shops as a critical case study in contested heritage where policy, architecture, and community intersect.

HISTORICAL AND ARCHITECTURAL BACKGROUND

The Süleymaniye Mosque Complex is one of the largest and most comprehensive külliye (imperial complexes) in Ottoman Istanbul, encompassing religious, educational, medical, and commercial facilities.[1] It takes its name from the Ottoman Sultan Süleyman the Lawgiver, who sponsored its construction between 1550-1557. It was designed by architect Koca Mimar Sinan, who was the head of the Corps of Royal Architects (hassa mimarları). The Complex is situated on the third hill of the

historical peninsula of Istanbul. This location overlooking the Golden Horn and the Bosporus allows the mosque to visually dominate the silhouette of the city and be seen from various locations such as Galata and Üsküdar.

The mosque complex dominates the historical commercial area, which continued this function through the Byzantine, Ottoman eras till today. The commercial area developed as an extension of trade ports located at the Golden Horn, which is an inlet of the Marmara Sea that acts like a natural harbour. Streets of shops and hans climb up the slopes facing the Golden Horn, and extend towards the main artery of the peninsula, which was called the Byzantine Mese, Ottoman Divan Yolu, or the contemporary Ordu Caddesi, fostering a very crowded and lively region of the city.

Süleymaniye Mosque was and still is a peaceful urban oasis within the hustle and bustle of this commercial and touristic zone *(Figure 1)*. The mosque is framed by an outer courtyard, which represents the gardens of heaven defined by high walls (courtyard). Additional buildings of the complex, such as madrasas, a hospital, a public kitchen, a hammam, and shops, create a buffer zone between the crowded, narrow streets of the city and the mosque (top view).

Figure 1. Left photo: Life in the courtyard of Süleymaniye, right photo: hustle of the neighbourhood, 2025

Since the complex is located on the slope, it is on a large terrace that drops down approximately 6 meters to the east and northeast. Here, the terrace is supported by a vaulted substructure, the voids of which were utilized as shops. There are 35 shops on the east and 18 on the northeast. Ottoman külliyes represented an integrated urban model where religious, commercial, and social functions coexisted. The urban identity of Ottoman külliyes depended as much on their commercial appendages as on their monumental mosques.[2] The row shops are part of such a unique combination. The Row Shops of Süleymaniye functioned as a commercial spine composed of small workshops meeting daily needs.[3] They produced metal objects and were included in the vakıf so that their income was used for the upkeep of the mosque and its charitable institutions.

Throughout the centuries, however, the shops underwent transformations and partial restorations. Süleymaniye's social fabric—once marked by a vibrant artisan economy, religious scholarship, and intergenerational living—has been eroded over decades due to changes in population, economy, and social structure. By the twentieth century, the area faced profound socio-economic decline. The Republican Era in Turkey brought modernization and infrastructural interventions that compromised heritage. The road level rose and interventions of the 1950s permanently distorted the original façade alignment of the shops.[4] By the 1980s, the shops were degraded, squatted, or abandoned. Since the 1980s, with the enactment of Law No. 2863 on the Conservation of Cultural and Natural Assets, Istanbul has witnessed both large-scale urban renewal and targeted conservation efforts. UNESCO's

inscription of Istanbul's Historic Areas in 1985 brought recognition but limited resources. Conservation boards catalogued the shops but lacked enforcement or integration with community revitalization. By the early 21st century, much of the area had fallen into neglect, marked by invasions, squatting, and physical deterioration IBB Miras initiative, launched in 2019, represents a municipal-led heritage program that combines restoration with cultural reprogramming.

IBB Miras is a governmental institute under the umbrella of the Istanbul Metropolitan Municipality. Especially in recent years, IBB Miras has undertaken multiple restoration projects in Istanbul. It has 25 completed projects in 28 districts, many cultural heritage assets, including monuments, industrial heritage buildings, fountains, graveyards, and cisterns.[5]

RESTORATION PROCESS AND PROJECT GOALS

The restoration of the Süleymaniye Row Shops, carried out between 2018 and 2024, was guided by Ozer/Urger Architects in collaboration with Istanbul Metropolitan Municipality's IBB Miras unit. The project involved detailed surveys, restitution studies, and physical interventions aimed at stabilizing and revitalizing the structures. As Ozer/Urger noted in their project report,[6] the restoration sought not only to stabilize decayed structures but also to redefine their public role within the historic core.

By 2018, the shops were largely abandoned, with many occupied by squatters or informal businesses. Façades exhibited graffiti, damaged shutters, and structural cracks, while several interiors were derelict or collapsed. Interiors had been subdivided or stripped of original elements, further compromising historical integrity *(Figure 2)*.

Figure 2. Süleymaniye Row Shops façade before restoration, 2018

The architectural team preserved the overall footprint of the row shops but undertook significant interventions to the façades and structure. Road elevation changes over the decades necessitated the adjustment of thresholds and entrances, resulting in partial loss of original masonry. Restitution drawings by Ozer/Urger reconstructed missing façade elements based on archival photographs and art history report *(Figure 3)*.

Figure 3. Restored street elevation after intervention, 2024

The conservation of monuments is always facilitated by making use of them for some socially useful purpose.[7] Conservation is not only the safeguarding of stones and structures, but also of social memory.[8] Therefore, the project's urban design component extended beyond architectural restoration, proposing a revival for the neighbourhood and its social heritage. Demolished shops on the opposite row were replaced with an open public space, creating a small plaza where visitors could rest and socialize *(Figure 4)*.

Figure 4. Public open space created after demolition of opposite row, 2024

This intervention sought to balance conservation with contemporary urban needs. Since sustainability in heritage management depends on integrating tangible and intangible values, as well as the participation of multiple stakeholders,[9] the project aimed at expanding the user profile and developing proposals to attract not only tourists but also locals, students, and researchers to the area. This perspective, developed during the project phase, later facilitated the integration of the design museum concept into the buildings once restoration was completed.

In 2024, the site reopened as the Istanbul Design Museum, envisioned as a hybrid cultural and commercial hub hosting design exhibitions, workshops, and artisanal production. Fifty shop units

were allocated to design studios, cultural organizations, and municipal affiliates *(Figure 5).* Yet, the selection of tenants—primarily designers, architects, and municipal institutions—created a split with the site's historical association with crafts and local production.

Figure 5. Opening ceremony and new shop signage, 2024

The UNESCO Recommendation on the Historic Urban Landscape insists that Urban heritage should be understood as the layering of cultural and natural values over time, beyond monuments alone.[10] While the museum branding aligned the project with global trends in creative industries, it inadvertently marginalized the living heritage of the neighbourhood. Craftsmen and small local businesses, who had historically animated the Row Shops, were largely excluded from the new allocation model. The absence of a participatory process meant that residents and former users had little influence over the reprogramming.

A CONTESTED HERITAGE SITE

The restoration and reuse of the Süleymaniye Row Shops constitute a significant example of the contemporary urban heritage projects in Istanbul. Such projects should be seen from the perspective of the Historic Urban Landscape of the city. HUL is not a new designation but a holistic approach to managing urban heritage in an inclusive and integrated way.[11] Istanbul Design Museum Project proposes intentions of approaching the concept of heritage with such a holistic approach.

The restoration of Row Shops as the 'Istanbul Design Museum' achieved notable physical and institutional outcomes. Structurally, the row shops are stabilized and legally protected. Problems of ownership disputes, invasions, and neglect have been resolved, and the area is once again integrated into Istanbul's cultural map. The intervention also addressed urban design concerns by creating a public open space and improving street-pavement integration.

However, these achievements are counterbalanced by problematic issues. Despite architectural success, the project has faced criticism for its social implications. "A monument stripped of its social function becomes an empty shell, preserved in matter but disconnected from memory".[12] One of the most pressing challenges of the Süleymaniye Row Shops is the misalignment between their new tenants and the social heritage of the neighbourhood. While the Istanbul Design Museum was envisioned as a hub for creativity, the leasing strategy prioritized design studios, cultural organizations, and municipal partners with the capacity to mount exhibitions. This approach secured initial visibility but failed to integrate local traditions *(Figure 6).*

Since the selected shop users were often incompatible with the neighbourhood's character, some tenants could not adapt to the existing conditions, and their units became vacant within a year of

opening. In addition, the museum remained largely disconnected from the local residents, and tourists and external visitors became its primary audience. The transformation has failed to revive the artisan economy once embedded in the site. Crafts and micro-economies were displaced by curated cultural events. Unlike Istanbul's Grand Bazaar, where trade continuity persists, the Row Shops became symbolic rather than functional. The selected shop users were not compatible with the neighbourhood, and after a short time, several units were left empty *(Figure 6)*.

Figure 6. Black and white photos representing empty museum units, 2025

The absence of reference to the industrial and social heritage of the shops—such as their historical role in metal casting—deepened the sense of disconnection. Interviews and student research conducted in collaboration with local universities reveal that residents perceive the museum as alien to their everyday lives. Integration of large cultural institutions and international design brands contrasts sharply with the modest economic activities of surrounding shops, such as religious material stores and small eateries.

Urban heritage is a social asset, whose value lies not only in buildings but in the continuity of practices that animate them.[13] One of the most pressing challenges of the Süleymaniye Row Shops is the misalignment between their new tenants and the social heritage of the neighborhood. While the Istanbul Design Museum was envisioned as a hub for creativity, the leasing strategy prioritized design studios, cultural organizations, and municipal partners with the capacity to mount exhibitions. This secured initial visibility but failed to integrate local traditions.

Alternative approaches could have mitigated these tensions. These include selecting more compatible users, such as local artisans and craftsmen, and adopting participatory governance models. By diversifying tenants according to the authentic fabric of the neighbourhood, the design museum could move beyond its current image as a curated cultural corridor to become a living, socially integrated ensemble. Compatible users would restore continuity with Süleymaniye's intangible heritage while keeping the site adaptable to new cultural and economic currents. A more flexible framing—avoiding the rigid label of "Design Museum"—might allow the site to function as a community-integrated cultural corridor. Incorporating programs that highlight the living traditions of metal casting, woodwork, or glassmaking could have provided continuity with the site's Ottoman-era functions while engaging new creative practices. Comparative studies of contested heritage sites confirm the risk: as Laurajane Smith argued, "Heritage is not a thing but a cultural process, continually negotiated

between communities and institutions".[14] The Row Shops illustrate this tension precisely: technically restored but socially contested.

To safeguard the living heritage of Süleymaniye, a more compatible user profile is needed. The best way of preserving a building is to find a use for it that respects its historical character (Venice Charter 1964, Art. 5). In this light, the selection of future users should reflect both tradition and adaptation.

Traditional artisans and craftspeople remain vital. As Bandarin and van Oers argue, "Heritage conservation is sustainable only if it continues to serve the needs of local communities while retaining authenticity."[15] Allocating affordable units to artisans—bookbinders, calligraphers, woodworkers, and coppersmiths—would ensure continuity with Ottoman-era practices.

The 'Melting Pot' Project

In spring 2025, Istanbul Bilgi University's Interior Design second-year studio presented an exhibition titled *The Melting Pot* in two of the Süleymaniye Row Shops (Units 21 and 45). The project, coordinated by Idil Karababa and Nazlı Güngen, invited students to rethink the Row Shops not as a rigid boundary but as a site of convergence.

The *Melting Pot* project reconceptualized the units as a *"neighbourhood fusion space"*, cultivating new scenarios of reuse that emphasized cultural exchange, collaboration, and community spirit. Each student group worked with two cells and the street in front, proposing modular, removable additions that allowed for workshops, gatherings, and informal social encounters. The design principle was to "touch the old without rivalling or harming it," ensuring that interventions could be reversed without permanent impact.

The student works of the *Melting Pot* project point to alternative futures for Süleymaniye Row Shops. Rather than limiting the site to professional design institutions, students speculated on possible users and interior designs that are compatible with the social heritage of the neighbourhood.

The exhibition (1–15 March 2025) animated the restored shops with models, drawings, and installations. More importantly, it attracted not only academic audiences but also neighbourhood residents, mosque visitors, and tourists passing through. By situating student projects in real shops, the event temporarily restored the Row Shops' function as a space of encounter between diverse publics.[16] This demonstrates that student projects can provide not only pedagogical experimentation but also genuine community integration *(Figure 7).*

Figure 7. Student exhibition (the "Melting Pot" project), Bilgi University, 2025

In the exhibition, the inclusion of students and residents created a platform for experimentation and dialogue. This integration of education, cultural production, and neighbourhood participation provides ideas on the possible approaches for the integration of the community to the reuse project.

CONCLUSION

Istanbul Design Museum (Süleymaniye Row Shops) re-use project exemplifies the complexities of social heritage in historic urban contexts. While the physical restoration aligns with conservation principles, the social outcomes demonstrate the risks of touristification and unsustainability. The case resonates with global debates on contested heritage, where heritage projects become arenas of negotiation between preservation, economic interests, and community identities.

The commercial structures of the Süleymaniye Complex are more than auxiliary buildings—they are architectural testimonies to an integrated Ottoman urban philosophy where economy, education, and spirituality coexisted harmoniously. Therefore, it is significant to include historical consciousness and community-oriented use in such a restoration project. Preserving their architectural language is not only a matter of material conservation but also of safeguarding the social history embedded in these stones.

The Istanbul Design Museum, if effectively integrated with the social ecosystem of Süleymaniye, holds the potential to become a model for socially engaged urban heritage preservation. However, this integration depends on acknowledging and addressing the cultural tensions embedded in adaptive reuse projects. Social heritage must be considered not as an obstacle to modernization but as a vital component of sustainable urban futures.

NOTES

[1] Gülru Necipoğlu, “The Süleymaniye Complex in Istanbul: An Interpretation,” *Muqarnas* 92-117.
[2] Doğan Kuban, *Osmanlı Mimarisi* (İstanbul: Yapı Endüstri Merkezi Yayınları, 2007).
[3] Tekin Süllü, *Sanat Tarihi Raporu: Süleymaniye Camii Külliyesi Ticari Birimleri* (Istanbul Metropolitan Municipality, 2018)
[4] Süllü, *Sanat Tarihi Raporu*
[5]İstanbul Büyükşehir Belediyesi Kültürel Miras Koruma Müdürlüğü, accessed December 11, 2025, https://kulturelmiras.ibb.istanbul/.
[6] Ozer/Urger Architects, *Restoration of the Süleymaniye Row Shops: Istanbul Design Museum Project Archive* (Istanbul, 2020).
[7] International Council on Monuments and Sites (ICOMOS), *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)* (Venice, 1964) Article 5.
[8] Zeynep Ahunbay, *Tarihi Çevre Koruma ve Restorasyon* (İstanbul: Yapı Endüstri Merkezi Yayınları, 1996)
[9] Francesco Bandarin and Ron van Oers. *The Historic Urban Landscape: Managing Heritage in an Urban Century* (Oxford: Wiley-Blackwell, 2012).
[10] UNESCO, *Recommendation on the Historic Urban Landscape* (Paris: UNESCO, 2011)
[11] Bandarin and van Oers, *The Historic Urban Landscape*
[12] Ahunbay, *Tarihi Çevre Koruma ve Restorasyon*
[13] UNESCO, *Recommendation on the Historic Urban Landscape*
[14] Laurajane Smith, *Uses of Heritage* (London: Routledge, 2006
[15] Bandarin and van Oers, *The Historic Urban Landscape*
[16] Istanbul Bilgi University, Department of Interior Design. *The Melting Pot Exhibition: Süleymaniye Row Shops Student Projects*: *Exhibition Booklet* (Istanbul, 2025).

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USING HERITAGE AS A TOOL. ENHANCING RURAL AREAS THROUGH ARCHITECTURAL DESIGN

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INTRODUCTION

The territory north of the province of Treviso, bounded to the west by the course of the Piave River and to the south by the line formed by the municipalities of Susegana, Conegliano, and Godega di Sant'Urbano – where the first hilly elevations arise after kilometers of plains – is today particularly renowned for the production of Prosecco DOCG. This area encompasses the so-called "Prosecco Hills", which on July 7, 2019, were inscribed on the UNESCO World Heritage List due to their compliance with Criterion V of Outstanding Universal Value. This criterion defines the site as: "an exceptional example of a traditional human settlement, land use, or sea use representative of a culture (or cultures) or human interaction with the environment, especially when it has become vulnerable to the impact of irreversible change".[1]

Since the UNESCO recognition, interest in the hills and the wider region has grown exponentially. To illustrate, tourism data show that arrivals in the area increased from 96,899 in 2018 to 120,424 at the end of 2023.[2]

However, to mitigate risks related to overcrowding – both in terms of hydrogeological vulnerability, to which the territory is particularly susceptible, and the well-documented negative impacts of mass tourism (as exemplified by the nearby city of Venice) – it is prudent to adopt a broader perspective. This entails situating the Prosecco Hills within a larger territorial context beyond the boundaries defined by UNESCO. Such an approach would allow for the inclusion and enhancement of surrounding areas, which are often less known and frequented, thereby bringing to light the hidden heritage they preserve. From this reflection emerges the idea of identifying new "attractors", whether architectural-cultural or naturalistic, which, integrated into a cohesive system, can contribute to expanding the area's sphere of attraction. This strategy would not only help alleviate pressure on the most overcrowded zones but also promote the revitalization of individual landmarks and, more broadly, entire portions of the territory.

The enhancement of cultural heritage is, in fact, one of the strategic actions identified by the European Union in its 2021 document *A Long-term Vision for the EU's Rural Areas – Towards Stronger, Connected, Resilient and Prosperous Rural Areas by 2040*.[3] This policy promotes the development of internal regions by identifying and valorizing elements that bear witness to civilization, history, and culture. These assets, carriers of irreplaceable and unique values, express the identities of the places and societies that created them and must be made legible and accessible to all.

When observing the orography of the Upper Marca Trevigiana, one is immediately drawn to a territorial dimension that predates even viticulture, tracing back to late antiquity and the medieval period. This landscape preserves a heritage that is perhaps little narrated today but of significant historical importance: that of castles and fortifications.

The Castle of Collalto

The Castle of Collalto (Figure 1), located in the municipality of Susegana, in the Province of Treviso, traces its origins back to 1110 AD, when the first fortified settlement was constructed atop the hill known as *Collalto* — literally, the "high hill". The site was not chosen arbitrarily. Its elevated position offered a commanding view over a key crossing of the Piave River and lay at the convergence of two major routes: the *Via Claudia Augusta Altinate*, a Roman imperial road linking *Altinum* to the Alpine passes, and the transalpine route connecting *Opitergium* (modern-day Oderzo), *Feltria* (Feltre), and *Tridentum* (Trento). These were critical corridors for trade, communication, and military movement between the Adriatic coast, the Venetian plains, the Alpine regions, and Central Europe.

Figure 1. The Castle of Collalto photographed in 2024.

Within this strategic context, the noble family of Ensedisio I – likely of Lombard descent – established a permanent residence. The early structure consisted of a modest watchtower, a common feature in feudal territorial control. However, over the following centuries, the castle evolved into a complex fortified settlement. The addition of comital residences, a church dedicated to Saint George,

and various ancillary structures for guards, administrators, and townspeople progressively transformed the site into a *castrum* of considerable importance – both militarily and administratively.
Visual documentation has played a crucial role in reconstructing the castle's original appearance. Among the most significant sources are paintings by Cima da Conegliano, which depict the castle as part of the background landscape in several 14th- and 15th-century works (Figure 2). In addition, a 17th-century engraving provides a detailed overview of the site's topographical and architectural articulation, revealing a tripartite terraced layout.

Figure 2. Cima da Conegliano, Madonna col Bambino tra i Santi Michele Arcangelo e Andrea, oil on panel, 194 x 134 mm, 1505-1507, Parma National Gallery. (Detail). Image license CC BY-NC-SA 4.0 (https://creativecommons.org/licenses/by-nc-sa/4.0/deed.it)

The uppermost level was occupied by the *rocca* – the fortress proper – comprising the main tower and the noble quarters. This area, accessible through a single guarded entry, represented the most secure part of the complex. The second tier, still within the first defensive perimeter, housed ecclesiastical structures: the church, the parish residence, and the bell tower. The lowest level was reserved for the broader settlement, including dwellings for villagers, workshops for artisans, and spaces for merchants. The entire village was encircled by a robust wall system punctuated by four defensive towers and two monumental gates, located to the east and west. These entrances were equipped with defensive innovations such as fortified vestibules, drawbridges, and buffer zones designed to expose and delay potential attackers.
The beginning of the castle's decline can be traced to 1724, when its administrative functions were transferred to the nearby Castle of San Salvatore, also under the control of the Collalto family. This shift marked the end of Collalto's central political role and triggered a slow but steady process of depopulation and structural degradation.
A far more dramatic rupture occurred during World War I. In 1918, Italian artillery stationed on the Montello ridge shelled the Collalto area, which at the time was occupied by Austro-Hungarian and German forces. The bombardment caused widespread destruction: only fragments of the original complex survived – among them the main tower, parts of the palace façade, segments of the perimeter walls, some residential buildings, and the bell tower. The church was completely demolished but rebuilt in the interwar period (1926–1927), a testament to local resilience and the enduring symbolic value of the site.

Despite its ruinous state, the castle has recently become the focus of renewed interest from both public institutions and private stakeholders. In the late 1980s, the Municipality of Susegana approved a detailed plan for the conservation and enhancement of the historic area. Local associations contributed actively to early efforts, including the restoration of the church, clearance of invasive vegetation, and the cleaning of the ruined village. More substantial work was carried out between 2021 and 2023 by the Ferné - Collalto family – who still retain ownership of the site – and involved structural consolidation of the main tower and the reconstruction of its roof.

It is within this framework that Iuav - University of Venice initiated its involvement, positioning architectural design as both a critical method of inquiry and a tool for landscape and heritage regeneration. This perspective resists purely conservative approaches, advocating instead for the integration of historical understanding with innovative design strategies aimed at creating new spatial and cultural meanings within the existing context.

In 2024, a research project titled *Enhancement Strategies for Architectural Heritage in Rural Areas* was launched under the coordination of Professors Mauro Marzo and Emanuela Sorbo. Funded by the Veneto Region through the European Social Fund Plus (ESF+), the project brings together expertise in architectural restoration, spatial design, and digital technologies. Its overarching objective is to formulate a multidisciplinary methodology for the enhancement of architectural heritage in marginal and rural territories – areas often overlooked by traditional heritage policies.

The Castle of Collalto, with its layered history, strategic location, and evocative material remains, serves as a paradigmatic case study. It exemplifies the potential of integrating heritage research, design experimentation, and digital documentation in order to develop sustainable and context-sensitive strategies for the future of rural historic environments.

SHAPING A METHODOLOGY: KNOWLEDGE, ACCESSIBILITY, VISIONS

Today, the Castle of Collalto is situated within the buffer zone of the UNESCO World Heritage site known as “The Prosecco Hills of Conegliano and Valdobbiadene”. This geographical and cultural positioning carries significant implications, as it offers promising opportunities for the revitalization of the castle as a pivotal element in the cultural and touristic activation of the broader territory directly linked to the Prosecco Hills landscape.

In light of this, it is imperative to adopt a comprehensive and multi-scalar design approach. Such strategies should transcend the mere restoration of the castle itself, instead envisioning an integrated system that includes the village of Collalto and the surrounding rural landscape. The objective is to conceive a coherent and interconnected heritage network, one that not only links individual sites of interest but also actively participates in defining the identity of the region and shaping future interventions accordingly.

The research commenced with a rigorous phase of historical and territorial investigation. We systematically analyzed archival maps and documentary sources,[4] which were then digitally redrawn and critically assessed. This process informed the development of a survey methodology designed for potential replication at comparable heritage sites. The research framework was structured into three progressive phases:

1. Knowledge
2. Accessibility
3. Visions

The initial phase, *Knowledge*, is concerned with a comprehensive understanding of the site — encompassing architectural features, historical functions, and the broader territorial context. This foundational study is crucial in reconstructing the castle’s role within its historical landscape and its relationship with surrounding infrastructural and cultural elements.

Following this, the *Accessibility* phase involves an evaluation of contemporary usage patterns. This includes analysis of road networks, cycling and pedestrian routes, tourist flows, and existing cultural attractions in the region. Accessibility here is understood in the broadest sense, encompassing physical, digital, and cultural dimensions, with the aim of maximizing inclusive engagement with the heritage.

Finally, the *Visions* phase is devoted to formulating enhancement strategies rooted in the findings from the previous phases. These strategies balance respect for historical authenticity with openness to innovative interventions, ensuring that future developments are context-sensitive and sustainable.

Central to this methodology is the conviction that responsible heritage design is impossible without a profound understanding of the past. Reconstructing the site's narrative, tracing its historical evolution, and interpreting its spatial and cultural relationships with the surrounding environment are essential prerequisites for any meaningful intervention.

As the historian Carlo Tosco eloquently stated:

"The landscape before our eyes is like an open book. It tells a story we must learn to read and interpret. The information will always be incomplete, even fragmentary — but it gives us the key elements we need to sketch the bigger picture. Landscapes of the past continue to act upon the present, because of the value of what remains and the significance of what those remains still represent".[5]

Within the *Knowledge* phase, our investigations extended to the morphology of the territory, historical road systems, the network of neighboring castles and villas, as well as contemporary tourism dynamics (Figure 3) — particularly those connected to the UNESCO-listed Prosecco Hills. Zooming in at the village scale, we undertook detailed architectural reconstructions of the castle's development phases (Figure 4). This was supplemented by archival research, primarily utilizing resources from the *Soprintendenza Archeologia, Belle Arti e Paesaggio*,[6] the Italian institution responsible for safeguarding cultural heritage. This process allowed for the reconstruction of the principal interventions and requests for intervention submitted over the years to the Superintendence, and, based on the permits granted, for the evaluation of which actions may be realistically pursued in the future.

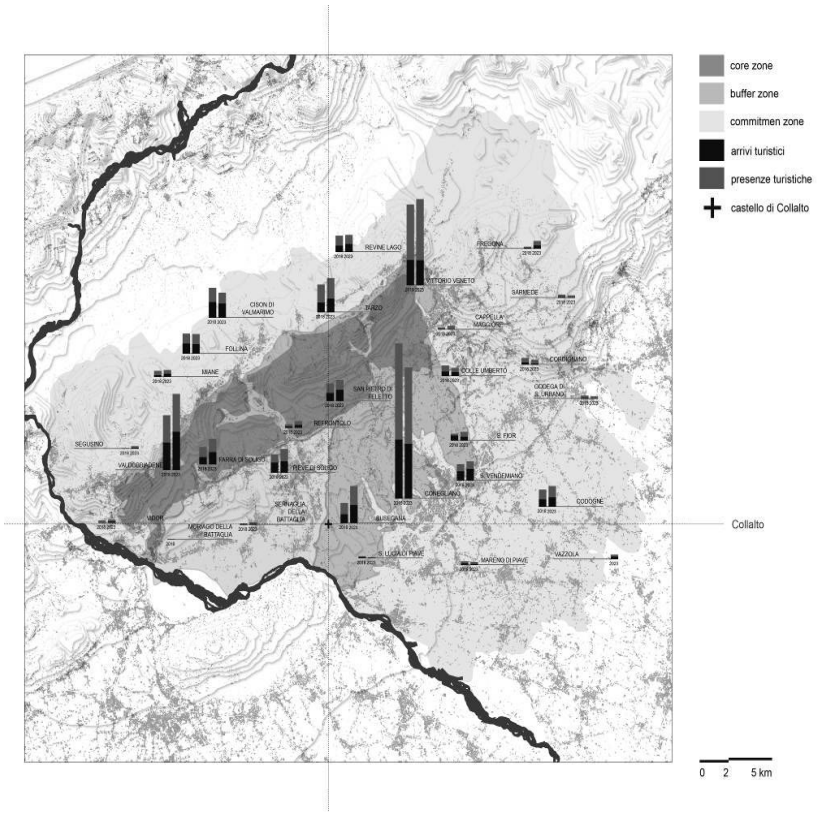

Figure 3. The comparison of tourist flows in 2019 and 2023 in the core zone, buffer zone and commitment zone of the UNESCO site "The Prosecco Hills of Conegliano and Valdobbiadene".

Figure 4. The reconstruction of the architectural evolution of the castle from the XVII century to today.

This multi-layered understanding equips us with the intellectual tools necessary to guide future preservation and enhancement efforts with rigor and foresight.

The question of accessibility warrants particular attention in contemporary heritage discourse. This concept transcends mere compliance with regulations; it embodies a vision of heritage as a shared resource and common good, accessible to all members of society regardless of physical ability, socio-cultural background, or technological means.

Physical accessibility poses considerable challenges, especially in historic sites such as castles, which often contain inherent architectural barriers. The key challenge lies in implementing solutions that preserve the integrity and authenticity of the heritage fabric while promoting inclusivity. The Italian Ministry of Culture's *Guidelines for the Elimination of Architectural Barriers in Cultural Heritage Sites*[7] advocate for interventions that are both reversible and compatible with the original structures.

Concurrently, digital accessibility has gained prominence, particularly in the wake of the COVID-19 pandemic, which restricted physical access to cultural sites. Virtual tours, digital twins, online exhibitions, and augmented reality experiences became indispensable tools for maintaining public engagement. According to a joint report by ICOM and UNESCO, over 60% of European museums launched digital initiatives during the lockdown period, indicating a lasting shift toward hybrid access models.[8]

Moreover, digital technologies serve critical roles beyond public outreach, underpinning research, conservation, and restoration activities. Initiatives such as *Europeana* exemplify efforts to digitize and democratize access to millions of cultural heritage objects, facilitating unprecedented scholarly and public interaction with historical resources.

We mean heritage as a living and evolving construct, and therefore the modalities through which it is accessed and experienced must evolve correspondingly.

The imperative to remove physical barriers remains crucial; however, it is equally important to construct digital bridges that facilitate inclusive access. This dual approach is not merely an ethical or legal obligation but represents a profound opportunity to foster cultural, social, and economic development.

In the specific case of the Castle of Collalto, our inquiry into accessibility has unfolded on two parallel fronts. Physically, we conducted a comprehensive mapping of the surrounding road network, with particular focus on pedestrian and cycling pathways, as well as an in-depth examination of internal village accessibility. Digitally, we embarked on the creation of a three-dimensional (3D) model of the entire site, accessible remotely via a dedicated website or direct link. This digital model addresses existing limitations such as the absence of Street View coverage and 3D terrain mapping, effectively rendering the site visible and explorable in virtual form.

The construction of the 3D model involved the use of simplified mesh geometries to reduce computational load and enhance navigability (Figure 5). Modeling software including AutoCAD and 3D Studio Max was employed, followed by exportation into the Unity engine for real-time rendering and augmented reality applications. Given the complex topography of Collalto, meticulous manual adjustments were necessary to accurately replicate the slopes and terrain without overburdening the digital scene. Texturing was executed with an emphasis on realism, incorporating orthophotos where feasible and avoiding repetitive patterns. Additional environmental details – such as vegetation, gravel paths, and roadways – were integrated to enrich the immersive quality of the virtual experience.

The culminating objective is the public dissemination of this digital resource, thereby democratizing access for audiences who might otherwise be unable to physically visit the site. Through a simple URL, users will be empowered to undertake an immersive virtual journey of Collalto, enabled by augmented reality technology.

Beyond public engagement, the 3D model serves as a dynamic repository of spatial and architectural data, underpinning future research endeavors, conservation strategies, and educational initiatives. This exemplifies how technology, when thoughtfully applied, can expand heritage's visibility, significance, and inclusivity.

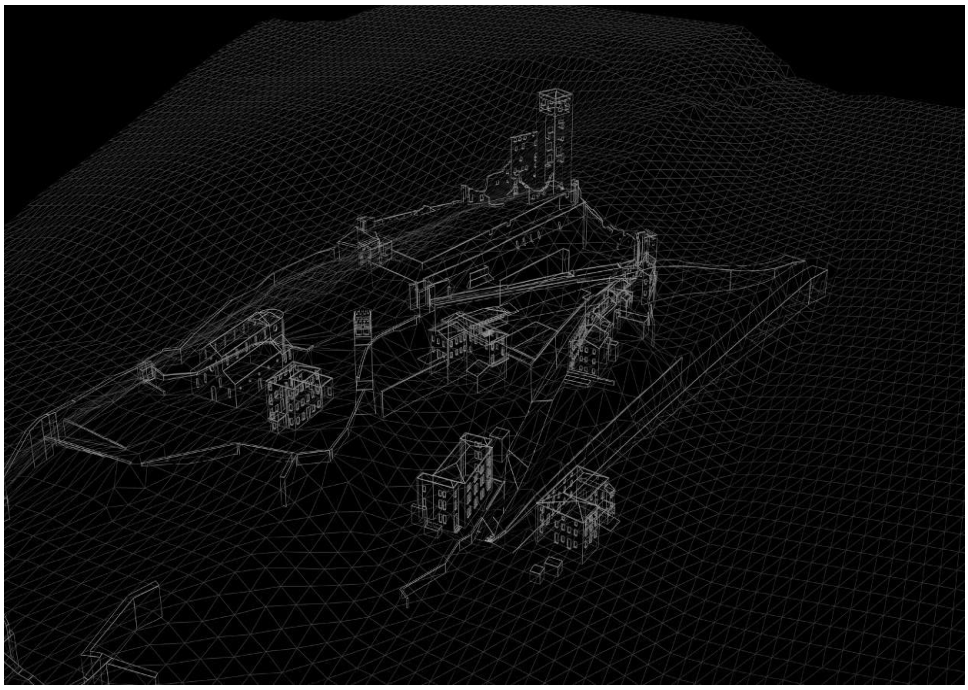

Figure 5. Frame of the digital model created for the visualisation in AR.

NEW VISIONS

Transitioning to the final stage of our methodological framework – *Visions* – we propose design interventions grounded in a critical reading of the site's challenges, insights from existing scholarship, and consideration of ongoing or planned regional projects. One such proposal entails the design of a "link route" (Figure 6), a culturally and ecologically valuable trail branching off from established pedestrian and cycling networks.

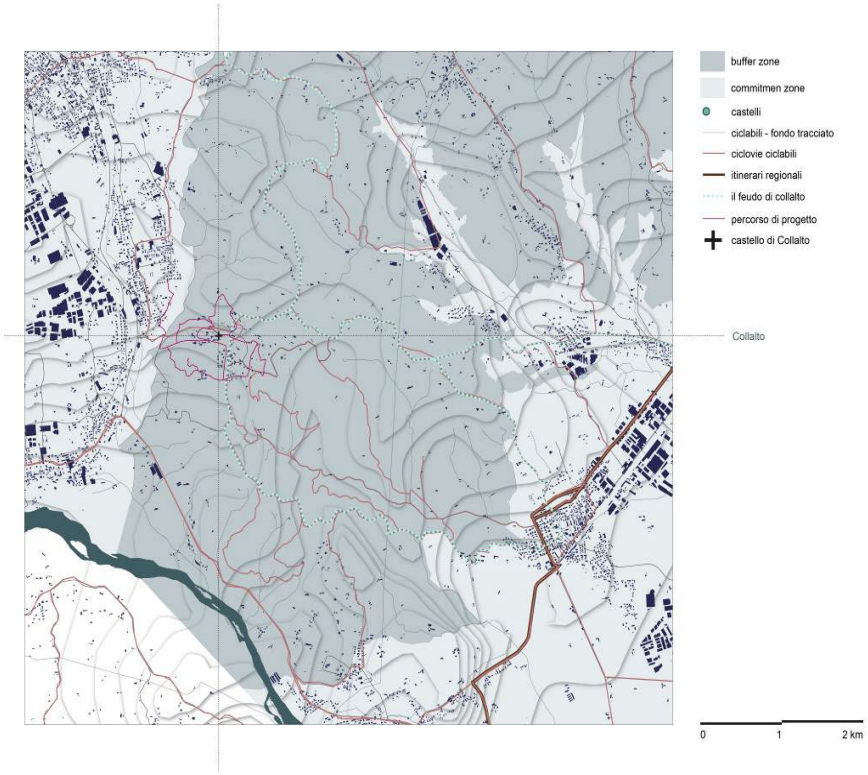

Figure 6. Frame of the digital model created for the visualisation in AR.

Inspired by depictions of the Castle of Collalto in the paintings of Cima da Conegliano, this project seeks to recover historical viewpoints – those vantage points from which the castle was traditionally observed in its entirety. The envisioned trail spans approximately six kilometers (Figure 7), catering to both walkers and cyclists, and features eight strategically placed viewpoints offering diverse perspectives of the castle, often from angles historically overlooked. These enhance visitor engagement and foster a deeper understanding of the surrounding landscape, architectural heritage, and historical context.

The underlying objective is to restore the castle's former visibility as a prominent territorial landmark, a symbol of power embedded in the natural landscape. Over time, this visual presence has diminished due to vegetation overgrowth and vineyard expansion. The new trail aims to reinstate this experiential dimension, reconnecting visitors to the castle's symbolic and physical prominence (Figures 8 and 9).

This initiative is situated within a broader vision to rediscover and revitalize the historical network of castles and fortifications characteristic of the region – a network largely unrecognized today but ripe with potential to form the backbone of thematic itineraries and innovative modes of landscape interpretation.

Such trails also contribute to the promotion of slow, mindful tourism, an increasingly valued approach in the sustainable development of rural and peri-urban territories. This paradigm emphasizes not only attracting visitors but fostering meaningful interactions that reinforce the bond between landscapes, local communities, and cultural heritage.

Consequently, architectural design transcends the preservation of isolated monuments, emerging instead as a catalyst for social and cultural regeneration. It provides new layers of meaning and vitality to spaces still rich with historical narratives and contemporary relevance.

Heritage, therefore, should be conceptualized not merely as a static inheritance but as an active and evolving resource – one that communities engage with, reinterpret, and transmit, ensuring its continual renewal and relevance for future generations.

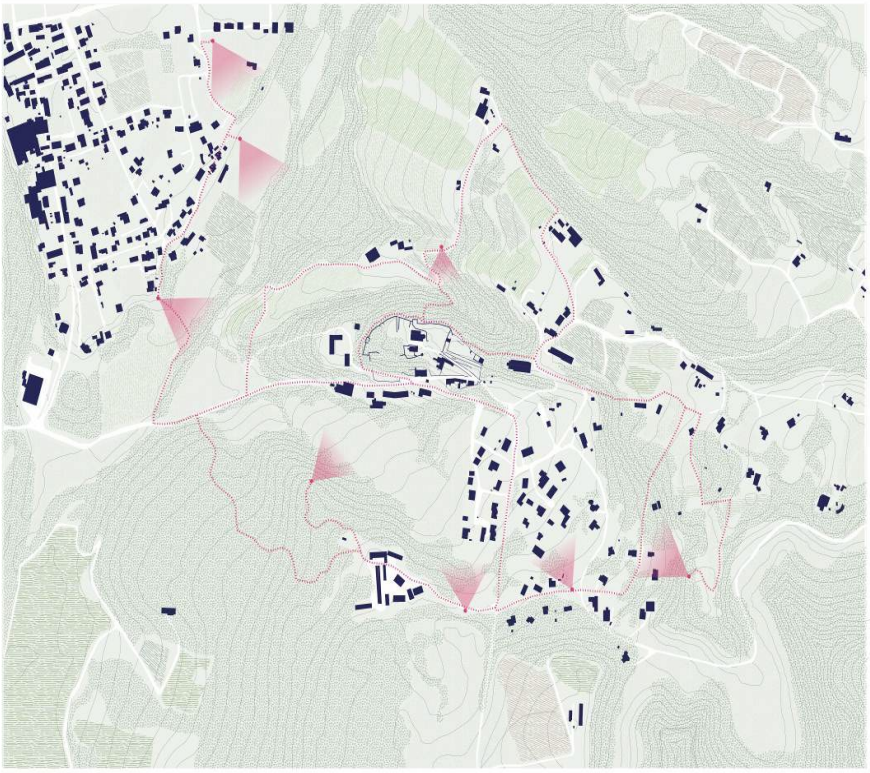

Figure 7. The 6-kilometer route around the Castle includes eight new viewpoints.

Figure 8. One of the seven new hypothesized viewpoints that recover ancient perspectives of the Castle.

Figure 9. One of the seven new hypothesized viewpoints that recover ancient perspectives of the Castle.

NOTES

[1] "The Criteria for Selection," UNESCO World Heritage Centre, accessed July 22, 2025, https://whc.unesco.org/en/criteria/.
[2] "Sistema Statistico Regionale. Movimento turistico nel Veneto," Regione del Veneto, accessed July 22, 2025, https://statistica.regione.veneto.it/banche_dati_economia_turismo_turismo6.jsp.
[3] "The EU rural vision," European Union, accessed July 22, 2025, https://rural-vision.europa.eu/rural-vision_en.
[4] The archival research was conducted using the Venice State Archive, the Superintendencies Archives, the private Ferné-Collalto Family Archive, as well as the Iuav Library, the Municipal Library of Susegana, the "Giovanni Comisso" Municipal Library of Treviso, the National Central Library of Rome, and the Municipal Library of Castelfranco Veneto.
[5] Carlo Tosco, *Il paesaggio storico. Le fonti e i metodi della ricerca* (Roma-Bari: Laterza, 2009).
[6] Soprintendenza archeologia belle arti e paesaggio per l'area metropolitana di Venezia e le Province di Belluno, Padova e Treviso, abbr. SABAP-VE-MET, Sezione di Venezia, Archivio lavori I, TV 83/07, fascc. da 1 a 3, Archivio lavori II, TV 83/01, fasc. 25, Archivio lavori II, TV 83/06, fascc. da 1 a 6, Archivio lavori II, TV 83/12, fascc. 1, 2, Archivio lavori II, TV 83/14, fasc. 1, Archivio lavori II, TV 83/15, fasc. 1, Archivio lavori II, TV 83/16, fasc. 1, Archivio lavori III, TV 83/04, fasc. 1.
[7] Ministero per I Beni e le Attività Culturali, *Linee guida per il superamento delle barriere architettoniche nei luoghi di interesse culturale* (Roma: MiBACT, 2008).
[8] ICOM-UNESCO, *Museums around the world in the face of COVID-19*, (Paris: ICOM-UNESCO, 2020).

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CRAFTING NOSTALGIA: THE ROLE OF HERITAGIZATION IN AL-DIRIYAH, RIYADH'S URBAN DEVELOPMENT

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INTRODUCTION

Heritagization, as a transformative process, extends beyond preservation; it is also linked to the selection, recreation, and reinterpretation of heritage. However, its broader implications, particularly in evoking nostalgia, that underlie these transformations remain underexplored. This study examines the role of heritagization within the urban development of Al-Diriyah, emphasizing how it crafts a nostalgic "City of Earth". By employing a process-tracing research design, the study draws on academic literature, archival documents, and recently announced international agreements between the local and international bodies that accelerate Al-Diriyah's urban development.

The analysis reveals the phases of heritagization that underlie the urban development of Al-Diriyah, transforming it into the world's largest cultural heritage development. Furthermore, the study highlights that the urge to preserve and present stems from nostalgic sentiments of the first Saudi State. This makes Al-Diriyah a one-of-a-kind heritage site, which productively shapes nostalgia, where the unforgettable past meets the contemporary development needs, all the while safeguarding it for future generations.

Heritagization

Heritagization is the process by which objects, places, and practices are transformed into cultural heritage as values are attributed to them.[1] Heritagization is also linked to the transformation of practical 'things' into items intended for display and exhibition, thereby highlighting the dynamic nature of heritage.[2] Given this dynamism, the term *heritagization* can apply to several different aspects,[3] including the designation of new heritage, the affirmation of recognized heritage, a reinterpretation of declared heritage, and the recreation of previously designated heritage.[4]

Viewing heritagization as an institutional fact reveals the dynamics behind granting heritage status to objects. This involves "societal interest" (Society being subjective) in the object, acknowledgment of its specific traits, and the assignment of a status that elevates it above ordinary objects.[5] In this vein, heritagization plays a key role in interpreting the sentiments of communities,[6] strengthening how the act of designating heritage serves as a foundation for collective identity and social cohesion.[7] To address this, there is an increasing shift in focus toward people as active agents who assign meaning and value to heritage. This perspective aligns with scholars who conceptualize heritage as the dynamic interaction between individuals, their world, their sentimental values and each other.[8]

Hence, heritagization discourse reflects how heritage is shaped by the people who actively reinterpret and reimagine heritage in response to contemporary realities. As a result, the effort to define the term *"*heritage*"* precisely has shifted towards studying "heritagization," not just in a collective context but in the one that refers to the process by which something acquires or may acquire the symbolic status of heritage.[9] This acquisition of symbolic status often includes multiple layers of heritagization, prompting the question of whether these layers are reversible or not.[10]

Heritagization and the Notion of Nostalgia

As a process of remembering that is overtly, and often unashamedly, sentimental, nostalgia is an important phenomenon in understanding how the past is both brought to bear on the present under the processes of heritagization.[11] Since heritage is experienced, imagined, and enacted by people, both residents and outsiders, researchers continue to document how nostalgia is felt by people due to their experiences that shape their interpretation of heritage.[12] This interpretation is first linked to the notion of nostalgia, and then to the rapid changes of late modernity, highlighting both its potentially progressive or regressive utopian aspects. Amidst this, the former highlights the progressive role of nostalgia, describing it as "productive-nostalgia".[13] Simultaneously, the latter links nostalgia to those who have never actually experienced it, a phenomenon termed "exo-nostalgia".[14]

The notion of nostalgia is also associated with an "imagined, aestheticized, and romanticized past"—a meticulously crafted simulation that allows us to experience the illusion of pastness.[15] This "imagined" past can, on one hand, deceive people into feeling that the time and place seem to have existed before. On the other hand, the imagined past can also guide people in understanding their present and future, aligning with their socio-cultural narratives and sentimental values.[16] This phenomenon is envisioned, desired, or practiced by non-experts and laypeople,[17] a process described as "past-presencing".[18] Nostalgia as an imagined past thus also connects deliberate acts of memorialization and can be understood as manifestations of "the materialization of memorialization".[19]

Even though it has roots in the real world, nostalgia in the context of heritagization is continuously linked to the creation of the imagination, where the boundaries between reality and fiction, past and present are blurred.[20] Over the last decade, there has been an increasing concern to re-examine and re-consider the nature of nostalgia, and to argue that rather than simply being a reactionary desire to return to an idealized and fetishized past, it is a far more complex phenomenon. There is an increasing quest to define and separate a conservative and reactionary form from a radical and critical form of nostalgia.[21] Simultaneously, there is a resistance to the existing understanding of nostalgia, highlighting that it is neither good nor bad, conceiving nostalgia as 'a sprawling, inevitable, and constitutive presence within modernity'.[22] This stresses how the existing understanding of nostalgia in heritagization is limited and narrowly defined[23] and thus calls for further examination to better advance the heritagization discourse.[24]

CASE STUDY: AL-DIRIYAH

Al-Diriyah is a historic town located in Riyadh, Saudi Arabia, renowned for its cultural significance and architectural heritage. The At-Turaif District of the town of Al-Diriyah served as the first capital of the Saudi state and was designated as a World Heritage Site in 2010 due to its distinctive Najdi architecture (Criteria iv, v, vi)[25]– as illustrated in Figure 1.

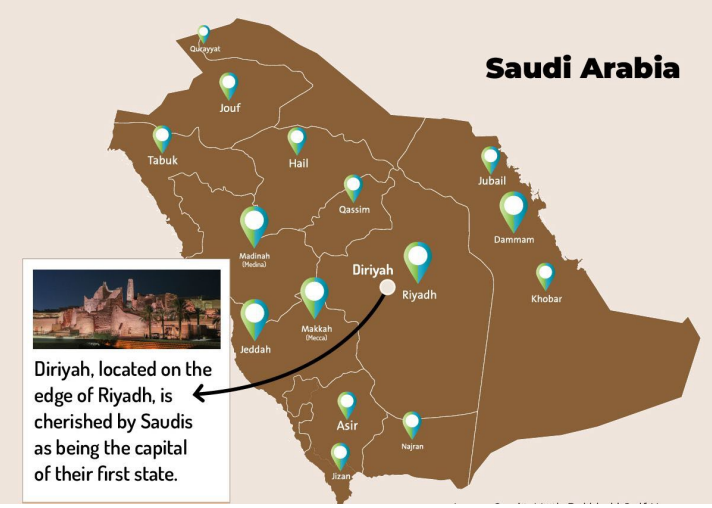

Figure 33. Al-Diriyah Town is located at the edge of Riyadh, the capital of Saudi Arabia. Source: Vijith Puliikkal /Gulf News

Historical Significance of Al-Diriyah

Al-Diriyah dates back to the 15th century, having been founded around 1446 CE as a settlement along the banks of Wadi Hanifah in the central region of Najd. Al-Diriyah adopted the mud brick technique and the earthen characteristics of central Arabia. During the 18th and early 19th centuries, the historic town gained heightened religious and political importance, with its citadel emerging as the center of the House of Saud's authority and a core site for the dissemination of the Salafiyya reform movement. However, political unrest and Ottoman invasions left Al-Diriyah in constant decline as people over the years started to move towards the safer side of Riyadh.

In the 1970's after decades of neglect and abandonment, the Department of Antiquities and Museums expressed interest in preserving the remains of Al-Diriyah. UNESCO sponsored a study conducted by a team of archaeology and conservation specialists. In 1976, the At-Turaif district of Al-Diriyah was placed under the protection of the 1972 Saudi Antiquities Act. By 1978, a second survey was conducted. Both studies aimed to recommend structures for proper preservation and restoration. The Department of Antiquities and Museums (later integrated into the Saudi Commission of Tourism in 2003) tackled this challenge by "selecting specific buildings" for restoration, following UNESCO's recommendations.[26] Since the 1970s, the department has focused on restoring the important heritage structures, such as the Palace of Nasir, and then the Palace of Saad and the Faysal Tower in the late 1980s. By 1982, the remaining houses were also abandoned, with only a few former residents nostalgically visiting their family mud-brick homes, as illustrated in Figure 2.

Figure 34. Al-Diriyah was left abandoned during the early 1980s. Source: The High Commission for the Development of Al Riyadh and the Historic Al-Diriyah Development Programme

Designation of the At-Turaif district of Al-Diriyah

In 2010, following the efforts and guidance of the Saudi Commission of Tourism and Antiquities (SCTA) and based on the documents prepared by the High Commission for the Development of Riyadh,[27] the At-Turaif district of Al-Diriyah was designated as a UNESCO World Heritage Site, shown in Figure 3. In 2017, a royal decree was issued creating the Diriyah Gate Development Authority (DGDA), an agency responsible for monitoring the World Heritage site of At-Turaif, preserving the peripheries, and regenerating the historic town of Al-Diriyah. Most of the town remained deserted and futile until the Saudi government commissioned the Diriyah Development Gate Authority to carry out an extensive urban development project with an aim to transform the historic town into an exciting heritage tourism destination, now labeled as “The City of Earth”.

Figure 35. At-Turaif District in Al-Diriyah. Source: Ameen Qaisran/ UNESCO

URBAN DEVELOPMENT OF AL-DIRIYAH

Al-Diriyah, over the years, was absorbed by the metropolitan expansion of Riyadh and diluted within its urban structure.[28] To combat this, it underwent a decade of exceptional investment to become first a regenerated historic town and then a giga project that eventually transformed it into the world’s largest cultural heritage development. This investment brought Al-Diriyah to the spotlight through an ambitious urban development project that continues to defy the existing norms of heritage preservation. The theme is inspired by new Saudi urbanism and the previously dominating Najd

architecture of the region.[29] Adjacent to the World Heritage Site and its buffer zone, the urban development project in Al-Diriyah seeks to put strategic decisions and a site management plan for heritage protection, tourism development, and new mega-scale projects that are inspired by the past under the cooperation of leading heritage organizations.[30]

Al-Diriyah continues to witness an exceptional process of urban development, making it the largest such cultural heritage development not only in the Gulf region, but globally, as seen in Figure 4. The urban development is set to showcase decades-old Saudi cultural heritage. The initial development of the site includes cultural museums, educational institutions, and prestigious residential projects, along with outstanding lifestyle offerings such as entertainment, shopping, and dining experiences. The initiative is part of the 2030 vision, which aims to attract 27 million local and international visitors. This supports the national tourism policy, which calls for the Kingdom to welcome 100 million visitors from around the world by the year 2030.[31]

Figure 4. Al-Diriyah is set to become the world's largest heritage development project. Source: Diriyah Gate Development Authority

Furthermore, Al-Diriyah's urban development extends beyond heritage preservation and infrastructural ambitions, encompassing a large-scale ecological conservation effort that includes the planting of over 6.5 million native trees, shrubs, and plants. This environmental initiative is designed to mitigate urban heat, enhance biodiversity, and provide extensive green spaces for both residents and visitors. A key feature of this green framework is Wadi Hanifah, a natural valley integrated into the urban fabric, offering a tranquil environment with palm groves, indigenous vegetation, and a 3-kilometer escarpment walk.

An integral part of Al-Diriyah's urban development is also the integration of a mobility system centered on pedestrian-only streets, supported by e-bikes and scooters, while vehicular traffic and parking spaces are managed through underground tunnels that reach depths of up to 40 meters. To enhance the connectivity of the historic town, there are four planned metro stations that aim to reduce surface congestion and promote sustainable transportation, linking them to other stations in Riyadh. Al-Diriyah is also located just 30 minutes from King Khalid International Airport and within a seven-hour flight for 80% of the global population. This offers strong international connectivity and time zone advantages, making it not only the largest but also one of the most attractive and accessible cultural heritage developments in the world.[32] Al-Diriyah's comprehensive vision for a holistic urban development balancing heritage preservation and the contemporary needs continues to attract significant recognition, including more than ten local and international sustainability awards and the

region's first LEED Platinum certification for a masterplan by the U.S. Green Building Council, illustrated in Figure 5.

Figure 5. Al-Diriyah is becoming the world's largest cultural heritage development, building the dream and simultaneously bringing history to life. Source: Diriyah Company

Defining the Phases of "Heritagization" in the Urban Development of Al-Diriyah

Heritagization plays an essential role in the urban development of Al-Diriyah, as the historic town transformed from an ancestral village into the world's largest cultural heritage development. Heritagization of Al-Diriyah manifests in three phases: the selective recognition of heritage, interpretation of heritage, and (re)interpretation of heritage through significant investment.

The first phase involved selecting the historic town and recognizing its historical significance, initiating the need to revive the past for future generations. This selective process involved acknowledging Al-Diriyah as the birthplace of the Kingdom of Saudi Arabia and the ancestral homeland of the Al Saud family. This acknowledgement holds profound historical and cultural significance for Saudi citizens, serving as a foundational symbol of national identity. This phase simultaneously aligned with Saudi Arabia's Vision 2030, which emphasizes the development and support of emerging sectors to ensure their success and position them as foundational pillars of the nation's future economy.[33]

The Second Phase included interpreting the heritage of the historic town. This phase followed the World Heritage Designation of the At-Turaif District of Al-Diriyah, which highlighted its potential as a heritage tourism destination that can showcase the heritage not only to locals but also to international visitors. Mr. Inzerillo, the CEO of Al-Diriyah, emphasizes that Al-Diriyah once held longstanding historical significance as a central meeting point within the Arabian Peninsula[34]. He notes that the current urban development initially focused on reviving this legacy by interpreting the heritage of Al-Diriyah. This interpretation led to the foundation of the urban development of the historic town into a continuously evolving heritage site that highlights Saudi Arabia's rich cultural heritage, contemporary achievements, and future aspirations.

The third phase includes the re-interpretation of heritage. This phase is significantly shaped by the investment that has further accelerated the development of the historic town, turning it into the world's largest cultural heritage development, featuring retail shops, museums, theatres, cafes, and cultural institutions. Substantial progress has been made not just within the officially designated historic zone, but also in the adjacent areas and neighboring neighborhoods. The Saudi government has embarked on a forward-looking re-interpretation initiative, where the heritagization process is aimed at drawing in 25 million visitors annually. To support this ambitious goal, an impressive budget of nearly USD 18.5 billion has been earmarked to establish the peripheries of Al-Diriyah and its environs as one of the premier and most frequented destinations globally,[35] as illustrated in Figure 6.

Figure 6. At-Turaif is at the heart of Al-Diriyah's Heritagization. Source: Diriyah Gate Development Authority/ /Atkins Middle East

Future Initiatives of Heritagization in the Urban Development of Al-Diriyah

The heritagization of Al-Diriyah continues to progress as The Diriyah Company revealed the concept design for The Arena in Diriyah, a 20,000-seat venue, part of a $63.2 billion masterplan by the Saudi Public Investment Fund (PIF). Designed by HKS, the arena's concept draws on the area's natural geology and historic Najdi forts, combining historical reflection with modern digital and tech-forward elements. Furthermore, the developers spearheading the urban development also recently revealed plans to construct King Salman Boulevard, a 1.9km avenue modeled after the Champs-Élysées in Paris, along with the kingdom's first Royal Diriyah Opera House.[36]

The urban development of Al-Diriyah is significantly progressing in 2025, with various key announcements and construction contracts being awarded. Diriyah Company has awarded a SAR 5.75 billion ($1.53 billion) contract to the Branch of China Harbour Engineering Company Ltd for the development of the Arena Block district in Al-Diriyah, shown in Figure 7. This will include the Diriyah Arena, three mixed-use office buildings, and extensive parking facilities. The Diriyah Arena, designed by HKS Inc., will feature a gross floor area of approximately 74,000 square meters and accommodate up to 20,000 spectators for various events, including national festivals, concerts, sports events, and art exhibitions. Inspired by the Najdi architectural style, the arena aims to integrate heritage preservation with contemporary design and tourism infrastructure. The accompanying office plots, designed by John McAslan + Partners, will span around 114,000 square meters, supported by advanced infrastructure and over 4,000 parking spaces to facilitate access and usability.[37] These international deals are accelerating the heritagization of Al-Diriyah, making it a one-of-a-kind heritage site that productively integrates the unforgettable past to meet the contemporary development needs, all the while safeguarding it for future generations.

Figure 7. Al-Diriyah continues to develop into the world's largest and most exciting cultural heritage destination. Source: Diriyah Company

Crafting Nostalgia through the Heritagization of Al-Diriyah

Nostalgia can be detected in the heritagization of Al-Diriyah from the very first phase. The urge to preserve the first Saudi state stems from nostalgic sentiments. The significance of the Najdi architectural style and the need to preserve it for future generations further strengthened these sentiments. Due to this, the heritage of Al-Diriyah has been preserved to uphold cultural values and offer renewed interpretations that resonate both locally and internationally.[38] This embodies nostalgic sentiments that once stood as a lasting cultural emblem, deeply rooted in the region's geographical importance and cultural roots.[39] Through a nostalgia-inspired selection, interpretation and re-interpretation of heritage, the heritagization process reconstructs a version of the past that once flourished in the historic town, now reimagined through a contemporary lens. The phases that underlie the heritagization also reflect the dynamic and evolving nature of heritagization, positioning it as a central mechanism in the urban development initiative, which is set to transform the ancestral historic town into the world's largest cultural heritage development that will be known as "The City of Earth", Figure 8.

Figure 8. Nostalgic sentiments lie at the heart of Al-Diriyah's heritagization. Source: Diriyah Gate Development Authority/Royal Geography Society

Introducing the Nostalgic Al-Diriyah as "The City of Earth": Productive-Nostalgia or Exo-Nostalgia

The notion of nostalgia that is presented by the heritagization process of Al-Diriyah selectively showcases the historic town as "The City of Earth". This display resonates with the productive-nostalgia where the past is presented to not only re-construct the heritage site but also recognize it, affirm it, reinterpret it, and develop it according to nostalgic sentiments that have transformed Al-Diriyah into a cultural production. The productive-nostalgia here strengthens the cultural identity for the locals, where they feel an increased awareness as well as the attachment to the heritage site once inhabited by their ancestors, rendered in Figure 9.

Figure 9. Renders illustrating the productive-nostalgia of Al-Diriyah. Source: Diriyah Gate Development Authority/Atkins Middle East

At the same time, the aspects of exo-nostalgia also exist for the international visitors who have little to do with the actual nostalgia that the historic town once had. However, these aspects are countered by the projection of Al-Diriyah as the City of Earth, where intangible aspects of the heritage will present international visitors with the opportunity to indulge in the nostalgic sentiments that once formed the tangible heritage of the historic town. Such a transformation produces creative and thematic use of heritage sites, presenting an idealized, nostalgic past.[40]

The productive-nostalgia in this context manifests as a cultural production that "The City of Earth" is set to present as they welcome international visitors to showcase Saudi heritage, as illustrated in Figure 10. Such cultural production can serve two primary roles: it may reinforce modern civilization by venerating an original as a model for heritage replication, or it may progressively contribute by

introducing new cultural combinations that chart fresh directions for heritage. This process is not a full re-creation of the past; rather, nostalgia plays a selective and constructive role in reshaping historical elements to meet contemporary needs.[41]

Figure 10. Nostalgic Al-Diriyah, as "The City Of Earth", will be open to visitors during Riyadh Expo 2030. Source: Diriyah.Sa

CONCLUSION

This study aimed at examining the role of heritagization within the urban development of Al-Diriyah, emphasizing how it crafts nostalgia. The analysis reveals that three phases of heritagization underlie the urban development of Al-Diriyah, which is set to transform it into the world's largest cultural heritage development. These phases include the selection of the historic town due to its significance as the first Saudi state. The second phase involved interpreting the ancestral heritage site, highlighting its potential to be transformed into a heritage tourism destination. The third phase included the re-interpretation of Al-Diriyah through significant development that continues to accelerate its heritagization-driven urban development on a previously unwitnessed global scale.

Furthermore, analysis highlights that the urge to preserve and present the heritage that drives the heritagization process stems from nostalgic sentiments of the first Saudi State. These sentiments are set to project Al-Diriyah as the nostalgic "City of Earth" that will attract the local and international visitors to showcase the rich cultural heritage of the kingdom, the Najdi architectural style and the past that the historic town once embodied. This makes Al-Diriyah a one-of-a-kind heritage site that productively shapes nostalgia, where the unforgettable past meets the contemporary development needs, all the while safeguarding it for future generations. Findings contribute to ongoing heritagization discourse, which emphasizes that by selectively presenting the heritage, it is possible to make advances in redefining the existing notion of nostalgia.

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THE ADOPTION OF THE "GARDEN CITY" MODEL IN SÃO PAULO AND ITS ADAPTATION TO POPULAR AND ELITE NEIGHBORHOODS

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INTRODUCTION

Developed at the beginning of the 20th century by Ebenezer Howard, the "garden city" was an urban planning concept that had the aim of solving the social and environmental problems of large industrial cities. The new garden cities would be sustainable from an ecological, political and economic point of view,[1] merging the advantages of both countryside and the city: clean air and water, access to green spaces, new economic opportunities and a vibrant social life.[2] Soon, Howard's urban model would reach other countries.

São Paulo, during this time period, was going through a period of exponential economic and territorial growth, and many urban developers incorporated some of the garden city's ideals into new neighborhoods.[3] Considering this scenario, this paper's objective is to evaluate to what extent Howard's original concept was modified in order to adapt to different socioeconomic realities in the Brazilian metropolis, whether or not its social goals were achieved, and how is the occupation of garden neighborhoods in the present day. Therefore, two neighborhoods were selected as case studies: Jardim América and Jardim da Saúde.

Context and methodology for the research

This research was conducted as a scientific initiation between September 2023 and September 2024, while at the Architecture and Urbanism undergraduate program at the University of São Paulo (FAU-USP). It was carried out under the supervision of Professor Eduardo Nobre and funded by the National Council for Scientific and Technological Development (CNPq).

The methodology consisted of:

- Bibliographic review to build a theoretical and historical basis.
- Preparation of maps using files from the Geosampa platform (São Paulo's digital map that gathers georeferenced information about the city, maintained by the Municipal Department of Urbanism and Licensing).
- Field visits to the two neighborhoods to analyze their current occupation.
- Interviews with representatives from the neighborhoods' residents' associations.

GARDEN NEIGHBORHOODS IN SÃO PAULO: JARDIM AMÉRICA

In 1911, English, French and Brazilian investors founded the City of São Paulo Improvements and Freehold Land Company Limited, popularly known as *Companhia City*. The following year, the company had already acquired approximately 37% of the city's urban perimeter for its upcoming urban projects.[4]

The economic boom of coffee farming in the state of São Paulo and the capital accumulated in this process led to intense urbanization of the capital, developing a range of industrial sectors, including real estate.[5] The market has always had great interest in the southwest sector of the city, soon realizing its great sales potential among the high-income population, to whom its advertisements were aimed.[6] Its English designers, Barry Parker and Raymond Unwin, had also planned Howard's first garden city, Letchworth and London's first garden suburb, Hampstead.[7] Their arrival at the company represented a change in the design of the projects, which until then followed orthogonal grids and the Haussmann aesthetic of its French architect Joseph Bouvard.[8]

Thus, in an area still uninhabited and considered inhospitable, near the Pinheiros River's floodplain, one of São Paulo's most famous elite neighborhoods emerged. Investments from Companhia City were necessary to improve the site and enable the installation of infrastructure such as paving, water, electricity, and gas. This was achieved through three-way agreements between Companhia City, the municipal government, and the São Paulo Tramway, Light and Power Company, a Canadian-owned electricity and public transportation company.[9]

In its original plans, Jardim América should have had varied cultural and economic uses, but this was put aside by Companhia City's goal of maximizing the number of residential lots for sale and reaching the buyers' expectations for exclusivity.[10] As early as 1931, thanks to the close relationship between the company and the public administration, the city's legislation has contributed to turn the neighborhood into an area of only private residential housing with strict construction parameters.[11] The public authorities also invested in the region through improvements to the road system, public transport and the creation of Ibirapuera Park.[12]

In 1986, the listing of Jardim América as a protected urban area was approved by the Council for the Defense of the Historical, Archaeological, Artistic and Tourist Heritage of the State of São Paulo (*Condephaat*). It also included the neighborhoods Jardim Europa, Jardim Paulista, and Jardim Paulistano. The listing objects include the urban layout, including streets and squares contained between the lot alignments, lot demarcation lines and tree vegetation.[13]

In 2023, however, 40 years after the heritage listing by Condephaat, the council proposed a revision of the rules that would allow the construction of gated communities, and could make it easier for there to be non-residential uses in the area.[14] This revision brought on criticism from the home-owners of the affected neighborhoods, that protested, as a banner on a wall of a house in Jardim América reads: "let's maintain the model that is working", as shown in Figure 1.

Figure 1. Banner in Jardim América against the revision of the heritage listing (photographed by the author, São Paulo, 2024)

Zoning analysis

According to the 2016 Land Subdivision, Use and Occupation Law,[15] that orders zoning in the city of São Paulo, Jardim América is mostly classified as a Strictly Residential Zone, with a predominance of medium-sized lots (ZER-1), as illustrated in Figure 2. Therefore, most of the neighborhood is occupied by high standard horizontal housing, since the zoning law also limits the height of the buildings to 10 meters.

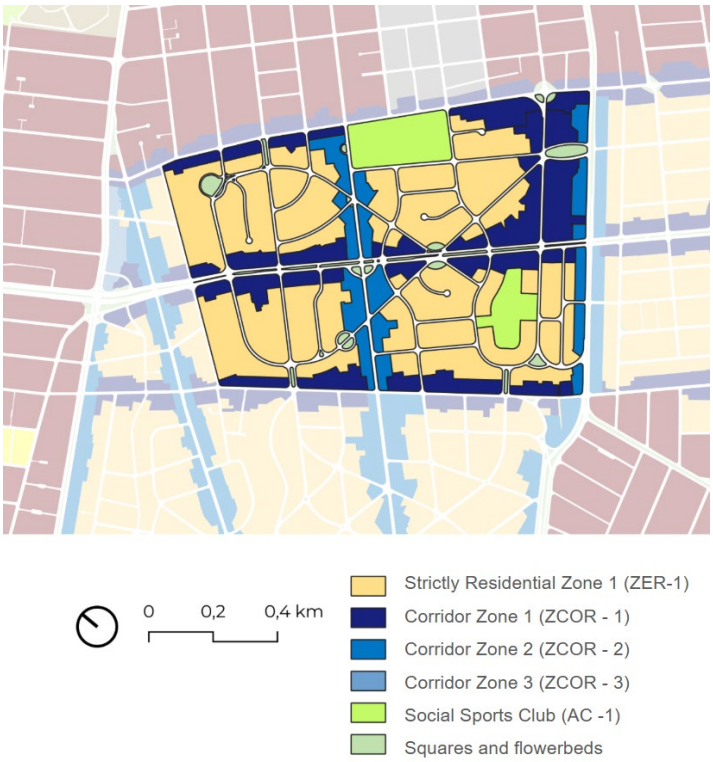

Figure 2. Zoning in Jardim América, according to the 2016 Land Subdivision, Use and Occupation Law (elaborated by the author with data from the Geosampa platform)

The main avenues and streets, that also present heavier car flow, are considered Corridor Zones, because they allow for some non-residential uses. The classification as Corridor Zone 1, 2 or 3 will depend on the type of non-residential activity that is permitted. Type 1 will allow for less diverse activities, more in line with a residential and quieter area, while types 2 and 3 will progressively allow for more disruptive activities. In Jardim América, there are also two important sports clubs, *Clube Athletico Paulistano* and *Clube Harmonia de Tênis*, that are listed as "social", but are in fact very exclusive.

Field Visits

During the field visits to Jardim América, it was observed that most of the streets have private security guards hired by the local residents, with at least one security booth per street, as shown in Figure 3.

Figure 3. Security booth in Jardim América (photographed by the author, São Paulo, 2024)

The majority of the houses in this neighborhood are rather large, some occupy nearly entire blocks. In general, they also have high walls surrounding them, while a few older houses have shorter walls and metal bars. Both of those cases are illustrated in Figure 4.

Figure 4. Houses in Jardim América (photographed by the author, São Paulo, 2024)

The non-residential use in Jardim América is very specific to this region, with high quality services in medicine laboratories, law and architecture firms, building materials and furniture showrooms, and sports car dealerships, such as Ferrari and BMW, which attracts the attention of many car enthusiasts. On the days of the field visits, even on the weekends, the neighborhood's parks were rather empty. Most of the green areas are taken care of by the neighborhood association "Ame Jardins", which provides basic maintenance services to those areas.

GARDEN NEIGHBORHOODS IN SÃO PAULO: JARDIM DA SAÚDE

After working in Companhia City under the guidance of Parker and Unwin, civil engineer Jorge de Macedo Vieira became an important propagator of the garden city's concepts, with several projects in São Paulo and other Brazilian states between the 1920s and 1960s, working in his own engineering office.[16]

Jardim da Saúde, which literally translates to "Health Garden", was at the time, located in a rural area of the municipality of São Paulo. It was built on land belonging to *Companhia de Terrenos da Saúde* (Saúde Land Company), with its subdivision project divided into several parts, extending from 1938 to 1943.[17] From the outset, it was marketed as a "high, dry, and healthy neighborhood",[18] characteristics that were highly sought after by the population given the sanitary ideas in vogue at the time.

The land was located between the Ipiranga River and the Moinho Velho Stream, in the Tamanduateí basin. The streets were designed with a winding layout, not only to incorporate universal guidelines of the garden city model, but primarily for the practical purpose of water drainage and to accompany the natural declivity of the area.[19]

Following the Companhia City standard, Macedo Vieira also defined rules that should be included in purchase and sale contracts, in order to control their occupancy. The main buyers were part of a working middle-class, even though the lots were more expensive than those of close neighborhoods. Notably, the Companhia de Terrenos da Saúde hired some of the residents, who were bank clerks, to help sell more land to their colleagues. Later, companies such as *Cervejaria Caracú* (Caracú Brewery) and Volkswagen chose this neighborhood to design their workers' housing, a large number of which were immigrants.[20] Still today, the presence of residents with Japanese ancestry is notable.

In 1945, the *Sociedade Amigos do Jardim da Saúde* (Friends of Jardim da Saúde Society) was created to demand that residents' common needs and desires be met. For example, the lack of running water and paved streets was resolved only in the 1960s. Gradually, the neighborhood became more densely populated, and by the 1980s and 1990s, it was already going through a gentrification and verticalization process. Fearful of real estate speculation and the loss of their quality of life, residents started mobilizing in 1996 to have the neighborhood listed as a protected residential area.[21] It was only in 2002 that the National Heritage Council of São Paulo (CONPRESP) approved the listing of Jardim da Saúde's urban layout and both public and private landscaped and permeable areas.[22]

Zoning analysis

Jardim da Saúde, by the current zoning of the city of São Paulo,[23] is also classified as Strictly Residential, with a predominance of medium-sized lots (ZER-1), as illustrated in Figure 5. The main avenues in Jardim da Saúde are also Corridor Zones, and are very important to public transportation in the region, notably the bus. Since the avenues are marked as Corridor Zones 2 (ZCOR-2), the uses can be more diversified to conform to the needs of the regional subcenter.

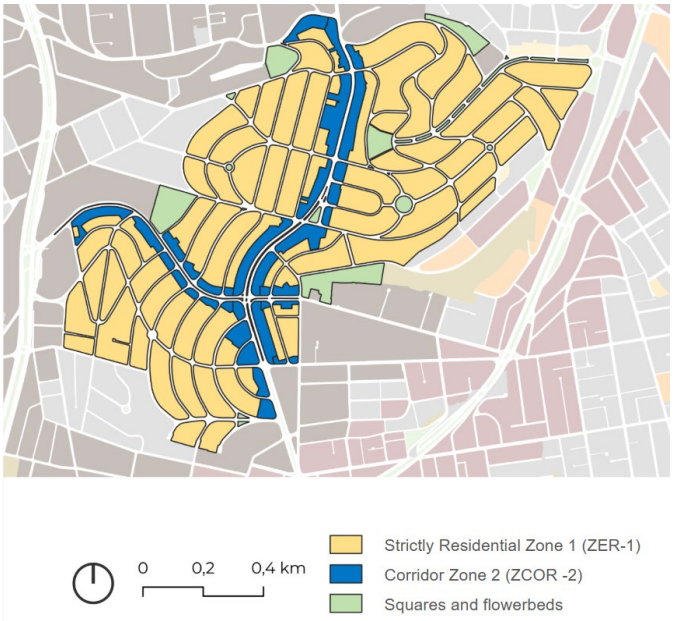

Figure 5. Zoning in Jardim da Saúde, according to the 2016 Land Subdivision, Use and Occupation Law (elaborated by the author with data from the Geosampa platform)

Because the urban heritage listing of the neighborhood was only approved in 2002, after the process of verticalization and uses diversification had already started, it is possible to find amongst the houses a few taller buildings, commerce and schools that preexisted the horizontal residential zoning.

Field Visits

On the main avenues in Jardim da Saúde, it is possible to find very diverse types of commerce and services, such as clothing stores, schools, mechanic shops, and supermarkets, shown in Figure 6. Residents will also market small businesses carried on in their houses, such as dressmaking and tarot reading.

Figure 6. Popular commerce in the main avenues of Jardim da Saúde (photographed by the author, São Paulo, 2024)

On some streets it is possible to see security booths and private security guards hired by the residents, notably less than in Jardim América. It is also common to find signs about guard dogs. In general, in Jardim da Saúde there are smaller houses, usually with low exterior walls, just fences, or sometimes without any division between the lot and the street, as illustrated in Figure 7.

Figure 7. Houses in Jardim da Saúde (photographed by the author, São Paulo, 2024)

There is also a good number of squares and green spaces widely used by residents for activities such as soccer practice. Many of the physical structures of the squares, however, such as benches, were found in poor conditions of maintenance.

CURRENT OCCUPATION OF THE GARDEN NEIGHBORHOODS IN SÃO PAULO

A few factors contribute to the low density of the garden neighborhoods in São Paulo. Notably, the ban on the construction of tall buildings in the area, the large area of the lots that are only allowed to accommodate single-family housing, and the decrease in the average size of the Brazilian families. Therefore, the population density of both Jardim América and Jardim da Saúde is around 30 inhabitants per hectare, illustrated in Figure 8.

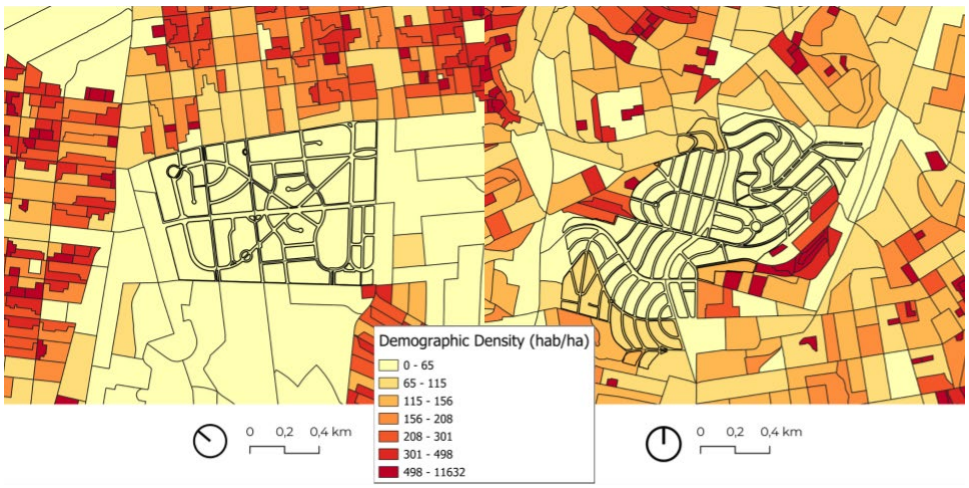

Figure 8. Demographic density in Jardim América and Jardim da Saúde (elaborated by the author with data from the Geosampa platform)

During the field visits to the neighborhoods, a survey of vacant lots on residential streets was conducted to determine their occupancy rate and discuss whether the garden neighborhoods under study are currently experiencing an emptying process. In Jardim América, all streets with exclusively residential use were visited. In Jardim da Saúde, due to its size, a route was taken that covered most of its area, but it was not possible to visit all streets. In both cases, to calculate the percentage of vacant lots, only the number of lots on the residential streets visited was considered. In addition to vacant lots, to better understand the neighborhood's occupancy dynamics, houses for sale, recently sold, being demolished, or under construction were also considered. However, it is important to consider that on real estate websites, there is a high probability that there are more houses for sale and rent than those with signs on the facade. Figure 9 and Table 1 show the data collected from Jardim América, and Figure 10 and Table 2 show the data collected from Jardim da Saúde.

Figure 9. Lots in a "dynamic state" in Jardim América (data collection and elaboration by the author)

Total number of lots in the visited streets	294	100%
Total of lots in a "dynamic state"	40	13.6%
Lots or houses for sale	13	4.4%
Demolished or under demolition lots	2	0.7%
Parking lots	4	1.4%
Houses for renting	1	0.3%
Abandoned lots or houses	2	0.7%
Recently sold lots	3	1%
Lots under construction	15	5.1%

Table 1. Lots in a "dynamic state" in Jardim América

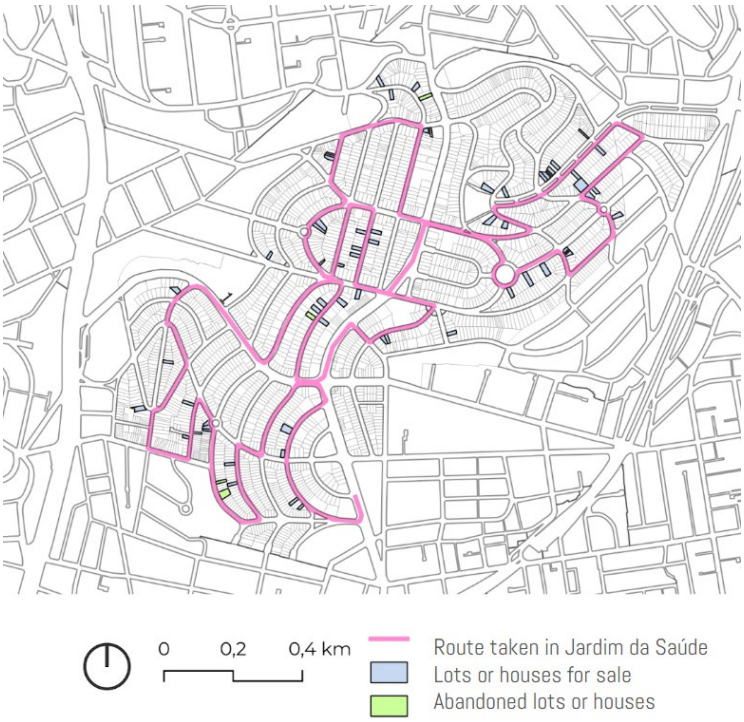

Figure 10. Lots in a "dynamic state" in Jardim da Saúde (data collection and elaboration by the author)

Total number of lots in the visited streets	1056	100%
Total of lots in a "dynamic state"	70	6.7%
Lots or houses for sale	64	6.1%
Abandoned lots or houses	6	0.7%

Table 2. Lots in a "dynamic state" in Jardim da Saúde

It can be seen that the number of buildings in Jardim América exceeds the number of houses and lots for sale. While the construction may be intended for sale upon completion, this situation indicates that there are potential buyers interested in the neighborhood. In at least two of the parking lots, after speaking with the workers, it was revealed that a residence would be built on the site in the future, and that the parking lot was a temporary occupation, until construction began.

In Jardim da Saúde, only lots and houses for sale were found, along with a few abandoned houses. Given its larger area and consequent greater number of lots, in addition to its smaller lots than those in Jardim América, the number of vacant lots found is less significant than in Jardim América. It is interesting to note the absence of new construction in Jardim da Saúde, at least on the streets visited. Over time, this may indicate the beginning of the neighborhood's depopulation.

It had been assumed for years that the garden neighborhoods were losing residents in São Paulo. The data collected shows that these percentages are not as significant as previously thought and may indicate a change in their dynamics with the arrival of new residents buying and building homes in the areas. When talking to the residents' associations, it was pointed out that as the former residents of the neighborhoods grew older or passed away, their children and grandchildren lost interest in the properties, which were very expensive and costly to maintain. However, the associations also pointed

out that since the Covid-19 pandemic, there has been a new interest in garden neighborhoods with larger and greener spaces for families.

CONCLUSION

Despite the socially engaged origins of the garden city model, in São Paulo the organically laid-out subdivisions, from their inception, have not been designed for the less privileged classes. Companhia City's Jardim América reasonably follows English precepts in its formal aspects, but not in terms of sustainability, connection with the surrounding area, and social interest for the working classes, which can be explained both by the social differences between the countries and by the company's own financial plans. Garden neighborhoods that were idealized for a working middle class, such as Jardim da Saúde, also end up becoming, to a lesser extent, spaces of segregation and elitism, a result of the restrictions that accompany the protections of strictly residential zoning and urban heritage listing.

While this entirely residential and self-contained model has been challenged for decades by the interests of the real estate market, at the same time it has always received support from its residents and associations. The São Paulo city government plays a dual role in this conflict, sometimes protecting the interests of residents, especially in Jardim América, which is politically more influential, and sometimes championing an ideal of modern and lucrative progress symbolized by rebuilding the city from scratch.

However, questions arise about the validity of this form of living, which requires increasingly high walls and constant security guards on the streets; a reality in which any unknown pedestrian is a potential threat. Part of this situation can be explained by the deepening insecurity in Brazilian cities, but even when Barry Parker drew up the plans for Jardim América, there already existed obstacles to the implementation of a neighborhood in free communion with the city.

Today, given the pressure of the real estate market and the need for dense land use, it is possible to argue that the garden neighborhood model is not a practical solution for new subdivisions in São Paulo. However, preserving this urban typology, especially neighborhoods that have undergone heritage designation, is crucial for preserving the city's urban and landscape heritage. Preservation, however, does not require stagnation. Given the prevalence of exclusionary policies in the São Paulo metropolis, it is justified to analyze urban reconversion proposals for garden neighborhoods, combining heritage protection with the diversification and densification of these areas in a more inclusive manner.

NOTES

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[17] Bonfato, 80.
[18] Célia Kawai. "Os Loteamentos de Traçado Orgânico Realizados no Município de São Paulo na Primeira Metade do Século XX". Master's diss. University of São Paulo, 2001: 150.
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HERITAGE THAT (DIS)UNITES US: THE CRUZ SHIPYARD AND THE MONUMENT TO THE DISCOVERIES

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INTRODUCTION

Cultural heritage is never neutral. It embodies power relations: the power to shape memory, to legitimise certain narratives over others, and to determine what is preserved, erased, or transformed. As a selective lens of the past, heritage reflects institutional priorities, economic interests, and prevailing ideologies. It is also a site of contestation, where competing claims to history, identity, and visibility collide.

In recent years, debates over heritage have intensified across Europe and beyond, particularly concerning monuments that glorify colonialism, authoritarian regimes, or exclusionary national myths. At the same time, vernacular and working-class heritage, often informal, precarious and excluded from official frameworks, faces erasure under urban redevelopment, tourism economies, and the commodification of memory. These tensions are particularly visible in the Portuguese context, where the legacies of empire and dictatorship continue to shape the cultural landscape.

This paper proposes to read heritage not as a static inheritance, but as a conflicted process of cultural negotiation, shaped by competing claims to space, history, and belonging. It focuses on two sites in Portugal where this conflict – the result of an intersection of heritage, memory and power – becomes visible: the Cruz Shipyard (*Estaleiro da Cruz*), a living shipyard on the Douro River in Vila Nova de Gaia, and the Monument to the Discoveries (*Padrão dos Descobrimentos*), a monumental structure on Lisbon's waterfront.

The former exemplifies vernacular heritage, embodied, intergenerational, and endangered, and its survival challenges dominant models of heritage recognition, while the latter represents an official, state-sanctioned narrative tied to the ideological apparatus of the Estado Novo dictatorship (1933-1974), whose continued presence raises urgent questions about colonial legacies in public space.

By bringing these cases into dialogue, this paper explores how heritage can both sustain and suppress memory, and how communities resist marginalisation through acts of re-signification, reinterpretation, and persistence. Drawing on historiographical, anthropological and heritage studies approaches, the analysis situates both sites within broader debates on memory politics, spatial justice and the ethics of preservation in post-authoritarian and postcolonial societies.

Rather than proposing definitive answers, this study argues for a critical engagement with heritage as a dynamic field – one that must reckon with historical injustices, cultural hierarchies, and the

competing demands of conservation, inclusion, and urban development. Heritage, as will be shown, is not simply inherited: it is continuously negotiated.

To examine these dynamics, the study adopts a comparative, document-based methodology. Sources include public discourse, site observations, and critical literature in memory politics and heritage studies. Rather than relying on empirical fieldwork, the approach prioritises interpretative analysis, seeking to uncover how different configurations of space, authority, and memory give rise to competing claims on the past.

FRAMING HERITAGE: POWER, MEMORY AND VISIBILITY

Heritage is not a passive residue of the past, but an active process of selection, interpretation, and representation. It entails choices, about what is worth remembering, who decides, and whose stories are legitimised or excluded. As Laurajane Smith famously argued, "there is, really, no such thing as heritage"[1] in the abstract, only authorised heritage discourses, which reflect the cultural values of dominant institutions and serve specific political ends. These discourses often marginalise vernacular practices, minority histories and dissenting memories, producing an uneven landscape of recognition.

In *Les Lieux de Mémoire*, the seminal work by French historian Pierre Nora, we find the concept of places of memory, that underscores the spatial nature of memory, pointing to places where history crystallises and endures, but also where it is contested. Monuments, buildings and urban sites act as carriers of historical meaning, but they are also shaped by shifting social values and political regimes. Heritage, therefore, often becomes an expression of power.

This asymmetry is particularly acute in societies grappling with the legacies of colonialism and authoritarianism. In such contexts, heritage can serve both as an instrument of erasure and as a tool of resistance. On one hand, official narratives, embodied in monuments like the *Padrão dos Descobrimentos*, may reinforce imperial nostalgia, silencing the perspectives of the colonised. On the other, grassroots actors and marginalised communities may seek to reclaim suppressed histories, reoccupy neglected spaces, and challenge the hegemonic uses of the past.

These dynamics are not abstract. As Sharon Macdonald[2] has shown, heritage is often emotionally charged, politically sensitive, and embedded in struggles over identity, legitimacy and justice. Rather than being consensual or celebratory, heritage frequently becomes a terrain of conflict: between conservation and redevelopment, inclusion and exclusion, memory and oblivion. Recent scholarship has extended this analysis, showing how contested heritage reflects broader conflicts around race, class and postcolonial recognition.[3]

Such tensions are also visible in the fate of working-class heritage, particularly sites linked to manual labour, technical know-how and local economies. These sites, such as shipyards, markets, or workshops, rarely enter national canons of heritage. They lack monumental form, aesthetic polish or institutional backing. Yet they embody cultural knowledge, social history and lived continuity. Their disappearance, whether through demolition, redevelopment or gentrification, is not only material but symbolic: it marks a rupture in the mnemonic infrastructure of everyday life.

By framing heritage as a political and epistemological field, marked by asymmetries of power, contested memories and struggles over visibility, this study aligns with a growing body of critical heritage scholarship. It also responds to urgent global debates on how to deal with monuments that embody exclusionary pasts, and how to value sites that do not celebrate triumph, but instead bear witness to labour, resilience and the muted endurance of everyday lives.

THE CRUZ SHIPYARD: VERNACULAR HERITAGE AND THE POLITICS OF SURVIVAL

Amid the monumentalised narratives of Portugal's maritime past, the Cruz Shipyard stands as a rare site of vernacular heritage: modest in scale, embedded in local labour traditions, and historically overlooked by institutional frameworks. Located just below the former Corpus Christi convent in Gaia and continuously run by the Sousa family for over a century, the shipyard has preserved techniques of wooden boatbuilding that date back generations. Yet its significance lies not only in technical continuity but also in its resistance to cultural, spatial, and economic erasure.

Founded in the late nineteenth century, the yard initially served the thriving riverine economy, building and repairing *rabelos*, flat-bottomed wooden vessels used to transport port wine downstream to the cellars of Gaia. With the decline of river transport in the mid-twentieth century, brought on by the rise of road infrastructure, the shipyard adapted. Rather than closing, it redefined its purpose. The *rabelo* was reinvented as a tourist vessel, its form preserved but re-signified, transformed into a vehicle for cultural experience rather than commercial transport.

This shift was not purely economic. It represented a conscious effort to safeguard traditional craftsmanship, adapting it to contemporary uses without abandoning its core identity. The vessels still preserve their wooden hulls, clinker-built planking and elongated forms designed for Douro currents. Though now powered by engines and stripped of their original sailing function, they retain symbolic features such as the *espadela* (long steering oar) and the upright sail, vestiges of the past reinterpreted for modern visibility.

Yet such continuity has been fragile. In the early 2000s, municipal plans threatened to demolish the shipyard to make way for tourism infrastructure, including a coach park and a river taxi terminal. The site, lacking formal heritage status and aestheticised presentation, was deemed expendable. Its preservation was not guaranteed by official cultural policy, but achieved through grassroots mobilisation, media advocacy, and legal resistance. As Dacia Viejo Rose[4] reminds us, heritage is not only what is protected but what is made visible, and visibility is determined by power. As Octávio Lixa Filgueiras[5] argued, Douro vessels are cultural artefacts. To lose the shipyard would be to dismantle the ecosystem that produces and sustains them.

The Cruz Shipyard's case challenges dominant conceptions of heritage that privilege monumentality, national symbolism, and curated narratives. It embodies *living heritage*, sustained through use, transmitted through embodied knowledge, and rooted in place. Its carpenters are not relics of a bygone era, but practitioners of a craft continually adapted to changing realities. Their labour constitutes not just economic activity, but cultural preservation.

Moreover, the shipyard reconnects with a broader historical continuum. The northern coast of the Iberian Peninsula, from the Douro to the Basque Country, was a centre of naval innovation during the medieval and early modern periods. Porto's shipyards, including those in Miragaia and Gaia, played a crucial role in the development of caravels and *naus* used in Atlantic exploration. Though absent from grand narratives of empire, these sites were vital nodes in the material infrastructure of the Portuguese maritime expansion. The Cruz Shipyard, as the last of its kind on the Douro, symbolically inherits this legacy. It offers a counterpoint to official histories, where anonymous shipwrights and river pilots are often omitted.

Preserving such a site requires more than nostalgia. It demands recognition of cultural labour, protection from speculative pressures, and an expanded understanding of heritage that includes the everyday, the artisanal, and the vernacular. In this sense, the Cruz Shipyard is not only a space of memory, but of political practice, a place where heritage is claimed, negotiated and kept alive through struggle.[6]

THE MONUMENT TO THE DISCOVERIES: MEMORY, MYTH, AND COLONIAL NOSTALGIA

Erected on the Lisbon waterfront, the Monument to the Discoveries stands as one of the most iconic, and contested, symbols of Portuguese national memory. Originally conceived for the 1940 *Exposição do Mundo Português* (Portuguese World Exhibition),[7] under the Estado Novo dictatorship, the monument was intended as a celebration of imperial glory. Its architectural form, a stylised stone caravel led by Prince Henry the Navigator, considered the greatest patron of the voyages by sea, and flanked by 32 historical figures,[8] projects a triumphalist vision of the so-called "Age of Discoveries", rooted in nationalism, Catholic evangelism, and colonial expansion.

The first version of the monument, made of plaster and ephemeral materials, was dismantled shortly after the exhibition. However, in 1960, to commemorate the 500th anniversary of Prince Henry's death, the structure was rebuilt in durable materials and re-inaugurated as a permanent fixture on the Belém waterfront. From that point onwards, the *Padrão* became a centrepiece of state-sanctioned memory, integrating the visual language of empire into Lisbon's urban fabric.[9]

Its location is not incidental. Positioned near the Monastery of Jerónimos and the Torre de Belém, two key landmarks tied to maritime expansion, the *Padrão* anchors a narrative of national exceptionalism and historical grandeur. Yet this narrative is selective. It omits the voices of colonised peoples and erases the violence, exploitation and asymmetry that characterised the imperial project. The monument, like others of its kind, monumentalises not only a past but a particular reading of that past, one aligned with the ideological apparatus of the Estado Novo and its myth of *Portugal dos Descobrimentos.*[10]

In recent years, this narrative has come under increasing scrutiny.[11] Activists, scholars and artists have challenged the monument's symbolism and its uncritical celebration of empire. Among the most notable interventions is *A Descoberta* (2007), a work by Angolan artist Kiluanji Kia Henda, which reimagined the *Padrão* by placing Afro-descendant Portuguese youth in direct physical interaction with its sculptural figures. The performance unsettled the monument's authority, making visible those historically excluded from its narrative.[12]

Public debates have also intensified. While some call for the monument's destruction as a relic of a dictatorial past,[13] others argue for its reinterpretation through critical contextualisation, a process of re-signification. As González de Oleaga argues, controversial monuments should not be erased, but historicised: their meanings pluralised and subjected to open debate.[14] A compelling example is the Monument to Victory in Bolzano, Italy. Commissioned by Mussolini, it was reinterpreted in 2014 through a cross-community initiative. Rather than demolishing it, its fascist roots were exposed: a luminous quote from Hannah Arendt – No one has the right to obey – was installed, and red lights were placed around the structure.[15]

In Lisbon, however, efforts at critical re-signification have met resistance. In 2017, the Afro-descendant organisation Djass proposed a memorial to victims of slavery, designed by Kia Henda and titled *Plantação*. Although it won the participatory budgeting process, bureaucratic delays and shifting municipal positions have prevented its realisation. Meanwhile, the *Padrão* remains intact, largely unchanged in its interpretive framing.

The *Padrão* thus encapsulates the dilemmas of contested heritage in postcolonial societies. It cannot be viewed as a neutral object, nor as a mere relic of the past. It is a living symbol, one whose meaning is shaped by ongoing political, social, and cultural dynamics. Its monumental presence demands engagement: not simply to preserve or to demolish, but to interrogate and, where necessary, reconfigure. Only then can such sites become platforms for dialogue rather than instruments of silence.

CONCLUSION

The Cruz Shipyard and the Monument to the Discoveries occupy opposite ends of the heritage spectrum, yet their juxtaposition reveals complementary insights into the politics of cultural memory in contemporary Portugal. One is grounded in vernacular practice, community resilience, and cultural continuity; the other, in state-led monumentalisation, symbolic visibility, and contested historical narratives. Together, they expose how heritage is not simply inherited, but continuously negotiated across lines of power, visibility, and historical legitimacy.

The Cruz Shipyard exemplifies na heritage-in-practice, a living, embodied tradition embedded in functional space, oral knowledge, and everyday use. As explored by Lafrenz Samuels and Daehnke,[16] heritage is an arena of democratic engagement, not merely about preservation, but about who participates in shaping collective memory. In this sense, the endurance of the Shipyard is not due to formal recognition, but to community resilience and civic mobilisation. Sustained by craft and memory, the shipyard resists musealisation precisely by remaining alive. Its very precariousness exposes the blind spots of institutional frameworks that privilege symbolic capital over lived heritage.

In contrast, the Monument to the Discoveries reflects a monumentalised narrative of imperial glory, closely aligned with the authoritarian ideology of the Estado Novo. Erected as a celebratory icon of national identity, the *Padrão* exemplifies what Rigney[17] describes as a commemorative act that seeks to fix historical meaning – only to have that meaning reopened through public critique. As Whitehead et al.[18] argue, heritage becomes particularly charged in times of crisis, serving as a site of ideological contestation. In today's Portugal, the *Padrão* is no longer a neutral landmark; it has become a stage for anti-colonial critique, artistic intervention, and demands for re-signification.

This comparative lens also illuminates the asymmetries of heritage recognition. The *Padrão* benefits from state protection, international tourism, and cultural prestige, even as its symbolism grows increasingly problematic. The Cruz Shipyard, by contrast, holds no such institutional support, yet carries immense historical and social value. Its exclusion from official heritage discourse reflects broader tendencies identified by Laurajane Smith[19] in her critique of the authorised heritage discourse, which privileges elite values, monumental aesthetics, and national coherence, often at the expense of complexity, dissent, and vernacular knowledge.

Both cases also raise urgent questions about sustainability, not only environmental or economic, but cultural. The Cruz Shipyard has managed to adapt traditional techniques to contemporary contexts, notably through the reinvention of the *rabelo* boat for tourism. This form of negotiated continuity reflects a heritage model that is neither frozen nor commodified, but dynamic. Conversely, the *Padrão*, while materially intact, risks becoming culturally obsolete if not critically recontextualised. As Lowenthal[20] reminds us, the past must not be mythologised, but reopened to interpretation and debate.

From these cases, several practical imperatives arise. First, heritage governance must move beyond the narrow confines of material preservation and embrace participatory models that include local stakeholders in recognition and decision-making processes. Second, contested monuments should not be erased by default, but re-signified, a process that involves embedding alternative narratives, confronting historical violence, and enabling inclusive dialogue. Third, vernacular and intangible heritage, specially that embedded in craft, space, and labour, must be valued and protected through policy frameworks that prioritise cultural continuity over institutional visibility.

In sum, the Cruz Shipyard and the Monument to the Discoveries serve not only as case studies but as mirrors of broader heritage dynamics. They reveal that to preserve the past meaningfully is not simply to conserve objects, but to cultivate pluralism, critical reflection, and democratic responsibility. Heritage, in this light, is not just what we inherit, it is what we choose to remember, reframe, and carry forward.

NOTES

[1] Laurajane Smith, *Uses of Heritage* (London: Routledge, 2006), 13.
[2] Sharon Macdonald, Sharon. *Difficult Heritage: Negotiating the Nazi Past in Nuremberg and Beyond* (London: Routledge, 2009).
[3] Rodney Harrison. *Heritage: Critical Approaches* (London: Routledge;2013; Caitlin DeSilvey. *Curated Decay: Heritage Beyond Saving* (Minneapolis: University of Minnesota Press, 2017); Laurajane Smith, Margaret Wetherell and Gary Campbell, eds., *Emotion, Affective Practices, and the Past in the Present* (Abingdon: Routledge, 2020).
[4] Dacia Viejo Rose, "Património Cultural em Conflito: Da Violência à Reparação", In *Patrimónios Contestados*, ed. Miguel Bandeira Jerónimo and Walter Rossa (Lisboa: Público. 2021), 10-25.
[5] Octávio Lixa Filgeiras. *Barco rabelo: um retrato de família* (Porto: A. A. Calém & Filhos, Lda., 1989).
[6] Heritage Crafts Association. *Red List of Endangered Crafts: 2023 Edition* (London: Heritage Crafts, 2025).
[7] The Portuguese World Exhibition formed part of the so-called Centenary Commemorations, marking both the foundation of the Portuguese nation in 1140 and the restoration of its independence in 1640. It became the most significant political and cultural event of the Estado Novo regime.
[8] Prince Henry is depicted holding a model ship and a map, while the 32 sculpted figures — navigators, warriors, evangelisers, cartographers, and chroniclers — each carry objects symbolising their historical roles. At the rear, a monumental Sword of Avis represents the support of both the Crown and the Church for imperial expansion.
[9] Following the fall of the dictatorship in 1974, the *Padrão* was abandoned. Neglected for several years, it was surrounded by thousands of wooden crates containing the belongings of returnees from Africa. In 1985, the monument's interior was redeveloped and converted into the *Centro Cultural das Descobertas* (Cultural Centre of the Discoveries), featuring a cultural programme, an observation deck, an auditorium, and exhibition spaces. Today, it is one of Lisbon's most visited and photographed landmarks. For Ellen Sapega, "like many other buildings and works of public art that date from the 1930s and 1940s, the *Padrão*'s associations with the regime have indeed been subtly downplayed, if not erased, since the 1974 coup that abruptly put an end to Portugal's Estado Novo" (Sapega, 2008, 27).
[10] Ellen W. Sapega. "Remembering Empire/Forgetting the Colonies: Accretions of Memory and the Limits of Commemoration in a Lisbon Neighbourhood". *History and Memory* vol. 20, no. 2 (2008): 18–38, doi: 10.2979/his.2008.20.2.18.
[11] Recent global movements – particularly those that gained momentum following the rise of Black Lives Matter – have reignited debates about the presence of colonial symbols in public space. Iconoclastic actions across the United States and Europe have targeted monuments linked to colonialism and slavery, calling into question their legitimacy in contemporary society.
[12] Barbara Alves. "Turned into Stone: The Portuguese Colonial Exhibitions Today." Parse vol. 13, no.2 (2021), doi:10.70733/zcb34nfbkadj.
[13] Acts of graffiti have reflected this critical re-evaluation: in 2021, one inscription read, "Blindly sailing for monney [sic], humanity is drowning in a scarllet [sic] sea"; more recently, graffiti referencing Wakanda Forever accused Portugal of "killing Africa."
[14] Marisa González de Oleaga. "Descolonizar el museo y resignificar los monumentos: la escena del crimen." *Revista PH Instituto Andaluz del Patrimonio Histórico*, no.111 (2024): 62–75.doi: 10.33349/2024.111.5553.
[15] Hannes Obermair."The Bas-Relief in Bolzano-Bozen." *Contested Histories Onsite*, accessed June, 19, 2025. https://www.youtube.com/watch?v=U04Logag9rA&t=531s
[16] Kathryn Lafrenz Samuels and Jon D. Daehnke, eds, *Heritage and Democracy: Crisis, Critique, and Collaboration* (Gainesville: University Press of Florida, 2023).
[17] Anne Rigney, Anne, "The Dynamics of Remembrance: Texts Between Monumentality and Morphing", in *Cultural Memory Studies: An International and Interdisciplinary Handbook*, ed. Astrid Erll and Ansgar Nünning (Berlin and New York: Walter de Gruyter), 345-353.
[18] Christopher Whitehead, Susannah Eckersley, Mads Daugbjerg, and Gönül Bozoğlu, eds., *Dimensions of Heritage and Memory: Multiple Europes and the Politics of Crisis* (London: Routledge, 2019).
[19] Laurajane Smith. *Uses of Heritage* (London: Routledge, 2006).
[20] David Lowenthal. *The Past Is a Foreign Country – Revisited* (Cambridge: Cambridge University Press, 2015).

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MEDIATING HERITAGE THROUGH DESIGN AND MOBILITY: NELSON MANDELA'S LEGACY IN THE URBAN LANDSCAPE

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INTRODUCTION

"How do you know when you have arrived at your destination?" This question arose during a visit to Nelson Mandela Park in Leicester in the United Kingdom where the Named after Nelson project[1] originated, where clear wayfinding and integrated design created a strong sense of arrival (see Figure 1). It prompted a broader inquiry into how design and mobility shape heritage, especially how Nelson Mandela-linked places in Gauteng, South Africa which was the initial geographic focus of the Named after Nelson project, can be better integrated into the urban landscape to foster inclusive, accessible heritage environments supporting the Nelson Mandela Foundation's 'Just Cities' agenda that calls for the transformation of urban spaces to make them more inclusive and accessible to the poor and marginalised.[2] In South Africa, heritage tourism has been identified since the early post-apartheid period as an important niche for tourism promotion and product diversification, with unexploited potential for local and provincial economic development.[3] However, the potential of heritage tourism in South Africa remains under-realised.[4] Cultural tourist guides identify various factors that constrain visitation and use, such as poor governance, fragmented planning, inadequate infrastructure, lack of maintenance, insufficient signage, high fees, and long driving distances.[5] Without inclusive transport infrastructure and user-centred system design, mobility can reproduce exclusion, through accessibility gaps that limit equitable access to opportunities and undermine places' social-inclusion potential.[6] This research links heritage to spatial justice, emphasising everyday journeys and symbolic landscapes as part of Mandela's urban legacy. It advocates for an interdisciplinary approach that connects transportation, urban design, and heritage interpretation to address inequality and foster inclusive city-making.

Figure 1. Signage at Nelson Mandela Park in Leicester, United Kingdom.[7]

FRAMING MANDELA'S LEGACY THROUGH URBAN MOBILITY AND DESIGN

Hundreds of places named in honour of Nelson Mandela worldwide serve as symbolic tributes that express his legacy and shared values through opportunities for public education, shaping how people experience the cultural and historical importance of these places.[8] Mandela-named places can promote inclusive narratives and spatial justice by engaging a diverse public with his values in context-specific ways when thoughtfully integrated into urban landscapes. The concept of 'graphic heritage' links spatial, visual, and narrative elements in these places, transforming them into active, participatory environments rather than static destinations. The 'graphic' in 'graphic heritage' refers to abstract, architectural, diagrams, graphs, non-representational, pictures, statues and structural graphic images.[9] Graphic heritage makes intangible legacies visible through signage, storytelling, and spatial interpretation. Such methods foster deeper connections between people and place, especially when incorporated into transport and cultural infrastructure, although accessibility varies across sites. Aligning these places with mobility systems supports public memory, economic development, tourism, and placemaking. As cultural anchors within urban areas, Mandela-named places serve as platforms for inclusive urban transformation and more equitable participation in heritage and space production.

PUBLIC TRANSPORT AND URBAN ACCESSIBILITY IN SOUTH AFRICA

South Africa's public transport remains shaped by the historical legacy of apartheid, with persistent inequalities in access that complicate post-1994 efforts to build an inclusive mobility system.[10] Despite reforms and policies like the National Land Transport Act,[11] public transport remains fragmented, inefficient, and often inaccessible. Since the early 2000s, South Africa's subsidised formal transportation modes have lost ground.[12] Commuter rail patronage has declined sharply, while buses and trains have ceded market share to minibus taxis which are an informal, lightly regulated mode of transportation. Minibus taxis carry about 80% of public-transport work trips and an estimated 15 million daily commuter trips. Moreover, most users are not served by BRT or Gautrain, underscoring weak integration with city planning.[13] Private vehicles and taxi services like Uber, Wanatu, and Bolt are alternative options, but mobility largely remains a privilege which is unevenly distributed across urban areas. Early post-apartheid policy sought to expand public transport and discourage urban motoring, but the application was uneven.[14] Decades later, policy objectives remain

largely unmet, and users report dissatisfaction with public transport services.[15] This challenge is not unique to South Africa since international studies highlight the need for inclusive, evidence-based, participatory design interventions to address transport disparities, racialised inequities, and infrastructural exclusion linked to systemic inequality worldwide.[16]

STORYTELLING, DESIGN AND MOBILITY AS TOOLS FOR ENHANCING HERITAGE EXPERIENCES

Cultural heritage places are central to expressing and sustaining national and community identity. They play a significant role in local and regional socio-economic development when effectively managed and linked to cultural tourism.[17] Applied as a creative, design-led intervention, participatory place-based visual storytelling enables residents to generate counter-narratives that highlight local heritage and shift public perceptions of place, thereby strengthening place identity.[18] News media actively participate in 'news place-making,' assigning meanings to environments and shaping public understandings of place.[19] Correspondingly, urban designers can curate a city's narrative landscape and create formats that accommodate multiple, diverse place-stories rather than a single master narrative.[20] In urban environments, wayfinding systems are essential for pedestrian orientation and accessibility because when signage communicates information clearly and incorporates culturally resonant, visually appealing elements, it improves the user experience and can even promote walking.[21] Mobility systems such as transit signage, route branding, and station design serve not only as technical infrastructure but also as storytelling media that convey messages about place, identity, and belonging. For heritage places named after Mandela, such design interventions can help balance symbolic visibility with physical accessibility to enhance visitor connection to the cultural significance of these places.

METHODS

This study adopts an interdisciplinary qualitative approach to examine how Nelson Mandela's legacy is mediated through design and mobility in the urban landscape through a spatial and visual analysis. Six case studies of places named after Mandela in the Gauteng region of South Africa were selected from the Archive at the Centre of Memory database.[22] These case studies were explored initially as part of the Named after Nelson project,[23] which was built on earlier work exploring visual heritage, spatial justice, and commemorative place-making.[24] The spatial analysis included the use of maps and satellite imagery to assess each place's location, transport nodes, access routes and surrounding infrastructure. In contrast, the visual analysis involved photo documentation, site visits, and signage audits to evaluate signage, storytelling features and graphic heritage elements. The integration of visual and spatial data supports a holistic understanding of how design and mobility shape visitor engagement and narrative coherence across Mandela-named places.

FINDINGS AND DISCUSSION

The selected sites represent diverse spatial and social contexts, which enables comparative insights across varying levels of accessibility, visibility, land use, and symbolic value. These findings are discussed in relation to the spatial and visual context of each place, followed by a discussion of the integration with graphic heritage and urban design.

Spatial and visual context

Mandela Village in Hammanskraal is a peri-urban settlement established in the early 1990s for low-income residents. The spatial analysis reveals a fragmented settlement bordered by major arterial roads (N1, R101, R734), with transit activity concentrated along the southern and eastern periphery.

Despite the presence of public and minibus taxi services, there are no formal transportation nodes within the village centre. A signage audit identified only two directional signs (see Figure 2), namely one to Mandela Village and another to Mandela Square near the sports grounds, which underscores the limited visibility of the place within the broader mobility networks.

Figure 2. Spatial and visual analysis of Mandela Village in Hammanskraal, Pretoria. Annotated Map: A - Mandela Village, Hammanskraal; B - Dinokeng Nature Reserve; C - Jubilee District Hospital; D - Kudube primary school; E - Makgetse High School; F - SAPS Temba Police Station; G - Tshwane North TVET College - Temba Campus; H - Mokonyama Primary School; I - Hammanskraal masjid; J - Bethesda Outreach Ministries; K - Jabulane Christian Academy.[25] Top right: Google Street View of the corner of Harry Gwala Avenue and R101 (Old Warmbaths Road). Bottom right: Google Street View near the Mandela Sportsgrounds on the R734.[26]

The Nelson Mandela Bridge connects the precincts of Braamfontein and Newtown, serving as an iconic symbol of urban connectivity. It functions as a well-integrated mobility corridor by linking the inner city through walkways, BRT stops, and its proximity to Park Station. Although symbolically prominent, its only official signage is a single nameplate on Bertha Street (see Figure 2), and it lacks interpretive infrastructure. The Red City Sightseeing Bus crosses the bridge but does not stop nearby, potentially due to perceptions of safety and crime concerns in the area limiting its heritage tourism value.

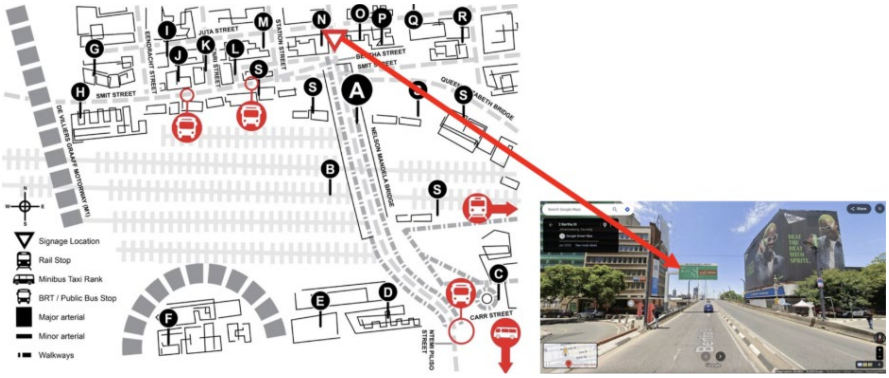

Figure 3. Spatial and visual analysis of the Nelson Mandela Bridge in Braamfontein, Johannesburg. Annotated Map: A - Nelson Mandela Bridge; B - Railway lines; C - Queen Elizabeth Bridge Park; D - Heritage View (residential houses); E - Old Park Station (heritage site); F - Vehicle Dealers (BMW & Mini); G - Bridgeview Apartments; H - Factory Warehouses; I - Maddison Lofts; J - Revolution Media Academy; K - Encore Media & TMF Studios; L - DYPUSA House (labour union); M - Rosebank College; N - BluLever Education; O - IFAS - Institut Français d'Afrique du Sud; P - Vehicle Service Centre (Audi); Q - The PlayGround; R - Retail shops & Restaurants; S - Railway Building; T - Old Park Station Structure.[27] Bottom right: Google Street View of the only road sign which is located on Bertha Street.[28]

The Nelson Mandela Theatre is situated in Braamfontein and is a key cultural venue for the performing arts. The theatre is part of the Joburg Theatre complex, which is embedded in a civic precinct accessible via BRT, rail, and taxis. While the theatre is architecturally distinct, external signage only references the broader complex (see Figure 4), requiring prior knowledge for visitors to locate the Mandela-named venue. Internal signage within the building is more effective, but public wayfinding only refers to the Joburg Theatre.

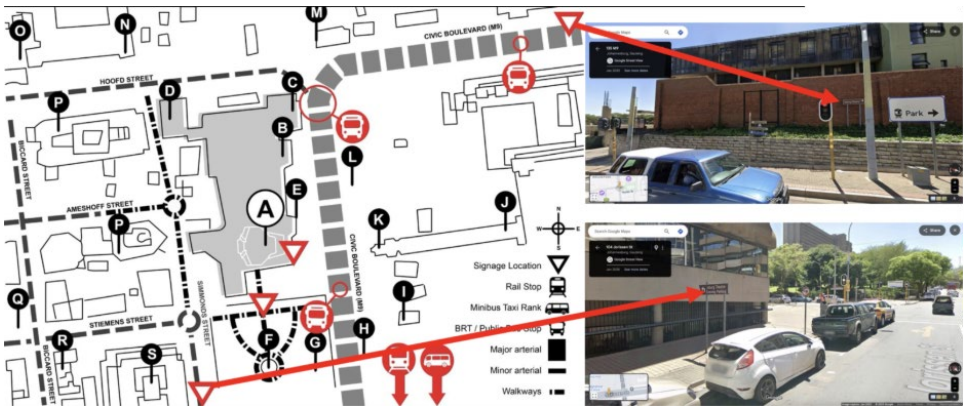

Figure 4. Spatial and visual analysis of the Nelson Mandela Theatre which is located within the Joburg Theatre complex in Braamfontein, Johannesburg. Annotated Map: A - Nelson Mandela Theatre (also called 'The Mandela'); B - The Lesedi at the Joburg Theatre; C - Peoples Theatre; D - Space.com Theatre; E - Joburg Theatre; F - Joburg Theatre Garden; G - Theatre Park; H - Joburg Metro-Link Reception Centre; I - City Council of Johannesburg City Council of Johannesburg City Council of Johannesburg; J - Civic Centre Braamfontein; K - Greater Johannesburg Metropolitan Council (Supply Chain Management); L - City Of Johannesburg Town Planning; M - FNB Bank Braampark Offices; N - National School of the Arts; O - National School Of The Arts Theatre; P - Commercial space; Q - The South African Human Rights Commission; R - Retail space; S - Thuso House (Government offices). [29] *Top right: Google Street View of Civic Boulevard (M9) indicating the theatre and rail station's direction. Bottom right: Google Street View of Jorissen Street near the crossing with Simmonds Street, indicating the theatre and its parking garage are to the left.* [30]

The Nelson Mandela Centre of Memory is an institutional archive and public heritage site curated by the Nelson Mandela Foundation, located in a suburban context. Major roads frame it and are accessible via a Gautrain feeder route and the Tourist Sightseeing Tours. However, signage is minimal and mainly limited to its immediate surroundings, despite its institutional significance (see Figure 5).

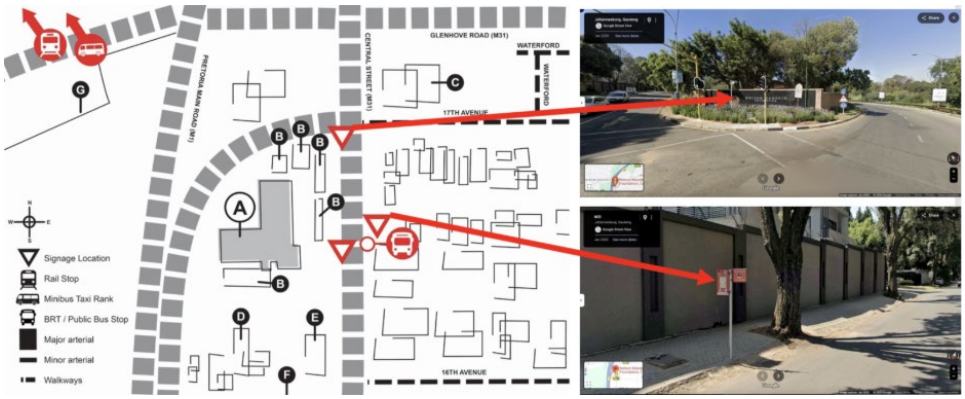

Figure 5. Spatial and visual analysis of the Nelson Mandela Centre of Memory in Houghton, Johannesburg. Annotated Map: A - Nelson Mandela Foundation Main Building; B - Nelson Mandela Foundation Buildings; C - Wave Medical and Surgical; D - iPath Laboratories; E - Health and Fitness; F - Brand South Africa; G - Houghton Estate Nature Area.[31] Top right: Google Street View of Nelson Mandela Foundation signage on the corner of Central Street and the M1 off-ramp. Bottom right: Google Street View of City Sightseeing Tours signage stop across the road from the Nelson Mandela Foundation entrance.[32]

Nelson Mandela Park in Mamelodi is a public recreational space linked to post-apartheid renewal efforts. The park is embedded in the local urban fabric and accessible by informal transport and walkways, though the nearest rail station is a 40-minute walk away. Signage at the park entry points supports local engagement but lacks broader visibility and formal narrative cues (see Figure 6).

Figure 6. Spatial and visual analysis of Nelson Mandela Park in Mamelodi, Pretoria. Annotated Map: A - Nelson Mandela Park; B - JNF Walter Sisulu Environmental Centre; C - Mandela Park Peace Garden; D - Tshwane North TVET College - Mamelodi Campus; E - Mamelodi Regional Hospital; F - Zcc Mamelodi (church); G - Tlakukani Primary School. [33] Bottom right: Google Street View of Official park signage on Tsamaya Avenue in Mamelodi.[34]

Nelson Mandela Square in Sandton is a luxury commercial precinct that appropriates Mandela's image for branding. In contrast to the park and the village, the square is highly integrated into the city's commercial core. It benefits from multimodal transit connections, including the Gautrain, pedestrian walkways, cycle lanes, and high signage density. The square's accessibility, visual branding, and tourism infrastructure reinforce its symbolic and functional prominence (see Figure 7).

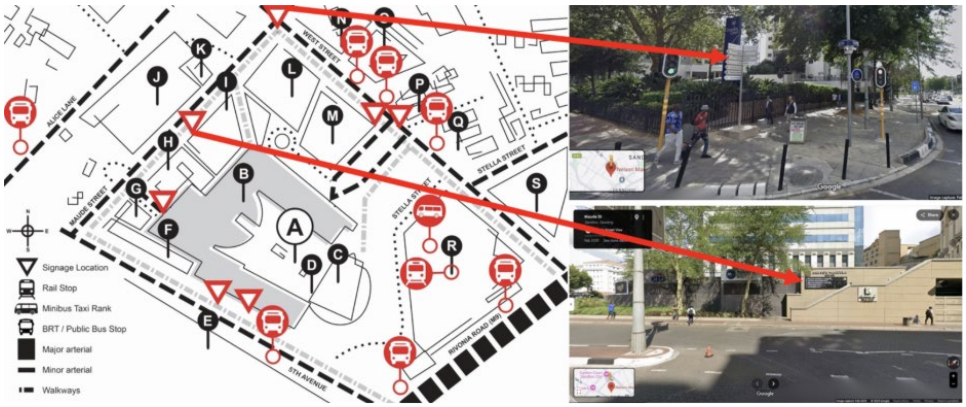

Figure 7. Spatial and visual analysis of Nelson Mandela Square in Sandton, Johannesburg. Map Legend: A - Nelson Mandela Square; B - Nelson Mandela Square Shopping Centre; C - Sandton Library; D - Tourist Information Centre; E - Sandton Mall; F - DaVinci Hotel and Suites on Nelson Mandela Square; G - The Forum (business); H - Regus - Johannesburg Sandton Nelson Mandela Square (hotel); I - Michelangelo Hotel; J - Sandton Convention Centre (conference); K - Garden Court Sandton City (hotel); L - Citibank South Africa and City Bank Place; M - Onomo Johannesburg Sandton Hotel; N - Netcare South Africa (hospital); O - Capitec Business Sandton Campus; P - Pink Elephant South Africa (business); Q - SiMODiSA Association (NGO) and Visual Aspiration (business); R - Gautrain Sandton Station (underground transportation link); S - Old Mutual Mutual Place (banking).[35] Top right: Google Street View of Pedestrian signage on West Street in Sandton with a visible bicycle lane. Bottom right: Google Street View of Building signage on Maude Street.[36]

Integration with graphic heritage and urban design

Preliminary findings reveal that integrating graphic heritage with transportation planning enhances visitor engagement and connectivity, fostering a more cohesive tourist experience. However, South Africa's limited public transportation infrastructure presents significant challenges, restricting equitable access to heritage destinations. The research underscores the need for innovative strategies that prioritise inclusion and sustainability while leveraging graphic heritage as a mediator between physical and cultural spaces. Across the six case studies, the integration of graphic heritage with mobility infrastructure emerged as a key factor in shaping visitor experiences. High-connectivity sites like Mandela Square and the Nelson Mandela Theatre benefit from integrated transit and visual systems, while peripheral sites like Mandela Village and Nelson Mandela Park exhibit spatial and narrative isolation. This spatial disparity reflects broader socio-spatial hierarchies, where heritage visibility and access mirror historical inequities. The three key barriers to inclusive heritage that emerged were spatial disconnects, infrastructural fragmentation and narrative gaps. Places in peri-urban areas are physically distant from formal transport systems, which limits access for visitors. Inadequate signage and reliance on informal transit networks reduce legibility and ease of navigation, especially for tourists or first-time visitors. Whereas a lack of graphic storytelling, including interpretive signage, murals, and maps, diminishes the heritage value and public engagement potential of many Mandela-named places. To advance Mandela's inclusive legacy, this paper calls for a multidisciplinary and participatory planning model, where graphic designers, transport planners, heritage professionals, and communities co-develop accessible, legible, and meaningful heritage corridors. In doing so, Mandela-named places can evolve from static memorials into dynamic, lived experiences of memory, justice, and belonging. Ultimately, reframing mobility as a condition of heritage access anchors this work within broader heritage justice discourse. Equitable access to places of memory requires dismantling infrastructural barriers and investing in design strategies that democratise who gets to see, experience, and belong to the legacy of Nelson Mandela.

CONCLUSION

This paper highlights the intersection of transportation, heritage, and graphic design in shaping how Nelson Mandela's legacy is accessed and experienced within urban places. The analysis of six Mandela-named places in the Gauteng province of South Africa revealed disparities in accessibility, visibility, and interpretive coherence. Places with integrated mobility and design strategies (e.g. Nelson Mandela Square and Nelson Mandela Theatre) foster engaging, inclusive experiences, while places lacking connectivity or narrative infrastructure (e.g Nelson Mandela Park and Mandela Village) risk diminishing their symbolic impact. Linking mobility with heritage through spatial design and graphic storytelling transforms commemorative places into participatory environments that advance Mandela's vision of social justice. Sustaining his legacy requires more than naming places, but it demands creating places that are accessible, meaningful, and connected to the rhythms of urban life. By aligning design and transport planning with heritage interpretation, cities can redistribute visibility and access, promoting heritage justice. When inclusive mobility and design converge, urban landscapes become active sites of memory that embody Mandela’s ideals of dignity, equality, and belonging.

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BEYOND SEDUCTION: MINING BUILDINGS IN THE CHILEAN ATACAMA DESERT AND CENTRAL VALLEY

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INTRODUCTION

The fascination with abandoned industrial structures and buildings, which thrived during the heyday of the industrial economy in places like Detroit or were impacted by disasters such as Chernobyl, has led to the emergence of a photography genre dedicated to capturing the beauty in the decay of these buildings often referred to as “ruin porn,” These deteriorating buildings are seen as beautiful entities that should be allowed to decay naturally without human intervention.[1]

Critics argue that such photography ignores the social and economic conditions under which workers lived and the environmental damage they may have caused. The images construct in their view, a false narrative in which cities, such as Detroit, are portrayed as abandoned and in the process of being reclaimed by nature, when in fact many people still reside there. Romanticizing and glamorizing the gritty and melancholic aspects of abandoned urban areas appears to ignore the present's harsh realities and seemingly discards the possibilities of creating a better future. The photos in Detroit tend to exclude the people who live in these areas, mainly African Americans, causing their invisibility in photographic documentation to be seen as a reflection of their invisibility in policy circles and or discussions of urban revitalization.[2]

*Figure 1. Site Dilapidated Packard Plant, Detroit, Michigan_*

The criticism of ruin photography is not universally shared. Scholar Tim Edensor, for example, celebrates abandoned areas as "unpoliced, extra spaces" that exist outside the confines of capitalism.

He believes that in our "over-regulated" cities, these areas provide a sense of relative freedom. By examining the confrontations with the ghosts that inhabit these ruins, Edensor suggests that there is a subversive quality to deteriorated abandoned industrial sites. These structures serve as an antidote to the fixed, classified, and commodified memories typically represented in heritage and commemorative spaces, hosting activities often seen as 'disreputable' or 'inappropriate.[3]

While critics perceive different qualities or shortcomings in the spaces or photographs, the ruins are often treated without distinction, generically as deteriorating industrial structures. Ruins, however, have many distinct qualities and are influenced by many factors, such as the materials used in their construction, the original structure's function, the degree of ruination, and their physical surrounding context. Thus, we should focus on their specific qualities and regard industrial ruins the way the Renaissance viewed ruins from the 14th century to the 17th century: as vital contributors to contemporary environmental and creative culture.

This article reviews four case studies of abandoned mining complexes to assess the varying impacts photographs and real-time visits of industrial ruins have on understanding past, present, and even future realities. We distinguish between three categories: “fleeting industrial ruins,” which are completely abandoned and their origins unrecognizable; “didactic ruins,” which are carefully managed for public or tourist consumption; and “generative industrial ruins,” which are transformed through additions or refurbishments, creating a new environmental reality. As case studies, we focus on mining complexes in Chile, a country whose economy is heavily reliant on mineral extraction,

FLEETING RUINS (NALTAHUA)

Nestled in the picturesque landscape of the Chilean Central Valley, near the Maipo River and approximately an hour and a half from the capital Santiago, lie remnants of abandoned structures of the Naltagua Copper Mine Company, founded in 1908 by Count Bernard de Saint-Seine, Baron de Rothschild’s son-in-law. The site included housing for over 2,500 people, a school, a health clinic, and a grocery store. It operated until 1945, when rising costs rendered it economically unviable. The mine began operating in April 1909 and, after the Chilean El Teniente copper mine, was the second most important extraction site in the country's central region. Copper shipments to foreign markets relied on a six-kilometer-long cableway connected to the nearest railway station. However, the Société des Mines de Cuivre ceased its operations in Naltagua in 1945, as rising operational expenses made the enterprise unsustainable.

Figure 2. Site of the derelict Naltagua copper mine company (photos by the author)

Although the area is private property, the absence of fences and signs explaining the site's significance allows for free exploration and an unrestricted flow of imagination. Time spent among the ruins, feels limitless. This illusory permanence stands in contrast to the nearby Maipo River and the seasonal changes in the adjacent grape-growing fields. We refer to these ruins as "fleeting" because they seem to exist in relative terms only briefly on the surface of the earth, while the histories that led to their creation appear to have vanished.

Visiting and photographing these ruins does not provide insight into the fact that the building fragments were part of a copper mine. Perhaps this is partly because the idyllic surroundings of the Maipo River and vineyards do not evoke the harsh realities of extraction and material accumulation associated with mining.

The Naltahua ruins differ from photos taken of ruins in Detroit or Chernobyl, where by contrast, our knowledge of the cities' devastation and decline enhances the visual narrative and amplifies their impact. The allure of the Naltahua ruins, however, cannot be attributed to the industrial economic reality that led to their abandonment. Instead, their appeal lies in the fragile and fleeting nature of life, revealing the gradual decline and disintegration of all objects in the world , as well as the interplay between nature and human endeavor.

DIDACTIC INDUSTRIAL RUINS (HUMBERSTONE AND SANTA LAURA SALTPETER MINES

Unlike Naltahua, the mining establishments of Humberstone and Santa Laura, although in a state of disrepair, are carefully managed to generate tourism income. These two settlements were established between the late 19th and early 20th centuries in the Atacama Desert when Chilean mines played a significant role in producing most of the world’s saltpeter, a key fertilizer during the agricultural industrialization of Europe. From 1880 to 1930, saltpeter mining accounted for 60-80% of Chilean exports and contributed 40-60% of the country’s fiscal revenue. Mines were established near nitrate-bearing veins, necessitating considerable earth removal to extract sodium nitrate. The nitrate trade initially involved Bolivia, Peru, and Chile, but tensions over taxes ultimately led to the War of the Pacific (1879-1883). After Chile's victory, the country gained control of valuable nitrate mines. From 1880 onwards, recruiters began enlisting migrant workers, often trapping them in a cycle of debt and economic exploitation. These workers endured harsh conditions and received little pay, frequently compensated only with store tokens.

The Humberstone Saltpeter Works

Humberstone, established among approximately 200 salitreras (saltpeter mines, processing plants and company towns) built between the 1880s and the early 1930s in northern Chile, is one of the best-preserved industrial townships. As a UNESCO World Heritage Site, it is maintained under strict preservation guidelines. The township is located about 45 minutes east of the city of Iquique, nestled in the Pampa, the elevated plain of the Atacama Desert.

While Humberstone has no remaining industrial installations, the layout of the company town is well-preserved. It features a regular orthogonal grid with 10-meter-wide streets running west to east, intersected by 18-meter-wide avenues running north to south. At the center is the Main Square, which houses most of the community's buildings, including the theater, the pulpería (a general store that now functions as Humberstone’s interpretive center), the marketplace, the church, the hotel, and the swimming pool.

Figure 3. Humberstone Saltpeter mine.(photo by the author)

Despite the complex's current decay and its partially vanishing materiality, Humberstone cannot be appreciated solely for its textural aesthetic value. The harsh conditions endured by the miners are reflected in the town's design, the severe architecture, and the unforgiving desert that surrounds it. The only relief comes from a hillock of discarded tailings on the town's periphery. Additionally, a few dead trees, the only vegetation for miles, serve as indicators of the challenges faced in this environment, suggesting that nothing ultimately survives the desert's harsh conditions.

Santa Laura Saltpeter Works

Santa Laura Saltpeter Works, located just a five-minute drive from Humberstone, offers a unique experience with its well-preserved industrial site. Established in 1872 and closed in 1960, it features a small exhibition that showcases life in the saltpeter towns. The remaining structures primarily consist of the industrial plants that processed nitrate for transport to Iquique, with the iconic leaching plant being the most notable remaining piece. The abandoned buildings, with their crumbling and fading materials, evoke a sense of aesthetic pleasure and a haunting atmosphere of decay and desolation. This ambiance makes them ideal subjects for "ruin porn" photography. However, as Dora Apel discusses in her book "Beautiful Terrible Ruins: Detroit and the Anxiety of Decline" (2015), simply labeling these images as "ruin porn" overlooks deeper insights. She argues, “Even if we take the term ‘ruin porn’ at face value and see the objective of ruin imagery as the production of pleasure or arousal, to condemn the massive proliferation of ruin images on this basis leads to no new insight or knowledge. The more productive questions are how ruin images please, move, or arouse, and what purpose this serves. ” Criticism of ruin porn often arises from the view that photographing industrial ruins trivializes the social and political conditions experienced by workers. However, the issue lies not exclusively in the seductive nature of the photography, but rather in the lack of context provided. In Humberstone, the small workers' houses and the harsh desert surrounding environment offer a clear sense of the socio-economic challenges that the workers faced.[4]

Figure 4. Site of the derelict Santa Laura Saltpeter mine.(photo by the author)

GENERATIVE RUINS (HUANCHACA SILVER PROCESSING PLANT)

The Huanchaca silver processing plant is a notable example of how abandoned, derelict industrial buildings can inspire environmental change. Located in Antofagasta, which transformed from a small fishing village in the 19th century into a significant port for mineral exports, the plant was established by the Huanchaca Company in the 1890s. This company extracted silver from the Bolivian Puclayo mine, which was connected to the processing plant by a railway. At its peak, the plant employed around 1,200 workers. Unfortunately, the living conditions for these workers were poor, as they faced inadequate services and health risks from industrial pollution, which contributed to high rates of alcoholism among the workforce.

The plant was closed in 1902 due to a decline in silver prices and subsequently fell into disrepair. Its condition continued to deteriorate even after it was designated as a National Historic Monument in 1974. A partial restoration took place in 1994, which led to a competition in 1996 to design the Parque Cultural Huanchaca, including a museum and an amphitheater. A team of recent architecture duates from the Universidad Central in Santiago, that included Eugenia Soto, Ramón Coz, Marco Polidura, and Ignacio Volante, won the competition. Due to a shortage of capital, the project remained unbuilt until 2006, when the Chilean Leisure and Tourism Company took advantage of a government resolution authorizing gambling facilities in Chilean regional districts. Thus an opportunity arose to include a hotel and casino in their plans for the building of the museum and amphitheater. As a result,

Figure 5. Site of the derelict Huanchaca Silver Processing Mine (photo by the author)

the Chilean firm Estudio Larraín was contracted to design the hotel and casino, while the contracts for the museum and amphitheater projects were awarded to the competition winners. [5]
The Museo del Desierto, situated adjacent to the ruins of the Huanchaca processing plant, integrates its architectural features harmoniously with the surrounding landscape. The semi-subterranean design allows for natural light to pass through open courtyards, further enhancing the museum's connection to its surroundings. Tucked beneath the ramps are a series of five rooms containing a permanent collection of regional mineral samples and anthropological exhibits: two for the geology and paleontology of the Atacama Desert, one each for its first inhabitants and the evolution of the Chilean mining industry, and the fifth, donated by the European Southern Observatory (ESO). dedicated to the exploration of the universe. The site's westward slope design creates a semi-subterranean series of spaces that accommodate various programmatic areas. Towards the ocean, the eastern wing of the museum is constructed against a large retaining wall. This includes facilities for curatorial activities, research, an auditorium, offices, storage rooms, coffee souvenir shops, and the Huanchaca Room

Figure 6. Desert Museum and Huanchaca's Silver Processing Mine

for temporary exhibitions. Three open courtyards provide most of the natural light and cross-ventilation for the interior, as well as climate control systems that modulate ambient temperatures and afford glimpses of the ruins above. One courtyard allows visitors to observe the museum's fresh air.
conservation work through sliding glass panels. Another provides an exterior space shared by the auditorium lobby and the coffee shop patio, while a third supplies the restrooms with sunlight and The only other natural light penetrating the museum interior enters the main hall exhibition spaces through the glazed apertures on the western elevation between each ramped volume. The semi-subterranean courtyards of the Museo del Desierto take advantage of the ground's capacity for heat retention and the thermal insulation provided by its surface layer, as well as temperature fluctuations that lag significantly behind those of ambient air temperatures. In "Landform Building: Architecture's New Terrain" (2011), architect Stan Allen argues that the growing demand for improved environmental performance, along with advancements in design and fabrication technologies, has led to a reconsideration of architecture's traditional connection to the ground. This has resulted in numerous buildings that resemble natural landforms.[6]

Figure 7. Museo del Desierto Interior (photo by the author)

While the design of the Desert Museum does take advantage of the climatic benefits of being built semi-underground, it is mainly motivated by the desire to preserve unobstructed sightlines to the ruins.[7] The design of the Huanchaca Cultural Park's Desert Museum, according to architect Polidura, was similarly influenced by the Earth Art movement, also known as Land Art or Earthworks. This predominantly American movement, which began in the late 1960s, utilizes the natural landscape to create site-specific structures, art forms, and sculptures. Inspired in addition by the rhythms of the stunning views of the coastal mountains. The museum's sculpting of land brings to mind Michael Heizer's 1969 "Double Negative", that features deep trenches cut into the flat desert plateau of Mormon Mesa near Overton, Nevada. The duality referenced in Heizer's title refers to natural and human-created voids facing each other on opposite sides of an existing ravine, the "negative" space. excavated to build it.[8]

Figure 8. Michael Heizer Double Negative (photo courtesy Marc Treib)

The Huanchaca ruin also recalls pre-Hispanic indigenous constructions, such as the massive stone structures of the Saqsaywaman Archaeological Park in Cuzco, and the Pachacamac ruins in Lima, which blend seamlessly with the landscape. This interplay may contribute to what can be described as the museum's ensemble's deceptive appeal to the uninformed visitor, as a pre-Hispanic ensemble.

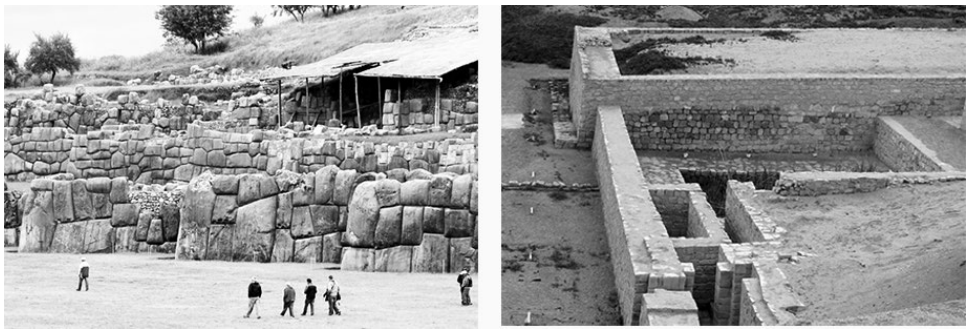

Figure 9. Parque Arqueológico Saqsaywaman, Cuzco, Peru and Pachacamac, Lima Peru (photos by the author)

CONCLUSION

Criticisms of ruin photography often focus on its voyeuristic exploration of decaying structures and an aestheticized fascination with the textures, colors, and patinas of decay. These critiques suggest that such activities and images lack engagement with the socio-economic contexts that give rise to these buildings, ultimately rendering the harsh realities of these situations invisible to the general public and policymakers. Humberstone, which retains workers' houses intact, expresses the harsh conditions the workers endured, demonstrating that the concealment of socio-economic circumstances arises in great part from a lack of context rather than a focus on the enticing textural magnetism of the ruin. To comprehensively understand the issues these images document, it is essential to provide a broader picture. On the other hand, even though decaying industrial buildings can provide, in some instances, insights into the experiences of workers, a photo of a physical ruin alone does not convey the same understanding of a mine's operation as, for example, a documentary would. Photography, like any other medium, has its limits. Thus, to expect photography to reveal detailed social conditions that prevailed in the past is unrealistic. The support of industrial ruins as venues for non-normative behavior is also performed by other spaces such as "*Terrain vague*," urban sites defined by Sola de Morales in 1995, as characterized by the absence of use, of activity, and a sense of freedom, of expectancy " Although industrial ruins are often less valued than antique ruins due to their more recent and often less distinguished histories, their main worth is neither as socio-economic documentaries nor as spaces for alternative non-normative activities, but as fountains of inspiration. Industrial ruins transcend mere nostalgia; they offer new meanings and insights into unfulfilled futures. Just like ancient Roman ruins inspired architectural practices during the Renaissance, we should recognize our industrial remnants as essential contributors to contemporary environmental creative culture.

In the past, a pilgrimage to Rome was considered essential for an architect's training, as studying iconic structures like the Colosseum and the Pantheon provided valuable lessons in design. The classical elements—columns, pilasters, pediments, entablatures, arches, and domes—became foundational components of Renaissance architecture**.** The Museo del Desierto (Desert Museum), situated within the Huanchaca Cultural Park in Antofagasta, Chile, deep in the Atacama Desert, is a prime example of the creative potential embedded in industrial ruins. The museum draws directly from the ruins of a long-neglected industrial silver processing plant and other sources to celebrate and honor a landscape history that has borne, since the late nineteenth century, the weight of relentless mining extraction activities

NOTES

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[2] Nate Millington. “Post-Industrial Imaginaries: Nature, Representation and Ruin in Detroit, Michigan. ”*International Journal of Urban and Regional Research* 37, no. 1 (December 6, 2012): 279–96. https://doi.org/10.1111/j.1468-2427.2012.01206; Anthony J Fassi. “Industrial Ruins, Urban Exploring, and the Postindustrial Picturesque.” *CR the New Centennial Review*10, no. 1 (March 1, 2010): 141–52. https://doi.org/10.2307/41949681.Fassi, 2010, 141-152); Dora Apel. *Beautiful Terrible Ruins: Detroit and the Anxiety of Decline*. Rutgers University Press, 2015. Apel 2015, p. 100); Paul Draus and Juliette Roddy. “Ghosts, Devils, and the Undead City.” *Space and Culture* 19, no. 1 (October 9, 2015): 67–79. https://doi.org/10.1177/1206331215596486.Draus 2016, 67-79.); Steven High. “Beyond Aesthetics: Visibility and Invisibility in the Aftermath of Deindustrialization.” *International Labor and Working-Class History* 84 (January 1, 2013): 140-153. https://doi.org/10.1017/s0147547913000276.
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[5] SCJ 2017
[6] David Gissen. “The Architectural Production of Nature, Dendur/New York.” *Grey Room* 34 (January 1, 2009): 58–79. https://doi.org/10.1162/grey.2009.1.34.58.
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[8] Claudio José Galeano, Antonio González, Marcelo Lufin. XI CAAS, Antofagasta y la inmigración: desde la praxis del asentamiento industrial al imaginario de la ciudad de servicios, 1880-1930. (Junio 2015), 41 41.https://www.researchgate.net/publication/286220376_Los_inmigrantes_en_la_capital_salitrera_de_Chile_Un_analisis_de_Redes_Socio-Espaciales_en_la_ciudad_de_Antofagasta_1880_-_1930

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CONSTRUCTING A THEORETICAL FRAMEWORK FOR STAGED ARCHITECTURE: FAKE HISTORICAL ARCHITECTURE AND DISNEYFICATION IN EAST AND SOUTHEAST ASIA

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INTRODUCTION

The paper argues the evolution of the term "Staged Architecture," which comes from a theoretical analysis based on Aesthetic Theories, Urban Studies, and Art History. The term is based on two main concepts: Fake Historical Architecture and Disneyfication. These terms are analysed from both perspectives: those of supporters and detractors. Based on aesthetic theories, the paper proceeds to conceptualize the term Staged Architecture; furthermore, it points out that such concepts have been found spread in physical form throughout East Asia and Southeast Asia, especially in towns and places influenced by cultural exchange, foreign trade, and colonization. Then, it is stated that these cases are, in general, supported by local governments and the general public, as in the case study of Preservation Districts in Japan. Such evidence suggests that Staged Architecture is a complex phenomenon occurring in this region, and there should be a theory that explains and comprises it. Finally, the conclusion showcases the possible scenarios for future research and the findings of this paper.

Fake Historical Architecture

The first notion of Fake Historical Architecture in the Western World is usually associated with a negative image. Fake is the synonym of replicas, inauthenticity, and lack of integrity. Daniel Levy mentions it as a way of debasing our understanding of authentic historical architecture,[1] or, in the words of Anne Catrin Schultz, "a work of art or artifact that is not genuine and is intended to deceive."[2] However, replication seems to be a different phenomenon when it comes to East and Southeast Asian contexts, where copying from the originals is generally considered a master form of artistry. In other words, the art of copying buildings becomes a skill of high praise in Asian Cultures, such as the case of China and Japan. A particular example of replication in the urban scale comes in the European-style copied cities found throughout China, such as Hallstatt Town in Guangdong Province. Schultz also acknowledges that the mastery of replicating these cities has created almost exact copies of their European counterparts, creating a unique, nearly surreal duplicated environment.[3] In this regard, the author suggests that these cases have never been called Fake inside

China, and on the contrary, they have become places with a singular identity and character over time.[4] These statements help to support that this type of architecture goes beyond "fakeness."

On a smaller scale, some traces of these concepts can also be seen in the region, although in a more subtle way. Figures 1 and 2 correspond to a Preservation District in Kobe, Japan, and a French Quarter in Hanoi, Vietnam. In both cases, we could assume these are Fake Historical buildings since they do not correspond to the exact construction date and are not listed buildings. However, they are a precise copy of them, which might cause some confusion. Carissa Baker states that we cannot say that the historical atmosphere has been disrupted, since these "copies" are helping to create and integrate a homogeneous landscape.[5] This is one of the arguments from supporters of this type of architecture, who argue that the designs tend to be pleasing for ordinary viewers, who appreciate the familiarity of picturesque landscapes.[6] The research hypothesis is that this appreciation for imitation might be achieved because there is an optimal blending with the surrounding context, creating a cohesive and thematic environment.

Figure 1. Preservation District in Kobe, Japan.

Figure 2. French Quarter in Hanoi, Vietnam.

Disneyfication

As a second supporting concept, we delve into Thematization. To illustrate Disneyfication, we can mention the resorts and thematic buildings situated in the dense and multifaceted city of Macau, China. For example, the Roman-Thematic Resort Hotel is located in Fisherman's Wharf. This type of thematic building is common in Macau, with hotels, casinos, shopping malls, and other types of buildings featuring themes such as the Eiffel Tower, Venice, and London. In simple terms, Disneyfication refers to the thematization of space.[7] Although Figure 4 represents the epitome of Fake Historical Architecture and Thematization, we do not mean to judge them as simply good or bad. They are used to illustrate the concept of Disneyfication.

Furthermore, Figures 3 and 4 represent two major tourist attractions in East Asia: Yu Garden in Shanghai and Huis Ten Bosch in Nagasaki. Ayumi Katsuki observes that Yu Garden is a thematic district built around heritage buildings; however, the quantity of these "hyperreal" buildings has outnumbered the heritage ones, and nowadays it is a common destination for layover tourists to visit the area and experience a taste of a fabricated traditional China.[8] The second one is a deliberate Theme Park located near the American Military Base in Nagasaki, which takes the Netherlands as the object of thematization, although reinterpreted in a newly built town. Schultz argues that these types of staged buildings aim to create a homogeneous thematic environment by using a well-known collective symbolism that prompts a cultural agreement.[9] This statement can be seen in the theme of Dutch Architecture in Huis Ten Bosch, for example (figure 6).

Figure 3. Yu Garden in Shanghai, China.

Figure 4. Huis Ten Bosch in Nagasaki, Japan.

Both of these sites have a regular flow of visitors and are advertised as tourist attractions. Gerhard Hoffstaedter argues that this type of architecture is a means of representation because the developer or the site has deliberately sought to establish an identity.[10] In this sense, in the words of Sophie Mireille, architecture acts as a "Theatrical Stage,"[11] meaning as a thematic background that hosts different activities and aims for cultural representation. Interestingly, this thematization of the space is also closely related to economic strategies for urban management. Krase states that this thematization helps boost the economic revenue of the place by utilizing a historic theme as a means of commodification[12] —meaning the attribution of financial value due to this landmark's thematization.

Another issue we would like to indicate here is the creation of identities. French philosopher Jean Baudrillard states that identity is a social construct that sometimes arises from the necessity of a cultural representation.[13] Also, Cecilia Chu observes, for example, how Shanghai and Hong Kong used Western Architecture as a mode to fabricate their own identity during the 1920s and 1930s.[14] Which leads us to raise the question: if a place deliberately decides to fabricate its own identity, should we stop it? In other words, thematization may appear when there is a need to simulate, revive, or create identity.

Figure 5 corresponds to Genting Highlands, a theme park in Malaysia, portraying a colonial Portuguese town. On the other hand, in the same country, we see George Town (Figure 6), a UNESCO-listed world heritage, with its colonial houses and also some replicas inside. Malaysia has been actively seeking to attract tourists by promoting itself as a multicultural country. In this regard, Hoffstaedter suggests that it is not a surprise that this country uses these types of thematization as part of their tourist promotion, reviving and also making use of its colonial heritage as part of their identity and cultural representation.[15] This is to show that thematization might also be related to the search for identity, and in that regard, it is difficult to stop or dictate what is wrong and what is right.

Figure 5. Genting Highlands, Malaysia

Figure 6. George Town, Malaysia.

STAGED ARCHITECTURE

It is because of these inherent contradictions that our trigger for a new concept arose, one that accurately describes the phenomenon, without the need to fall into stigma or detrimental thoughts about Fake Historical Architecture and Disneyfication. We understood that these cases were somewhat different from what we are used to in the Western Conservation discipline. Therefore, they should be examined with a neutral and open view, understanding the reasons behind their appearance and influence, rather than judging with preconceived canons. In this process, we based the conceptualization of Staged Architecture on the following aesthetic theories.

Rhetorical Experiences

One of the most significant insights was that these cases were attempting to convey a story through a historical theme —an unconscious narrative behind its physical architectural form. Noted by Beasley, the edifices do not stand alone as copies or recreations only because of casualty or personal taste, but because there is a premeditated intention to influence the perceptions of the viewer.[16] One of the most significant arguments that helped us organize this idea was the doctoral thesis from Sophie Mireille, in which she talks about architecture working as Rhetorical Experiences, meaning that architecture has the capacity of storytelling, especially when it comes to historical themes, with the ability to transport us to a particular historical environment.[17] Notably, in her essays about eclectic architecture, she argues that historically themed architecture acts as a stage for conveying different stories about time and epoch.[18] This concept helps in better understanding the idea of Staged Experiences without falling into criticism.

Figure 7 shows a typical scene in Phuket Old Town, featuring a mixed-type building that serves as a restaurant and house, which contains some hints of historic eclecticism, particularly blending in with the picturesque scenery shown before. The first impression an architecture professional might have is that this falls into Kitsch, and he might directly punish it as a failure in design.[19] However, when viewed in context, even the ornaments in the columns and the balustrade of the balcony contribute to finding a place within the landscape, as the edifice is part of a broader narrative and storytelling: the historical theme of Phuket Old Town. This example helps to understand the depth of Rhetorical Theory, as established by Mireille: “Rhetorical Narratives as Staged Experiences in which architecture serves as the stage for telling a story of a particular time in history.”[20]

Figure 7. Phuket Old Town, Phuket, Thailand.

Conceptualization of Staged Architecture

We are now able to transfer from the concept of Fake Historical, which is inherently detrimental and primarily used in Western contexts, to the term Staged Architecture. Thematic settlements can be considered as theatrical stages in which architecture acts as the Stage. Rhetorical experiences can be translated into staged experiences, in which, again, architecture acts as the Stage, arriving finally at the term Staged Architecture:

A type of architecture that utilizes thematic elements, aiming to integrate into a particular context or to tell rhetorical narratives of identity.

Staged Architecture in East and Southeast Asia

The cases shown before are just a glimpse of the overall image. Upon analyzing the region's geography, we can observe the distribution of cases in nearly every country in East and Southeast Asia. One of the most common trends is to find these cases in towns that have been influenced by cultural exchange throughout history. Kelly Shannon analyzes that international ports and colonies are a significant hub for the mixture and instances of hybrid architecture, since they reflect the fusion of local styles and the influences of foreign migration.[21] Jean Baudrillard, in his essay about Thematic Ethnic Towns, also refers to this influence of international settlements in different contexts, which ultimately end up replicating the architecture of their origins or thematizing the urban environment.[22] For example, Japan with its Port Towns from the Meiji Period, or international port cities in China such as Shanghai and Macau.

Colonialism is another common trend that can be observed in such architecture. Almost every country in Southeast Asia possesses colonial towns with traces of these concepts. Shannon refers to colonial cities in Southeast Asia as major combinations of local and European architecture, with modern buildings aiming to harmonize or integrate the landscape mainly through replication.[23] It is worth noting that this phenomenon of replication is quite notorious in Southeast Asia, compared to colonial cities in Latin America, for example, where new buildings usually show some degree of notoriety. Whereas in Southeast Asia, Staged Architecture has been the most common way to integrate the landscape in heritage towns and historical centers.

This geographical implication is another argument that supports the existence and expansion of Staged Architecture throughout history, which should ultimately be studied as a unique phenomenon of this region. Table 1 lists the cases found in international ports and colonial towns with historical connotations where Staged Architecture is found, aiming to integrate harmoniously with the historical context; we call this category Harmonic Staged Architecture. Table 2 shows those thematic settlements that make use of historical themes for creating or proposing a historic narrative, independently of the context. We called this category: Thematic Staged Architecture.

These are widely spread in East and Southeast Asia, and have become the basis for acknowledging the importance of tracing examples of Staged Architecture in the region.

Harmonic Staged Architecture		
Name	**Type**	**Country**
Macau Historical Area	Port – Colonial Town	China
Jakarta Old Town	Colonial Town	Indonesia
Surabaya Old Town	Colonial Town	Indonesia
Bandung Center	Colonial Town	Indonesia
Higashi-Minami Yamate, Nagasaki	Port Town	Japan
Kita no Cho, Kobe	Port Town	Japan
Hakodate	Port Town	Japan
Yamate, Yokohama	Port Town	Japan
Luang Prabang City	Colonial Town	Laos
Vientiane Old Town	Colonial Town	Laos
Malacca Historic City	Colonial Town	Malaysia
Georgetown, Penang	Colonial Town	Malaysia
Yangon Downtown	Colonial Town	Myanmar
Intramuros	Colonial Town	Philippines
Baclayon Historic Town	Colonial Town	Philippines
Iloilo Historic Town	Colonial Town	Philippines
Población, Manila	Colonial Town	Philippines
Vigan Historical City	Colonial Town	Philippines
Laolag Historic Town	Colonial Town	Philippines
China Town Historical District, Outram	Colonial Town	Singapore
Incheon	Port Town	South Korea
Da Dao Cheng, Taipei	Port Town	Taiwan
Da Dao Cheng, Taipei	Port Town	Taiwan
Phuket Old Town	Port Town	Thailand
Phuket Old Town	Port Town	Thailand
Hội An Old Town, Quảng Nam	Colonial Town	Vietnam
Ta Hien Quarter	Colonial Town	Vietnam
Ba Đình, Hanoi	Colonial Town	Vietnam
Hoan Kiem (French Quarter), Hanoi	Colonial Town	Vietnam
Ho Chi Minh City, French Quarter	Colonial Town	Vietnam
Total		**30**

Table 1. List of Harmonic Staged Architecture in East and Southeast Asia

Thamatic Staged Architecture	
Name	**Country**
Window of the World, Shenzhen	China
Tang Paradise, Xi'an, Shaanxi	China
Song Dynasty Town, Hangzhou, Zhejiang	China
Venetian Macao Casino	China
Studio City Macau	China
Macau Fisherman's Wharf	China
The Londoner Macao	China
Shanghai Old City	China
Feng Huang Ancient Town, Hunan	China
Gubei Water Town, Beijing	China
Wuzhen Water Town, Zhejiang, Jiaxing, Tongxiang	China
Pingyao's Ancient City, Jinzhong, Shanxi	China
Hallstatt in Guangdong	China
Paris in Tianducheng	China
Holland Village in Pudong	China
Sweden Town in Luodian	China
Thames Town	China
Anting German Town	China
Breeza Citta di Pujiang	China
Florence in Tianjin	China
Huis Ten Bosch, Nagasaki	Japan
Rio, Genting Sky World, Pahnag	Malaysia
Colmar Tropical French Themed Resort, Pahang	Malaysia
Total	23

Table 2. List of Thematic Staged Architecture in East and Southeast Asia

CASE STUDY: JAPANESE PRESERVATION DISTRICTS

For a better understanding of the concept of Staged Architecture, we decided to look in detail at some of the listed cases above. As a case study, we analyzed the Preservation Districts of Minami-Higashi Yamate in Nagasaki, Japan, which correspond to Port Towns: Groups of Traditional Buildings within the Preservation System. The objective of this case study was to identify cases of Staged Architecture, identify the causes that originate them, and retrieve data about the perception of this type of architecture within the urban landscape. The results showed different perceptions and causes for the use of Staged Architecture, which primarily support its use and encourage it by the authority of design guidelines. This evidence further validates that this type of architecture is a unique phenomenon in the region and supports the hypothesis of conceptualizing it as Staged Architecture.

Analysis of Design Guidelines

One of the key findings is that most of these cases are a result of local policies, which means that local governments generally promote Staged Architecture in their efforts to create a homogeneous landscape or promote incentives for city beautification. Figure 8 is an extract of City Design Guidelines in the Preservation District of Nagasaki, which establish the use of the same colors, forms, textures, and dimensions for new buildings to blend into the historical landscape, citing these

buildings as outstanding examples of seamless integration.[24] In summary, the guidelines suggest that architects and developers integrate new buildings into the urban image by creating replicas of heritage buildings. The images deliberately show examples of good design that should be taken as an example. They also mention "creating an exotic atmosphere typical of foreign settlements…"[25] which resonates with the creation of thematic landscapes and Disneyfication based on the concepts studied before. In summary, we believe these kinds of guidelines are one of the triggers that prompt the appearance of Staged Architecture in the region.

Figure 8. Extract from City Design Guidelines, mentioning creation of "exotic atmosphere…" (Source: Nagasaki City Landscape Promotion Office, 2020).

In contrast to Western guidelines, where harmonic design is encouraged with some degree of notoriety to differentiate contemporary design from heritage buildings.[26] These guidelines deliberately prompt the mimicry of heritage buildings. However, the authoritative instruction comes from a carefully planned committee of urban planners and designers who choose this method as the most appropriate for their region. Within the guidelines, it is stated that the "new designs must blend harmoniously and integrate with the character of the city, creating a homogeneous landscape that resembles the historic identity."[27] Such terms are very much following the concept of Staged Architecture: "A type of architecture that utilizes thematic elements, aiming to integrate into a particular context or to tell rhetorical narratives of identity."

Analysis of Perception

To further understand the complexity of Staged Architecture, we decided to conduct a survey asking for the perception towards this type of architecture among visitors and people who were not familiar with the urban landscape of Nagasaki. Interestingly, when viewers were asked to rate their perception preference, it was found that they tend to prefer the Staged Architecture option, avoiding cases that have modern connotations or show some degree of modernity, even if it is harmoniously and subtly suggested.

Figures 9 and 10 show the development of this experiment, in which four scenarios were presented to the viewer, and he had to choose the best option that integrates into the urban landscape of Nagasaki. This survey was created under the theory of integration, proposed by Brent. C. Brolin, in which he

describes three types of integration into the historic environment: Contrast, Harmonic Contrast, Replication, and Vacant Site.[28] Since we are avoiding the term replication, we opted for the term Staged Architecture instead. Contrast refers to a notorious and landscape-breaking design; Harmonic Contrast is the subtle integration into the landscape, but still retaining some notion of contemporary; Vacant Site is the deliberate emptiness of the space; Replication (for us, the Staged Architecture) is the intentional copy and mimicry of the surrounding historical landscape.[29] By using these four types of integration, it was possible to understand the degree of acceptance and perception towards the current state (Staged Architecture). Very interestingly, the option containing Staged Architecture was the most preferred choice, followed by Vacant Site, Harmonic Contrast, and Contrast, respectively. This experiment helped us to understand that Staged Architecture would mostly have the acceptance and support from viewers and locals in the region. Despite the common notion of "replicas" or "copies," this survey helped us to understand that Staged Architecture is a preferred method for integrating into historical landscapes.

Figure 9. Four Possible Scenarios near Oura Church, Nagasaki.

Figure 10. Four Possible Scenarios next to Heritage Houses, Nagasaki.

CONCLUSION

In this paper, we attempted to explain the necessity for a theoretical framework for Staged Architecture as a distinct phenomenon in East and Southeast Asia. Several challenges lie ahead, particularly regarding issues of authenticity, local identity, and support from both locals and tourists, among others. Particularly, we believe the most important findings of this research are the attempt to create a theoretical framework that explains the phenomenon of Staged Architecture, going beyond the terms of Fake Historical and Disneyfication, and arriving at a more solid and different spectrum, which does not mean a detrimental connotation, but rather a neutral, more explicative one.

We understood that Staged Architecture emerges due to local policies from governments and urban planners who believe in the effectiveness of a homogeneous landscape. It was found that Staged Architecture tends to be appreciated and preferred in terms of familiarity and harmonization with the environment, therefore being the first option chosen by ordinary viewers.

Furthermore, the geographical implications of internationalization and colonization in East and Southeast Asian countries have prompted the widespread occurrence of Staged Architecture cases. Therefore, we believe that this phenomenon must be understood from the perspective of Asian cultures, where duplication, fabrication, and thematization are not necessarily viewed as detrimental. For further steps, we intend to identify these locations and gain a deeper understanding of the perceptions, reasons, and effects in the urban environment. This time, conducting a more detailed research based on the categories of Staged Architecture, we could identify, until now, Harmonic and Thematic Staged Architecture.

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REFRAMING ARTISTIC VALUE: HERITAGE PRAXIS AND THE ARTS-AND-CRAFTS DIALECTICS IN *YEN HOUSE*

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INTRODUCTION

This research examines institutional debates on the classification of crafted objects as artistic works within fine art museums and the evolving art-historical narratives shaped by heritage practice. Engaging with the concept of 'non-art'—which signals the frontier, the edge of art's horizon—this study explores how the notion of 'heritage' establishes a non-dualistic framework that disrupts the discursive disciplines of art museums, revitalising cultural spaces as sites for manifesting creative substance. Focusing on *Yen House*, this research explores the "An Ode to the Sun and the Moon" exhibition's curatorial practice on re-establishing the house's significance in bridging seemly independent fields of fine art, architecture and handicrafts. The case exemplifies the collaboration between art historians and architects, expanding the normative boundaries of artistic value and fostering a renewed understanding of creativity within the cultural domain. Through a critical heritage praxis, I argue that the dialectical processes emerging from intersubjective conversations—often ambiguous, dynamic, and flexible—offer transgressive perspectives for reassessing museums' institutional discipline framed within the concept of 'fine art.'

YEN SHUI-LONG AND *YEN HOUSE*

Located in Taichung, *Yen House* was the residence of the Taiwanese painter Yen Shui-long (1903-1997), who was renowned for initiating the Taiwanese craft movement, associated with the global legacy of the 'International Arts and Crafts'.[1] Designed in 1955, the house was built under the collaboration between Yen and the architect Yang Yi-bing (1908-1992). Both of them received their education in Japan with a significant influence of European modernism, which made the geometric features with a modernist simplicity.

Since *Yen House* was accomplished, Yen and his family lived in the house until they moved again to Taipei in 1971. After a few shifts of ownership, the house was demolished in the 1980s. The house is a pivotal puzzle for art historians to shape the overall view of Yen's engagement in his Arts and Crafts practices through architecture. When teaching at the Taiwan Provincial Tainan Junior College of Technology, Yen recognised architecture as the "mother-body of art" that sustains a unified domain for integrating arts in terms of painting, sculpture and craft.[2] From a heritage perspective, *Yen House* has the potential to be conserved as a house museum to demonstrate Yen's artistic approach through craft. However, the absence of the house results in a conceptual void in articulating a holistic view of Yen's artistic practice.

Resettling himself in Taichung, Yen built the house within walking distance of the train station, which enabled him to travel to multiple projects across the island, including his role as a consultant in developing handicraft products with the Sino-American Joint Commission on Rural Reconstruction (JCRR). Yen's participation in the JCRR was celebrated as his contribution to "create the foundations for the modern craft design industry" for the "export market".[3] Yen worked prolifically during this period, creating several furniture designs, including his most prominent pieces of bamboo furniture. However, the focus on these works' industrial potential often projects a "shift" that "torres his contribution to art into two parts throughout his life".[4] Yen conceived craft as a break from his artistic path, marking a split from his identity as a painter. Yet this view risks overlooking craft as integral to his broader conception of art.

Yen's identity was persistent. Simultaneously, he noticed the seeming discrepancy within his artistic practice. He recognised himself as a "painter" who promoted craft to rediscover "the unique plastic culture in Taiwan".[5] Academically trained in Japan and Paris, Yen's identity as a painter did not limit his career; instead, he excelled across art, craft, design and other fields, through which he embodied a non-dualistic view of human creativity. Yen saw art as a unified whole rather than a hierarchy, with Yen House as a "mother-body of art" embodying his belief in plural forms that sustain an interconnected human experience.

INSTITUTIONAL CRITIQUE THROUGH HERITAGE

In celebration of Yen's 120th anniversary, the Taiwan National Museum of Fine Arts launched the "An Ode to the Sun and the Moon: Yen Shui-Long's Formosa" exhibition in the spring of 2024. Based on the latest discovery of Yang Yi-bing's architecture drawings, *Yen House* was displayed and interpreted in an art museum for the first time. Besides this, the exhibition gathered his paintings, furniture, pottery, textiles and advertising designs to demonstrate his approach to artistic value in everyday practice. (Figure 1)

In developing the exhibition, the idea of exhibiting craft works in an art museum was proposed as an effort to decentralise art history, which prioritises 'fine' art forms. While contemporary art historians may no longer struggle to recognise crafted works as part of art history, this exhibition's decentralised approach to non-hierarchical understandings of art extends beyond the question of whether 'crafted work is art'. Rather, it examines how artistic value is constructed within the museum context. The objects on display were not merely the products of artistic intention, but part of an experimental process that explored aesthetic value in the tension between art and non-art.

Figure 1. Gallery View of the "An Ode to the Sun and the Moon: Yen Shui-Long's Formosa" Exhibition, 2024.

Instead of giving a connoisseur's view, the exhibition engaged in diverse materials, including art and non-art, reframining artistic experiences in their social context. In Elizabeth Mansfield's terms, art museums should "decipher", rather than "mythologise" a disciplinary culture, which is associated with the popularisation of art history's genealogy, also, the "biographical model".[6] She addressed that historiography "cannot take place independently of institutional critique".[7] Aligning to Mansfield's notion that museums should be where "institutional critique" develops to revitalise art through re-engaging in art history's discursive fields, museum researchers used the term "critical praxis" to emphasise the importance of interrogating the aesthetic frameworks applied in museum contexts with precise materials.[8] By doing this, the "critical praxis" fosters viewers' autonomy to question the museum's "interpretive power" in forms of "histories, structure and discourses".[9]

In this context, *Yen House* provide an alternative perspective through the idea of heritage—a non-art, or more-than-art, engagement marking the horizontal edge where the idea of art meets its limitation, also, a pivotal fulcrum to apply "institutional critique". The house, which I explore as a vacuum of aesthetic centralism, projects more than a building in constructing artistic experiences. By introducing the significance of alternative materials such as archives, oral history, architectural and engineering drawings with a heritage perspective, the dialogues gain the possibility to transcend art's boundaries shaped by "the master narrative" in art history.[10] *Yen House*, therefore, projects the site of everyday experience of beauty, scoping a cultural frontier for re-evaluating creative experience beyond the genealogical model of modern aesthetics.

YEN HOUSE IN "AN ODE TO THE SUN AND THE MOON"

The exhibition "An Ode to the Sun and the Moon" employed a dual-narrative structure, with two parallel storytelling lines arranged in opposite directions, mirroring, overlapping, and reversing one another. Within this structure, although the displayed artworks and objects ostensibly form a spectrum between 'art' and 'craft', the complex visuality of Yen's oeuvre, including his paintings, paperworks, design drawings, textiles, manuscripts, pottery, furniture, and commercial design, accompanied by cultural objects, conveys an ambiguity beyond the simplified art-and-craft division. The two parallel narrative lines met in the gallery "Architecture and Form: Nature and Life", where a one-to-fifty scale architectural model of *Yen House* held the audience's attention. (Figure 2)

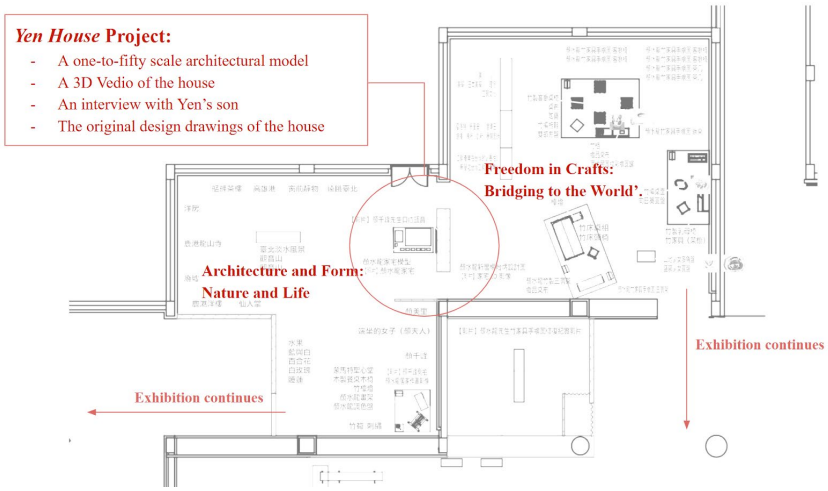

Figure 2. The location of Yen House model and the floor plan of the "Architecture and Form" and the "Freedon in Crafts" galleries in the "An Ode to the Sun and the Moon" Exhibition. Exhibition designed by Hide and Seek Auduivisual Art Variety Inc, 2023-2024.

Yen House was displayed with a video playing a three-dimensional demonstration of the house, including its interior and exterior views, as well as a documentary interview with the artist's second son, Yen Chian-fong, who lived in the house during his childhood. Installed in the same gallery, Yen's paintings of landscapes, architecture, window views, and flowers he planted in his garden echoed the visual and oral materials in the gallery.

Supported by a series of interviews, the house in the curatorial context conveys a user's view—a place to live rather than a static, self-sustained architectural work. According to Chian-fong, the plants in the garden, including roses, cactuses, white lilies, aloe vera, lotuses, a eucalyptus tree, melaleuca trees, camphor trees and a bamboo forest behind the house by a river, were selected for reasons.[11] For example, Yen planted the aloe vera for medical purposes. He mentioned that he used aloe vera to cure stomach issues when studying in France.[12]

Yen's garden provided valuable insights for re-engaging with Yen's idea of art that incorporates natural and cultural meanings. These re-discovered oral materials show that Yen was tremendously conscious about planting, not merely in the sense of gardening. The plants play significant roles in shaping Yen's thoughts and practices. Several appear in Yen's paintings. For example, he painted cacti as a symbol of resilience and depicted them as a metaphor for himself, who endeavoured to thrive in his challenging life. He also painted white lilies, often depicted with Taiwanese indigenous females wearing them as a symbol of nobility and pureness. The display included a historical photo of Yen drawing white lilies in the garden. There were also water lilies, which Yen planted in a small pond by the house's main entrance. Yen's paintings of botanical themes, including *Cactus* (1962-64), *Water Lily* (Figure 3, 1974), and *White on Blue* (Figure 4, 1983), were displayed in the same gallery.

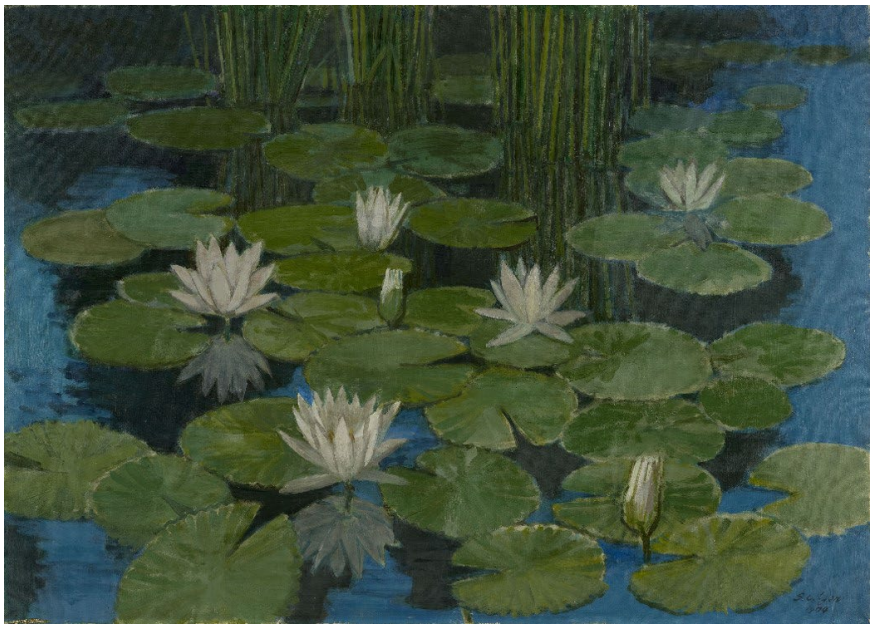

Figure 3. Yen Shui-long, Water Lily, 1974. Oil on canvas, 65 x 91cm. Private collection.

Alternative Ways of House-building

In *White on Blue,* a small table with a manual bamboo weaving panel for the tabletop, barely wide enough for placing a vase of blooming lilies. The simple composition of this painting conveys Yen's emphasis on the significance of visual culture based on local conditions, especially the long-term developed handicraft techniques sustained by natural sources.[13] Some plants in Yen's garden are associated with his promotion of local craft industries. Especially, the bamboo forest behind the

building refers to the iconic source of Yen's furniture design, resonating with the house's interior view, delightfully decorated with crafted bamboo pieces.

Figure 4. Yen Shui-long, Water Lily, 1974. Oil on canvas, 65 x 91cm. Private collection.

Divided by a wall, the 'Freedom in Crafts: Bridging to the World' gallery continued the focus on architecture with an interior presentation, gathering Yen's most prestigious works of bamboo furniture. Yen worked with bamboo as his aesthetic approach to Taiwaneseness. Identifying bamboo weaving as the "most widespread form of craftsmanship on the island", he said:
There are many species of bamboo, [...], each with different properties depending on the species. As a result, bamboo has a wide range of applications, including in construction, furniture, woven goods, and papermaking.[14]

Figure 5. Downtown Renaissance Association, Project led by Su Jui-bi, 3D Reconstruction Simulation of Yen Shui-long's Family House designed by Yang Yi-bing, 2024.

Yen explored bamboo as an intimate material that pervasively shapes daily making and using experiences. (Figure 5) Demonstrating the "wide range of applications", the gallery gathered crafted pieces based on their functional contexts rather than displaying them as independent designed works. They were decorated with related works, such as tableware, textiles, and lighting equipment, embodying Yen's perspective on art and communicating the beauty in diverse forms.

A HOUSE EVOLVING IN BEAUTY

Needless to say, the functional, formal, chromatic, visual, and tactile expressions of these forms vary with time. As they evolve, they develop into traditional forms marked by the characteristics of their era, reflecting the rise and fall of that era's culture.[15]

Yen explored visual forms in their evolving cultural context "in architecture and everyday utensils", capturing the visuality of Taiwaneseness in its miscellaneous details connected to his interpretation of "tradition" with "characteristics of their era".[16] In this perspective, *Yen House* projects Yen's methodology to bridge art, which is creative and unique, with the idea of heritage, which is historical and universal.

Yen House was a residential building with a distinctly modernist appearance. Its white walls and sloped-roof design stood out in the neighbourhood for its striking 'roofless' façade.[17] The design was simple and self-sufficient, with its material combination and geometric forms coming together to produce a sharp, cohesive architectural expression. Against the lush greenery, the white building caught the sunlight and glowed within the vibrant garden. (Figure 6) According to Yen, Taiwan's climate created a unique context for his exploration of colour, which he described as 'the colours of the sun', among which he considered white as an 'atmospheric colour'.[18] The house was not only an artistic product of Yen and Yang's collaboration but also configured as a perceptual interface for generating inspirations in dynamic negotiations.

Figure 6. Downtown Renaissance Association, Project led by Su Jui-bi, Reconstruction Simulation of Yen Shui-long's Family House designed by Yang Yi-bing, 2024.

The house's modern appearance reflected Yen and Yang's respective engagements with Western modernist styles, particularly those aligned with their shared interest in the Bauhaus. They both received a Japanese education in their early careers, at a time when the idea of the Bauhaus gained traction in Japan. According to Su Jui-bi, the chief of the architecture research team who rebuilt the Yen House model for the exhibition, Yang's Bauhaus-like style was very likely inspired by Kurata

Chikatada (1895-1966), who travelled to Germany during the Weimar Republic and was significantly influenced by the Bauhaus.[19] Yen, likewise, expressed the influence from the Bauhaus with 'respects'.[20] He saw the Bauhaus as an approach of 'rationalism' corrected from the 'romanticism' of William Morris.[21] However, Yen sought to restore the 'unity' by reconstructing the relationship between artistic beauty and functional beauty in an industrial age.[22] Yen's adoption of Bauhaus 'unity' could be shaped with a rather hybrid approach by integrating other conceptual sources, such as the idea of 'composite beauty' defined by Yanagi Sōetsu, the initiator of the Japanese Folk Craft Movement.[23] His approach expanded the horizon to a non-binary realm of creativity in a universal cultural sense of art, instead of framing art with disciplinary categories.

Yang's drawings displayed in the gallery demonstrated the sophisticated detail of *Yen House* in its thoughtful plan, well-organised with aesthetic and technical considerations. However, beyond taking the house as merely a static artistic object, the curatorial project invited viewers to explore the evolving process and the transformative creativity that occurred in a concrete relationship that brings art into life.

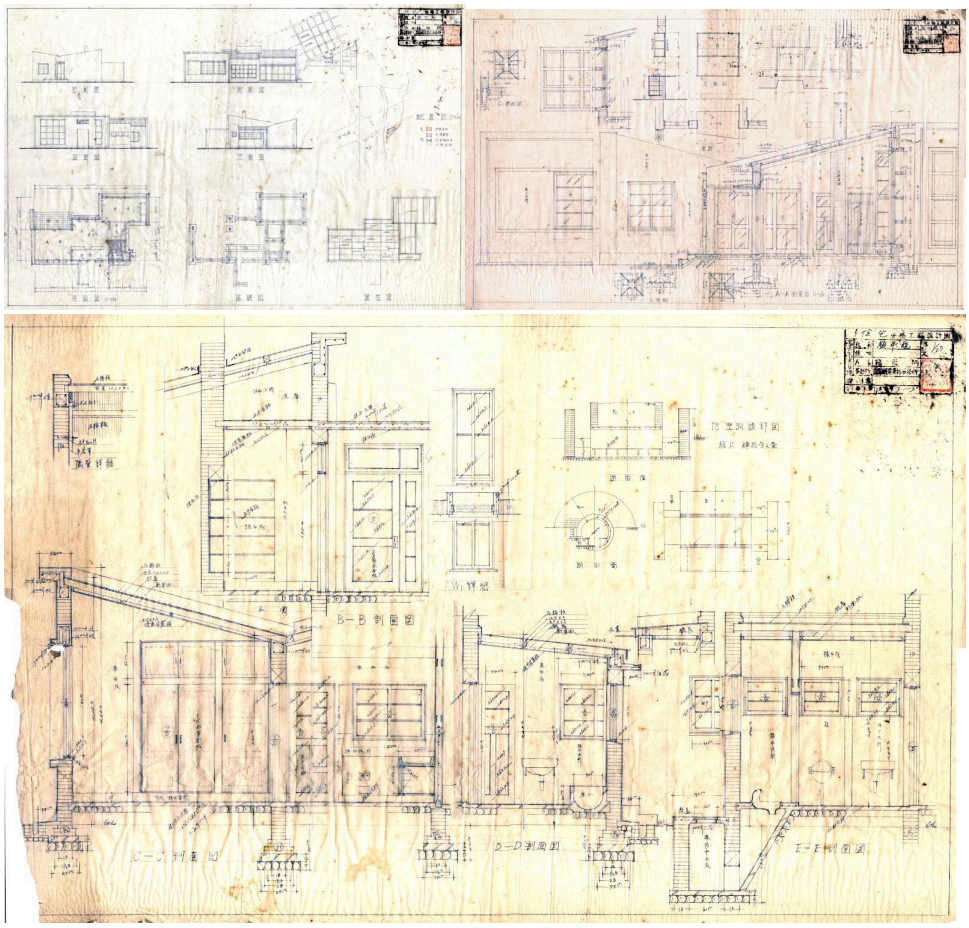

Figure 7. Yang Yi-bing, Design of Yen Shui-long's New Residence in Taichung, 1955. Pencil on tracing paper, 59.4 x 84.1cm. 1 in 3 sheets. Private collection.

Yen's notion of 'unity' was also a resistance toward technique divisions. Yang's design drawings are simple and constrained with technical information. He only used three panels to include everything needed for building the entire house. It is worth noting that Yen House was constructed during the Cold War, a period when global affairs were shaped by geopolitical tensions. In Taiwan, American influence added an additional layer of complexity to an already hybrid cultural landscape shaped by

Japanese colonialism. The advancing forces of globalisation promoted an integrated "free world", fostering an "ideology of global interdependence rather than one of racial difference".[24] Through U.S. Aid, a renewed structure of primitivism emerged, emphasising modernisation, improved quality of life, and the supremacy of Western science and rationality. Within this context, *Yen House* positioned itself at a thoughtful distance from this new form of mechanical modernisation.

According to Su, these drawings are distinguished from the increasingly popular American model, which tends to isolate explicit making details across numerous separate plates, reflecting divided industrial techniques and, at times, modularised processes.[25] In comparison, Yang's design juxtaposes structural and proportional information within a unified view, articulating technical details through engineering relationships rather than segmented sequences. His drawings allowed builders a degree of autonomy and interpretive flexibility, while retaining coherence with the overall architectural unity. They prioritise human understanding and dynamic engagement over instrumental rationality as dictated by mechanical logic.

Yen's design drawings often convey a similar approach. In *Design Sketch for Living Room Chair* (1954), for instance, three views of the same chair convey its actual dimensions and proportions. The seat's surface is deliberately left unfinished to expose the internal structure, referencing an earlier stage of construction. Juxtaposing multiple stages of the making process, Yen does so by integrating structural information directly into the drawing. This type of drawing enables makers to work autonomously, understanding how each unit supports a dynamic whole. It allows confident, flexible adjustments based on their knowledge, skills, and sense of beauty.

Comparing the house's aerial photos from different periods, the architecture research team found that the house's appearance had changed. According to Chien-fong, six people lived in the house (the parents and four children, one girl and three boys), and a significant change happened when the young lady grew up and needed an individual private space. Also, Yen's dedication to reviving the local craft industries demanded multiple working spaces, which resulted in the extension of the original architectural format. For example, Yen added a working space for accommodating a weaving loom.[26] These led to extensions of the original floor plan, as Su noted that the original Japanese step-like layout was subsequently developed into a traditional Taiwanese U-shaped courtyard house, corresponding to the family members' daily routine movement in the house.[27]

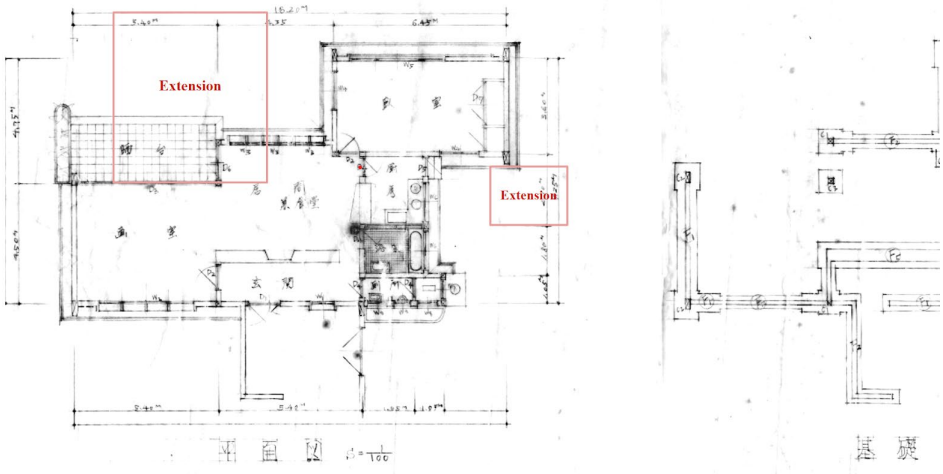

Figure 8. The details of the extensions of Yen House. Yang Yi-bing, Design of Yen Shui-long's New Residence in Taichung, 1955, Pencil on tracing paper, 59.4 x 84.1cm. 3 sheets. Private collection. Floor plan in the first panel.

Deciding between Yang's original design and the renovated version, developed along with Yen's users' perspectives, the curatorial team took the latter without too much hesitation. The exhibition aimed to rebuild the historical context and the making process evolving with everyday engagement in beauty. The interdisciplinary engagements in these art-historical materials conversed with each other, blurring the boundaries between art, craft, architecture, and heritage.

CONCLUSION: ARTISTIC VALUE IN DIALECTICS

Heritage, as a method of institutional critique, raises a fundamental question: When does art happen to us in a cultural sense? This reverses conventional assumptions and invites a re-examination of the art museum's institutional power, which has often reduced art to narrow categories and static aesthetic epistemologies. In this context, reconnecting art and culture becomes a reflective method—understanding art not as a product of genius, but as a process of cultivating creativity in everyday life.

"An Ode to the Sun and the Moon" was initially envisioned as a decentralised approach to non-hierarchical understandings of art, probing the ground of artistic beauty by questioning curatorial frameworks. With an attempt at institutional critique, the alien category 'art' and its legacy of European Enlightenment should be (re)conceptualised in "more reciprocal, symmetrical forms" of curatorial practice.[28] *Yen House*, as featured in the exhibition, becomes a historiographical site that embodies an "intersection of global encounters and European knowledge practice" through archival, material, spatial, and visual forms.[29] It challenges traditional art history, especially within the modernist canon, by incorporating plural, dynamic narratives and hybrid reactions to the 'original'.

By situating *Yen House* within this framework, the exhibition resists linear narratives of artistic development and instead foregrounds the entanglements between local histories, transnational exchanges, and material practices. The house becomes not merely an object of display but a site of negotiation, between tradition and modernity, function and form, art and life, reclaiming artistic value as an evolving practice rooted in dialectical process.

NOTES

[1] The term International Arts and Crafts appeared as a title of an exhibition organised by the Victoria and Albert Museum in 2005, which took the British Arts and Crafts initiated by William Morris as an initial influence to demonstrate its circulation across many different countries. Karen Livingstone and Linda Parry*, International Arts and Crafts* (London: Victoria and Albert Museum, 2005).

[2] Yen Shui-long,〈工藝美術史〉[History of Arts and Crafts], [1944?], collection of the Taiwan Archival Information System, Academia Sinica, Taiwan. 3.

[3] Kikuchi Yuko, "Shui-Long Yen and Vernacularism in the Development of Modern Taiwanese Craft", in *Shui-Long Yen: The Public Spirit, Beauty in the Making*, (Taipei: Taipei Fine Arts Museum, 2012), 307.

[4] Chuang Su-O, 〈純藝術的反叛者〉[A rebel of fine art - Yen Shui-Long], in《臺灣美術全集》*Taiwan Fine Arts Series 6: Yen Shui-Long*, (Taipei: Artist Magazine, 1992), 33.

[5] Yen Shui-long,〈我與臺灣工藝：從事工藝四十年的回顧與前瞻〉[Myself and Taiwanese Craft: a Forty-Year Retrospective View of My Craft Engagement and Its Prospect],《藝術家》*Artist* 33, vol.6, no.3 (2), (1978). Collected in Yen Shui-long, *Formosa Industrial Art*, (Taipei: Yuan-Liou Press, 2016), 179.

[6] Elizabeth Mansfield, "Introduction", Elizabeth Mansfield (ed.), *Art History and Its Institutions: Foundation of a Discipline,* (London and New York: Routledge, 2002), 1.

[7] Mansfield, "Introduction", = 2.

[8] Cheryl Meszaros, Twyla Gibson and Jennifer Carter, "Interpretation and the Art Museum: Between the Familiar and the Unfamiliar", in Juliette Fritsch (ed.), *Museum Gallery Interpretation and Material Culture*, (New York and Oxon: Routledge: 2011), 46.

[9] Meszaros, et al, *Interpretation and the Art Museum*, 39.

[10] Andrew Dewdney, David Dibosa and Victoria Walsh, *Post-Critical Museology: Theory and Practice in the Art Museum*, (London and New York: Routledge, 2013), 25.

[11] Recalled and described by Yen Chian-fong, Yen Shui-long's second son. Online interview participated by curatorial researchers and the architecture team on 24th of January, 2024.

[12] Yen Chian-fong, Online interview.

[13] Yen Shui-long, 〈臺灣區的造形文化〉, [Plastic culture in Taiwan],《歷史文物》Bulletin of National Museum of History, vol. 7: no.9(12), (1997); in《臺灣工藝》Formosa Industrial Art, 233-235.

[14] Yen Shui-long, 〈關於臺灣工藝產業〉[About Taiwanese Manufacture Industries], 1943,《工藝ニュース》[Craft News], vol. 12: no.5(7), (1943); in《臺灣工藝》Formosa Industrial Art, 53.

[15] Yen Shui-long, 〈臺灣區的造形文化〉, [Plastic culture in Taiwan], 222.

[16] Shui-long, 〈臺灣區的造形文化〉.

[17] Recalled and described by Yen Chian-fong, Yen Shui-long's second son. Interviewed by Yen Chaun-ying on 24 Oct, 2023. A manuscript was kept and collected by National Taiwan Craft Research and Development Institute. Yen, Chaun-ying, Lin Yu-chun, Yang Yu-jui, and Ho Guan-Wei. "An Auspicious Sunrise: Yen Shui-long's Formosa" Research Project Report, (Nantou: National Taiwan Craft Research and Development Institute, 2024), 4-63. (Unpublished material)

[18] Yen Shui-long, interviewed by Yen Chaun-ying and Lin Po-ting, "Appendix: Full Transcripts to Three Interviews with Shui-long Yen, 1988-1989", in *Shui-Long Yen: The Public Spirit, Beauty in the Making*, 404.

[19] Face-to-face interview with Su Jui-bi on 25 May 2025. A vocal record kept by the author.

[20] Yen Shui-long, interviewed by Yen Chaun-ying and Lin Po-ting, "Appendix: Full Transcripts to Three Interviews with Shui-long Yen, 1988-1989", 409.

[21] Yen also noticed similar responses from other 'pioneers', including American architect Frank Lloyd Wright (1869-1958), Austrian architect Otto Wagner (1841-1918) and German architect Peter Behrens (1868-1940), who were also active in the field of industrial design. Yen Shui-long,〈設計人的地位與責任〉[The status and responsibility of designers], n.d., ca. 1960-1970, collected by the Taiwan Archival Information System, Academia Sinica, Taiwan, 1-2.

[22] Yen Shui-long, The status and responsibility of designers.

[23] Yen, Shui-Long. 〈工藝美術史〉[History of Arts and Crafts], [1944?]. Original manuscript, 1-41.

[24] Christina Klein, *Cold War Orientalism: Asian in the Middlebrow Imagination, 1945-1961*, (Berkeley and Los Angeles: University of California Press, 2003), 16.
[25] Face-to-face interview with Su Jui-bi on 25 May 2025. A vocal record kept.
[26] Recalled and described by Yen Chian-fong, Yen Shui-long's second son. Online interview participated by curatorial researchers and the architecture team on 24th of January, 2024. A vocal record kept by the author.
[27] Face-to-face interview with Su Jui-bi on 25 May 2025. A vocal record kept by the author.
[28] Philipp Schorch, Conal McCarthy and Eveline Dürr, "Introduction: Conceptualising Curatopia", in Philipp Schorch, Conal McCarthy (ed.), *Curatopia: Museums and the Future of Curatorship*, (Manchester: Manchester University Press, 2019), 3.
[29] Schorch et al. *Introduction*, 2-3.

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Yen Shui-long, 〈關於臺灣工藝產業〉[About Taiwanese Manufacture Industries], 1943,《工藝ニュース》[Craft News], vol. 12: no.5(7), (1943). In《臺灣工藝》Formosa Industrial Art, 46-63. Taipei: Yuan-Liou Press, 2016.

Yen, Shui-Long, interviewed by Yen Chaun-ying and Lin Po-ting, "Appendix: Full Transcripts to Three Interviews with Shui-long Yen, 1988-1989". In Shui-Long Yen: The Public Spirit, Beauty in the Making, 394-414. Taipei: Taipei Fine Arts Museum, 2012.

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FIRST-HAND MATERIALS

Face-to-face interview with Su Jui-bi on 25 May 2025. A vocal record kept by the author.

Face-to-face interview with Yen Chian-fong by Yen Chaun-ying on 24 Oct, 2023. A manuscript was kept and collected by National Taiwan Craft Research and Development Institute. Yen, Chaun-ying, Lin Yu-chun, Yang Yu-jui, and Ho Guan-Wei. "An Auspicious Sunrise: Yen Shui-long's Formosa" Research Project Report, (Nantou: National Taiwan Craft Research and Development Institute, 2024), 4-63. (Unpublished material)

Online interview with Yen Chian-fong by Su Jui-bi, participated by curatorial researchers and the architecture team on 24th of January, 2024. A vocal record kept by the author.

NEGOTIATING HERITAGE AUTHENTICITY IN POST-COLONIAL CONTEXTS: THE CASE OF THE KASBAH OF ALGIERS

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INTRODUCTION

The Kasbah represents the old town of Algiers where millennia of continuous human activity and settlement have contributed to the creation of an urban site unique in its style and history. Since the Phoenician and throughout the Roman, mediaeval, and Ottoman periods, the city grew and adapted to changing historical and geographical situations to become a jewel of the Southern Mediterranean. However, with the French invasion, a series of architectural and urban interventions, in line with the colonial project, have altered this continuity and integrated elements that have changed the precolonial character of the city. Two centuries later, the Kasbah of Algiers, a World Heritage Site, now faces a new challenge: the fragility of early colonial buildings constructed within the city walls and against precolonial buildings, which design, and initial intent does not allow for a survival expected from Ottoman-era structures. As a result, colonial structures periodically crumble into dust, as was the case in January 2025, when a vacated tenement building collapsed. If allowed to happen, these collapses will create further holes in the urban fabric, harming the character of the site. As these colonial structures have a value of their own, given the use of local materials and the blending of Algerian and French architectural styles, their loss causes harm to the overall significance of the Kasbah. However, while conservation efforts are lacking, the design of these structures could not allow them to exist permanently, posing the question of the fatality of their loss.

This paper offers a discussion of potential solutions to address this phenomenon: if early colonial buildings will eventually fall, what approach should be taken to manage them? Between reconstruction, modern replacement, or restoring precolonial buildings that these buildings replaced at the time, the question of authenticity must be cautiously considered, in particular with regards to UNESCO definitions and paradigms.

HISTORY & SIGNIFICANCE

The Kasbah of Algiers represents the historic old city of Algiers, the capital of Algeria and one of the principal urban centres in North Africa.[1] As the oldest continuously inhabited area of Algiers, the Kasbah forms the historic nucleus from which the modern city evolved starting the colonial period. Its layered development spans from the ancient Numidian era through Roman, mediaeval Islamic, Ottoman, and French colonial periods, and finally, the postcolonial era starting 1962. Further modifications continue to the present day, creating a rich urban fabric that is a palimpsest, incarnating Algeria's complex history.[2]

Geographically, the Kasbah is located on an elevated slope ending in cliffs overlooking the Mediterranean Sea to the east. Initially, it evolved from the area which forms a small cape facing a cluster of islets. This geographical formation gave the city and country its name in Arabic, El-Jazayer, meaning “the isles.” Archaeological evidence indicates the ancient city, referred to as Ikosim in Phoenician and later Romanised as Icosium, formed an early nucleus on this site. Roman remains such as the road network, theatre, and cathedral (now converted into the Jamaa el-Kebir Mosque), are still discernible in the contemporary urban layout (Figure 1).[3]

Figure 1. Open Museum of the Kasbah of Algiers, displaying multiple-period archaeological remains.

Throughout the early medieval period, the city expanded westwards and uphill, developing into an Islamic medina characterised by narrow, winding streets, dense housing, and defensive walls forming an approximate triangular shape by 1830 (Figure 2). The city’s urban morphology exhibits the layered influences of successive cultures, with a core medina structure typical of Islamic cities, providing both social organisation and defence against external threats.[4] This medina structure, with its narrow alleys and public squares, remains integral to the Kasbah’s identity today.

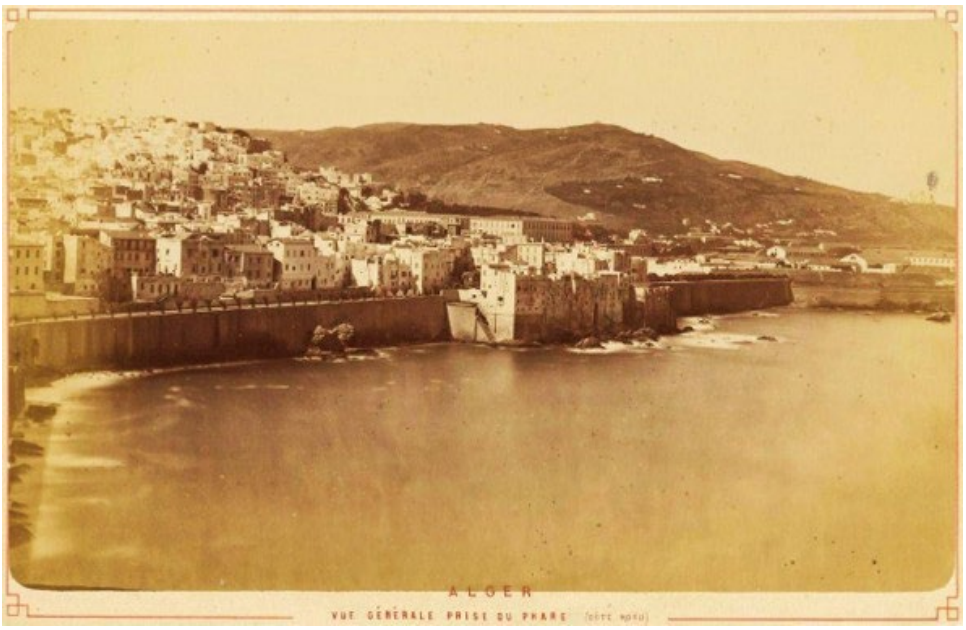

Figure 2. General view of Algiers from the lighthouse shortly after its occupation.

Beyond its urban layout, the Kasbah presents a distinctive architectural heritage that merges elements from diverse cultural influences. The architecture features characteristic elements such as the Algerian arch, elaborately carved windows and doors, decorative columns, and intricately designed interior courtyards. These features embody a vernacular tradition synthesising Berber, Andalusian, Ottoman, and Arabian architectural vocabularies into a coherent style (Figure 3). This traditional character has been closely tied to intangible heritage practices within the Kasbah, including space segregation by gender, social interaction norms, and a defensive urban character designed to protect inhabitants.[5] The aesthetic and social qualities of the Kasbah's architecture have been extensively documented and represented during the colonial period, where orientalist artists and propagandists used the site's unique character to evoke exotic imagery of the "Orient".

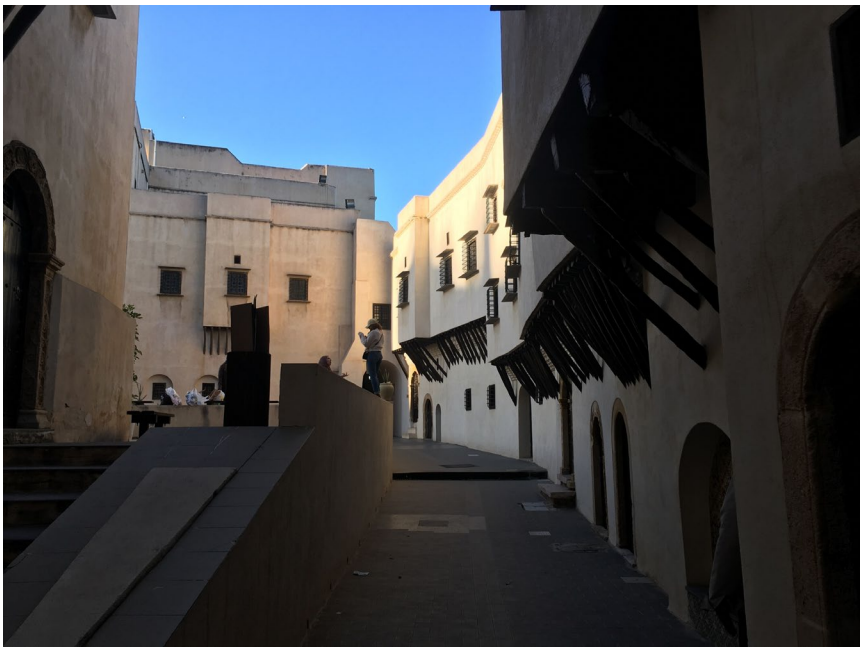

Figure 3. The Palace of the Reis, a notable example of surviving precolonial fabric.

The Kasbah also holds significance as a gateway into the Orient for many European visitors during the colonial era. Among notable figures, Charlie Chaplin visited the site during his 1931–1932 world tour, commenting on the city's beauty and the warmth of its inhabitants, while simultaneously noting the harsh socioeconomic conditions that transformed the Kasbah into a ghetto within the wider urban context of Algiers. Thus, the Kasbah has played dual roles as a cultural symbol and a lived urban environment, embodying both the richness and the challenges of Algeria's historical evolution.

However, one of the most distinctive and dismissed aspects of the Kasbah of Algiers is its colonial fabric, which sets it apart from other medinas in North Africa such as those in Tunisia or Morocco. Unlike these other cities, where colonial architectural interventions were either limited or segregated spatially from traditional medinas (Figure 4), Algiers saw the insertion of colonial buildings directly within its historic precolonial fabric.[6] As a result, this has produced a unique heterogeneous urban environment where Ottoman-era structures coexist alongside French colonial buildings, creating a complex narrative of architectural and urban change.[7]

Figure 4. The juxtaposition of precolonial and colonial buildings in the Kasbah.

A closer examination of the Kasbah's urban morphology reveals how these colonial interventions reshaped not only its architecture but also its social and cultural functions. The Kasbah of Algiers represents a unique palimpsest of urban history, where successive civilisations have left architectural and morphological traces that collectively form a distinctive cultural landscape. Bourahla and Chérif note that the urban morphology of the Kasbah has undergone significant typological transformations, particularly during the shift from traditional Ottoman courtyard houses to multi-storey apartment blocks introduced during the early colonial period.[8] This change was not only functional but also symbolic, reflecting a broader political project aimed at altering the socio-cultural dynamics of the city.[9] The introduction of these new structures brought novel materials and construction techniques, some of which were less durable than the Ottoman masonry traditions they replaced, contributing to current structural fragility.

Hadjilah emphasises that the 19th-century urban interventions within the Kasbah were driven by a dual agenda: modernisation on European lines and the assertion of colonial dominance through the visual and spatial reorganisation of the urban fabric (Figure 5). These interventions often

compromised the spatial logic of the precolonial city, leading to tensions between heritage values and imposed modernity. Furthermore, they identify a lack of widespread public awareness about the architectural and historical value of colonial-period buildings within the Kasbah, which complicates conservation efforts. This absence of public engagement is compounded by the often-overlooked hybrid character of these structures, which merge Algerian and French influences.

Figure 5. A precolonial and colonial building structurally supporting one another.

The omission of the colonial layer from UNESCO's official recognition highlights a critical gap in the site's heritage discourse. While the Ottoman and precolonial components receive emphasis, the colonial fabric remains marginalised, despite its unique presence and significance in Algeria. This situation necessitates a broader negotiation of authenticity that goes beyond conventional heritage definitions. In this case, authenticity must be understood as a dynamic and multifaceted concept negotiated at multiple scales, locally among residents and communities, nationally within Algerian heritage policy, and internationally through UNESCO's framework.

The Kasbah's colonial buildings thus contribute an added value by reflecting Algeria's distinct colonial experience, different from other Maghrebi countries. Recognising and integrating this colonial layer into the Kasbah's conservation strategy enriches the site's historical narrative and reflects its complex cultural identity. This holds potential in allowing for a more inclusive understanding of authenticity that embraces all periods shaping the urban fabric, not only the preferred or idealised ones. This element is crucial given that the Kasbah also holds significant national importance as the site of the Battle of Algiers during the Algerian War of Independence (1954–1962). This historic event, emblematic of the struggle against colonial rule, is deeply ingrained in Algerian national identity and collective memory. The Kasbah's physical environment thus becomes a symbol and stage for postcolonial identity and resistance, adding a profound layer of political and cultural significance to its conservation (Figure 6). Heritage interventions must therefore be sensitive to these associations, as any alteration to the Kasbah's fabric could be perceived as affecting national memory and identity.

Figure 6. Painted façade of the house in which the depicted martyr, Ali La Pointe, died along three other Algerian combatants, at the hand of the French army.

THE PROBLEM

The main issue concerning the colonial buildings in the Kasbah is that many were constructed rapidly and using methods suited for immediate function rather than durability, leading to them often being physically fragile today and prone to structural failure.

A dramatic example of this fragility occurred in January 2025 when a vacated colonial-era tenement building collapsed unexpectedly (Figure 7), damaging adjacent structures and underscoring the ongoing risk of physical deterioration in the Kasbah.[10] This collapse was not an isolated event but rather part of a periodic phenomenon of colonial buildings deteriorating or collapsing due to age, material decay, and inadequate maintenance (Figure 8). The frequency of such incidents raises urgent questions about the future management of the colonial architectural heritage within the Kasbah, and beyond, its implication for the rest of the fabric of the site. It also underscores the intertwined nature of safety, heritage conservation, and urban life in the Kasbah, where buildings are not only artefacts but also homes, workplaces, and community landmarks.

Figure 7. The collapse of a colonial building in January 2025.

Figure 8. The collapse of a colonial building in May 2019, costing the life of a family.

As discussed above, the fragility of early colonial structures is a recurrent theme in both contemporary scholarship and conservation practice. Hadji et al. link this vulnerability not solely to the material and structural properties of the buildings, but also to gaps in legislative precision regarding heritage management. They argue that while the Kasbah's designation as a UNESCO World Heritage Site provides a framework for protection, the actual legislative instruments in Algeria lack specificity in addressing the unique needs of mixed-heritage urban contexts. The resulting regulatory ambiguity has allowed neglect to persist, accelerating deterioration. In practical terms, this means that conservation professionals often operate in a grey zone, where the absence of clear policy direction leads to reactive rather than proactive decision-making.

The conservation challenges posed by these colonial buildings are therefore profound. Importantly, these structures were never intended to last indefinitely; their construction prioritised short-term utility and expediency over longevity, reflecting colonial priorities rather than indigenous architectural traditions.[11] Consequently, today decisions must be made about how to address the ongoing deterioration of these buildings. While continuous shoring and structural reinforcement is currently employed to maintain endangered colonial buildings, this approach risks creating an artificial preservation that freezes the urban fabric in a non-authentic, museum-like state, potentially disconnecting it from the living heritage context. However, shoring can also provide valuable breathing space –buying time for more comprehensive planning and avoiding hasty decisions driven purely by crisis management.

Alternatively, heritage managers might monitor these buildings carefully and plan their safe removal when their structural integrity signals failure. This approach recognises the impermanence of the colonial fabric while ensuring public safety and preserving the overall urban environment. Yet, it also risks the gradual disappearance of a significant layer of the Kasbah's history. In such cases, the question is not only what is lost in material terms, but also what narratives and meanings are erased from public memory when physical traces disappear.

Finally, the possibility of reconstruction can be considered. But most importantly, this option poses the question of what to reconstruct. Reconstructing colonial buildings after their collapse. While reconstruction can restore the urban fabric and maintain the Kasbah's architectural continuity, it must be approached cautiously to avoid creating conjectural or inauthentic reproductions that undermine heritage values. Reconstruction should only be based on robust historical documentation, archaeological evidence, and traditional building methods. There is also the possibility of reconstructing pre-colonial Ottoman-era fabric that colonial buildings replaced or obscured. This would reinforce the Kasbah's traditional architectural character and align with the predominant narrative recognised by UNESCO in its World Heritage designation, which focuses primarily on the site's Ottoman and Islamic heritage.[12] Reinstating this fabric could strengthen the Kasbah's integrity and authenticity from a heritage conservation perspective. However, this approach is also fraught with difficulties, as it involves selectively erasing a colonial legacy that, while contentious, forms an inseparable part of the Kasbah's layered identity. It would also raise ethical questions about whether heritage conservation should privilege certain historical periods over others, and whether the resulting urban fabric would still reflect the true historical trajectory of the site.

These three strategies –shoring, monitored removal, and reconstruction– should not be viewed as mutually exclusive. In practice, they can be combined into a phased or hybrid approach, responding to the specific condition, significance, and use of each building. For example, temporary shoring might stabilise a structure long enough for archival research to inform a historically accurate reconstruction, or to allow community consultations to determine whether removal or restoration best serves local needs. Such combinations acknowledge that heritage conservation in the Kasbah is as much about negotiation and sequencing as it is about technical intervention.

Decision-making regarding which buildings to conserve, reconstruct, or remove requires detailed assessment of cultural significance, physical condition, and community use. It should be underpinned by interdisciplinary collaboration between architects, archaeologists, conservators, historians, and local stakeholders. A one-size-fits-all approach is unlikely to be effective; rather, conservation must be adaptive and context-specific, reflecting the Kasbah's heterogeneous nature: a multi-dimensional case-by-case approach. Equally, the perceptions of current residents, whether they see colonial buildings as valuable heritage, as relics of oppression, or as dangerous hazards, must be integrated into the process, as these views can influence both the feasibility and the legitimacy of conservation measures. The reconstruction debate, particularly, demands careful consideration. While reconstruction can restore lost urban fabric and contribute to heritage tourism and local identity, it must not be pursued at the expense of authenticity or scholarly rigour. Heritage conservation should embrace complexity and multiplicity of histories, not reduce them to a single narrative.

CONCLUSION

In conclusion, the Kasbah of Algiers stands as a living palimpsest, where successive layers of history, culture, and identity are inscribed into its urban fabric. Its intricate network of streets, diverse architectural forms, and stratified social spaces testify to the city's evolution from ancient settlement through its Ottoman zenith, colonial transformations, and post-independence management. Unlike other North African medinas, the Kasbah uniquely integrates colonial-era structures within its historic core, creating an exceptional opportunity to interpret Algeria's colonial experience in dialogue with its pre-colonial heritage. This coexistence of architectural legacies challenges conventional conservation narratives and invites a more inclusive understanding of heritage as a dynamic continuum rather than a fixed past.

The conservation of colonial-period buildings within the Kasbah presents urgent and complex dilemmas. Many of these structures face advanced deterioration, posing safety risks while also carrying significant historical and interpretive value. Decisions on whether to shore, restore, reconstruct, monitor, or in certain cases remove these buildings must be guided by a careful balance between safeguarding public safety, preserving authenticity, and respecting both historical integrity and community perceptions of value. The Kasbah's designation as a UNESCO World Heritage site further intensifies these debates, framing them within an international discourse on authenticity, integrity, and the protection of layered cultural landscapes. Ensuring that such debates are participatory and reflect a diversity of voices –scholarly, professional, and local– is essential to sustaining the site's living character.

Ultimately, the Kasbah is far more than an assemblage of architectural forms; it is a repository of Algeria's collective memory, a symbol of resilience and resistance, and a space where national identity continues to be negotiated. Effective conservation and management should therefore move beyond a purely material focus, embracing the site's intangible dimensions –its social practices, symbolic associations, and evolving uses– alongside its physical preservation. By recognising and valuing all layers of its history, the Kasbah can remain not only a testament to Algeria's rich and complex past but also a vital, relevant, and inhabited space for future generations.

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CULTURAL POSITIONS: HERITAGE ADMINISTRATION AND POLITICAL AGENCY IN THE CITY OF WESTMINSTER

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INTRODUCTION

"All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before then can ossify. All that is solid melts into air, all that is holy is profaned, and men at last are forced to face… the real conditions of their lives and their relations with their fellow men."

- The Communist Manifesto, *1848*

Drawing on nineteenth century atheist assertions, the Communist Manifesto projects an image of disintegration and decomposition of the sacred whole. Authored by Karl Marx towards the end of the century, the Manifesto hinges upon Marx's description of *'modern bourgeois society'*. Engagement with modernization is implicit in Marx's works which has focused on the solid, characteristically defining the *"archetype of a century of modernist manifestos and movements to come."*[1] The Communist Manifesto serves as a testament to modernist culture through valued insights and contradictions that embody the essence of the process.

The Manifesto discusses the bourgeois period which exemplified *"a loss of a halo",* referring to the disintegration of the solid sacredness in revered professions and interactions.[2] In this context *'The halo'* serves as a symbol for religious experience which created distinctions between the sacred and the profane, elevating the role and position of the bearer of the symbol as a sanctified figure, distinct from the regularities of the common man. Subsequently, the removal of the halo transformed the doctor, lawyer, architect, the priest and the poet into *'paid-wage labourers'* with monetary aspirations devoid of the spiritual connection and wider sense of purpose.

Marx describes man's confrontation with reality rendering him as subject and object of the process of modernisation that has disintegrated the finite whole. Alternatively, the author defends the *"stripping away of the halo"* to demonstrate the fallacy in the perception that isolates these professions from economic and politically constructed landscapes, which have influenced and continue to influence the nature of practice within these disciplines.[3] The inherent contestation within these premises illustrates the dismantling of the halo and the disintegration of the sacred whole, while forces of opposition strive to reinstate it. Efforts that aim to unmask inauthenticity in transcendence, seek to attain real transcendence aiming not to reconstruct the revered halo, but achieve a state of dynamism, liquidity and balance between profession and purpose.

All that is solid melts into Air : The Experience of Modernity written by Marshall Berman between 1971 and 1981, employs Marx's observations to comment on the evolutionary cycle of societal

change. As Berman observes, in the nineteenth and twentieth centuries, socio-political processes sought to attain coherence and stability through pluralist approaches that transformed entities, environments and people. Bound within a perpetual state of continuity and change, they strived towards completion through modernisation. The fluidity in processes and power relations were mirrored to reflect a dynamism and permeability in the socio-politics of the period and the definition of the invidual. Consequently, survival in this version of a modern society demanded a development of fluid personas which remained flexible and adaptive to changing circumstances. It empowered people to effect change onto the world they inhabit as they were simultaneously transformed by it. Consequently, Modernism adopted a public, democratic outlook rendering the phenomenon and practice approachable and accessible. Modern men and women were faced with contradictory conditions and challenges that dictated and altered attitudes towards the persistence of a perpetual state of transition. As Berman's writes, to be modern is, *"to be both revolutionary and conservative: alive to new possibilities for experience and adventure, frightened by the nihilistic depths to which so many modern adventures lead, longing to create and to hold on to something real even as everything melts."*[4] In this regard, Modernism embodies a notion of self-negation, as in the course of embracing some of its potentials, certain realities need to be overcome.

The paper aims to contextualize modernist and post-modernist debates and their resultant impacts in the twenty-first century to examine the underlying rationale and evolutionary mechanism related to the administrative structures of organisations, entrusted with the care and protection of heritage assets and historic environments. The network of institutions and their intrinsic relations with governmental processes forms the central focus of the study, which seeks to ascertain the role, jurisdiction and influence of the state in the deployment of heritage and the administration of cultural practice.

Statutory Control and Conflict

Classical liberal philosophy of the eighteenth century and the laissez faire societal model, most commonly associated with John Locke and Adam Smith, was founded on the idea of free market capitalism, the protection of private property and minimal governmental intervention within processes of economic exchange.[5] Neoliberal policy, by extension advocated for corporations to not only have the freedom to manage transactions and resource allocation, but also to be subsidised for it. Proponents of Neoliberalism claimed that markets balancing supply and demand through price mechanisms were better at allocating resources than governments or states, and where organizations could not be privatised, they should be made subject to market disciplines and regulations. Here, state intervention was directed to prevent a monopoly of the market as compared to the notion of the state facilitating it through unlimited support of individuals and corporations. Alternatively, a reversal of laissez faire sought to present the state *'as an agent of the community'* through legislative measures and to assess limits of governmental action through the deployment of the market as an instrument in the process.[6]

In the context of cultural practice and heritage administration in the United Kingdom, the discussion sheds light on the institutionalisation of heritage and the practice of conservation underscored by socio-economic and political processes that were simultaneously unfolding external to the discipline. The revitalisation of a dominant national sentiment attributed to the rise of the right wing during the 1970s was contested through political tensions that manifested by means of '*the heritage debates'* with Labour enforcing a Wealth Tax on aristocrats and the Conservative attempt to preserve establishment and prevent dissociation of nationalist sentiment through taxation on cultural property.[7] In its aftermath and with the official recognition of conservation and preservation practices, cultural inventories diversified from elite, country estates to include ecclesiastical and community owned properties in addition to an increased role of the state in overseeing the protection of heritage. Defined

by this process, the creation of identities crafted through cultural heritage hinged upon the degree of statutory control over heritage processes, the nature of power structures and relations between the government, the deployment of heritage and the practice of conservation. Subsequently, heritage practices, defined and developed by means of governmental processes and policies led to the formation of the *'heritage sector'*, a specialized collective that operated at the intersection of lobbying, sponsorship, conservation policy and international relations.[8]

Contextualising this debate within contemporary cultural practice in London, the role of the political actant as a participant and overseer in heritage and governance can be ascertained and illustrated by means of the Restoration and Renewal Programme of the Palace of Westminster with Parliamentarians entrusted with the power and responsibility of overseeing the administration of the programme in the continued use of the premises for Parliamentary proceedings. The programme presents an opportunity to unravel the dialectics between *'political oversight'* and *'interference'* and their respective and collective influence with regards to preservation and urban development.

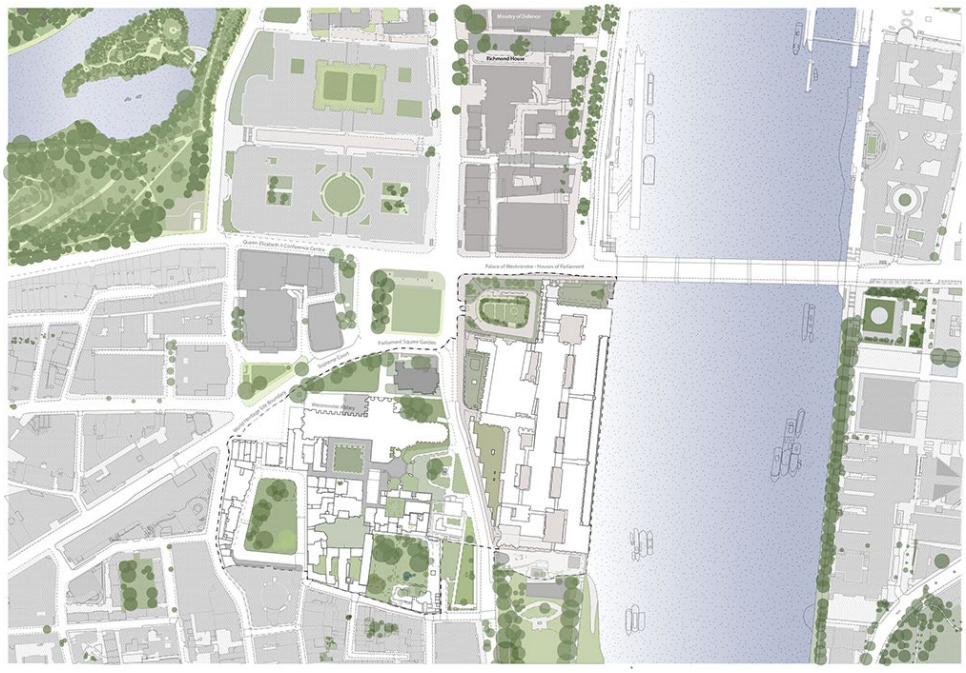

Figure 1. The site of the Restoration and Renewal Programme, Palace of Westminster, Houses of Parliament, City of Westminster, London.

The Restoration and Renewal Programme, Palace of Westminster

The Palace of Westminster, the Houses of Parliament exists as a singularly distinct historic monument within the stylistically diverse and abundant cultural landscape of Britain. It is the most significant national institution of political governance in London that exercises influence and control locally and globally. The Parliament building itself constitutes the legislative chambers including the House of Commons and the House of Lords that represent two arms of the government, operating in parallel to conceive bills and policies, while ensuring their statutory approval or revision. Additionally, the building is representative of the cultural context of the City of Westminster that exhibits the power and status of the borough by means of its monumental and ornamental Gothic exteriors. It's formal expression emanates a majestic presence, establishing a territorial stronghold on the northern banks of the Thames.

The Restoration and Renewal Programme is a prominent project of cultural heritage with national and international significance, involving a range of influences and taxpayer investments that extend far beyond the metropolitan context. The proposal is therefore aimed (ideally) to benefit the United Kingdom in its entirety, remaining accessible from every part of the country, with due diligence to all public contributors and residents of the State. As a consequence of the Programme, the Palace would be reinstated as a cultural landmark with nationwide influence and access, while ensuring the long-term sustenance of its material constitution.

First proposed in 2016, the plan for restoration gained momentum by 2018, and finally reached the discussion stage by 2021. In its initial phase, the Joint Committee on Restoration and Renewal supported the R&R Programme and perceived it as an opportunity to emphasize the architectural value of the existing buildings.[9] The proposal sought to renew underused and restricted open areas, alongside the removal of long-standing, temporary additions that were considered redundant. In this context, Historic England recommended a redirected focus on an increased public engagement through educational programmes and disable friendly access.

The administrative framework of the Programme was initially conceived to represent collaborative governance strategies between the Sponsor Body, preceded by a shadow Sponsor Body and the Delivery Authority, entrusted with the task of formulating the Business Case and ensuring its successful management and delivery respectively.[10] The recognition of Outstanding Universal Value (OUV) of the heritage asset was emphasized, and the process of restoration was planned in accordance.[11] In 2019, the shadow Sponsor body (appointed in July 2018) consisted of members from the Houses of Lords and Commons, including specialists and individuals experienced in working with governments and local authorities with regards to stake-holder management, in addition to experts in specific areas. The shadow Sponsor Body constituted the tentative structure for the Statutory Sponsor Body, and the process of appointment through Royal assent or a further public appointment process through open competition was to be determined.[12] The panel included a programme management expert, a heritage and financial expert, in addition to an authority in broader stakeholder communications. Based on Schedule 1 of the draft Bill, the Sponsor Body comprised of seven to thirteen members, with the shadow Sponsor Body (in 2019) constituting twelve members including seven parliamentary members and five external members, overseen by the Chair.[13]

The *'Chair of the Sponsor Body'* was to be held by an individual, external to statutory governance; the Chair is neither a member of Parliament nor a Minister of the Crown.[14] In this regard, the appointment of the Chair contrasted with the constitution of the Sponsor Body which included several members of the legislative assemblies in addition to external members. Collectively, these individuals sought to ensure a balance between political and non-political appointees to institute checks and balances with regards to the extent of political oversight and interference in the delivery of heritage services and conservation practice.

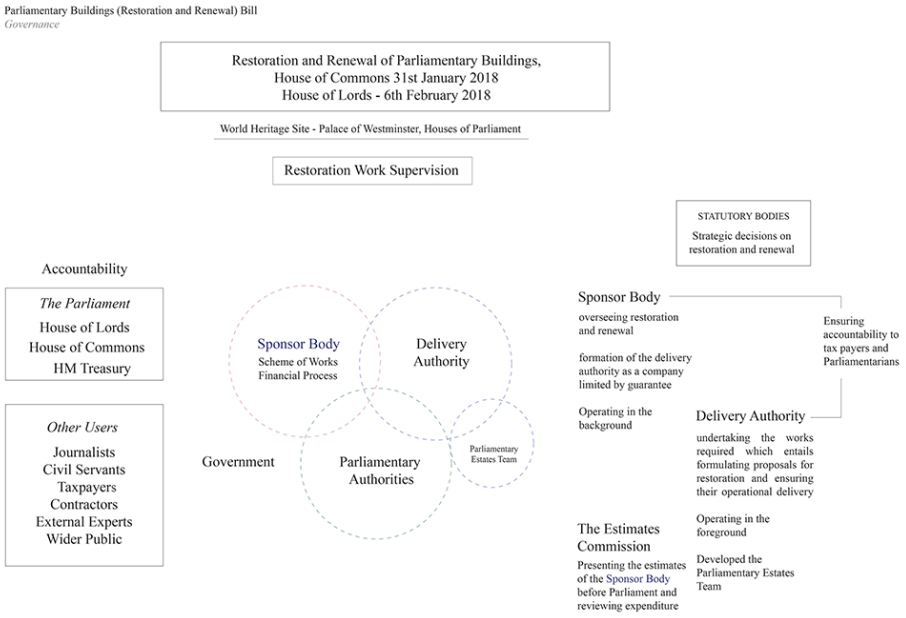

Figure 2. Institutional frameworks of governance, Restoration and Renewal Programme

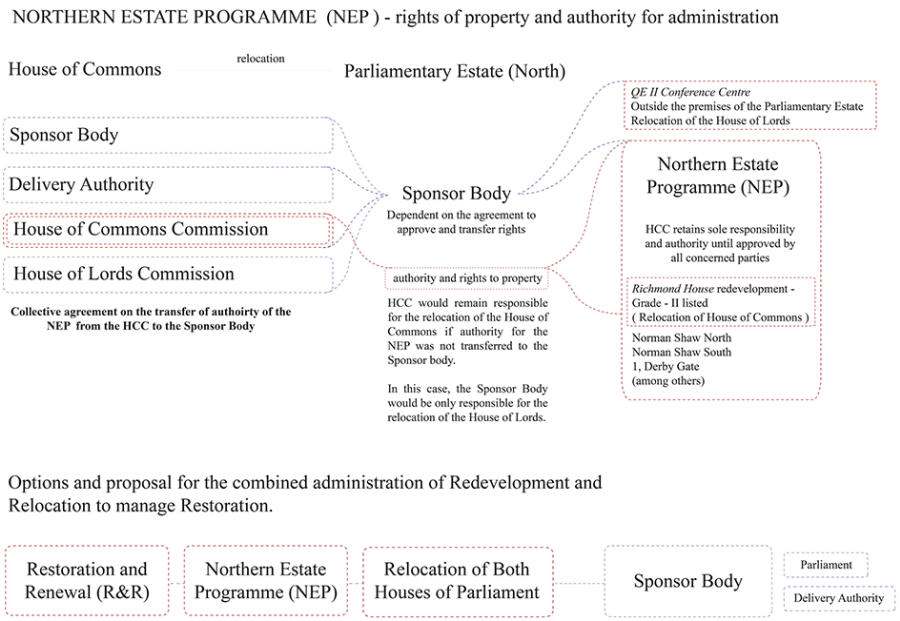

Figure 3. Northern Estate Programme, Initial plans for Parliamentary decant during restoration

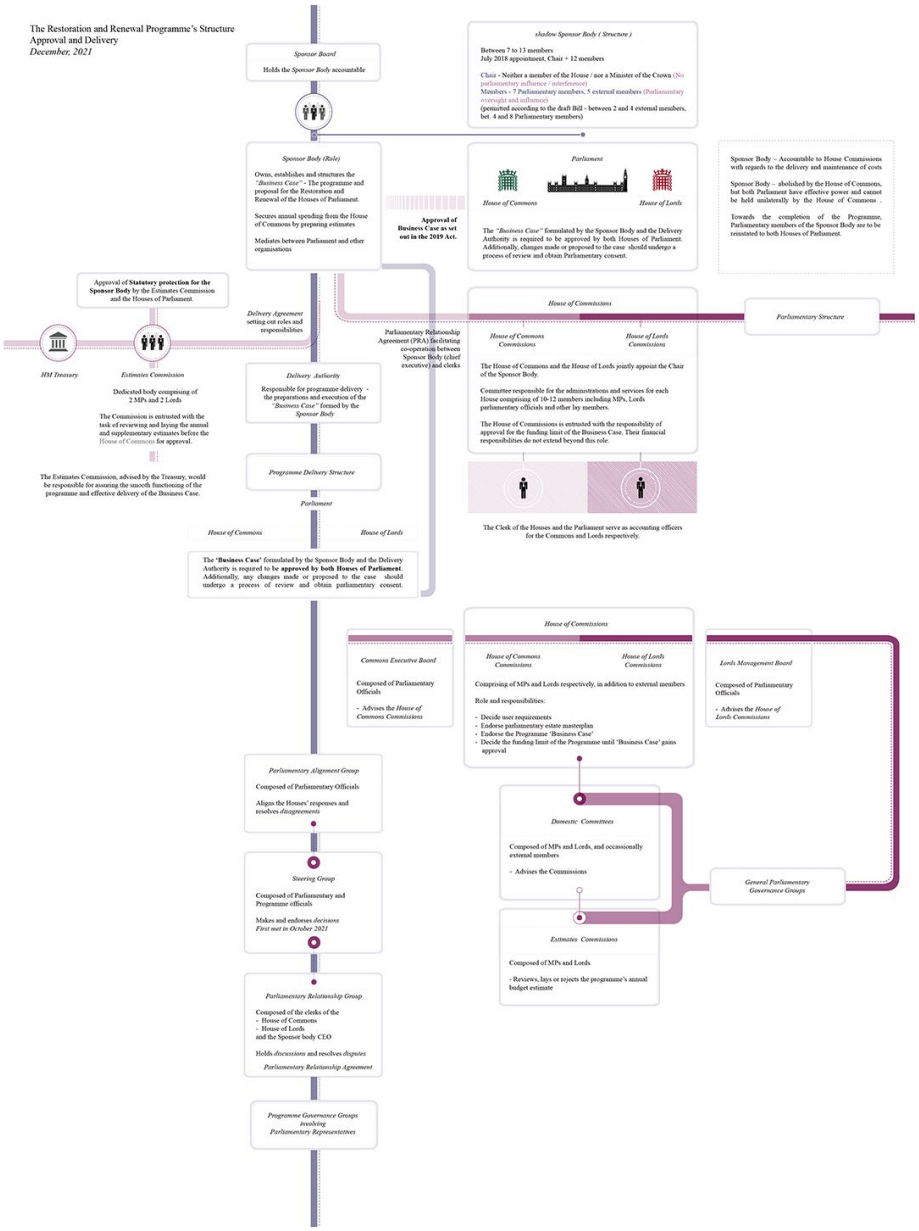

Figure 4. Restoration and Renewal Programme, Approval and Delivery, 2021

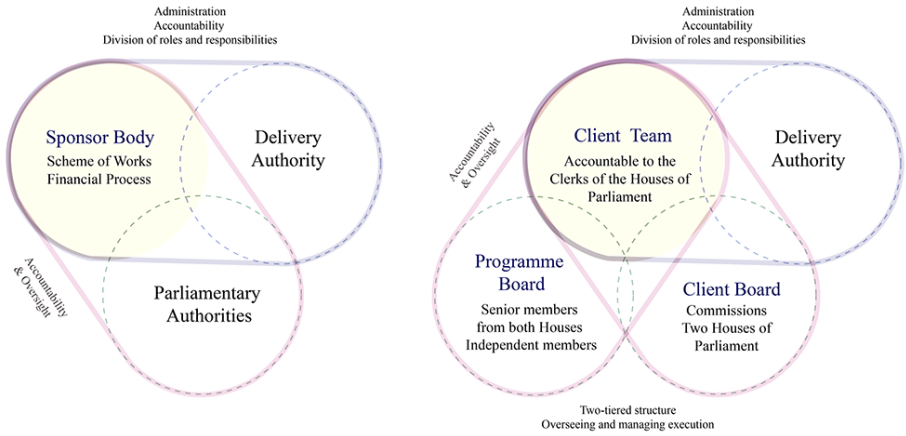

Figure 5. Partnerships and programme delivery, 2021 - 2022

Institutional oscillations

In 2022, a new proposal for the R&R Programme was formulated to integrate its governance structure with Parliamentary administrative frameworks that would substantially incorporate the sponsor programs within the extent of Parliamentary control, while ensuring the sustained independence of the Delivery Authority. The Restoration and Renewal Client Board including members from both Houses of Parliament was formed to oversee the works of the R&R Programme replacing the Sponsor Board and Body. The process was a consequence of negotiations and co-ordination with Parliamentary authorities that recognized the imperative to rethink institutional relations. The new model comprised of a two-tiered governance structure that would be accountable to the Commissions. The structure replaced the Sponsor-Board by means of the Client Board comprising both Commissions responsible for strategic decisions with regards to the Programme. Furthermore, the Client and Programme Boards were assigned the responsibility of overseeing and managing the execution of the Programme by the Client Team who would report to the Clerks of the House of Parliament. The Porgramme Board comprised of senior managers in both Houses and independent members with appropriate expertise who would have delegated authority from the Client Board.[15] The Programme Board would comprise of a minimum of two Speakers (or their nominated delegates), the Leaders of both Houses (or their nominated delegates), the Clerks of both Houses, the Head of the Client Team, the Head of the In-House Services and Estates Team (IHSE) and the Chief Executive of the Delivery Authority alongside independent members with expertise with regards to high profile and large scale projects such as these.[16] Furthermore, the altered proposal for the programme sought to limit the extent of the works by reconfiguring the initial proposal of relocation from the Houses of Parliament and has instead proposed to execute the works with the potential consideration of a '*partial or no-decant*' strategy.[17]

The reconfigured structure has sought to simplify and strategically approach matters of distributive powers and agency. However, it risks an escalation in political oversight and interference with an increase role of the state. Alternatively, the dissolution of the Sponsor Body to transfer powers in-house have presented an opportunity for regular users of the Parliament to participate with an increased capacity in the R&R Programme.

The newly constituted governance structure would remain in place during the conception and development of the Programme, until the Strategic Outline Business Case was approved. However, it would reflect earlier processes and would be transformed periodically with regards to the immediate requirements of the Programme. Consequently, a new governance structure would be introduced during execution of the proposal. The shifting landscape within institutional frameworks is exemplary of a fluidity inherent to the process which has remained defined through adaptation as compared to an ephemerality and absorption as opposed to elimination. The process that forms, deforms and reforms, disintegrating and renewing culture and its administrative networks involves modern environments and experiences, embodying the very essence of modernity forged out of a unity of contestations and contradictions.

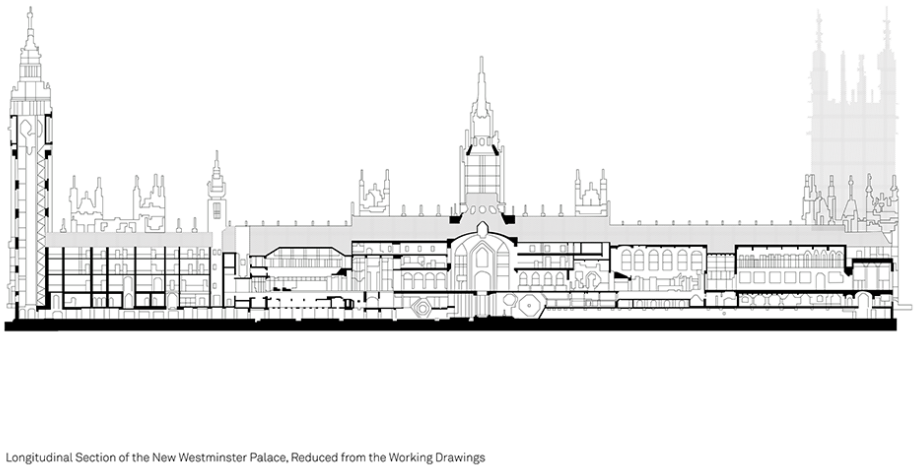

Figure 6. The Palace of Westminster, longitudinal section through the Elizabeth Tower

CONCLUSION

Modernity encapsulates a process that expands perception and experience, providing clarity and potential for a greater depth in the process of interpreting culture and creating engagement within its disciplinary practices to enhance and contribute to lived realities. Post-Modernism, a mid-20th century phenomenon identified with self-referentiality, relativism, pluralism and irony, was a reactionary form of practice that sought to reverse Modernist design principles and ideological assertions, opposing a singularity of form and expression. In addition, it advocated for a sense of place, emphasizing the role and significance of the context which diverted from a universality and modularity inherent to the Modern movement. Postmodernism aimed to respond to a specific context and culture demonstrating aspects of individualism , non-conformity and complexity.

Recalling nineteenth century Modernism can provide solutions to recreate the potential and address the fallacies of the Modernist ideal that manifests in the twenty-first century. The disintegration of a solid finiteness that diversifies an organisation and its operative processes and the subsequent reconstitution into a finite entity, strengthened through limits, examines, assesses and seeks to renegotiate territorial and administrative frameworks within cultural practice. The process is aligned to accurately represent the influence of a transformative socio-political and economic paradigm on the discipline of architecture and practice of care. In essence, the phenomenon is representative of the process of Modernsiation, while remaining imbued with Post-modernist ideologies. With respect to the former, it reflects the *'stripping away of a halo'*, as elucidated by Marx to illustrate the inherent interdependencies between the practice of architecture and the role of the profession in relation to forces that exert influence and strive to limit and delimit its potential and agency. With reference to the latter, a reconstitution of administrative frameworks and mechanisms of delivery within heritage and cultural practice acknowledges the role of the context, the site and building, and its unique position, power and influence over the nation state and as a site of World Heritage, to conceive a process of conservation and care that is rooted in place. Post-modernist currents that underscored the evolution have found value in prioritizing the needs of parliamentary actants, overseers and users within the Restoration and Renewal Programme.

The proposed governance structures for the R&R programme co-incided with frameworks exemplifying best practice for a Non-Departmental Public body as overseen by the Cabinet Office. Additionally, the programme draws on the model of governance for the 2012 Olympics and the

HS2.[18] However, it distinguishes itself in its scope of operation being limited within the regulatory framework of the planning system. The planning process would involve the collection of actors participating in matters of heritage conservation and urban regeneration including Westminster City Council and Historic England, amongst others. Perceived as a tentative proposal, and an initiative to customize a method based on the requirements of the programmes, the governance model would be exemplary of an institutional framework which would inform plans of restoration and renewal within parliamentary contexts worldwide. In this regard, the Palace of Westminster illustrates and accentuates these aspects within processes of cultural administration and production, exemplary of a phenomenon that has acquired resonance globally, constituting not a unique case of cultural practice but a universal model for conservation.

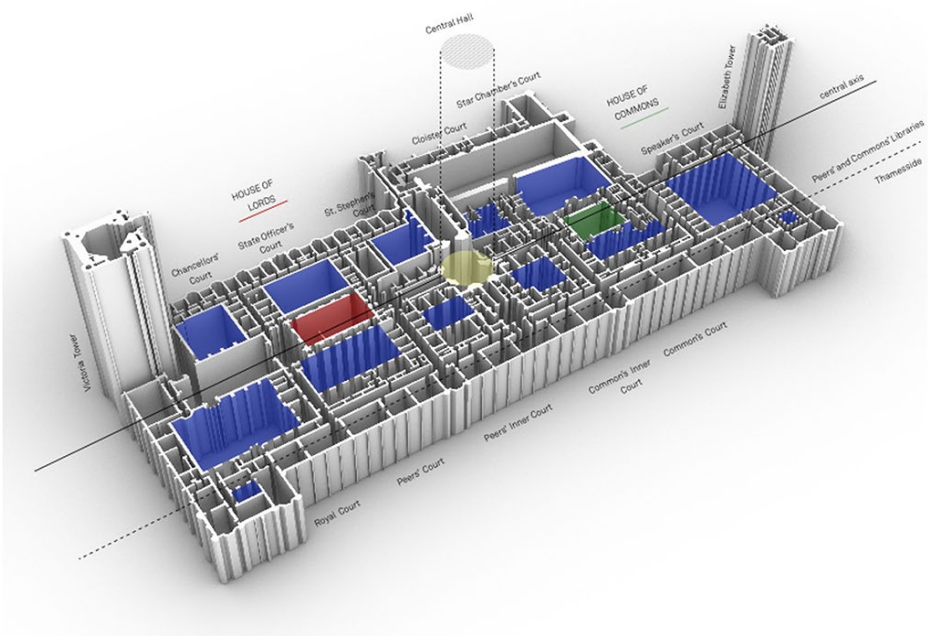

Figure 7. Spatial distribution within the House of Parliament: Courts and enclosures.

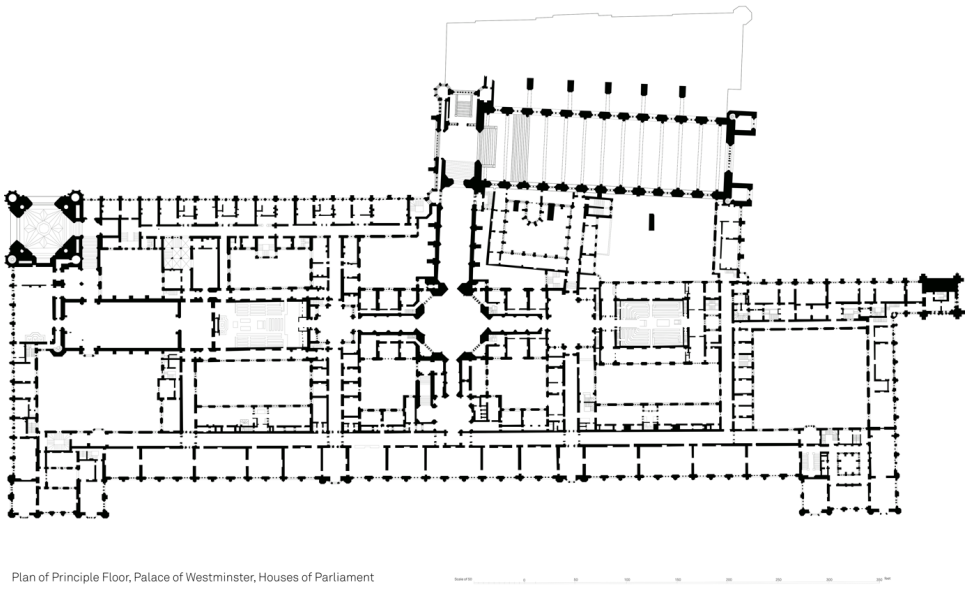

Figure 8. The Palace of Westminster, Houses of Parliament

NOTES

[1] Marshall Berman, *All That Is Solid Melts Into Air* (Simon & Schuster, Inc. 1982), 89
[2] Berman, *All That Is Solid Melts Into Air*, 1982, 115-120.
[3] Berman, 119.
[4] Berman, 13.
[5] *Laissez faire* in the eighteenth century limited the role of the state. A contemporary form of liberalism inclined towards competitive market structures sought to prevent monopoly of the market as compared to the understanding of the state facilitating monopoly through unlimited support of individuals and corporations.
[6] Michel Foucault and Michel Senellart, *The birth of biopolitics: lectures at the Collège de France, 1978-1979*. (New York: Picador, 2010), 119
[7] Jo Littler and Roshi Naidoo, *British Heritage and the Legacies of Race, The Politics of Heritage and the legacies of Race,* (Oxon: Routledge, 2005), 4
[8] Littler and Naidoo, 3-5
[9] Restoration and Renewal of Palace of Westminster Progress Update, Report by the Comptroller and Auditor General, Session 2021-2022, 21st January, 2022, HC 1016, 4-6
[10] The Business Case formulated by the Sponsor Body and the Delivery Authority requires approval from both Houses of Parliament. Additionally, any changes made to the case should undergo a process of review and obtain Parliamentary consent. Prepared and assessed by the Sponsor Body and Delivery Authority, the 'Business Case' was scheduled to be sent for approval to the Parliament in June 2023. Based on the recommendations of the Strategic Review, the Sponsor Body developed four conditions for the proposal - a *"do minimum"* based on essential objectives, a *"do maximum"* based on stretch objectives and upto two intermediate options. The Restoration and Renewal Programme's primary requirements entail the repair of the Mechanical and Electrical works (M&E) in the building in addition to secondary works including water penetration, asbestos removal, fire safety, heating, cooling and ventilation. The body of works could potentially cover accessibility, catering to an intergenerational population, including at least some internal adaptations and at most new office space accommodated in two to eight covered courtyards, historical preservation, repair and restoration, in addition to the reinstatement and medium-term conservation to reduce the need for future works.
[11] Outstanding Universal Value refers to cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The committee defines the criteria for the inscription of properties on the World Heritage List. To be deemed of Outstanding Universal Value, a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding against damage and destruction. (Policy Compendium, Operational Guidelines, paragraph 49, whc.unesco.org)
The nature of Conservation in the Restoration and Renewal programme seeks to address the sensitive preservation of the historic fabric during the course of increasing accessibility and the introduction of functional and spatial programmes. In this regard, Historic England recommended the introduction of a sub-paragraph to Clause 2(4) requiring the Sponsor Body to consider : *" the need to conserve and sustain the outstanding architectural, archaeological and historical significance of the Palace of Westminster, including the Outstanding Universal Value of the World Heritage Site."*
[12] Sponsor Body as the *'Intelligent Client'* negotiates the process between scope, cost and quality of work. A client who can define multiple objectives" and determine appropriate mechanisms for the repurposing of Parliamentary buildings, collaborating with the Delivery Authority. Understand 1. requirements, 2. the capability of the Parliamentary building in accommodating new uses. An "*Intelligent Client Approach*" includes the consultation of staff, however, staff employed by either Houses are not formally required to be consulted. Public accessibility and inclusivity aims to alter this statutory regulation. Staff working at the Palace of Westminster include journalists, civil servants, in addition to commercial businesses supplying the Houses.
[13] The Draft Bill serves to function as a legal instrument that critically determines several processes and relationships between major actors and stakeholders. The document emphasizes the need for visitor access to the Palace to be prioritized in order to cater to those who lack the means of accessibility available to others. Furthermore, it advocates for the public engagement and awareness of Parliamentary processes, introducing an element of transparency to it within England and its partner nations. These aspects of the Programme added layers of complexity in the context of assuring public engagement and transparency, juxtaposed with the privacy required for effective management and execution. Additionally, it interrogates the relationship between a

Parliament and its public in relation to cultural practice, heritage, education and tourism that demands a certain level of engagement and accessibility as opposed to governmental processes that filter it.
The structure of governance as proposed in the draft Bill has been aimed at depoliticizing the R&R Programme, to limit political interference while enabling Parliamentary oversight. By choosing to define '*a set of independent institutions'* as the best option for the delivery of heritage services, and recognizing the '*Intelligent Client'* with regards to its role as a sponsor, amongst related responsibilities and influence, the Restoration and Renewal Programme was structured through administrative mechanisms that eliminated the possibility of an overarching or influential political agenda.
[14] Governance of Restoration and Renewal, First Report of Session 2017-2019, Joint Committee on the Draft Parliamentary Buildings, HC 18, HL Paper 317, House of Commons, House of Lords, 21st March 2019, 24.
[15] This appointment, would need to be procured from a big company.
[16] Collectively, the Programme Board would comprise of seven Parliamentarians with four members of the House of Commons, and three members of the House of Lords, the Clerk of the House and Parliaments, and upto four external members. The Client Board proposed a new composition for the Porgramme Board in November 2022. The structure included four members of the House of Commons (two nominees of the Speaker, a nominee of the Commons Leader and a nominee of the Commons Shadow Leader), three Members of the House of Lords (a nominee of the Lord Speaker, a nominee of the Lords Leader and a nominee of the Lords Opposition Leader), two Officials – the Clerk of the House of Commons and the Clerk of the Parliaments. In addition, the Head of the R&R Client Team, Managing Director of Strategic Estates and CEO of the Delivery Authority would have the right to attend meetings, and up to four external members.
Restoration and Renewal of Palace of Westminster Progress Update, Report by the Comptroller and Auditor General, Session 2021-2022, 21st January, 2022, HC 1016
[17] The Sponsor Body has analyzed and assessed approaches for the process of restoration and renewal that consider both relocating the House of Commons and the House of Lords, and ongoing restoration works in their continued presence. It had been estimated that the Parliamentary bodies would benefit from the latter approach which would not require a relocation of parliamentarians. However, the scheme would in this case increase the budget for restoration that would be required to mitigate risks. For this reason, the former scheme based on relocation through the provision of decant accommodation during the restoration period was deemed more advantageous with lower risks.
[18] Governance of Restoration and Renewal, First Report of Session 2017-2019, Joint Committee on the Draft Parliamentary Buildings, HC 18, HL Paper 317, House of Commons, House of Lords, 21st March 2019, 45.

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CONTINUITY – BTWEEN PRESERVING HISTORIC URBAN LANDSCAPE (HUL) AND THE REGENERATION OF URBAN FABRIC IN RAMAT AVIV, ISRAEL

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INTRODUCTION

Our paper explores how the continuity of historic urban landscapes—across both time and place—can contribute to sustainability and urbanism within the regenerating urban fabric. Contemporary urban discourse often treats the preservation of historic urban landscapes and the advancement of urban renewal and regeneration as distinct, disconnected agendas, with limited consideration given to their integration. Contrary to that, we propose employing the notion of continuity—across temporal and spatial dimensions of both tangible and intangible elements—as a strategic tool for guiding urban regeneration within historic contexts.

Drawing on the Historic Urban Landscape (HUL) approach, we developed a conceptual model and a methodology for identifying, characterizing, and evaluating elements of continuity. These elements function as integral components of the regeneration process across multiple scales, from comprehensive planning guidelines to construction details.

We applied this model through site observations and archival research in the historic neighborhood of Ramat Aviv, Tel Aviv, Israel, established in the early 1960s. Its open space network—including communal residential yards, boulevards, groves, and a commercial plaza—embodies spatial continuity and preserves the site's *Genius Loci*. Maintaining the neighborhood's original structure, along with its tangible and intangible attributes, reinforces and enhances its urban character, particularly in terms of walkability and sustainability

Continuity

The concept of *continuity* in the dimensions of space, time and functions is a foundational principle in multiple disciplinary domains. In essence, it denotes an unbroken sequence—spatial or temporal—that reflects the interrelations between matter, memory, space, and temporality. While continuity is acknowledged as a central value in Historic Urban Landscape (HUL) frameworks,[1] policy and theoretical documents often invoke it abstractly, offering limited concrete methods for its realization. This research seeks to address that lacuna by articulating continuity as both a philosophical and architectural construct, with specific implications for landscape heritage.

Philosophers such as Henri Bergson and Martin Heidegger have offered influential conceptions of continuity. Bergson posited time not as a sequence of discrete moments but as a continuous, indivisible flow in which memory and change are constitutive. In *Creative Evolution*[2] (1907), he

defined true continuity as self-generated movement, foundational to perception and consciousness. Heidegger, in *Being and Time*[3] (1927), similarly located continuity within the ontological process of becoming, where the past shapes the present and projects toward the future.

Continuity is also culturally constructed. Some societies conceptualize time-event centrically (Kairos), rather than chronological metrics (Chronos), linking temporal experience to environmental or social rhythms.[4]

Continuity has been central to architecture since its origins. In architectural discourse, continuity is expressed both physically—through the layering of historical strata, formal typologies, and material practices—and conceptually, through the transmission of design narratives, planning ideologies, and cultural traditions.[5] As a spatial principle, continuity may be inscribed in elements ranging from minute architectural details to complex urban systems.[6] It thereby offers a framework for integrating heritage, identity, and transformation across time.

In the 1960s, continuity in urban design emphasized physical, visual, and sensory coherence. Thinkers like Jane Jacobs[7] and Jan Gehl underscored the social and ecological value of continuous, layered urban environments.[8] In parallel, ecological planning frameworks (e.g., McHarg's *Design with Nature*) redefined continuity as environmental interdependence. In essence, Ian McHarg's work promoted a philosophy of designing with nature that respected the continuity of ecological processes and advocated for a long-term, adaptive approach to planning and development. McHarg viewed ecosystems as dynamic and constantly changing, not static landscapes to be preserved in a snapshot. His design process accounted for the ongoing evolution of these systems and the impacts of development on those processes.[9]

Currently, continuity is examined at the confluence of historic preservation, urban renewal, and sustainable development. It underscores the role of historic urban fabric in shaping the identity and spirit of place,[10] while addressing the pressing challenges posed by urban densification.[11] Case studies such as Tel Aviv's Dizengoff Square—part of the UNESCO-designated White City[12]—and London's King's Cross district demonstrate how urban regeneration can retain historical structures and spatial configurations while accommodating contemporary functional and social needs. Ultimately, the pursuit of continuity necessitates a careful negotiation between transformation and identity, as well as between spatial coherence and ecological and social integration.

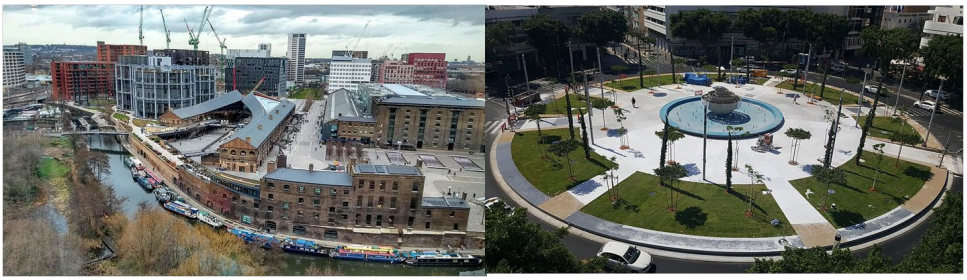

Figure 1. Urban regeneration retains HUL while accommodating contemporary needs. From left to right: Canal side regeneration at King's Cross, 2019, Crookesmoor, *Dizengoff Square, 2018,* Ovedc. *Source: Wikimedia Commons.*

Historic Urban Landscape

The concept of the Historic Urban Landscape (HUL) was initiated by UNESCO and first articulated in the Vienna Memorandum (2005).[13] This approach emerged from the growing recognition that traditional conservation methods—centered on individual monuments—are no longer adequate. In the context of increasing development pressures and globalization, the preservation of historic urban

fabrics requires a more comprehensive and integrated framework. The *Recommendation on the Historic Urban Landscape* (2011)[14] defines the historic urban landscape as a dynamic entity encompassing natural features, physical structures, and intangible cultural elements. The primary objective of the HUL approach is to integrate heritage conservation with the goals of sustainable urban development, to engage local communities in the planning and decision-making process, and to provide tools for the holistic management of historic cities.[15]

THEORETICAL MODEL: CONTINUITY OF HISTORIC URBAN LANDSCAPES IN TIME AND PLACE

This study introduces a synthetic and interpretive theoretical model[16] intended to guide the assessment of historic landscape continuity within the context of urban renewal. Rooted in the principles of the Historic Urban Landscape (HUL) approach, the model engages with the complex interplay of time, place, spatial typologies, and both tangible and intangible heritage values, all examined through the lenses of sustainability and urbanism.

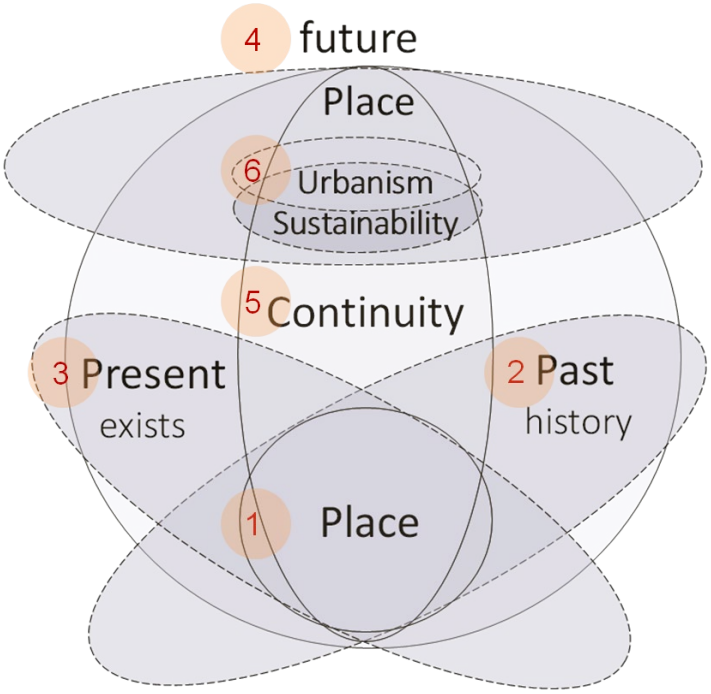

Figure 2. HUL continuity model in the dimensions of time and place. Source: Authors

Entitled *Continuity of HUL in the Dimensions of Time and Place*, the model, as illustrated in Figure 1, and defined in Table 1, incorporates the foundational concept of place alongside the three temporal dimensions—past, present, and future—and their relational dynamics with place. This framework allows for the identification of elements that are preserved and that contribute to continuity.
Finally, the model evaluates how continuity and place qualities intersect with key planning goals—urban livability and long-term sustainability.

<table>
<tr><td colspan="5">continuity</td></tr>
<tr><td colspan="2">Place</td><td colspan="3">Time</td></tr>
<tr><td colspan="2">Open spaces in the fabric of the HUL</td><td rowspan="4">Past

Components
Processes
Characters</td><td rowspan="4">Present

Components
Processes
Characters</td><td rowspan="4">Future

Components
Processes
Characters</td><td rowspan="5">Dimensions</td></tr>
<tr><td>fabric</td><td>The structure and the overall characteristics of the architectural and landscape system in the urban fabric: streets, lots, open spaces between buildings - and the sequence of open public space.</td></tr>
<tr><td>space</td><td>Historic urban landscape formations, natural and man-made typologies and their uses – such as streets, avenues, paths, gardens and pedestrian crossings, visual corridors, and landmarks in the landscape.</td></tr>
<tr><td>Elements:</td><td>Natural: geomorphology, soil, hydrology, drainage, habitat for fauna and flora.
Human-made: tangible human-made elements and their uses cultivated or built elements and their materials, planting.
Intangible such as shared community memory, traditions and social skills, styles and heritage, planning, technologies and narratives.</td></tr>
<tr><td></td><td>The nature of the place in relation to walkability, connectivity, community, mixed uses</td><td colspan="3">urban livability</td><td rowspan="2">Planning goals</td></tr>
<tr><td></td><td>The nature of the place in relation to environmental, economic, and social aspects</td><td colspan="3">long-term sustainability</td></tr>
</table>

Table 1. key terms for the HUL continuity model

Ramat Aviv

Ramat Aviv was established in the early 1960s on the agricultural lands of the abandoned village of Sheikh Munis. Located on the northern outskirts of Tel Aviv, Israel, the 70-hectare residential neighborhood was collaboratively designed by architects Bennet and Perelstein, together with landscape architects Yahalom and Zur. Its design combined Ebenezer Howard's "garden city" concept[17] with the ideal of the "kibbutz garden" and the principles of the modern public housing.[18] The original open space scheme crafted a continuous green fabric that extended from residents' doorsteps through shared courtyards, along pedestrian pathways, and into parks, public amenities, and neighborhood-scale commercial area. The neighborhood has been widely regarded as a planning success and is officially recognized by the Tel Aviv Municipality as an urban fabric worthy of preservation.[19]

As of 2018, Ramat Aviv had a population of 10,170 residents. With a population density of 35 people per hectare, it remains one of the least dense areas in Tel Aviv. However, the 2014 planning policy calls for "developing the neighborhood while preserving its unique character and the principle of common property." This includes promoting residential renewal, increasing housing and population

diversity, intensifying development, strengthening centers of activity, enhancing local commerce and employment opportunities, and improving inter-neighborhood connectivity.
Our research investigated the neighborhood's history, with particular attention to its open spaces, using historical maps, photographs, field surveys, and archival documents. The original design of Ramat Aviv's open spaces established a continuous sequence along a central east–west axis, serving as the neighborhood's primary pedestrian spine. This connected network supports adjacent land uses—including public institutions, commercial plaza, municipal services, and housing—thereby forming an integrated spatial system. A field survey identified six distinct open spaces along this axis, selected for their layered qualities, and including parks, shared residential courtyards, informal green areas (groves), and an urban plaza.

Figure 3. Historical urban landscapes in the Ramat Aviv neighborhood. From left to right, 1958 Ramat Aviv plan, Tel Aviv-Yaffo Municipality, aerial photo, Tel Aviv-Yaffo Municipality GIS website,

In each of these spaces we have identified tangible and intangible components that were preserved along the years and serve in creating the neighborhood's unique identity and charm.

CONTINUITY IN RAMAT AVIV'S OPEN SPACES SYSTEM

Continuity in Ramat Aviv constitutes a complex, multilayered system of components that extend beyond the neighborhood's immediate temporal and spatial boundaries. Sixty years after its establishment, many of the elements embedded by architects Bennet and Perelstein, and landscape architects Yahalom and Zur, have been preserved.

A. Intangible Continuity Components

Notably, it is the intangible elements that most distinctly characterize the neighborhood. These include planning heritage and patterns of spatial interaction, both of which were identified across all open spaces examined.

- **Planning Heritage**: The conceptual underpinnings of Ramat Aviv's design draw from a synthesis of influential models, including the "Garden City" concept, early 20th-century modernist housing principles, kibbutz landscape planning, and the notion of afforestation of the bare landscapes of Israel.
- **Spatial Interaction**: This component reflects the social planning ideals characteristic of the era in which Ramat Aviv was conceived. Interactions occur at multiple scales—from the neighborhood level to the shared courtyard—and vary according to user groups and modes of use. These early Israeli

social values, emphasizing collective life and spatial equity, align with contemporary notions of community resilience and are reflected in planning guidelines that promote gathering, visibility, accessibility, and shade. Currently, the neighborhood's open spaces serve the young families of Ramat Aviv who are gathering around a community garden that they have established, urban nature area, children's playgrounds and crowded urban plaza.

Figure 4. Continuity of local design language in the various uses of Kurkar stone. From left to right, retaining wall, paving and a wall built of processed stones. Pfrom by authors

B. Tangible Human-Made Continuity Components

Physical continuity components are prevalent throughout the neighborhood and contribute significantly to the landscape's character and identity.

• **Spatial Continuity**: Evident in the continuity of drainage systems, pedestrian circulation routes, and sightlines. Spatial connectivity is enhanced by the absence of solid fencing and the integration of green hedges between open spaces and semi-public courtyards. Permeable fencing between public open spaces and public buildings also reinforces this continuity. Although fences were not part of the original plan, their later addition has been implemented in a relatively unobtrusive manner.

• **Materiality**: The consistent use of *kurkar* (local sandstone) and concrete across open spaces defines the neighborhood's design language. *Kurkar* reflects the local material heritage of Tel Aviv, while concrete represents the modernist aesthetic and material constraints of the 1950s. These materials, employed in retaining walls, and paving, create a tangible link between built and un-built environments and contribute to the coherence of the overall spatial fabric.

• **Built-Open Space Relationships and Mixed Use**: Although less widespread, components that integrate mixed uses and articulate relationships between built structures and open public space hold high architectural and landscape value. Public and commercial buildings embedded within open spaces foster a distinctive form of continuity—functional, visual, and social—linking constructed and landscape elements in a cohesive, community-oriented manner.

Tangible Natural Components of Continuity

• **Topography, Terrain, and Ground Cover**: These elements are fundamental to Ramat Aviv's spatial continuity. Although the rapid construction of the neighborhood in the 1950s erased much of the rural legacy of Sheikh Munis lands, the underlying topography, terrain, and natural drainage systems were retained. In addition to enabling pedestrian connectivity, these features contribute to stormwater management and provide habitat for vegetation and wildlife. They are particularly evident in the semi-public parks and shared courtyards, where soft ground cover underscores their identity as green, planted areas, in contrast to the more intensively developed paved plazas. Given that approximately 22% of the neighborhood's land area comprises open space—most of it with soft surfaces—these natural elements significantly contribute to the spatial and ecological continuity of the urban fabric, extending beyond the central open-space corridor.

• **Vegetation**: The extensive planting of trees and shrubs during the neighborhood's establishment forms the foundation of its landscape identity. A spatial survey reveals distinct vegetation typologies between open green spaces and urban plazas. In the former, native groves and understory layers dominate, while plazas are characterized by sculptural trees and ornamental plantings. Lawns, once a prominent feature of public plazas, have been gradually removed and now persist primarily in private residential courtyards.

The next stage in the method assesses the extent to which these continuity components contribute to aspects of the current urban (New Urban Agenda – NUA)[20] and sustainability (Sustainable Development Goals –SDG)[21] agendas guiding urban planning worldwide.

To this end, we evaluated the contribution level of each component in relation to key aspects of sustainability: surface runoff, habitat for biodiversity, and climate mitigation; and in relation to key aspects of urbanity: walkability and connectivity, community life, and mixed uses. See Table 2.

Findings show that:

• Sustainability benefits are greatest in open public spaces with soft ground and vegetation.

• Spaces combining soft surfaces with infrastructure (paths, public buildings) contribute to both sustainability and urbanity.

• Commercial plazas primarily support urbanity.

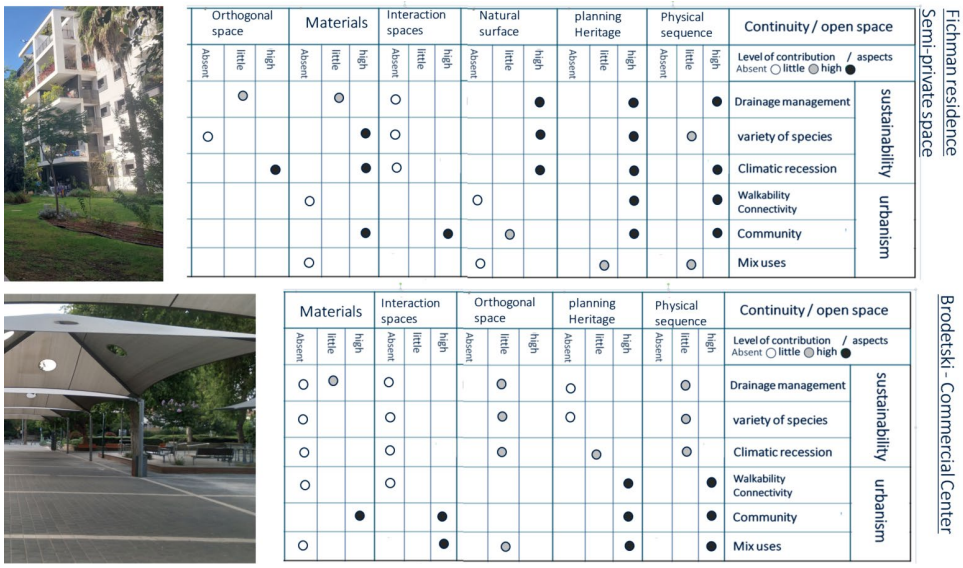

Table 2. Identifying the contribution of the continuity components to sustainability and urbanity.

These serve as the foundation for guidelines integrating the historic urban open landscape into the neighborhood's renewal scheme. These findings were incorporated into existing planning policy documents for Ramat Aviv, which focus mainly on the built fabric. The proposed methodology allows guidelines that balance preservation, adaptive reuse, creativity, and flexibility in planning, maintaining continuity in design language within a local context.

CONTINUITY- CONSERVATION, AND RENEWAL IN RAMAT AVIV – KEY PRINCIPLES

Conservation and renewal processes in Ramat Aviv operate across multiple scales—from the urban system to the neighborhood and individual local spaces and construction details. These transformations unfold both at the level of planning (through policies and legislation) and in actual construction and development practices.

Planning policies play a key role in preserving the neighborhood's character. Currently, they guide future development to align with the original design principles of the early neighborhood scheme. For example, they support the preservation of shared residential courtyards as public pedestrian routes integrated into the broader network of neighborhood pathways. However, alterations resulting from densification, including the construction of underground parking facilities, reduce open spaces and disrupt the balance between built and un-built environments.

Generally, the preservation of the central open-space axis in its original form as a permeable green corridor is intended to protect critical continuity components, such as natural drainage system, spatial connectivity expressed by pedestrian movement and sightlines, social interaction, and planning heritage. The integration of a future metro station at the entrance to this axis is expected to reinforce its role as a dominant pedestrian spine and enhance its function as a vital connector between the neighborhood, Tel Aviv University, and major transportation routes.

Kiosks situated along the main open space maintain the legacy of mixed land uses, fostering everyday social interaction in public spaces.

Figure 5. Kiosks in Ramat Aviv's open spaces. From left to right, a plan for a kiosk, 1963. Source: Engineering Administration, Tel Aviv-Yafo Municipality. Renovated kiosk, 2023, Photo by authors

Preserving local materials—such as *Kurkar* stone and concrete—alongside the existing vegetation is essential for sustaining the neighborhood's material and ecological character.

Finally, maintaining Ramat Aviv's distinct modernist design language remains critical, despite evolving construction technologies and materials.

CONCLUSION

In conclusion, the study suggests that continuity connects the intangible dimensions of time—past, present, and future—with the tangible, physical dimensions of place—fabric, space, and material. This notion of continuity is articulated through a theoretical model and a practical method that enable the identification and characterization of various components in historic open spaces, within the evolving fabric of the city, in terms of sustainability and urbanity.

NOTES

[1] WHITRAP *The HUL Guidebook: Managing heritage in dynamic and constantly changing urban environments.* (Shanghai: WHITRAP, 2016)
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[5] George Kubler, *The Shape of Time: Remarks on the History of Things*, (Yale University Press, 2008)
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[11] ICOMOS, *The Valletta principles for the safeguarding and management of historic cities, towns and urban areas.* (Adopted by the 17th ICOMOS General Assembly, 2011).
[12] Rachel Gottesman and Jeremie Hoffmann, "Actual and intangible in Tel Aviv: A reexamination of conservation strategies in a modern city" in *Reshaping Urban Conservation, The Historic Urban Landscape Approach in Action,* ad. Ana P. Roders, and Francesco Bandarin. (Springer, 2019) 473-482
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RESURRECTED FOOTPRINTS: RE-INTERPRETING LOST HERITAGE IN CONTEMPORARY LANDSCAPE ARCHITECTURE

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INTRODUCTION

Drawing on tangible and intangible heritage, landscape architects reinterpret the footprints of lost historic features to add authenticity to new design interventions, using heritage and memory to build a sense of place in an ever-changing urban landscape. The term '*resurrected footprints'* was coined to describe this observed approach. As an act of remembering, this approach relies on cartographies of the past being drawn up through subsequent layers of urban development with new palimpsest-interpretations of lost or destroyed features. Illustrated with case studies, this paper examines this design phenomenon as a way of acknowledging heritage in contexts where material remains have been lost. Frequently cited as a way of establishing a sense of place, *resurrected footprints* are thought to lend legitimacy to a project because design decisions come 'from the site', but are, by design, often undecipherable in their built form. Are they crude references to old maps with tenuous links between past and present, or subtle invitations to discover a place's story? This paper invites clients and designers to examine why and how lost heritage is incorporated into contemporary urban landscapes.

Pilot Study

"Why does it look like that? … Where do landscape architects get their inspiration, and how do they turn their ideas into built form?" These questions drove a pilot study for a larger piece of doctoral research into the factors influencing landscape architects' design decisions and their interpretation of the site with which they're working. The pilot study analysed a sample of 108 projects selected for Landscape Institute awards over a ten-year period, concluding that the types of projects being commissioned and built is a reflection of cultural, social, economic and political contexts, and that this context shifts over time.[1] The following contextual factors stood out: First, the political arena during the study period produced policy and guidance with an emphasis on being sensitive to the specifics of a site. This manifests in terms of culture, heritage, ecology and sustainability.[2] Second, the proclivity for site-sensitivity is shared by the clients who set the briefs for such projects.[3] Third, being sensitive to the history and heritage of a place is seen as a way of uniting people and place.[4] Fourth, strengthening the links between people and place are considered important social, economic and environmental drivers.[5]

RESURRECTED FOOTPRINTS

Of the 108 landscapes studied, 55 were described as being influenced by the site's history to a greater or lesser extent.[6] Additionally, a novel design approach was identified in 8 of the 108 projects. Although a relatively small proportion (7.4%) of the pilot study, this way of interpreting site history had received relatively little academic attention. A new term '*resurrected footprints'* was coined to describe the approach. *Resurrected footprints* are defined as: **new features within a landscape scheme which trace the outline, or route of a previously buried or destroyed part of the landscape – typically a building, street or watercourse**.[7] The projects outlined here are a mix of those from the doctoral research and subsequent ongoing observations.

Resurrected Waterways

Urban waterways occur frequently as examples of *resurrected footprints* because so many have been lost through the culverting of rivers and streams, and the building of combined storm-waste sewage systems.

Granary Square, London

Townshend Landscape's project at Kings Cross Granary Square in London traces the outline of a former canal basin as revealed in historic Ordnance Survey maps, Figure 1.[8] The shape of the basin is clearly identifiable by a change in paving colour in the plan (right image), although this is less evident when experienced at ground level. To emphasise the site's former use, Townshend have installed *"four impressive banks of fountains, with over 1080 individual jets … the location of the water feature reflects the historic canal basin"*, as shown in Figure 2.[9]

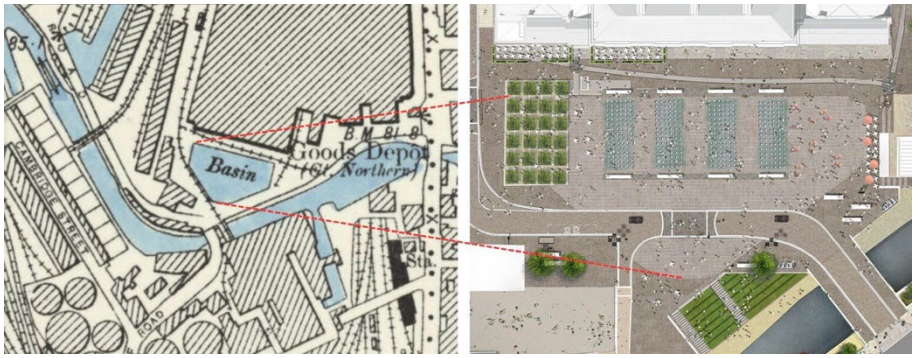

Figure 1. Canal Basin shown on Ordnance Survey 188-1915 map and revealed in Townshend Landscape's design for King's Cross Granary Square. Image credits: (left) National Library of Scotland, (right) Townshend Landscape Architects.

Figure 2. Fountains designed to echo the historic canal basin in Townshend Landscape's design for Kings Cross Granary Square, London. Image credit: Townshend Landscape Architects.

Custom House Square, Belfast

Custom House Square in Belfast is an example of an urban landscape scheme referencing a culverted river flowing beneath the surface. The Paul Hogarth Company installed lines of water jets to trace the path of the culverted Farset River below as it flows into the Lagan River – visible towards the top right of the right-hand image, Figure 3.[10]

Figure 3. Water jets trace and trees trace the line of the culverted River Farset in Custom House Square, Belfast. Image Credit: McAdam Design.

New Marlborough Yard, London

Lost waterways are not always resurrected with new water-features, as shown in Figure 4.[11] PAD Landscapes designed a new thoroughfare which *"expresses the historic river running through the site"* using a palate of grey-toned paving setts to represent the depth and flow of a river channel.

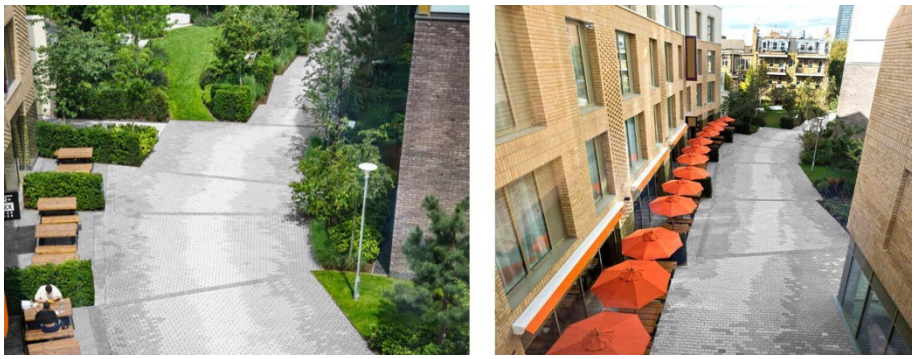

Figure 4. Course of an un-named 'historic river' resurrected with a path of paving setts. Image credit: PAD Landscapes.

Resurrected Buildings and Streets

Demolished structures such as buildings or roads represent a readily accessible source of historical information either published in Ordnance Survey maps, or revealed through archaeological surveys conducted as part of some redevelopment projects. In these examples, the outline of structures are traced in the surface of a new scheme, much like with waterways above, and/or re-interpreted using structural elements in the landscape.

Roman Gardens, Castlefield, Manchester

In these planning application documents, BDP present a landscape scheme which incorporates an interpretation of a portion of Roman road which traverses the site, along with a rebuilt gatehouse, both confirmed by an archaeological survey, Figure 5.[12]

Figure 5. Planning application for Roman Gardens, Castlefield indicating re-interpretation of Roman Road. Image credit: BDP via Manchester City Council Planning Portal.

Priory Gardens, Coventry

The Phoenix Project in Coventry, by Rummey Design, is significant in including two separate examples of *resurrected footprints* when built. The line of the culverted River Sherbourne was traced using blue paving setts inlaid into the footpath, but has now been lost due to subsequent road realignment. Priory Gardens contains a contemporary reinterpretation of a cloister from St Mary's Cathedral, demolished during the Dissolution in the mid-sixteenth century. Contained within a new walled garden, the cloister structure has been recreated using tightly pruned trees, Figure 6.[13]

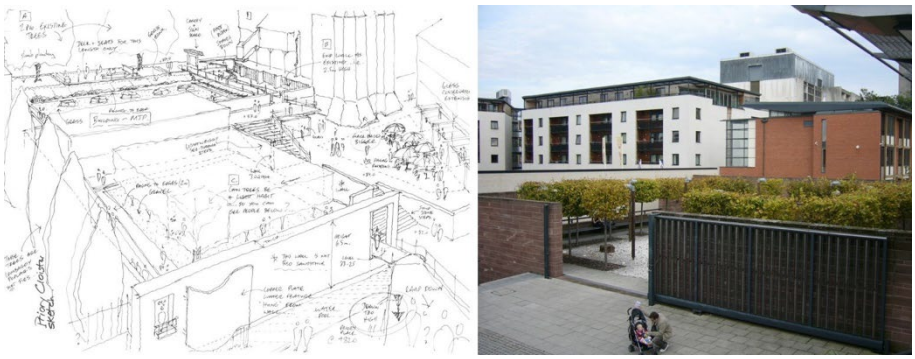

Figure 6. Contemporary reinterpretation of a cloister. Left, illustrative sketch showing Cloister Gardens within the wider Phoenix Project, credit: Rummey Design. Right, Priory Garden, credit: Author's image.

GETTING TO KNOW A SITE

Following the pilot study, interviews were conducted with a sample of landscape architects to understand their site-survey process, and how they use those findings to make design decisions.[14] More than simply seeking to understand a site by collecting data or documenting its appearance, the interviewees expressed that the site-survey was a much richer process. One interviewee, with a background in history described it as *"a deep delving into what a place has to offer"*.[15] All the interviewees spoke about this as a formative part of their practice, although there were differences in the rationale they gave for the process and how they practically approached the endeavour. The most common reason given for seeking to understand a site's character was the idea that there is a need for *"the design to come from the place"* so that projects don't appear to be *"parachuted in from the outside"*. An interviewee from a national advisory body, argued that *"one of the keys to good design must always be that it understands its place … what makes it special and why",* giving a designer a

solid position of knowledge upon which to make design decisions. Closely connected with the idea of fathoming the character of a site is a focus on 'weaving into the story of the site'. One interviewee explained it like this: *"I like to find out the information about the site because it makes it in some way much easier to start weaving a story that people can actually understand and feel something about … The information just starts me thinking, it's simply a starting point."* To varying degrees and in different ways, each articulated how their intervention would somehow interweave with this existing story and shape its future identity. One interviewee said *"when you're dealing with a place, you're dealing with it on borrowed time, and you do need to take responsibility for what you're passing on."*

Interpretating Sites

Kathryn Moore in *Overlooking the* Visual, argues, "However we encounter the site, there are a number of ways to describe it and these are always open to question and subject to change. … any meaning we might glean is dependent on what we know."[16] For most of the interviewees, researching the site is primarily about building a solid foundation of knowledge upon which they can critically assess and begin to make design decisions, as described by this designer: *"I think you have to amass all the information about what was there previously to make a design decision. Well, that's how I, or we, work here. I think it's important that we do that. There's absolutely no point in picking a scheme out of the air without knowing confidently why you've done it. One way of knowing that is looking at historic maps, your history. As teachers always said, 'know your history and the rest will follow'."* Being well informed allows designers to make justified and reasoned design decisions. It allows them to determine the best course of action based on their knowledge and experience to create distinctive, unique places with meaning. One interviewee said, *"we'd like to think that every space actually called for something different, so I think we go in predisposed to want to explore that".*

Connecting People and Place

During these interviews, all the designers spoke about how landscape architecture might be used as a way of connecting people and place, seeking to recreate or strengthen the identity of places which have succumbed to a sense of "placelessness".[17] They do this in three distinct, and sometimes contradictory ways:

Informing People about a Place

One interviewee, a specialist in historic landscapes, said that a landscape architect's role in instructing people about the history of a site *"was the most natural thing to do"* and that even if this did not express itself in a design, *"when you went to the first public meeting, it was bound to come up at some point."* Another interviewee observed that people are *"genuinely interested in the past, and stories of the past, and ways that that can be revealed",* and another suggested that *"I think in bygone times people were much more connected with their past and the rate of change was less. As the rate of change increases, I think people need to understand why their place is like it is."*

When using landscape architecture to inform people about a site, the interviewees were not necessarily attempting to 'instruct' the public about the history of a site per se, rather they are using references from its past to prompt curiosity, and in so doing facilitate a connection with the place in some (often vague, speculative) way. When asked about the *resurrected footprints* approach, interviewees largely expressed the opinion that these features don't have to be legible to be valid, suggesting that their design legitimacy stems from 'coming from the site's physical past' (as revealed by archaeology or historical map) rather than being 'invented' by the designer.

Facilitating Experiential Connections

When questioned, all the practitioners stated that the historic associations of a *resurrected footprint* feature were secondary to its function in a contemporary landscape project. As landscape architects, these designers might employ elements from a place's history as devices to generate from, but they are principally concerned with creating landscapes which people experience, rather than signposting historical events. This is summed up by one designer who argues that *"in the end, ideas do not make the place. It's a physical art form. A physical design. It's about what people see and touch and smell, and that's what makes the place – not the narrative, not the history."*

A few designers pointed out that there were different ways of presenting historical information uncovered during the site-survey process. In almost all cases the interviewees made it clear that any design solution should work as a built project, even if its function as an historical reference is illegible to the average site user. For example, this interviewee reflects: *"It's not a book, it's a landscape and each medium has its own way of making you feel and think, and landscape isn't a written medium, it's an experiential medium."* Another interviewee expressed it more passionately: *"I don't think you need a narrative. I don't think it's even important that people understand the narrative – I really don't. It's not important that anybody 'gets it'. I don't care. What I do care about is whether they somehow like the space, they intuitively get it – it feels good to them and it looks like it would be fun".*

All the landscape architects who spoke about their own designs were most animated when describing seeing people experiencing and connecting with their schemes as part of their everyday lives.

Meaningful Grounding in Time and Space

The interviewees described how landscapes can somehow give people the sense that they are part of something much larger. This is akin to the idea that landscape architects have the ability to weave their work into a site's ongoing story and thus enable people to see that they have a place in this continuum. To the extent that it is easier to grasp the past than the future, the most common way these designers facilitate this grounding in time is by utilising a site's history, including, but not limited to, the use of *resurrected footprints.* Further, by anchoring a place to its past, a number of interviewees argued that it could help ensure that people will continue to connect with the site into the future, ensuring its *"social sustainability"* as one practitioner put it. Another designer described this process as *"looking forward to how you best use open space within the city as well as looking back at what makes it resonate with people.*

INTERPRETIVE ACT OF REMEMBERING

As an act of remembering, the *resurrected footprints* approach relies on cartographies of the past being drawn up through subsequent layers of urban development into the contemporary public realm with new palimpsest-interpretations of lost features. It is a very specific way of acknowledging heritage in contexts where material remains have been lost by subsequent waves of development. Before the commencement of this research, it was assumed that the *resurrected footprints* approach was primarily based on informing people about history so they would grasp a connection to the landscape through an appreciation of their place within a site's historical timeframe. However, the interview data suggests that connecting people to place is not primarily about a connection with history - although this is an important aspect for some interviewees. It is clear from the interviews that connecting people to a place must be authentic, which many practitioners understood to mean that design inspiration must come from the site rather than being "*parachuted in*" as one stated. Despite 'coming from the site' resurrected footprints are, by design, often undecipherable in their built form, when experienced with no prior knowledge of their design. With little or no interpretation, many resurrected footprints remain obscure. Interviewees made it clear that the point of these references

was less about being an historical lesson, and more about functioning as ‘easter-eggs’ within their designs, with extra layers of meaning for those who wanted to explore that facet of the site.

CONCLUSION

Within the pilot study it was rare to find examples of designers explaining their creative process or where their inspiration came from. *Resurrected footprints* were an exception to this trend, offering an insight into the design process and being noteworthy because the designers used the opportunity to explain how this approach gave their scheme – and its users – a sense of historic continuity, cultural identity and design richness. It also demonstrated that interpreting a site in its context is a creative act, not merely a process of recording information and presenting it un-modified.

Furthermore, it became clear that as a form of historic material evidence, a site is not objectively neutral, in contrast to how the site-survey process is often portrayed.[18] A site’s history is just one element within a wider context of factors that shape how sites are understood. Designers approach and treat sites differently according to the context in which they are working. Sites are infinitely complex and ambiguous.

As a theoretical approach, *resurrected footprints* make the invisible past visible, acknowledging what has been lost as a way of connecting people with a place across time. Whilst not intended to be didactic, in practice they nevertheless present opportunities to subtly invite curiosity in a place, and, when revealed, can provide surprising insights into the story of a place. Does it matter that some examples are so subtle as to be almost undecipherable without explanation? Perhaps not, especially if that was not the designer’s intent. *Resurrected footprints’* ‘effectiveness’ as historic references should not be measured according to their legibility because this is often a secondary concern. Instead, these design devices should be seen primarily as inspirational tools for landscape architects. They help give form to landscape schemes, aid project narratives, lend legitimacy to design decisions, persuade clients and communities, and add layers of meaning and richness to a project. As long as the design meets its brief, discovering the meaning of a resurrected footprint is an added bonus. Being aware that the built environment has meaning and symbolism beyond its face-value presents a subtle invitation to discover hidden stories and strengthen the connection we have with a place.

NOTES

[1] The published pilot study examined project from 1993 to 2003: Alex Albans, “Site Seeing: Interpreting Site in Landscape Architecture” (2016). Further (unpublished) research was conducted from the same journal from 2003 to 2023. Journal of the Landscape Institute Award Issues: 1993 to 2013 physical publication. Digitised from September 2013 onward, available at https://issuu.com/landscape-institute.

[2] Including, but not limited to: Commission for Architecture and the Built Environment (CABE), “Green Space Strategies” (London: CABE, 2004).; Department for Communities and Local Government (DCLG), “Planning for the Historical Environment” (London: HMSO, 2010).; Department for Transport, Local Government and the Regions (DTLR), “Green Spaces, Better Places” (London: DTLR, 2000).; Landscape Institute, “Green Infrastructure: An Integrated Approach to Land Use” (London: Landscape Institute, 2013).

[3] Alex Albans, “Site Seeing: Interpreting Site in Landscape Architecture” (PhD Thesis, 2016), https://www.open-access.bcu.ac.uk/6891/.. See also Robert L. Ryan, “Research in Landscape Architecture Design Firms,” *Landscape Journal* 42, no. 2 (November 1, 2023): 129–44.

[4] Conceptions of *place* are contested – see Tim Cresswell, *Place: An Introduction*, 2nd ed. (2004; repr., Chichester, West Sussex; Malden, Ma: John Wiley & Sons, 2015). The link between people and place is consistently incorporated into definitions of *landscape* – see Council of Europe, “Council of Europe Landscape Convention (ETS No. 176),” 2000.

[5] For example: Landscape Institute, “A Landscape-Led Approach to Development,” *Landscape Institute*, accessed August 1, 2025., or, English Heritage, “Heritage Champions Handbook,” *Historic England*, May 18, 2016.

[6] Of 108 projects studies, 55 (50.9%) were influenced by the site’s history according to the project designer or critic/commentator. Alex Albans, “Site Seeing: Interpreting Site in Landscape Architecture” (PhD Thesis, 2016), https://www.open-access.bcu.ac.uk/6891/.287.

[7] Albans, *Site*,79.

[8] Ordnance Survey map, National Library of Scotland, “Georeferenced Maps Viewer - Map Images - National Library of Scotland,” Maps.nls.uk, 2024, https://maps.nls.uk/geo/explore/#zoom=15.0&lat=51.53090&lon=-0.12300&layers=6&b=ESRIWorld&o=100. Granary Square plan, Townshend Landscape Architects, “Townshend LA - Granary Square, King’s Cross,” townshendla.com, accessed August 1, 2025, https://townshendla.com/projects/granary-square-kings-cross-62/.

[9] Townshend Landscape Architects, “Townshend LA - Granary Square, King’s Cross,” townshendla.com, accessed August 1, 2025, https://townshendla.com/projects/granary-square-kings-cross-62/.

[10] The Paul Hogarth Company, “Custom House Square - the Paul Hogarth Company,” The Paul Hogarth Company, accessed August 1, 2025, https://paulhogarth.com/custom-house-square/. Image credit: McAdam Design, “Custom House Square | McAdam Design,” McAdam Design, 2025, https://www.mcadamdesign.co.uk/projects/custom-house-square.

[11] PAD Landscapes, “PAD Landscapes,” PAD Landscapes, accessed August 1, 2025, https://padlandscapes.com/projects-1#/new-marlborough-yard/.

[12] Manchester City Council, “Planning Application, Roman Gardens Castlefield Manchester,” Manchester.gov.uk, 2023,https://pa.manchester.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=RQ10KTBCHK700.

[13] Rummey Design, “Coventry Phoenix Initiative | Stirling Prize Award Shortlist — Rummey Design,” Rummey.co.uk (Rummey Design, n.d.), https://www.rummey.co.uk/project/coventry-phoenix-initiative.

[14] Methodological rationale for the interviews: Alex Albans, “Site Seeing: Interpreting Site in Landscape Architecture” (PhD Thesis, 2016), https://www.open-access.bcu.ac.uk/6891/, 101.

[15] All interview quotes are anonymised in line with the ethical approval granted by Birmingham City University for the PhD research. For this reason, illustrated examples of *resurrected footprints* are set out in a separate section in this paper, and are drawn from a mixture of those designed by interviewees quoted herein, and other examples whose designers were not part of the doctoral research.

[16] Kathryn Moore, *Overlooking the Visual : Demystifying the Art of Design* (Abingdon; New York: Routledge, 2010), 84.

[17] Edward Relph, *Place and Placelessness* (London: Pion, 1976).

[18] Moore, *Overlooking*, 76.

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A STUDY ON CONSERVATION OF HISTORIC VILLAGES AS "LIVING HERITAGE"

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INTRODUCTION

"Historic Villages of Shirakawa-go and Gokayama" are in a mountainous region that was cut off from the rest of the world for a long period of time. These villages have the Gassho-style houses, hereinafter Gassho houses, with their steeply pitched thatched roofs subsisted on the cultivation of mulberry trees and the rearing of silkworms. The villages are inscribed on the World Heritage List in 1995 as outstanding examples of a traditional way of life perfectly adapted to the environment and people's social and economic circumstances. However, the social change from the feudalism to capitalism requires careful examination in the context of the village's existence to ensure the continuous protection and conservation of its identity. It could be said that the essences are not merely the engagement between the residents under capitalism and the village, but rather the spatial system of villages that was established during feudalism.

The study focuses on Gokayama, Ainokura and Suganuma villages, where issues related to vacant houses and succession are becoming increasingly apparent. Although some houses and farm storage houses, which are no longer in use today, are increasing, as a World Heritage Site, it is necessary to ensure that these houses are maintained. The challenge of a declining population and the difficulty of finding a solution within the community may require a rethink of the approach to their conservation. This study, updated the author's doctoral thesis, [1] examines how these changes threaten the fabric of historic villages and question whether preservation methods adequately address modern challenges as "living heritage."

Origin of the villages

Gokayama had 70 villages since the Middle Ages and was under the control of the Kaga clan during the Edo period (1603-1867). The system of dividing and owning village's harvest was named 'the basic form of private ownership in village society during the feudal era.' [2]

Ainokura and Suganuma villages were two of such 70 villages in Gokayama. In 1838, Ainokura's village tax was 121.271 koku, which was relatively high compared to other villages, average of 85 koku, and Suganuma's one was 53.951 koku, which was relatively small. There was also a large gap between the upper and lower families. In Ainokura, the difference between the richest and poorest farmers was enormous, with the difference about 200 times in 1871. There were also differences in wealth among the farmers in Suganuma, but they were not as great as those in Ainokura in 1871. [3]

The Meiji era was as the origin of the emergence of 'private property systems, class structures based on wealth, economic disparities between household heads and family members, and various other

class-based or hierarchical social structures within village societies.' With this Meiji Restoration, 'the land corresponding to the owned harvest' changed to 'the villagers' own land.' [4]
Almost all villagers of Ainokura (except for two families) and all Suganuma villagers are descendants with this historic background, and they carry on their ancestors' land and the spirit of their village community.

Gassho houses

Gassho houses are generally defined as thatched houses with gabled roofs that use a truss structure called 'Sasu', in which two logs are crossed at the top of the roof and inserted into both ends of the beam. This design makes active use of the interior space under the roof, used as a place to raise silkworms.
Gassho houses are characterized by a structural feature called the 'Usubari.' The Usubari is a beam located at the base of the triangle that forms the Gassho-style. The square part where people live and the triangular part that supports the roof are structurally and spatially separated by the Usubari. The framework was bult by the carpenters, and the roof frame was built and thatched by a collaboration of the villagers. They had been replacing thatched roofs through these traditional customs of mutual aid called 'yui' and 'kouryaku,' [5] (Figure 1)

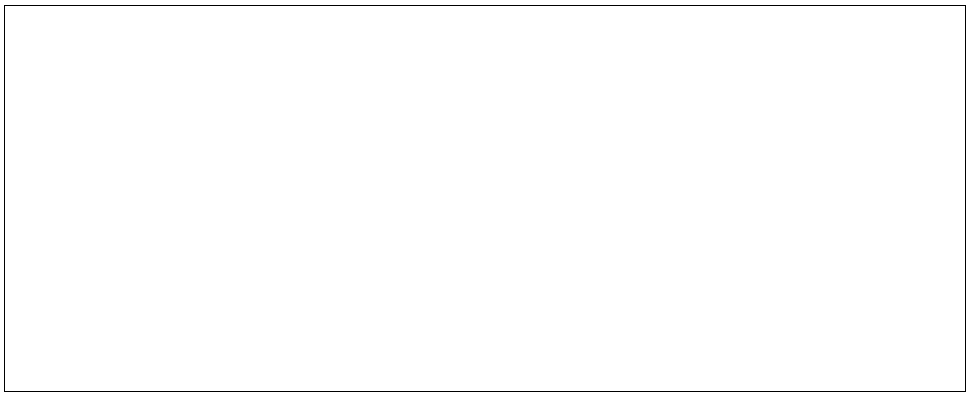

Figure 1. Section (left) and Photo (right) of Habake Gassho house [6]

HISTORIC SITE

Gassho houses are considered to be extremely rational constructions due to their steep thatched roofs, large gabled structures, extensive use of natural wood and diagonal beam reinforcement. They were firstly evaluated by the nationwide survey in 1950's under the Cultural Properties Protection Committee. The survey reported that the total 361 Gassho houses were in Gokayama in 1956. [7] In 1958, three Gassho houses in Gokayama, not in Ainokura and Suganuma, were designated as important cultural properties.
However, the modernization affected people's lifestyle, and the gassho-style roofs, which required a lot of work to replace the thatch, were replaced with tile roofs, and Gassho houses disappeared from 1950 to 1975 during the Japanese rapid economic growth. Under these circumstance, Ainokura and Suganuma villages, which relatively kept their lifestyle in Gassho houses, were designated as a historic site under the law of the cultural properties in 1970. This was the beginning of preservation of historic villages in Japan. [8]
According to the records of the investigation in 1966 conducted in Ainokura by the Taira Village Board of Education, the Toyama Prefectural Board of Education, and the Cultural Properties Protection Committee, the location of 'Kayaba', the thatch cultivation site, has been asked

repeatedly.[9] The historical site application documents also made special mention of 'the size of snow-retaining forests' and the 'size of the thatched roof area.' When examining the land use categories, they were divided into 11 types: residential land, rice fields, farmland, miscellaneous land, ponds, cemeteries, crematoriums, roads, wilderness, forests, and protected forests. During the survey at that time, no specific investigations were conducted on the Gassho houses. Instead, the approach was to designate areas related to the lifestyle of the village as a historical site, considering the characteristics of the Gassho village. (Figure 2)

Since the establishment of preservation on the district of groups of traditional buildings in 1975, no other historic villages have been designated as a historic site. The preservation of villages in Japan has shifted from preserving the land use which reflects on their lifestyles as a village to preserving groups of traditional buildings. When they were nominated as a World Heritage Site, the preservation district for groups of traditional buildings was also applied to them, in line with Shirakawa-go's status.

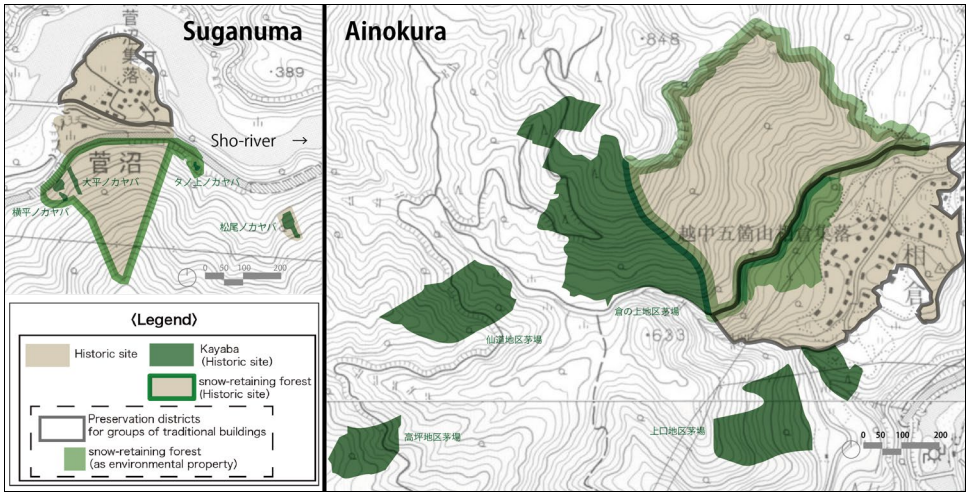

Figure 2. Delineations of a Historic site, Sunganuma (left) and Ainokura(right) [10]

Measures for preservation

The measures for preservation actually began in 1966, when the site was provisionally designated as a historic site. Due to above mentioned Gassho's characteristics, they require relatively frequent repairs. The annual preservation, repair, and management project has focused on re-roofing Gassho houses, repairing houses, and installing disaster prevention facilities, with financial assistance from National, Prefectural and Municipality. When it was necessary, vacant houses and their land were purchased. In both villages, 14 houses, including 13 Gassho houses, and some warehouses are now public property.[11]

In parallel with them, changes since designation have also been made in response to the demands of the times, such as renovations and additions due to changes in household composition, installation of outdoor facilities to improve the living environment, and paving of roads and residential areas for the convenience of private cars and snow removal. However, it has made efforts to preserve the basic elements as the historic village.

Thatching replacement

When the historic sites were designated, thatching by residents was conducted in Ainokura, while thatching by the local forestry cooperative was the norm in Suganuma. Due to subsequent social changes, thatching by residents in Ainokura have ceased, and today, the forestry cooperative is the

only organization that continues to carry on the tradition. However, there are differences in opinion and understanding between residents and craftsman, seven employed craftsmen as of 2020, regarding thatching techniques, and it has been pointed out that even Ainokura and Suganuma had different methods of thatching, raising concerns about changes in traditional techniques over time. [12]
The figure 3 shows the cycle of thatching replacement of A's house from 1975 to 2025. The thatched roof was initially divided into six sections, and the area replaced at one time was small, but since around 2000, one side of the roof has been replaced every 15 years. [13]
This is thought to be due to the efficiency gains achieved by outsourcing the work to the forest cooperative, which covers high-altitude work requiring temporary scaffolding and provides labor accident insurance as an employee.

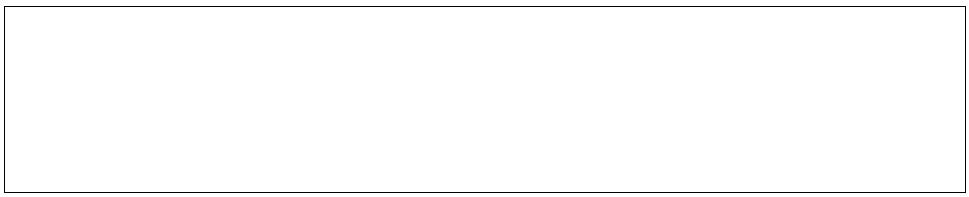

Figure 3. The cycle of thatching replacement, A's Gassho house

Thatch production

The use of local thatch in Gokayama on roofs is essential to the authenticity of Gassho houses and must be preserved. Thatch production accounts for approximately 67% of the annual demand. [14] The Table 1 shows the cultivation amount by cultivators. Noteworthy, in Ainokura, some residents of Gassho houses manage their own thatch fields, even though this practice has been discontinued in Suganuma. There are concerns about the future of Ainokura due to the ageing population, generational change, and the transfer of management techniques. [15]
In the future, technology and indigenous customs are likely to become increasingly formalized, leaving only the fact that some of the materials are made in Gokayama.

Table 1. Total production of Kogaya in Ainokura and Suganuma. unit: one bunch (diameter 25 cm) [16]

Permission to change

Before the historic site was designated, Ainokura, which had witnessed the burden on owners in maintaining the Gassho houses designated as important cultural properties, had residents who were not entirely positive about the designation as a historic site. The government-led preservation efforts were met with fierce resistance from Ainokura. Records of repeated exchanges between Ainokura residents and the Cultural Property Protection Committee remained.[17] The content can be summarized in the following two points. 1) In response to requests to rebuild Gassho houses, permission was granted to relocate Gassho houses to other residential sites within the village and rebuild them, i.e., construct new buildings. 2) In response to the difficulty of modifying Gassho houses, permission was

granted to construct or renovate annexes, provided that such modifications were necessary to maintain the family's livelihood in light of changes in family circumstances.
Compared to the traditional approach of preservation to remains as a historic site, this approach sought to strike a balance with ‘living historical sites’ while responding flexibly. Three key points emerged as strategies for addressing change: ‘residential sites as remains,’ ‘relocation to the remains,’ and ‘tolerance toward buildings other than Gassho houses.’

After designation

The main contents of the change application are measures to prevent landslides, tree felling to prevent contact with power lines due to tree growth, and other measures related to the natural environment and fire prevention, which are mainly concerned with the safety of the entire village. Next are road-related projects such as widening and paving of roads such as highways and farm roads. There are also examples of households not facing the road paving the entrance to their houses. On the other hand, all rejected applications were related to Gassho houses. For applications involving Gassho houses, the proposed changes included the installation of verandas or entrance canopies. Additionally, among individual applications, changes to annexes were common. Some involved new construction due to rebuilding, and there was a tendency to permit changes to annexes as a somewhat lenient approach to the restrictions on Gassho houses.[18]
After designation, it was found that most of the changes were related to safety measures and road widening or pavement improvements. Approximately one-quarter of the changes were related to Gassho houses, but there were few changes to houses that were currently inhabited, and the changes were relatively minor, such as adding an extension to the veranda or adding a small roof to the entrance, thereby maintaining the state.

CHANGE OF GASSHO HOUSES

The population of Ainokura was 121 in 1970, 90 in 1995, and 50 today, and Suganuma's population was 42 in 1970, 40 in 1995, and 27 today.[19] The current population of Anokura is 34% of what it was when it was designated as a historic site, while Suganuma has a population of 64%.

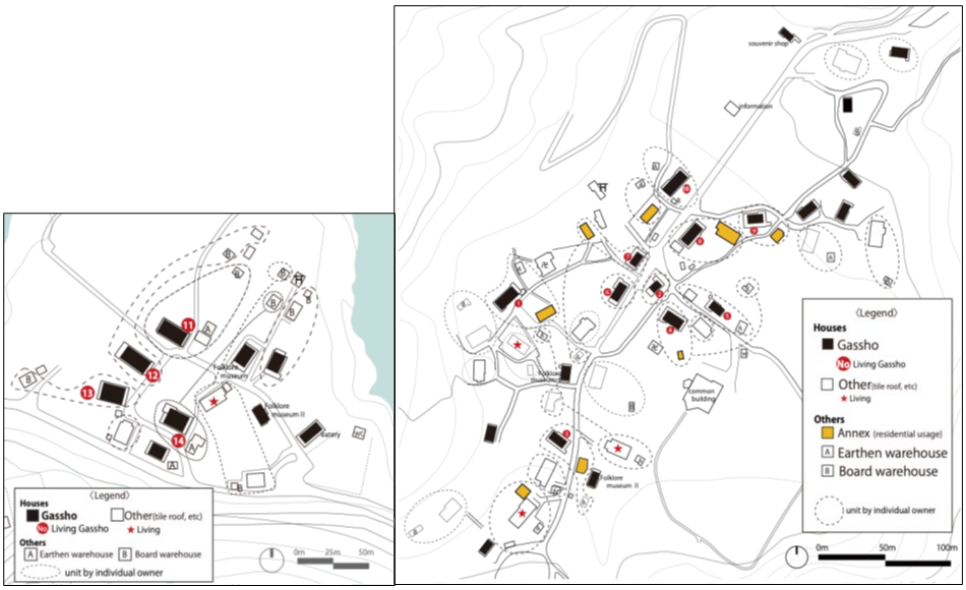

Figure 4. Usage status of buildings in Suganuma (left) and Ainokura (right), as of July 2025 [20]

Inevitably, as the population declines, the number of vacant houses and abandoned farmland increases. It can be said that Ainokura faces more sever declining issues. In Ainokura, 10 Gassho houses are used as residences, living Gassho houses. The rest include one privately owned house outside the village, two museums and one store managed by Nanto City, one short-term accommodation facility owned by a company related to the village residents, and five vacant houses that are rarely used except for exhibitions and meetings. In Suganuma, there are nine houses, four of which are living Gassho houses. The remaining houses include one privately owned house outside the village, two folk museums, one store, and one company office for the village residents, are managed by the city of Nanto.[21] (Figure 4)

Transition of Gassho houses

This study examines the addition to Gassho houses built in the early Meiji period, one of the oldest Gassho houses in Suganuma, from two perspectives: the preservation of traditional plans and adaptation to modern lifestyles. The 1897 survey included details of the plan, and it was confirmed that the plan was almost identical to the plan in 1996 (Figure 5). This is an example of a Gokayama Type II house with an added tatami room to increase the number of rooms. The addition of a waiting room for monks next to the Buddhist altar and an entrance, which are common in large Gassho houses, can be seen in later years. Although this entrance is rarely used nowadays, the use of the Buddhist altar and tatami room remains unchanged, along with the continuation of beliefs and shrine rituals.

The earthen space has been converted into a utility area and storage space, and the main renovations after the designation as a historic site have centered on this space.

The plan in 1996 shows an extension of the passageway on the east side and an extension of the bedroom. This extension was built to provide a separate room for a young couple and was apparently common in the 1950s. It was also common to build a stairwell and renovate the second floor to create children's rooms (in koyagumi as shown in Figure 1). From the above, the addition of a Buddhist altar room and both veranda and passageway extensions, as well as the creation of independent private rooms utilizing the passageway, can be confirmed. The plan reflects a flexible adaptation to changes in times.

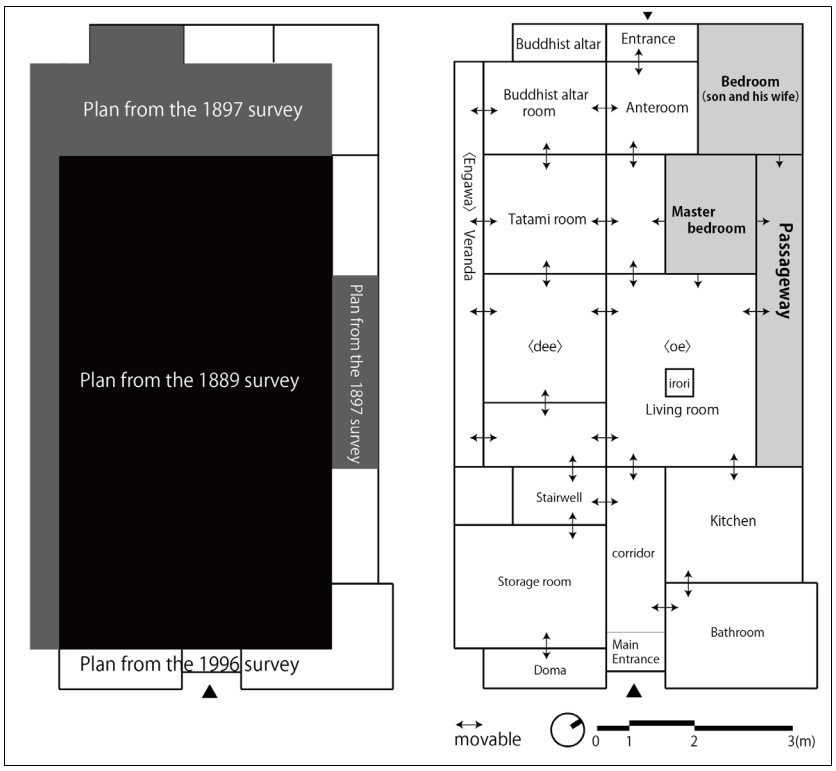

Figure 5. Shift of extension(left) and Plan in 1996(right), K's Gassho house in Suganuma. [22]

Living Gassho houses

This study focused on the 14 living Gassho houses and their annexes that are currently used as residences in both villages and investigated their current uses and lifestyles. The renovation and expansion of the Gassho houses vary depending on individual circumstances, but the same trends can be seen. Currently, more than 70% are dual-purpose residences that also serve as tourist accommodations. There are no major differences between residences that also serve as guesthouses, except for the improvement of water facilities, but the store spaces of residences that also serve as stores show many new elements. Ancillary buildings include board warehouses separated from the Gassho house, relatively new earthen warehouses near the main house, storage facilities, former workshops, and former garages.

Figure 6 shows each Gassho house and its annexes. All, except No. 2, have annexes in Ainokura (No.1-10), such as board warehouses and earthen storehouses. Board warehouses are located slightly away from the main houses, while earthen storehouses, which were built more recently, are located close to them. Additionally, in many cases, the presence of detached buildings with some residential use has been confirmed.

Figure 6 also shows the Gassho houses and outbuildings of each in Suganuma (No.11-14). Specifically, due to Suganuma's unique natural environment, located at the bend of the Sho River, the storehouses were separated from the houses as a fire prevention measure. [23] Consequently, except for recently constructed earthen warehouses and garages, all structures in Suganuma were separated from the house and arranged in clusters. None of the annex houses have been seen in Suganuma.

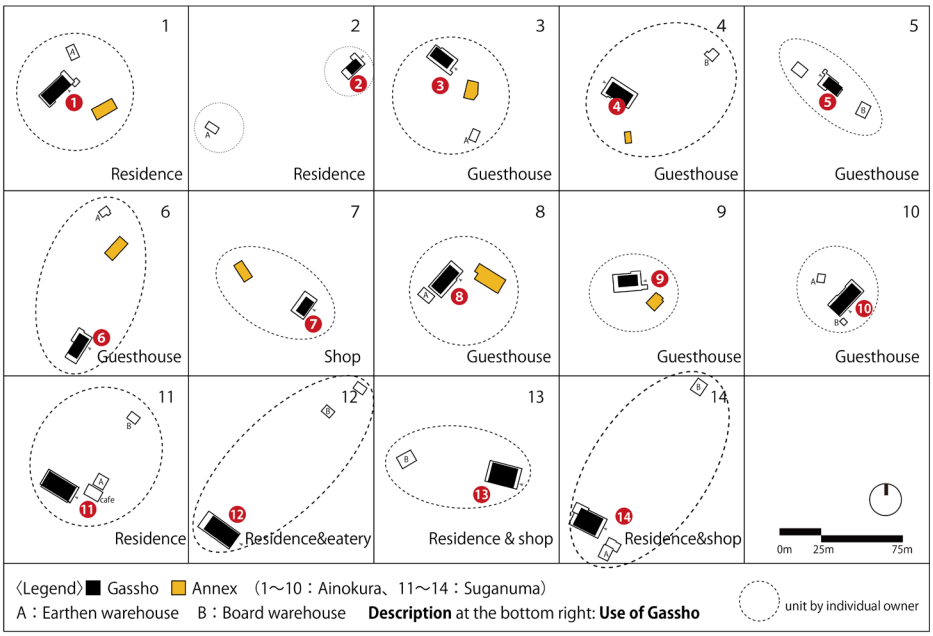

Figure 6. Usage of Living Gassho Houses as of July 2025

The difference between Ainokura and Suganuma lies in the presence or absence of examples where outbuildings have been renovated or newly constructed as detached residential buildings. Especially in the case of guesthouses, the traditional layout of the 'dee' and zashiki spaces are used as guest rooms. For families with two or more households, young couples and children's rooms are secured in the detached buildings, and this lifestyle has been maintained.

As above mentioned, located at the bend of the Sho River, where farmland was limited, and due to land use restrictions, it was not possible to construct new annex buildings on farmland in Suganuma. This disadvantage for families with two or more households operating guesthouses is estimated to be one of the reasons why there are no guesthouses in Suganuma today.

It has been found that restrictions on land use imposed by historic site designations regulate traditional land use in villages, resulting in differences in adaptability in securing living space, which in turn affects the tourism industry in the villages.

A CONSIDERATION TO SPACE

With the increase in vacant houses and fallow land, changes are also occurring in the structure of the village. Taking the small hill near the Museum 1, vacant houses are also noticeable on the slopes leading to the mountains, and the houses along the motorway are also divided into two large areas.

The recent climax period in Ainokura was around 1925. Seven houses that had established branch family can be confirmed. Looking at the changes since 1887, while the number of split-off households increased significantly, the relocation of other households can also be confirmed. Records from around 1980 showed that there were many vacant houses on the outskirts of the village. [24] While there was a noticeable decrease in the number of branch families, there was no change in the number of main families that had branch families. Even in 2025, there has been no change in the number of main families. From this perspective, it can be said that the hierarchy that existed before is still being carried on.

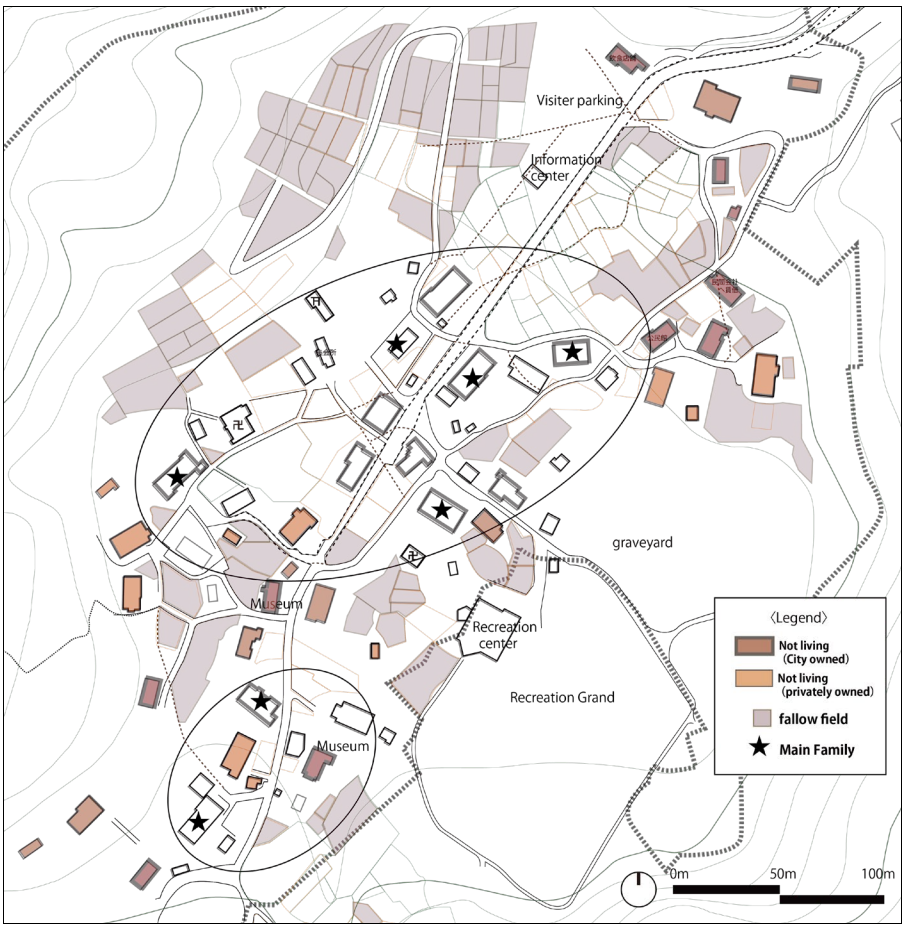

Figure 7. Ainokura, as of July 2025 [25]

CONCLUSION

The social change from the feudalism, when the villagers lived in a traditional way perfectly adapted to the environment and their social and economic circumstances, to capitalism requires careful examination in the context of the village's existence to ensure the continuous protection and conservation of its identity. It could be said that the essences are not merely the engagement between the residents under capitalism and the village, but rather the spatial system of villages that was established during feudalism. What most profound is that this spatial system including the arrangement of houses by which the village was determined is still effective– as illustrated in Figure 7.

In these circumstances, the preservation methods of the historic sites in Ainokura and Suganuma address modern challenges as "living heritage" in a flexible manner. Three key points: "residential sites as remains," "relocation to the remains," and "tolerance toward buildings other than Gassho houses" have addressed changes for half a century. The restrictions on land use regulate traditional land use in villages, resulting in differences in adaptability in securing living space, which in turn affects the tourism industry in the villages.

In addition to the fact that most gassho houses are not used purely as a house, the formalization of traditional techniques and customs, such as thatching roofs and farming methods, threatens the fundamental spiritual foundation of historic villages. As a result, this will only leave the material aspects alone, which is unfortunate. It is necessary to pay more attention to the residents to keep this historic site as living heritage, where the spatial system is still effective, with their hands.

NOTES

[1] Tomoko Mori, *The study on the conservation method of villages based on 'Oaza,' focusing on the peculiarity of the historic preserved villages, Ainokura and Suganuma, and their surrounding villages in Gokayama,* (Tokyo: the Doctoral thesis from the University of Tokyo, 2013).
[2] Renkichi Kodera, *The Transformation of Sho-river Gorge: The Past and Present of Gokayama of Etchu*, (Kyoto: Minerva Shobo, 1963), 85.
[3] Villages of Gokayama, *List of various items belonging to farmers exempt from taxes in the villages of Gokayama* (official document, 1871) Toga community centre collection.
[4] Renkichi Kodera, *The Transformation of Sho-river Gorge*, 86.
[5] Gassho-style Village World Heritage Commemorative Project Executive Committee, *World heritage the historic villages of Shirakawa-go and gokayama, traditional houses in the Gassho Style* (Yamaguchi: Shumposha,1996).
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[12] Nanto City, *National Designated Historic Site* 2020, 70-71.
[13] Nanto City, *Management data for re-roof*
[14] Nanto City, *National Designated Historic Site* 2020, 71.
[15] Nanto City, *National Designated Historic Site* 2020, 70-71.
[16] Nanto City, *National Designated Historic Site* 2020, 71.
[17] Cultural Properties Protection Committee, *Records of exchanges*, the Nanto City Board of Education Collection.
[18] Nanto City Cultural World Heritage Division, *File of application for changes.*
[19] Nanto City Cultural World Heritage Division, *Nanto City's data, Ainokura and Suganuma*, as of July 2025.
[20] The author updated the maps from Mori (the Doctoral thesis from the University of Tokyo, 2013).
[21] Nanto City, *National Designated Historic Site* 2020, 13.
[22] Kami Taira Village, *House investigation records, Suganuma*,1889, Nanto City Board of Education Collection. Kami Taira Village, *revision House investigation records*, *Suganuma, 1897,* Nanto City Board of Education Collection. Kami Taira Village Board of Education, *The report for the management plan in Suganuma village,* (the board of education in Kami Taira village, 1996) 45.
[23] Tomoko Mori, *the study on the conservation method of villages based on 'Oaza',* 171-173.
[24] Tomoko Mori, "*The spatial composition of a mountain settlement through its formative process in modern times, focusing on the relationship between a water system and a village community in Ainokura, Gokayama,"* Journal of architecture and planning, AIJ, 79 (706), (2014): 2671-2678. doi: 10.3130/aija.79.2671
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RECORDS OF CHANGE AND RESISTANCE AT THE AYLESBURY ESTATE AND BURGESS PARK (SOUTH LONDON)

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INTRODUCTION

The Aylesbury Estate is a vast brutalist housing scheme in South London, sitting next to Burgess Park and created in complementarity to it in the context of the Welfare State. Both were developed after clearing densely populated urban areas in the mid-twentieth century. After a few decades, these sites are again subject to a major urban transformation process. Burgess Park's palimpsest-like array of incomplete erasures and unfinished projects was recently flattened into a simplified scheme seeking for greater coherence and legibility, whilst the Aylesbury is undergoing a phased regeneration (meaning demolition and replacement), implying dispossession and displacement of vulnerable people, and environmental damage due to demolishing to build anew.

A market-driven process of large-scale urban transformation results in a loss of diversity and richness in both the spatial and sociocultural fabric of the city. But there is a response. This paper focuses on one particular flat in Wendover, one of the Aylesbury's high-rise slabs, where former tenant and activist Aysen Dennis lived since 1993. Artists and activists collaborated in adapting their flat into a free exhibition space accounting for Aysen's life leading community efforts to challenge the estate's regeneration since 1999. Different artworks featured throughout the flat whilst she kept on making her daily life until shortly before being relocated in 2023. Visitors learned about the struggle of vulnerable people against gentrification, socially unjust and unsustainable urban regeneration of the Aylesbury.

The flat and exhibition's 3D laser scanning record is the basis of a virtual exhibition that will extend the memory and message of an architecture currently concealed to its people and at risk of disappearance. By intersecting art and urban heritage, this digital vessel reflects both the fragility of the building and the life it supported, amplifying the voices against the city-making model and social and cultural stigma pushing for its replacement.

RECORDS OF URBAN CHANGE: TWO SIDES OF A SHARED HISTORY

The most pressing issues of the on-going regeneration of the Aylesbury involve gentrification,[1] the displacement of people and the dismantling of community networks,[2] greatly affecting vulnerable minorities,[3] and impacting the once richer sociocultural diversity of the area. From the perspective of urban culture, Ben Campkin notes that popular media, although not grounded in reality, help to consolidate a "sink estate" reputation, also useful to justify its replacement. As in the case of

Southwark's already "regenerated" Heygate Estate, such appearances contribute to unfair stigmatisation of both the estates themselves and their communities.[4] With these debates mostly circumscribed to the estate itself, we will start by observing the Aylesbury from the perspective of its overlooked relation to Burgess Park, showing how both sites define one another.

Burgess Park and the Aylesbury Estate are related products of modernist post-war planning, but their design and execution differed greatly. The open green space we know today as Burgess Park was proposed in the County of London Plan in 1943, and was slowly and fragmentarily built from the 1950s onwards, replacing heavily bombed old terraced houses and factories,[5] which grew associated to the west end of the Grand Surrey Canal.[6] Considering the future presence of such public green space, the Aylesbury was erected between 1967 and 1977 on its north side, replacing poor-quality building stock in the area.[7] The green open spaces of Burgess Park were linked up just in the early 1980s, however, several yet-to-be cleared buildings lingered for many more years contributing to a sense of incompleteness to the park until the regeneration works in the area began around 2010.

Both modernist planning experiences are also contrasting regarding their physical results. The Aylesbury, once home to 2,700 households, appeared mostly as a series of uncompromising modernist slabs of different heights, sitting on a cleared ground. Burgess Park, being a piecemeal development, is an additive result of incomplete erasures and unfinished projects implemented across six decades. One thing in common, however, is the lack of adequate maintenance and investment in both sites from the 1980s onwards, affecting the communities that lived there and in the surroundings. In the case of the Aylesbury this was furthered by its "managed decline",[8] where authorities neglect public housing estates, which then helps justify their replacement.[9]

Figure 1. Wendover, one of the Aylesbury Estate high-rises seen from Burgess Park. F. Lanuza 2017.

An iconic image promoting the regeneration of the Aylesbury shows it in seamless continuity with Burgess Park, as if were part of the same project. The planning documents of the Aylesbury's regeneration indeed show that the improvements to the park formed part of the overall regeneration strategy of the Aylesbury Estate. Southwark Council envisioned Burgess Park, at that point largely neglected, as an opportunity to increase the land value of the area before regenerating the Aylesbury Estate.[10] The works in Burgess Park and the first phase of the Aylesbury replacement developed in parallel in the early 2010s.

Figure 2. The Regeneration of the Aylesbury Estate along Burgess Park. Source: http://www.aylesburynow.london/regeneration/location. Accessed August 7, 2025.

The park's renovation, largely completed now, is widely regarded as positive and is welcomed by local people,[11] in contrast to the more controversial demolition and replacement of the Aylesbury Estate. Greenwashing,[12] appears here like a narrative of environmental improvement, enhancing community wellbeing and revitalising neglected areas, but it really serves as a vehicle for untold displacement and segregation, catering to certain groups whilst ignoring the visions and needs of disadvantaged communities slowly but steadily forced away from the area.[13] Burges Park is therefore more than a silent witness to the spectacle of managed decline and on-going demolition of the Aylesbury Estate, and the implied dispossession of its people.

Encounters with Absence

Burgess Park holds a palimpsest-like quality as it keeps elements of its previous configurations. Some of them are recognisable and cared for landmarks dating from the industrial past of the site, like the limekiln located by the former Grand Surrey Canal, or the pedestrian bridge crossing it. Old structures inherited from the past of the site and integrated –or staged– into its current scheme and historical identity.

But the site used to retain other, more subtle traces and fragments of its past configurations. Often overlooked and not considered as of heritage status, these traces are like lose ends; remainders that appear almost like found objects, not effectively incorporated into the present use of the park, giving it a vague quality.[14] These lose ends can trigger a more open experience of the park´s memory, one that is marked by strangeness and absence, stimulating retrospective and prospective imagination.[15]

Figure 3. Semicircle of paving blocks in Burgess Park, of unknown origin. They were removed in 2019. Photo F. Lanuza, 2014.

Nevertheless, the new park design sought to improve its coherence and legibility,[16] therefore disregarding those lose ends. Comparatively small erasures taking place in Burgess Park from 2010 were not only a contrasting parallel to the replacement of the Aylesbury Estate taking place in the backdrop, but as discussed in the previous section, were instrumental and integral to it.

Some of the traces and fragments left by partial erasures and incomplete projects that can still be found in the park refer us to absences; to streets, factories and houses that are not there anymore but can be reimagined, revealing the mnemonic depth of the place.[17] Emerging spontaneously, these leftovers are not integrated in an all-encompassing scheme. They somehow reflect absence as it comes through in the Aylesbury Estate, which can hardly be regarded in positive terms, however. Absence as a both unsettling and stimulating experience of the memory of a place, as Burgess Park used to be, contrasts with the absence of people displaced and homes demolished in the first phases of the regeneration of the Aylesbury Estate. In turn, those early regeneration phases implied many of Burgess Park's lose ends were tightened up, so the park improved to a standard conforming to a socially restrictive and culturally reductive regeneration project; a generic tradition-mimicking New London Vernacular set to replace one of the most ambitious council housing schemes of the Welfare State.[18]

RECORDS OF RESISTANCE: MATERIAL AND DIGITAL

The regeneration of the Aylesbury Estate has been anything but smooth, as it has faced the resistance of communities and people across the estate and beyond.[19] The case of Aysen Dennis, a council flat tenant who has fiercely campaigned against the privatisation of the estate and its demolition since 1999, is remarkable and testifies both for the long period the Aylesbury residents have been subject to the pressures and uncertainties of the regeneration, and their strength and resilience. Months before being evicted from her home, she had the idea of turning her flat in Wendover, one of the Aylesbury Estate's high-rise buildings, into an exhibition space to expose the negative effects of urban regeneration and raise awareness in the wider public. The Fight4Aylesbury exhibition was the result of a collective, self-organised process by a group of residents and their supporters bringing together the contributions, knowledge and skills of many different people.

Figure 4. Fight4Aylesbury exhibition, April-May 2023. Photo A. Gammarota. Source: www.alessiagammarota.com

The exhibition was a tribute to the efforts of the Aylesbury Estate's community to keep their homes and defend public housing in London. Most importantly, the exhibition provided overwhelming evidence of the uncaring and unsustainable regeneration of the Aylesbury Estate. Almost every wall was covered in collages made from the vast collection of materials gathered over the years. They were not just photographs and press cuts, but also documents, leaflets, and brochures from developers. The collages' density reflected the weight of the struggle borne by the residents.

Figure 5. Fight4Aylesbury exhibition, April-May 2023. Photo A. Gammarota. Source: www.alessiagammarota.com

Becoming an archive-on-display, the exhibition integrated a wide range of works into a counter narrative of urban change coming from the perspective of the residents themselves, showing the real impact of the redevelopment on their lives. Each room and each corner of the flat, plus the public corridor to access it, became an art installation, showing both the domestic and intimate dimensions of Aysen's life and her public persona as a leading campaigner. Since Aysen continued living in the flat, pieces of furniture and daily-use objects remained in place to naturally become part of the exhibition itself, showing how daily life and personal memories were shaped by almost 25 years of struggle.
The exhibition opened for about a month in 2023 and incorporated a series of events and activities, involving people of the Aylesbury Estate's community and beyond. Word of mouth turned the exhibition into a meeting place —a space to talk and reconnect— much like Aysen's flat had always been over the years, consistently open to everyone.

From absence to an activist digital presence

Wendover, stretching along Thurlow Street from north to south to nearly reach Burgess Park, where Aysen and her sister moved in 1993, is now all boarded up and made inaccessible to its community. It is earmarked for demolition as part of the next Aylesbury Estate's regeneration Phase 2B. The 3D laser scan capture of the exhibition in Aysen's flat, along with other records of it, provide an opportunity to extend its existence into a digital afterlife – to raise public awareness and inspire.
This technology is usually employed to conserve architectural heritage, for it provides accurate and comprehensive information of buildings for their material and structural assessment, to inform actions of intervention. What we are doing here is not too different. Beyond its monotonous design and state of neglect, the Aylesbury Estate sustained livelihoods and diverse communities who made of it their home. This digital archive testifies for a proud community heritage – their memory and identity around the defence of their homes. Whilst discourses of "authorised" heritage have been used to promote the demolition of the Aylesbury, the Fight4Aylesbury was able to publicly contest such positions by reclaiming the value of the Aylesbury as home and community.[20] The exhibition was dismantled, the flat forcedly vacated and the building may disappear, but their digital conservation might have further agency in the physical conservation of the Aylesbury and the wider implementation of more environmentally and socially sustainable forms of urban regeneration that work with the existing people and buildings.

Figure 6. Fight4Aylesbury exhibition 3D laser scan image, captured in 2023 and created in 2025 by Felipe Lanuza. Available in www.fight4aylesbury.com.

The sole defiant presence of Aysen's flat suspended in a seemingly immaterial building reflects both the vulnerability of people and place, and the immense challenge undertaken by the resistance.
The flat's simple open plan layout and functional design, the generous room proportions, and the quality of natural light are often superior to what is offered in the new developments like the one set to replace it. This challenges the dominant narrative around brutalist architecture, which is often dismissed as outdated or no longer fit for purpose. The negative public perception of these buildings is usually marked by their outward appearance, frequently the result of deliberate neglect, reinforcing the "sink estate" narrative, which both the flat and the exhibition disprove.

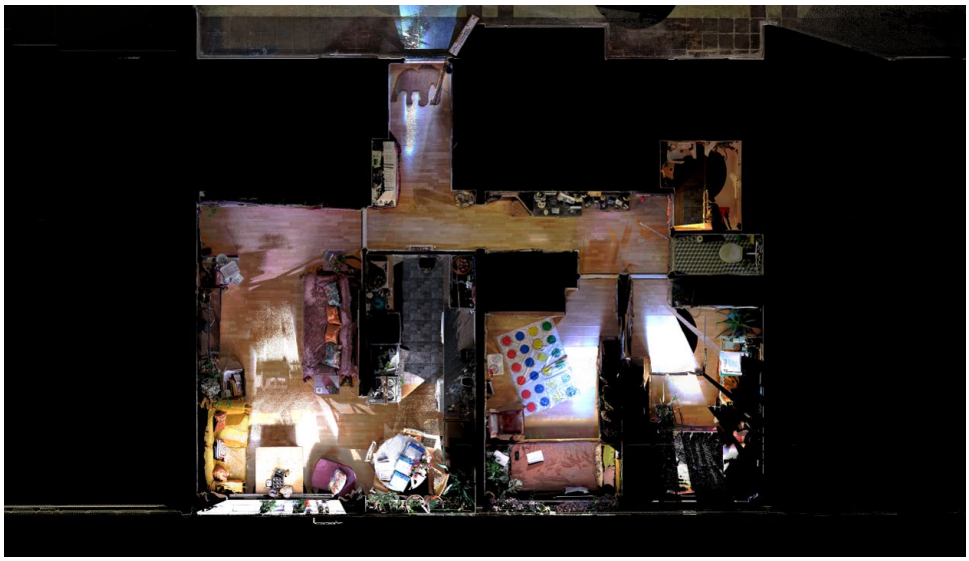

Figure 7. Fight4Aylesbury exhibition 3D laser scan image, captured in 2023 and created in 2025 by Felipe Lanuza. Available in www.fight4aylesbury.com.

One of the key themes of the exhibition was the ballot in 2001 where over three quarters of the estate residents said no to the council's plan for its privatisation. The authorities disregarded these results and put forward the estate's demolition in 2005.[21]

Figure 8. Fight4Aylesbury exhibition 3D laser scan image, captured in 2023 and created in 2025 by Felipe Lanuza. Available in www.fight4aylesbury.com.

Aysen's room was dedicated to mental health. To spend over twenty years with the threat of losing their home, the constant battling, the bureaucracy, the authorities and developers' distortion of truth, the gradual loss of community members, and all that is associated with a regeneration process lasting a lifetime takes a huge toll on people's mental health. The room tries to capture both the grief of loss and the joy of collective resistance against authorities and developers.[22]

Figure 9. Fight4Aylesbury exhibition 3D laser scan image, captured in 2023 and created in 2025 by Felipe Lanuza. Available in www.fight4aylesbury.com.

A note on public engagement

The virtual version of the exhibition held in Wendover in April-May 2023 is trying to make its message accessible to people in London and beyond. It is not only featuring the 3D laser scanning documentation but also photographs and other records of the exhibition and its related events. This has the form of a website <fight4aylesbury.org> [beta], which was pre-launched in a community-facing public event in the Walworth Living Room, a place very much connected to the Aylesbury community, just a few steps from the estate. This event was realised in hand with many Aylesbury Estate's residents and supporters. Prints of the 3D laser scan images formed an exhibition accompanying the event and computers were available for attendants to explore the website. They provided feedback both on the 3D laser scan images exhibited and the website, which will help shape its future development.

Figure 10. Fight4Aylesbury digital exhibition pre-launch and 3D laser scan images exhibition, June 2025. Photo by F. Lanuza.

CONCLUSION

Whilst the rich palimpsest of Burgess Park and its different layers has been to a great extent flattened into a more generic and exclusive public space populated with a few almost tokenistic "heritage objects", the sociocultural richness of the Aylesbury is disappearing with the demolition of buildings and the displacement of people. The Fight4Aylesbury digital exhibition therefore asserts the importance of the place and its materiality and spatiality, to support the existence of its intangible dimensions. The exhibition's brilliant intersection between activism and domesticity, between feminism and urban politics reflects a long-term grassroots movement: a Community Heritage of Resistance standing against mainstream narratives of urban regeneration.

Different forms of absence characterise the process of urban change in the Aylesbury Estate and Burgess Park. Some traces surviving the latter's revamp are still able to unsettle an otherwise flat and commodified public space. In turn, and even if in a digital realm, Fight4Aylesbury will continue to challenge -and haunt- the current regeneration plans by promoting the adoption of alternative, more sustainable and inclusive forms of city-making.

CREDITS AND ACKNOWLEDGEMENTS

Fight4Aylesbury Exhibition (14 April – 8 May 2023)

Aysen Dennis: housing campaigner, host, she who makes it all possible. Alessia Gammarota: photographer, exhibition designer and main creative force behind the visual materials on display. Caterina Sartori: visual anthropologist, one of the leading people who organised and managed the exhibition. She wrote the texts tying the exhibition together. Clayton Handley installed, built and glued the exhibition. Michael Romyn contributed to the exhibition with his research into the history of the Aylesbury Estate. David Roberts devised the installation in Pinar's room. Felipe Lanuza 3D laser scanned the exhibition. The Fight4Aylesbury collective provided ongoing support and input into work: Laura, Liba, Melissa, Jason. Thank you to all the campaigners and friends (including those who choose to remain unnamed) who have helped and inspired us, and without whom none of this would be possible. Chris, Luke P., Victoria, Guy Mannes-Abbott, Donnachadh McCarthy, Anna Minton, Paul Watt, Andrea Luka Zimmerman, LG, Peter Marshall (mylondondiary.co.uk), Lola, Andrewcooper-unseen.org, Southwark Notes, 56A Infoshop, Propagate. 35%, LATU. The 'mental health room' group: Sally Zlotowitz, Benji, Daina, KG Lester, River. The benefit gig crew: Ellen Muriel, the Avalon Choir, Toot Sweet, Öztan, Kerttu, the Avalon Cafe. Thank you to the funders: generous crowdfund supporters, Raymond Williams Foundation, Goldsmiths Graduate Fund, Leverhulme Trust, Necessity. The exhibition materials were donated to the Bishopsgate Institute in London, for their conservation. Thank you to all the past and present Aylesbury Estate residents who have been affected by the demolition.

Wendover 359 / Fight4Aylesbury digital exhibition and website (launch 21 June 2025)

Felipe Lanuza, Alessia Gammarota, Caterina Sartori, David Roberts, Laura Fudge and Liba Hoskin collaborated in the organisation of the exhibition and community-facing public event held in the Walworth Living Room (Pembroke House) on the 21st of June 2025.

3D laser scan capture, post-processing and images generation by Felipe Lanuza. Fight4Aylesbury virtual exhibition and website by Alessia Gammarota.

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[13] We widely understand greenwashing as corporate practices both environmentally and socially unsustainable, as here the environmental benefit of improving Burgess Park is highlighted whilst the negative social impact of the Aylesbury Estate regeneration is not recognised. See: Thomas P. Lyon and John W. Maxwell, "Greenwash: Corporate environmental disclosure under threat of audit," *Journal of Economics & Management Strategy 20* (2011) 3, (3-41).

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PRESERVING 3D PRINTED ARCHITECTURAL MODELS - THE HERITAGE AND CONSERVATION OF ARCHITECTURAL DESIGN PROCESS

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INTRODUCTION

Architectural models are an important part of architectural practice and culture, recording and communicating design process. Evidence of historic architectural models such as that held by the Thorp Modelmaking Archive and the internal archives of architectural practices such as Zaha Hadid Architects (ZHA), Foster + Partners, Make, and others provide valuable insights into the practices and processes that enable the development and communication of design concepts.[1] These models provide a tangible record of the social, political and technological concepts that have shaped the built environment, and the craftsmanship and creativity of the architectural modelmakers who make them.[2]
With the adoption of digital technology from the 1990s onwards, the tools and processes involved in creating architectural models rapidly developed,[3] with models made during the design process today heavily using 3D printing (3DP).[4] As architectural models are increasingly archived these soon-to-be historic 3DP artefacts create new challenges for conservators.
This paper investigates the growing challenge of caring for culturally significant 3DP architectural models made by Zaha Hadid Architects, now in the collection of the Zaha Hadid Foundation (ZHF).

3D printed architectural models

Plastics started to be used for modelmaking in the late 1930s, with Perspex (PMMA) first adopted to capture the transparency of modernist architecture. By the 1950s Perspex had become the dominant modelmaking material due to its stability, durability, and ease of machining. In the 1990s digital processes such as computer-aided design and computer-aided manufacture (CAD/CAM) were adopted by commercial modelmakers and architectural practices such as ZHA.[5] Digital workflows enabled emerging digital manufacturing methods such as computer numerically controlled (CNC) machining and laser cutting to be used for architectural modelmaking. The use of 3DP in architectural modelmaking was an important milestone in the integration of digital technology and which developed in four phases:
1. Exploratory and experimental - In the late 1990s architectural firms explored 3DP as a technology for architectural modelmaking. During this period Foster + Partners commissioned a stereolithographic 3D printed presentation model of the Swiss Re concept for 30 St Mary Axe.
2. Early commercial adoption and outsourcing – By the early 2000s 3DP was becoming part of modelmaking workflows. Advances in digital design allowed for new and more complex architectural

forms to be designed, which were difficult to replicate in model form using traditional methods, thus providing an opportunity for 3DP to be more widely adopted. Commercial prototyping firms like Materialise were producing high fidelity architectural models for competition tenders and design reviews.

3. In-house capability – by the mid-2000s architectural firms developed in-house capability through acquiring 3DP technology such as selective laser sintering (SLS) and fused deposition modelling (FDM) equipment and developing expertise in design and fabrication.[6] 3DP became a fast and efficient means of producing iterative design models during the design process. In 2008 Foster + Partners in-house 3DP department was producing 4000 models a year.[7]

4. Standard practice – From 2010 onwards digital workflows have been fully integrated into all stages of architectural modelmaking alongside more traditional means.

3DP technology is now the standard format for iterative design models made by in-house modelmaking workshops in architectural practices and is also used to create complex components in elaborate presentation models directed at clients or the public. Some architectural models are now purely digital outputs, while others integrate 3D printing. A model of the Bloomberg Headquarters Building made by 3DD Productions in 2017 included over 30,000 finely detailed components using various fabrication methods including 3D Printing.[8]

Such models should not be seen as just digital assets, as these models are part of the creative process in providing an appreciation of scale, form, and vision. These design models show developing designs and provide a valuable insight into a usually hidden part of the design process. Presentation models – the more complete architectural models – capture the finished design.

The models observed in this ZHF study are a sub-set of architectural models. These are 'purely' 3D printed models used for internal discussion to tangibly experience an otherwise digital model on a computer screen.

3D printed models as historic artefacts

The conservation of architectural models within heritage collections has established protocols[9] that rely on correctly understanding the risks associated with materials and manufacture of artefacts. As a relatively recent technology, industry archives, museums and private collections face challenges in conserving 3DP models. These objects present new challenges concerning material identification, the nature of digital heritage, and the conservation and maintenance strategies of these important examples of architectural heritage.

Deterioration of heritage plastics

The conservation of historical plastics is a substantial challenge, and within the heritage sector the stability of plastic materials is often significantly overestimated.[10] Common issues in identifying the correct care strategy of heritage plastics include identification of plastic materials, particularly using non-invasive means,[11] this is problematic due to the variety of materials within polymer chemistry and the blends of co-polymers, pigments, filler and other additives. The instability of some plastics leading to severe loss of condition within a short timeframe.[12] Degradation occurs via mechanisms including additive migration, oxidation and hydrolysis.[13] Storage in non-reactive packing and control of relative humidity (RH), temperature and ultraviolet (UV) light exposure environmental conditions can limit deterioration.

3DP plastic materials such as Polylactic Acid (PLA), Polyethylene Terephthalate (PET), Polyamide Nylon (PA) and Acrylonitrile Butadiene Styrene (ABS) present specific challenges for conservators.[14] As new grades of polymers have been developed specifically for 3DP the long-term risk profiles of 3DP materials are less understood than conventional plastics.[15] Parameters and conditions for 3DP

processes such as selective laser sintering (SLS) have complex thermal and chemical effects on the material that impact the stability and longevity of the final object.[16]

Observable signs of degradation and deterioration in plastics include discolouration as well as loss of gloss and transparency.[17] Deformation of objects in the form of warping, crazing and delamination is also an issue. Plastic objects can become embrittled and fragile causing breakages and surface cracking. Other changes to the surface texture and appearance can occur over time as materials break down, phenomena such as 'blooming' where additives migrate to the surface are evidence of polymer degradation.

METHODOLOGY

This empirical study compares the differences between traditionally made and 3D printed architectural models[18] from the ZHF collection.

A site visit by the research team was conducted at the ZHF collection in 2025. The research team compiled a report based on field notes, in-situ observations and photographs collected during the site visit. A Sample Condition Survey approach[19] was taken, general observations of the collection as well as a visual inspection of sample artefacts provide the data for this survey.

Visual inspection

6 models inspected during the visit are analysed for this study:

Early traditionally made models: 3 models (A, B and C) from the 1980s and 1990s constructed using traditional architectural modelmaking techniques. This includes typical construction methods and materials (including plastics).

Later 3D printed models: 3 'sets' of models (X, Y and Z) constructed using 3D printing technology from the 2010s were inspected.

Each model in this study was inspected directly by the research team. Notes were made on materials, current condition and deterioration e.g. discolouration, embrittlement, breakage. The inspection was non-invasive observation only to determine likely identity of materials and evidence of any degradation.

Materials risk profiles

Common degradation profiles for the materials used. Because materials were identified from archive labels and characteristics of the objects (size, material finish, and geometry) during the visual inspection, materials are unconfirmed by analytical testing by the research team.

RESULTS

ZHF Observations

The ZHF collection is stored in a three-storey former banana warehouse beside the Thames. Temperature and humidity are monitored, and while the building lacks dedicated climate control the ZHF team minimise fluctuations in RH and temperature that could stress plastic artefacts. UV-filter film and blinds have been applied to large windows, reducing light exposure. Objects in the collection are stored away from these windows to further reduce risk of damage by light. The building is shared with another tenant, pest risks and shared-use activity are actively managed.

The ZHF team combines research and preventative care of the objects within the collection that includes both personal items and artefacts from ZHA. The extensive collection is in the process of being inventoried. All items have been assessed and prioritised so that legacy materials can be replaced with archival packing such as archival boxes and inert foam. The building is in the process of being upgraded to provide enhanced racking, storage, and longer-term environmental control.

Sample condition survey

An overview of the inspected models is provided in Table 1. The observed conditions were rated by the research team using a standard index[20]

ID	Name/description	year	type	material	Observed condition
A	The Peak, Hong Kong, China	c. 1983	Presentation Model	Various incl. polystyrene.	Good
B	Music Video Pavilion, Groningen, The Netherlands	c. 1990	Study Model	Various incl. PMMA	Good
C	Vitra Fire Station, Weil am Rhein, Germany	c. 1993	Presentation Model	PMMA	Good
X	University of Cyprus, Department of Biological Sciences, Aglandjia, Cyprus	c. 2013	-	White Nylon	Fair: Discoloured, breakages
Y	Al Janoub Stadium, Al-Wakrah, Qatar	c. 2013	Study Models	White Nylon	Fair: Discoloured
Z	Mathematics: The Winton Gallery, Science Museum, London, UK	c. 2014	-	Nylon	Fair: Discoloured. breakages

Table 1. Sample condition Survey results

Model A: The Peak (1983)

Figure 1. The Peak architectural model and archival packing. Photograph by the author, ZHF Archive, June 2025. Courtesy of ZHF

Figure 1 shows The Peak presentation model, the design is of a horizontal skyscraper that was commissioned but never built. Believed to be the earliest model in the collection. Referred to as one of their star objects which is anticipated to be in demand for exhibitions. Packaged in a custom-made archival box made from archival buffered board for both storage and for travel to exhibitions. This looked to be a well looked after object. The model looked to be in good condition, without cracks or damage.

Model B: Music Video Pavilion (1990)

Figure 2. Music Video Pavilion architectural model in Perspex case. Photograph by the author, ZHF Archive, June 2025. Courtesy of ZHF

Figure 2 is of the Music Video Pavilion study model, including a swatch of the colour pallet. The colours on the objects differ from the colour swatch legend on the base indicating some discolouration. The PMMA case in good condition. The model is placed on protective plastazote® (low-density polyethylene foam) sheet and covered with Tyvek® (high-density polyethylene material) for protection.
To protect against degradation in general environment, the model is in the process of being repacked into an archival box which is being prepared to replace non-archival packaging.

Model C: Vitra Fire Station (1993)

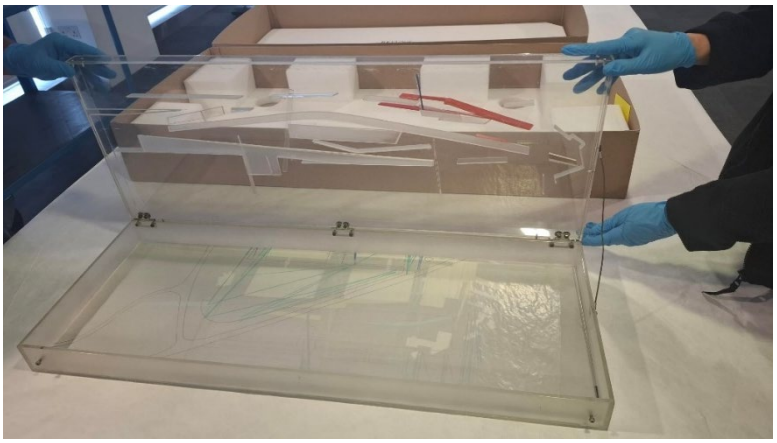

Figure 3. Vitra Fire Station presentation model. Photograph by the author, Zaha Hadid Foundation Archive, June 2025. Courtesy of ZHF

Figure 3 shows the Vitra Fire Station presentation model, the project was significant as it was Zaha Hadid's first completed building. The model is fragile but in good condition. The PMMA case looks discoloured (not transparent). Metal screws/hinges and case construction are a potential source of degradation. Model is packed in protective box made of archival card and plastazote® inserts to support the model.

Model X: University of Cyprus (2013)

Figure 4. Left, five 3D printed models for University of Cyprus project, Right, model breakage at stem. Photograph by the author, Zaha Hadid Foundation Archive, June 2025. Courtesy of ZHF

The collection of models in Figure 4 are of ZHA concepts for University of Cyprus. Models have become discoloured over time - internal material at break shows originally white rather than beige. The models are very fragile and several of the models are broken at the stems.
Breakages indicate that the models may have become more brittle over time. Damage occurred from previous nonarchival packing. Currently stored in plastic storage polypropylene (PP) containers with foam insert on the base, the ZHF team are in currently creating new packaging to prevent further damage. Plastazote cutouts will prevent the models from moving the box while minimising pressure being put on the objects.

Model Y: Al Janoub Stadium (2013) models

Figure 5. Collection of 9 Study models from Al Janoub Stadium project packed in acid free paper. Photograph by the author, ZHF Archive, June 2025. Courtesy of ZHF

A collection of study models in Figure 5 are ZHA stadium concepts for the Al Janoub Stadium. Each artefact has lost the original bright white colour expected of SLS prints. However, discolouration is different on each object – some more yellow and some more grey. Original storage conditions could have contributed to variable discolouration across the samples.
Models are protected in acid free paper and stored in plastic storage (PP) containers.

Model Z: Mathematics: The Winton Gallery, Science Museum (2014)

Figure 6. 3D printed models of geometric forms and aeroplanes from Mathematics: The Winton Gallery, Science Museum project. Photograph by the author, ZHF Archive, June 2025. Courtesy of ZHF

Figure 6 shows six SLS 3D-printed models from the Mathematics: The Winton Gallery, Science Museum project, stored in plastic storage (PP) containers with foam base inserts and acid-free paper over the models. The models may have discoloured over time (probably originally white rather than beige). Dark grey models show white marks on the surfaces, possibly indicating degradation or damage. These models demonstrate complex geometry and thin features enabled by 3DP. Thin sections of the aeroplane models have started to break—see Figure 6 lower wing.

DISCUSSION

While improvements can be made to the storage environment, the 30–40-year-old traditional models were in good condition and are well managed using appropriate best practice conservation. There were signs of aging such as faded colours and PMMA losing its glass like transparency, but the traditional models appeared stable.
The 10-year-old 3DP models X, Y and Z have been cared for using similar practices but are showing signs of deterioration, discolouration and breakages.

Modes of deterioration

Deterioration prior to the ZHF care is a significant factor in the current condition of artefacts X, Y and Z – particularly the breakage seen on model X where packing by the architectural office was not to archival standards.

Although efforts are made to stabilise the storage environment, building improvements are ongoing, and natural fluctuations in temperature and humidity contribute to the ageing of the 3DP objects.

3D printed model conservation challenges

The samples inspected represent a small number of models within the ZHF collection. Many models remain stored as packed by the ZHA team and are currently being archived. The care of heritage plastics is complex, and key challenges include:

- Identifying materials – A breakdown of polymer chemistry would help identify specific plastic grades, and any additives or contaminants (e.g. cleaning or surface coatings), to assess risk factors for deterioration.
- Characterising physical properties – Surface hardness, density and porosity of 3DP objects inform fragility and support improved handling and storage.
- Storage and exhibition activities – To slow degradation, effective management during storage, handling and display is essential. Object stability requires monitoring, and light, RH and temperature conditions for PA objects require active management.
- Thin features enabled by 3DP – Highly detailed CAD models enabled ZHA to 3D print high-fidelity models. Models X, Y and Z have fine detail and thin sections that have become increasingly fragile with age.

Recording and preserving digital heritage also presents challenges: while the CAD model exists as a digital record, the printed models are important design outputs and will eventually deteriorate.

Many architectural models combine traditional and 3DP components. Evidence in this study suggests 3DP nylon deteriorates more quickly than traditional modelmaking materials, creating future challenges for repairing otherwise stable mixed-material models.

Recommendations

Based on the samples observed being typical of 3DP models in the collection, the following recommendations are made for the ongoing care and maintenance of the ZHF 3DP architectural model collection:

- Due to the nature of the SLS nylon materials, there is a risk of further deterioration. The ZHF objects that are purely 3DP models like the ones observed in this study should have increased priority in terms of archiving, packing and monitoring.
- *Non-invasive analytical testing can enable detailed condition reporting. It is recommended that methods such as portable FTIR can be used to confirm the identity of materials for objects considered at greatest risk.*[21] *Additional non-invasive measurements such as digital microscopy, colourimeter and gloss measurements can also be conducted on site at ZHF. Objects should be kept in a controlled environment until specific preventive conservation actions can be outlined.*
- *During transport and handling for activities such as exhibitions, physical maintenance repair kits*[22] *for 3D printed objects could mitigate damage.*

- The wider use of 3D printing in architectural models which use other materials and processes needs further research. Modelmakers have a detailed understanding of the materials and processes used and their involvement in conservation of these models is recommended.
- Creation of a digital-physical registry to link printed artefacts to their CAD origin.

CONCLUSION

Architectural modelmaking was an early adopter of 3D printing technology. The models examined in this research provide a valuable test case for the broader category of 3D-printed heritage artefacts and their conservation. Six models were inspected, showing a clear contrast in preservation state: the earlier, traditionally crafted models remain more stable, while the 3D-printed models display a range of deterioration issues. This difference is strongly linked to material histories. Older models produced using plastics such as PMMA and polystyrene—materials with long-established use—show better long-term stability. By comparison, the more recent models were produced using then-innovative 3D-printing materials, often commercialised rapidly and potentially containing unknown fillers or additives intended to improve printability and mechanical performance. These materials now show more significant deterioration.

In particular, 3D-printed nylon remains insufficiently understood in long-term heritage contexts. Its hygroscopic nature and sensitivity to environmental conditions can contribute to embrittlement, surface change, and breakage, risks intensified by thin, intricate geometries typical of SLS components. As reliance on 3D printing in architectural practice grows, developing stronger analytical frameworks for ageing behaviour will be essential to preserve these models alongside traditionally crafted counterparts.

ACKNOWLEDGEMENTS

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COMMUNITY PERSPECTIVES AND CONSERVATION OF GREEK ORTHODOX HERITAGE IN ISTANBUL THROUGH KUZGUNCUK, AYIOS YEORYIOS, AND VLAHSARAY FOUNDATIONS

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INTRODUCTION

As a multilayered and multicultural city, Istanbul hosts architectural heritage elements of various religions. Despite the decreasing Greek (Rum)[1] Orthodox population, it is known that many buildings belonging to this community still exist and are in use throughout the city. Although there are challenges in ensuring their preservation and transmission to future generations, these structures possess significant potential in terms of cultural continuity and heritage value. Nineteenth-century inventories of Greek Orthodox churches recorded a total of 68 churches in Istanbul, 58 of which were built during the 19th century, while the remaining structures date back to the Byzantine era. Today, the number of Greek Orthodox churches in Istanbul constructed before the Tanzimat Edict is 54, whereas those erected after the edict are 42.[2] 64 Foundations are responsible for the management of Greek Orthodox Assets. On the other hand, the population of the Greek Orthodox community in Istanbul diminished significantly after the 1923 Population Exchange Convention, as well as due to socio-political events such as the 6–7 September 1955 incidents and subsequent economic developments.[3] These historic structures—along with their embodied memories and cultural heritage—are endangered, facing threats due to neglect, underuse, and lack of maintenance. Many of them fall outside the scope of national heritage preservation legislation.

Not only churches but also school buildings, residential buildings, cemeteries and the monuments still in use serve as important examples of historic architecture. These structures support local communities and offer valuable insights into the cultural and religious heritage of a declining historic population. Conserving endangered and marginalised heritage in Turkey is essential for promoting good public governance and achieving broader societal goals such as sustainable development, multi-cultural and layered heritage conservation, well-being, equality, diversity, and inclusion.

These buildings—particularly those containing ecclesiastical elements—require systematic documentation, protection, and preservation. This study seeks to address the following central research questions: What are the architectural heritage values associated with these sites, and what are the primary conservation challenges they face? How can a comprehensive conservation strategy be developed to support the sustainable documentation, preservation, and environmental management of

endangered Greek Orthodox heritage sites and churches in Istanbul? In this study comprehensive literature review was done focusing on the architectural heritage publications. The locations of churches are marked in the map considering the religious administrative territories based on the existing taxonomy generated by the website developed by the Patriarchal Psaltophiles project[4] directed by Michael Tsippoutas, literature review, thesis, interview with the community.
The research specifically examines the buildings affiliated with the Kuzguncuk Aya Pandeleimon and the Ayios Yeoryios Greek Orthodox Church Foundation, and the Vlahsaray Panagia Foundation, focusing on their current conservation status, documentation pf the buildings via Polycam[5] and assessing their potential contributions to sustainable development.

Brief History of Istanbul and Orthodoxy Framework

Istanbul became the capital of the Roman Empire under the name "Constantinople" in 330 AD. When the Empire was divided into two in 395, it became the capital of the Eastern Roman Empire and the center of a civilisation that would be known in history as "Byzantium." During the Byzantine period, Istanbul reached the status of "Capital of the World" due to its economic and social significance. It also became the center of "Orthodoxy," which played an important role in religious debates within Christianity. The growing importance of Istanbul and its splendor, which influenced "Holy Rome," disrupted the balance among Christians. In 1204, with the Latin Invasion, the city became the capital of the Latin Empire but returned to Byzantine rule in 1261.[6]
Although the Latin Invasion was short-lived, it caused some of the most significant destruction in Istanbul's history. The damaged urban planning and settlement could not be properly reorganized. With the Ottoman conquest of Istanbul in 1453, the Byzantine period came to an end, marking the beginning of a new era in the city.[7]
At the time of its conquest by the Ottomans, Istanbul had not yet recovered from the negative effects of the Latin invasion and appeared as a ruined and abandoned city. The fact that the Latins had largely shifted trade to Galata, along with major fires and migrations during that period, led to a decrease in population and the shrinking of the city. Works describing 15th-century Istanbul note that the urban fabric of large neighbourhoods had been replaced by monasteries scattered among vast vineyards and gardens, and that the inhabited areas in the city were sparse, separated from each other and surrounded by trenches. In the map of Istanbul prepared by Cristoforo Buondelmonti in the first half of 15th century,[8] large empty spaces can be seen outside the areas surrounding churches and monasteries (Figure 1). It is stated that during the Ottoman conquest, no more than fifty churches, excluding monasteries, were still standing, and only eighteen of them were still in use.[9]

The Greek Orthodox Churches After the Conquest

After the conquest of Istanbul, it is observed that Byzantine religious buildings were repurposed as mosques, small mosques (mescit), dervish lodges (tekke), charitable kitchens (imaret), or storage spaces. The city's largest church, Hagia Sophia, was the first to be converted into a mosque. Subsequently, the Church of the Monastery of Christ Pantokrator was turned into the Eski Imaret Mosque. the Church of the Monastery of Christ Akataleptos was given to dervishes to be used as a zaviye (a type of small dervish lodge) under the name Kalenderhane. The Pantokrator Monastery and Church, a significant complex from the Byzantine period, was later converted into a madrasa (Islamic school) and mescit. The largest religious structure in Galata, the Church of Saint Paul and Saint Dominic, was also converted into the Arap Mosque.[10]
The Church of the Twelve Apostles was designated as the Greek Orthodox Patriarchate after the conquest. It was later demolished to make way for the construction of the Fatih Complex. Pammakaristos Monastery. In 1591, the church was converted into the Fethiye Mosque. In 1586, the

Patriarchate was temporarily moved to the Church of the Blachernae Palace in Fener (Panagia Paramithia (Vlahsaray) Greek Orthodox Church. The Church of Saint Demetrios (Aya Dimitri) served as the Patriarchate Church from 1597 to 1601. Since 1602, the Church of St. George in Fener has served as the headquarters of the Greek Orthodox Patriarchate.[11]

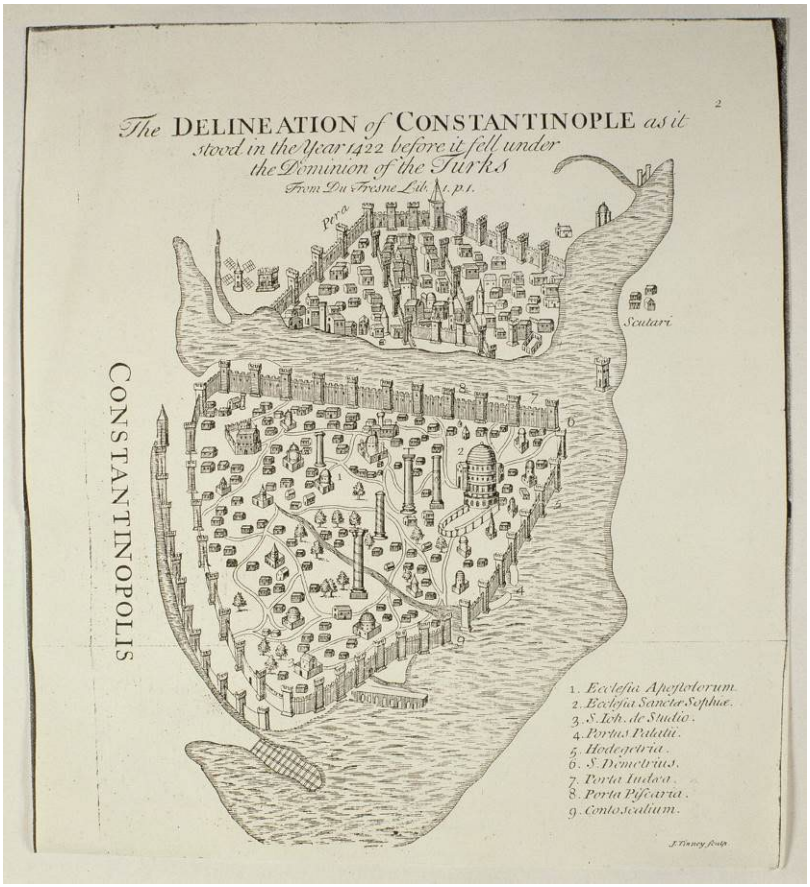

Figure 1. Cristoforo Buondelmonti map represents the first half of the 15th century.

In the social and political history of the Ottoman Empire, the proclamation of the Tanzimat Edict on November 3, 1839, marked the beginning of a new era. The primary objective of the edict was to reform state institutions, strengthen centralized governance, and unite all subjects of the empire under a common identity. For non-Muslim populations, this period held the promise of equality, justice, and prosperity. The edict advocated for religious freedom without discrimination, recognized legal equality, and extended civil rights to non-Muslim communities beyond the constraints of Islamic law. Thus, a transformative phase began in which both Muslims and non-Muslims were to be governed by the same legal framework, moving away from the religiously defined structure of Sharia law that had previously categorized imperial subjects by their faith.[12]

Following the edict, councils with elected members were established in provincial centers, furthering participatory governance and administrative modernization. The principles set forth in the Tanzimat Edict were further reinforced with the promulgation of the Islahat Edict on February 18, 1856. This reform guaranteed the inviolability of religion, sect, life, property, and personal honor of all Ottoman citizens, regardless of religious or sectarian identity. It enshrined equality before the law, safeguarded personal wealth, and upheld the freedom of religion, belief, and education. Crucially, it abolished the requirement to convert from Islam and eliminated the death penalty for apostasy. No one could be compelled to adopt a particular belief system. Non-Muslims were protected against insult, slander,

and verbal abuse, and were granted the right to serve in both civil and military positions on equal footing with Muslims.[13]

Patriarch of Constantinople

Pentarchy (from Ancient Greek Πενταρχία (Pentarchía), from πέντε (pénte) 'five' and ἄρχειν (archein) 'to rule') was a model of Church organization formulated in the laws of Emperor Justinian I (r. 527–565) of the Roman Empire. In this model, the Christian Church is governed by the heads (patriarchs) of the five major episcopal sees of the Roman Empire: Rome, Constantinople, Alexandria, Antioch, and Jerusalem.[14]

The Ecumenical Patriarchate is composed of nine provinces: the Archbishopric of Constantinople, the Holy Metropolitan Cities in Turkey, the Holy Metropolitan Cities in Greece, the other provinces of the Ecumenical Throne in Europe, the Province of America, the Provinces in Asia, the Provinces in Oceania, the Autonomous Churches, and the Patriarchal and Stavropegic Monasteries. Within the jurisdiction of the Archbishopric of Constantinople, there are 54 churches located in areas such as Fener, Tatavla, the Bosphorus, Ypsomatheia (Samatya), and Beyoğlu- Taksim. The Holy Metropolitan Cities in Turkey include Chalcedon (Kadıköy), Derka, the Princes' Islands, Imbros and Tenedos, Pisidia, Silybria, Adrianople (Edirne), Smyrna (Izmir), and Proussa (Bursa). Due to significant population decline in several of these provinces, their respective *metropolitans* are often based in churches located in Istanbul. In Istanbul, the Greek Orthodox churches are administered by the Archbishopric of Constantinople, Holy Metropolitan of Chalcedon (Kadıköy), Derka, the Princes' Islands and Patriarch of Jerusalem.[15]

GREEK ORTHODOX CHURCHES

Today, the number of Greek Orthodox Churches of Istanbul constructed before Tanzimat Edict is 54, whereas those erected after the edict is 42.[16] There are 64 Foundations that are responsible for the management of Greek Orthodox Assets. The churches are important Cultural Heritage assets, and their conservation values can be evaluated through multiple dimensions: documentary, historic, architectural, religious and cultural use, social and symbolic significance, authenticity & integrity and political issues. Symbolising minority presence and resilience within the broader narrative of the Turkish nation-state is one of the most significant facts of the cultural heritage assets.

Conservation Challenges of the Churches

The prominent document on authenticity is Nara Document scrutinises the importance of cultural diversity and heritage diversity. The diversity of cultures and heritage is an irreplaceable source of values. All cultures and societies are rooted in the forms and means of tangible and intangible expression, which constitute their heritage, and these should be respected.[17] Moreover, The ICOMOS established International Scientific Committee on Places of Religion and Ritual (PRERICO) to promote the tangible and intangible aspects of religious buildings for the conservation of their present, past and future roles.[18] Istanbul is a unique case for the multi-layered urban fabric and the preservation of Greek Orthodox heritage buildings in the city faces a range of complex challenges, many of which are rooted in historical and political developments that have shaped the region's demographic landscape. One of the most significant events was the 1924 Convention for the Population Exchange between Greece and Turkey, following the Greco-Turkish War (1919 –1922). This agreement led to the forced migration of over 1.5 million Greeks from Turkey and approximately 500,000 Muslims from Greece. Further demographic decline was exacerbated by the September 6–7 pogrom of 1955 and the long-standing Cyprus conflict, both of which accelerated the emigration of

the Greek Orthodox community from Istanbul. As a result, the users of many ecclesiastical heritage sites have significantly diminished.[19]

This demographic contraction has been impacted by a lack of financial resources allocated for the conservation of these historic structures. With fewer active community members to support their upkeep, many buildings were abandoned and suffer from neglect and deterioration. Moreover, the intersection of cultural heritage legislation and foundation (vaqf) regulations presents legal ambiguities and bureaucratic obstacles, further complicating conservation and maintenance efforts. The population is ageing, and the maintenance of buildings largely depends on external support. Even when restoration projects are initiated, there are ongoing concerns regarding the technical quality and authenticity of interventions on the registered (listed) buildings.

On the other hand, During the Republican period, many Greek Orthodox foundations in Istanbul lost control of their properties due to reclassification as mazbut (state-controlled) or mülhak (linked) foundations. In 1936, non-Muslim foundations were required to declare their immovable assets. Those that failed to do so were denied legal status, and their properties were re-registered by the Treasury. If a foundation could not appoint a board for ten years, it would be transferred to the General Directorate of Foundations. As a result, communities lost both property rights and administrative authority, and many assets were transferred to third parties, making restitution impossible.[20]

In addition to human and legal challenges, environmental and urban pressures pose serious threats to the long-term preservation of these sites. Seismic activity presents a significant risk, underscoring the urgent need for earthquake-related research and risk mitigation strategies. Urban development pressures—including new construction and changes in zoning regulations—often threaten the physical integrity and contextual value of heritage sites. Effective conservation requires not only technical restoration, but also continuous maintenance informed by strategic and sustainable conservation planning.

Lastly, the evolving role of minority communities, such as the Antiochian Arab Orthodox community, highlights the importance of transcultural and intercommunal relationships in sustaining the functions of Greek Orthodox assets. Their involvement suggests a broader understanding of heritage, not only as a material legacy but also as a living cultural and social practice, requiring inclusive and adaptive approaches to conservation and management.

The Narrate Project

There are individual attempts to conserve the churches however there is no holistic approach planned for the conservation of the Greek Orthodox architectural heritage. Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples (Narrate Project) is one of the internationally funded programs covering the documentation of movable cultural heritage assets of the churches. The main objective of the project is to engage stakeholders sharing different profiles and roles to provide their opinions on the needs and priorities concerning ecclesiastical CH documentation processes. The other aim is to design, develop and implement an ecclesiastical-centred data repository and data discovery service based on open-source tools and standard data exchange mechanisms.[21] The project team creates data model and reference ontologies for describing ecclesiastical cultural treasures based on a semantic metadata description.[22]

CASE STUDIES

The sites in Kuzguncuk were selected due to the declining Greek Orthodox population in the neighborhood and the continued efforts of the remaining community members to maintain religious practices. The Church of Vlahsaray (Panagia Paramithia Greek Orthodox Church) was included in the study because of its historical significance as a former residence of the Patriarchate and its current

condition: after suffering a fire in the 1970s, the structure has remained unrestored and been obsolete (Figure 2).

Figure 2. The location of Case Studies in Istanbul. (The different colours of pin indicate the administration of the churches. Blue: Kadıköy Chalcedon Metropolitan; Archbishopric of Constantinople, Light Grey: Beyoğlu; Dark Gray: Tatavla; Red: Fener, Black: Bosphorus, Dark Green: Samatya)

Kuzguncuk Hagios Panteleimon Church

The church, which has existed in Kuzguncuk since the Byzantine period, was rebuilt during the reign of Sultan Bayezid. After being damaged, it was reconstructed in 1587 and 1592 by Patriarch Jeremias II. It was later repaired during the tenure of Gabriel, Metropolitan of Kadıköy (1688–1702).

The church suffered a major fire in 1831 and was rebuilt between 1836–1837.

It burned down again on July 26, 1872, and was rebuilt once more between 1890–1892 by the architect Nikolaos Zikoú. The entrance to the church courtyard is provided through a bell tower built in 1911 by Andon Hüdaverdioğlu.[23] This two-story tower, made of marble, is topped with a dome (Figure 4). Pulat Sönmez and Mazlum states that architectural styles of church and tower are very different despite of the close construction year, the former has Greek cross plan scheme, the latter has an eclectic style with floral ornamentation and relief of column on façade.[24] The church has a basilica plan, and on the short eastern side of the building, there is an apse projecting outward. The walls are generally constructed with roughly hewn stones of various sizes; however, the corners and the apse masonry differ from the rest. Larger, smoothly cut stones were used at the corners (Figure 3). Although the church has entrances on both the north and south façades, the main entrance is provided through the narthex located on the western side. The north and south façades are the longer sides of the building and feature arched windows and triangular pediments. Traces of windows were later closed are visible on the facades. On the eastern façade, where the apse is located, there is a pediment and three arched windows. Circular staircases on both sides of the narthex lead up to the upper gallery. The apse is covered with a conical roof, where traditional Turkish-style roof tiles have been

used. The structure includes a templon screen, and stones inscribed with writings are embedded on the floor.

Figure 3. North façade of Kuzguncuk Hagios Panteleimon Church (Personal Archive, 2025)..

Figure 4. The bell tower of the church (left), masonry system in the corners (middle), inscription on the floor in the apsis area (right) (Personal Archive, 2025).

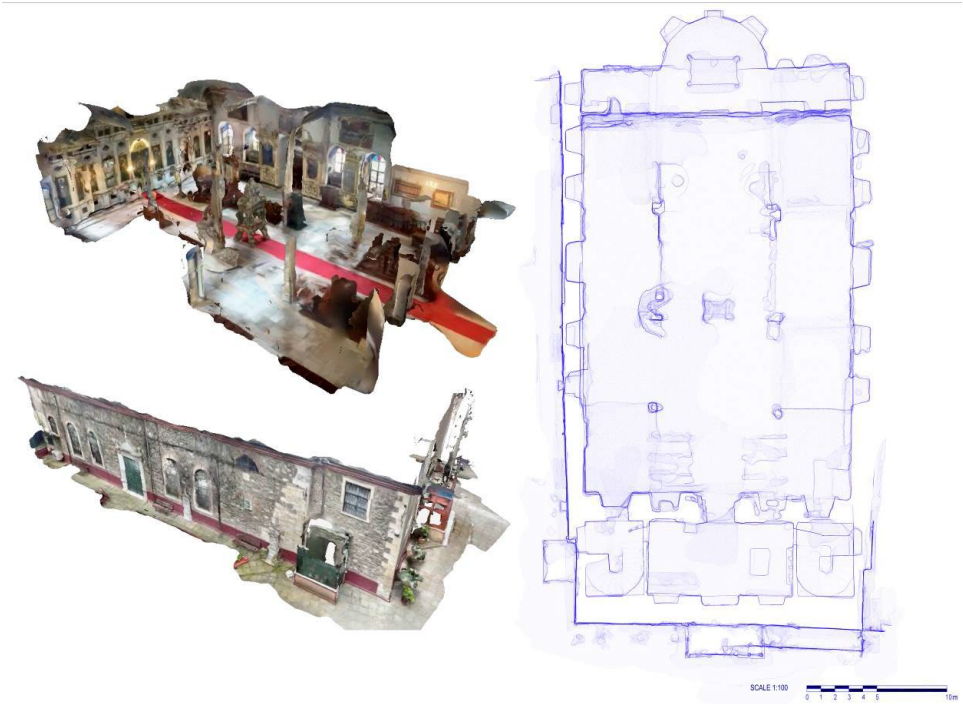

Figure 5. Documentation of the church with PolyCam studies. Interior, north façade, the plan (2 May 2025).

Kuzguncuk Hagios Georgios Church

The Kuzguncuk Church of Hagios Georgios was originally dedicated to Saint Panteleimon but was later rededicated to Saint George. It was completely rebuilt in 1821 and underwent restoration in 1951. Another major restoration took place in 1995, during which the building was significantly altered.[25]

The Kuzguncuk Hagios Georgios Church has a basilica and rectangular plan. Entry is through the southwest, leading into the narthex. The naos consists of three aisles; at the eastern end, aligned with the central nave, there is a semi-circular deep apse. On the western end, the narthex extends along the north–south axis. The aisles in the naos are divided by four columns on each side, and the side aisles are elevated one step above the central nave. Above the narthex, there is a gallery, supported by columns that also form a row of five on each side within the naos.[26]

A triangular section on the northern side of the church was added later and functions as a meeting room. The structural system of the building is visible from the exterior. It is constructed from rough-cut stone, with window arches and arch pediments made of brick. During the most recent restoration, the original church flooring was lost and replaced with ceramic tiles.

Figure 6. Kuzguncuk Hagios Georgios Church (Google Maps)

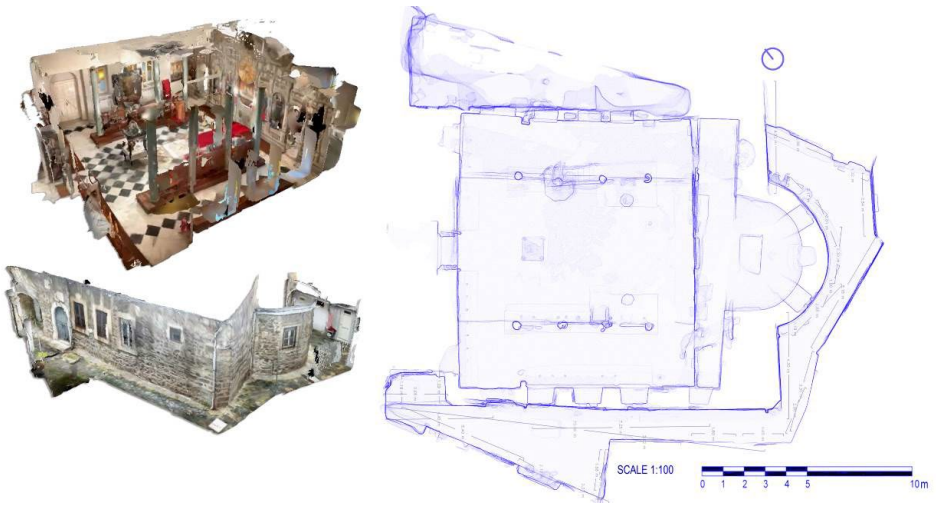

Figure 7. Documentation of the church with PolyCam studies. Interior, south façade, the plan (2 May 2025).

Panagia Paramithia (Vlahsaray) Greek Orthodox Church

The land on which the church stands is believed to have been granted to the Wallachian princes by Sultan Suleiman in 1529. An example of Orthodox architecture from the Ottoman period, the Vlahsaray Panagia Paramithia Church originally served as a palace chapel for the Wallachian rulers. However, when the Patriarchate was relocated from the Pammakaristos Monastery (now the Fethiye Mosque), the church served as the city's cathedral for ten years, beginning in 1587. It was later damaged by a fire in 1974.[27] The church is located within the same area as the Fener Hagios Georgios Metokhion Church.[28] Researcher Karaca briefly mentions the church under the heading of the Fener Hagios Georgios Metokhion Church, it as an abandoned structure located in the southwestern part of the site. In detailed maps prepared by the Central Directorate of Insurers of Turkey, the church and its surrounding structures are picturised. The main church appears as the largest stone-built structure in

the complex. Flanking it on either side are two buildings marked as wooden structures, which may have functioned as chapels, as indicated in Greek on the map.[29]

Today, the surviving masonry walls and fire damage are still visible (Figure 8). Located on sloped terrain, the building's western façade is elevated. Entrances are found on both the northern and southern façades, while an apse structure is located to the east. Traces of wooden roofing elements can be observed in the masonry walls of the chapels to the north and south. The new rectangular structure was erected in the area serving as a gathering area for the community. It is stated that the Architectural team of Özyeğin University started the preparation of conservation project of Panagia Paramythia Church funded by the Ambassadors Fund for Cultural Preservation (AFCP).[30]

Figure 8. The church from 1970s before the fire[31] (top left), west façade of the church after the fire (top right), interior and apsis part of the church (bottom left), north façade of the church (bottom right) (Personal Archive, 2025).

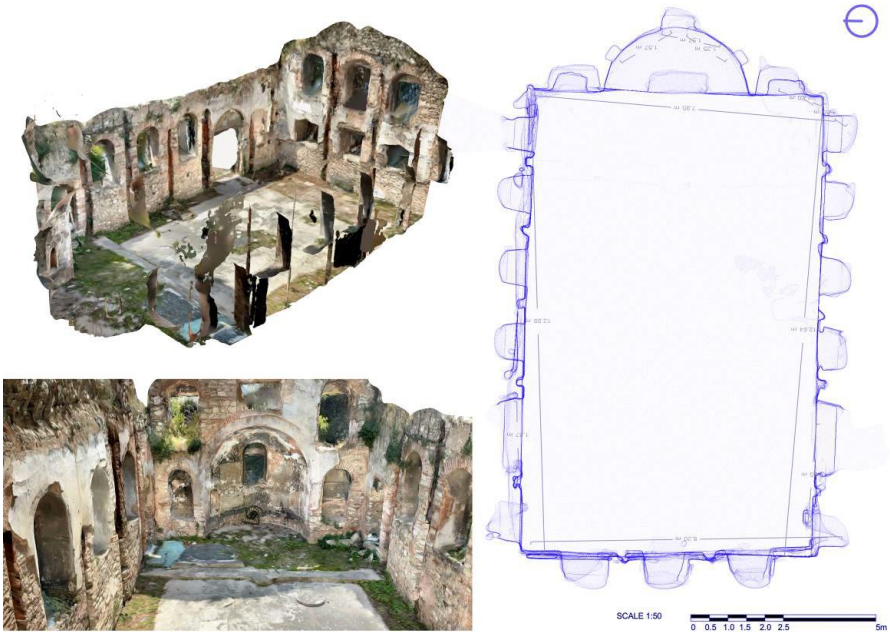

Figure 9. Documentation of the church with Polycam studies. Interior (9 May 2025).

CONCLUSION

The Greek Orthodox churches of Istanbul, rich in historical and cultural significance, face multifaceted challenges threatening their continuity. A sharp population decline, driven by political events and forced migration, has led to underuse of buildings. Legal and bureaucratic obstacles surrounding foundation governance hinder sustainable conservation efforts, particularly in securing funding.

This study assesses the current condition and locations of these churches, highlights key conservation issues, and explores their future potential. Using Polycam software, three churches were documented collaboratively with community members and staff which leads to examine the attitudes toward digital preservation. Although the community values the digitization of cultural assets, they concern about the security of publicly shared architectural and ecclesiastical content in the online platforms.

Findings reveal that conservation is constrained by demographic decline, legal uncertainty, financial limitations, urban pressures, and seismic risk. While many churches remain structurally intact, they are increasingly disconnected from active heritage management and community life.

Economically, these churches suffer from limited funding and insufficient financial mechanisms for regular maintenance, monitoring, and seismic risk mitigation—particularly critical in a city like Istanbul with high seismic vulnerability. The urban pressure caused by high-density development continues to jeopardise the urban integrity and the surrounding cultural landscape of these heritage sites.

At the same time, these churches possess immense potential as instruments of cultural dialogue, social inclusion, and historical continuity. As physical embodiments of transcultural identity, Antakya Orthodox communities are lodged and recruited in the churches of Rum Orthodox. It may lead to adapting the Arab Orthodox culture to the Greek Rum culture of Istanbul. Their conservation is not merely about architectural preservation but about sustaining the intangible values they carry—rituals, memory, and collective identity.

To ensure their survival, conservation strategies must be reimagined through an integrated approach that combines legal reform, seismic preparedness, digital documentation, and energy efficiency measures. The cultural heritage and others could be a sustainable development tool that demands community engagement, inclusive governance, environmental values, along with the retrofitting via renewable energy sources and recognition of these monuments as active agents in today's urban and social life. With thoughtful intervention and a holistic approach, the Greek Orthodox churches of Istanbul can continue to serve as resilient nodes of memory and identity, contributing meaningfully to the cultural sustainability of the city.

NOTES

[1] The communities living in Turkey who speak Greek have historically been referred to as “Rum.” This term is derived from the Arabic and Persian word rūm (روم), which refers to the Byzantine, or Eastern Roman Empire. The word itself traces back to the Ancient Greek Ῥώμη (Rhōmē), meaning “Rome.” In Turkish usage, the term does not fully correspond to the term “Greek” as used in Western literature. In English, “Greek” refers both to the people of modern Greece and to the Greek-speaking Christian communities who lived within the borders of the Ottoman Empire and modern-day Turkey. However, the term “Rum” also encompasses the Roman (Byzantine) identity and the specific geographic and historical context of these communities. Therefore, using only “Greek” to describe the Rum communities of Turkey in English-language writing results in a terminological gap and overlooks significant historical and cultural dimensions. In future studies, it is crucial to address the term “Rum” with its proper and distinct meaning to ensure conceptual clarity and contextual accuracy.
[2] Zafer Karaca, *İstanbul’da Tanzimat Öncesi Rum Ortodoks Kiliseleri* [Greek Orthodox Churches in Istanbul Before the Tanzimat] (İstanbul: Yapı Kredi Yayınları, 2008).
[3] Evangelia Aleksandru, *19. Yüzyılda İstanbul Rum Ortodoks Kiliseleri* [Greek Orthodox Churches in Istanbul in the 19th Century] (master’s thesis, İstanbul Teknik Üniversitesi Institute of Social Science, 1996).
[4] Michael Tsiappoutas, “Church Map,” Patriarchal Psaltophiles, accessed July 30, 2025, https://www.patriarchalpsaltophiles.org/map.
[5] The authors would like to thank Gizem Büyükgüner Sönmez and Murşit Sönmez for their valuable contributions during the on-site Polycam documentation.
[6] Demirkent, Işın. “İstanbul.” *Türkiye Diyanet Vakfı İslâm Ansiklopedisi*. Accessed July 30, 2025. https://islamansiklopedisi.org.tr/istanbul#1.
[7] Karaca, İstanbul’da Tanzimat Öncesi, 27.
[8] Cristoforo Buondelmonti, *Map of Constantinople (1422)*, in *Liber Insularum Archipelagi*, reproduced in MeisterDrucke (undated image), original map dated 1422, Bibliothèque nationale de France, Paris, public domain
[9] Karaca, İstanbul’da Tanzimat Öncesi, 27.
[10] Karaca, İstanbul’da Tanzimat Öncesi, 29; Aleksandru, *19. Yüzyılda*, 12.
[11] Aleksandru, *19. Yüzyılda*, 10.
[12] Karaca, İstanbul’da Tanzimat Öncesi, 52.
[13] Karaca, İstanbul’da Tanzimat Öncesi, 52.
[14] Pavel Kuzenkov, “How the ‘Order of Honour’ Is Determined in the Orthodox Churches,” *Moscow Patriarchate Department for External Church Relations*, accessed July 30, 2025, https://mospat.ru/en/authors-analytics/59575/.
[15] Karaca, İstanbul’da Tanzimat Öncesi, 66 – 69; Ecumenical Patriarchate, “Archbishopric of Constantinople,” accessed July 30, 2025, https://ec-patr.org/entities/archiepiskopi-konstantinoypoleos/
[16] Karaca, İstanbul’da Tanzimat Öncesi, 64 – 65.
[17] ICOMOS, *The Nara Document on Authenticity* (Nara, Japan: International Council on Monuments and Sites, 1994), https://www.icomos.org/charters/nara-e.pdf.
[18] ICOMOS, International Scientific Committee on Places of Religion and Ritual (PRERICO), accessed July 30, 2025, https://prerico.icomos.org/.
[19] Nur Akın, “Beyoğlu,” in *Günümüze Doğru Beyoğlu*, in *Dünden Bugüne İstanbul Ansiklopedisi* [*The Encyclopedia of Istanbul from Past to Present*], vol. 2 (Istanbul: Ministry of Culture and History Foundation, 1994), 216–218.
[20] Turgay Cin, “Türkiye ile Yunanistan’daki Azınlık Vakıflarının Hukukî Düzenlemelerinin Karşılaştırılması,” *Dokuz Eylül Üniversitesi Hukuk Fakültesi Dergisi* 9, special issue (2007): 1111–1143, accessed July 30, 2025, https://dergipark.org.tr/tr/pub/deuhfd/issue/46938/589021.
[21] NARRATE Project, “About the Project,” *NARRATE Project*, accessed July 30, 2025, https://www.narrate-project.eu/who-we-are/
[22] Aikaterini Stamou et al., “Preserving Ecclesiastical Cultural Heritage of Thrace: A Needs Analysis for Digital Recording in Monasteries and Temples,” *Heritage* 8, no. 2 (2025): 66, https://doi.org/10.3390/heritage8020066.
[23] Aleksandru, *19. Yüzyılda*, 98-100.
[24] Ece Sönmez Pulat and Deniz Mazlum, “Restoration of the Greek Orthodox Churches at the End of the 19th Century in Istanbul: Case of Galatasaray Panagia Church,” *ICONARP International Journal of Architecture and Planning* 8, no. 1 (2020): 357–382, https://doi.org/10.15320/ICONARP.2020.117.
[25] Karaca, İstanbul’da Tanzimat Öncesi, 503.
[26] Karaca, İstanbul’da Tanzimat Öncesi, 507 - 508.

[27] Panagia Paramythia Greek Orthodox Church, “History,” *Panagia Paramythia Greek Orthodox Church*, accessed July 30, 2025.
https://www.panagiaparamythiachurch.org/about. Church
[28] According to parcel records, the Hıdır İlyas Church—also known as the Aya Yorgi Metokhion Church—is situated in Fatih district, Tevkii Cafer Neighbourhood, Block 2309, Parcel 1; meanwhile, the Panagia Paramithia Vlahsaray Greek Orthodox Church is recorded in the same neighbourhood at Block 2309, Parcel 15.
[29] Panagia Paramythia Greek Orthodox Church, “The Architecture of Panagia Paramythia (Vlach-Sarai): Achieving a Net Zero Carbon Footprint,” *Panagia Paramythia Greek Orthodox Church*, accessed July 30, 2025, https://grey-cornet-wlbe.squarespace.com/news/carbon-zero-6z65t
[30] Panagia Paramythia Project, Özyeğin University, “Press,” Panagia Paramythia, accessed July 30, 2025, https://paramythia.ozyegin.edu.tr/press
[31] Panagia Paramythia Greek Orthodox Church, “The Architecture of Panagia Paramythia (Vlach-Sarai): Achieving a Net Zero Carbon Footprint,” *Panagia Paramythia Greek Orthodox Church*, accessed July 30, 2025, https://grey-cornet-wlbe.squarespace.com/news/carbon-zero-6z65t

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DESIGNING FOR THE DESERT: EXAMINING CONTRAST IN CONTEMPORARY ARCHITECTURAL DESIGN FOR ARABIC ARCHAEOLOGICAL SITES

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INTRODUCTION

The Middle East and North Africa (MENA) geographic region is one of a deep-rooted and complex history, with diversity in its cultures and modern-day societies. However, certain facets are shared, including both the geography and common climatic conditions, where much of the region falls within what is considered an arid desert climatic zone. Accordingly, many vestiges of this history present themselves within the region's deserts, reflected in the remaining archaeological sites throughout, with many of the most outstanding sites carrying universal value for all. This harsh climatic reality imposes upon these sites a visitor's need for supporting services and facilities; this need has been met with many contemporary architectural proposals. Despite the established commonality in geography and climate, these proposals take different approaches to their design process, and present different typological and stylistic decisions. In this paper, several chosen architectural projects at or near archaeological sites from across the region will undergo a qualitative comparative analysis to determine why their designs may agree or differ even when under very similar climatic, geological, and perhaps even cultural conditions.

People and the desert

Deserts cover approximately one-third of the world's surface on every continent,[1] and are home to approximately one billion people,[2] around one-eighth of the current world population. Much of these deserts, whether *arid, semi-arid,* or *extremely arid,* are located in the MENA region as part of the largest province of non-polar deserts in the world (i.e., the Sahara and its eastward continuations).[3] Studies of the geological nature and history of deserts as such have long attracted scientific interest – as seen in Figure 1,[4] and this does not include the research into the growing number of urban agglomerations which experience similar, if not exacerbated climate conditions with the combined factors of a desert climate and accelerating climate change.[5]

Figure 1. A 1938 photo of Ralph Bagnold, pioneer of dune studies, by R.W. Peel, recording sand movement in the Western desert of Egypt [6]

Due to the dry and hot nature of the region acting as a preservative,[7] the desert is host to both natural and cultural heritage sites and other archaeological remains representative of the region's rich and storied history. In the United Nations designation of the Arab States, which is the working definition of the MENA region used in this paper, there are already two desert cultural heritage sites inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List, along with a further four natural or mixed heritage sites, with many more sites on the Tentative List.[8]

Cultural landscapes

It is worth noting the definition of cultural landscape in this case, as this is of relevance when discussing the significance of research into architectural projects serving archaeological sites. According to UNESCO, a cultural landscape is a landscape representative of the combined works of nature and man, demonstrating the interaction between human activity and the natural environment over time.[9] These landscapes, much as other listed sites, are recognized for their cultural, historical, or aesthetic values. Categorised as either landscapes intentionally created by man or organically evolved landscapes,[10] these landscapes represent a newer understanding of heritage[11] than the more traditional "tangible heritage" concept that originated in the 1950s.[12] Due to this development, an ever-increasing number of cultural landscape sites are submitted for World Heritage Site nomination, and deserts are hosting more cultural activities in turn.[13] Therefore, an understanding of main factors both responded to and integrated by potential architectural designs for cultural landscapes (archaeological or otherwise, Arab or not) can elucidate an understanding of best practices in this burgeoning field.

SELECTED CASE STUDIES

With the groundwork of literature established above on relevant topics including the historical context of people in the desert and the significance of heritage and cultural landscapes, the paper now proceeds to establish the comparative analysis portion of the study, where accordingly six case studies were chosen – as illustrated in Figure 2.

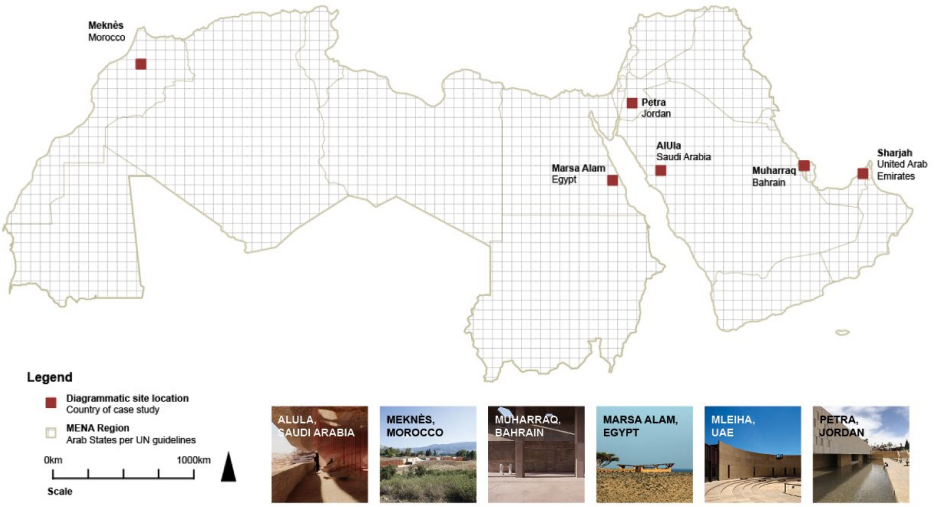

Figure 2. Diagrammatic map of chosen case studies. The mapped MENA region follows the UNESCO "Arab States" designation for State Parties. Map by author, photos credited below

As can be seen above, the six case studies chosen are located in the MENA region, with each project in turn a contemporary (21st century) architectural proposal near an archaeological site of note. The choice of the MENA region is rooted in the relatively common climatic conditions regardless of the nation, the significant presence of archaeological sites in desert climatic zones, and the growing development of architectural projects to service these sites. The projects and sites chosen are as follows: the Sharaan Desert Resort at AlUla Archaeological Park in Saudi Arabia, the Volubilis Visitor Centre at the Roman remains of Volubilis in Morocco, the Pearling Path Visitor and Experience Centre on the Pearling Path in Bahrain, the Wadi El Gemal Visitor Centre near Wadi El Gemal National Park in Egypt, the Mleiha Archaeological Centre in the Paleolandscape of Faya in the United Arab Emirates (UAE), and the Petra Museum outside the Petra Archaeological Park in Jordan. The selection criteria accordingly were first the location of the architecture proposal (in the MENA region, near an archaeological site, within the shared hot climatic zone), and the temporal placement of its design and construction within a contemporary time period (e.g., the 21st century). Accordingly, all projects above are located in regions classified as *BWh* per the Köppen climate classification (hot arid desert), with the exception of Volubilis, which is located in the similarly hot *Csa* classification (hot Mediterranean climate).[14] The aim of this qualitative comparative analysis is to compare between the projects both the design choices made in each project and how the design interfaces with its context, in order to determine the common factors shared and responded to between the case studies and the most prominent points of difference.

Sharaan Desert Resort – AlUla, Saudi Arabia

The first case study is the Sharaan Desert Resort, located in the Sharaan Nature Reserve near AlUla Archaeological Park and Hegra in Saudi Arabia. Designed by Ateliers Jean Nouvel,[15] the project is currently under construction inside a valley within the nature reserve. As can be seen in Figure 3,[16] the project is designed to be subterranean and embedded in nature, as the architects wished to reference in the design the local Nabatean heritage – of architecture which is carved and sculpted into rock – through an interpretation equally embedded in the sandstone cliff chosen. The architects justified their design as not only referencing the heritage, but as also protecting the inherent "mystery" of both the site and archaeological park entirely through embedding the architecture within the landscape rather than overlaying new elements on the surrounding nature. This integrated design, which includes perforations and embedded façade openings, thus creates a unique experience which can attract

visitors in its own right, beyond the wide-scope attraction of the archaeological site, while simultaneously fulfilling hospitality or accommodation needs on-site through its typological function. Consequently, these design choices seemingly conform to the climatic needs of a hot arid desert such as this, by reducing the amount of glazing and heat gain through sunlight and maintaining a heavy thermal mass through the stone. However, due to this particular project having ongoing construction works, it cannot be ascertained whether the design will be finalised as is, or change to something other than what can be determined through the published materials.

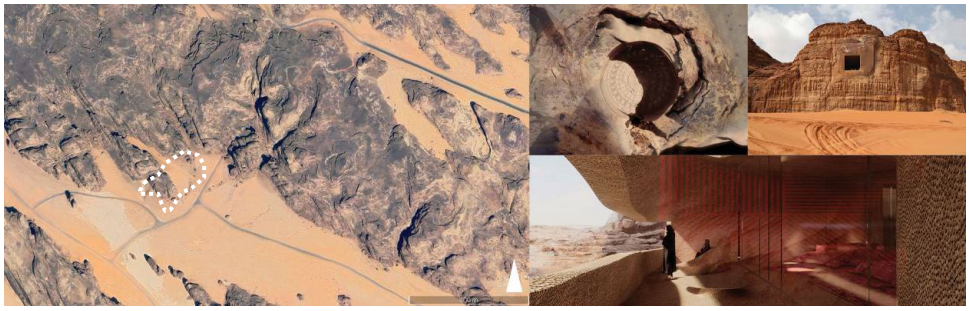

Figure 3. Left: satellite map of Sharaan Desert Resort (presumed outline – final boundaries not defined yet), right: composite of competition renders of project. Map courtesy of Google Earth, renders courtesy of Ateliers Jean Nouvel via METALOCUS[17]

Volubilis Visitor Centre – Meknès, Morocco

The second case study is the Volubilis Visitor Centre, located by the Volubilis remains near Meknès, Morocco. Designed by OUALALOU+CHOI Architectes and completed in 2013,[18] this project also attempts to embed itself into the context – as shown in Figure 4. Although not to the cavelike extent of Sharaan Desert Resort in Saudi Arabia, this entrenchment is purposely designed to reduce the project's visual impact on the surrounding landscape and ruins. The architects also constructed the building to decay over time via its own materiality, becoming in effect a circular design that will with time leave no trace on the site at all.

Figure 4. Left: satellite map of Volubilis Visitor Centre (outlined), right: composite of photos of project. Map courtesy of Google Earth, photos courtesy of Luc Boegly for OUALALOU+CHOI Architectes[19]

The building is a series of wood-cladded volumes, laid along a retaining wall with a total length of 200m; this subsequently allows the project to be only 8m wide, which supports the architects' intentions for an imperceptible design in relation to the ruins. Furthermore, this sequencing of upper and lower volumes allows for a mixture of indoor and outdoor spaces to serve the building's needs, and the design responds to the climatic needs of such spaces by shading the exterior spaces with both the cantilevered overhanging first-floor volumes of the building, along with extensions of the wooden cladding that work as shading louvers.

Pearling Path Visitor and Experience Centre – Muharraq, Bahrain

The third case study is the Pearling Path Visitor and Experience Centre on the UNESCO World Heritage Site of the Pearling Path in Muharraq, Bahrain, completed in 2019.[20] The Visitor and Experience Centre was designed by Valerio Olgiati Architects to be the "foyer" of the medina; this encourages an infrastructural use of public space by the public through reclamation, improving accessibility to the archaeological sites on the path. This reclamation is physically accomplished first by the massive outdoor concrete shading structure, reframing an empty space as an accessible park "interior" for the city denizens – as can be seen in Figure 5, set-back from the city and streets, and supported by inserted wind towers designed to cool the area further. This is followed by the actual visitor centre building on-site, introducing guests to the path and hosting supporting functions, with a matching heavy concrete design that greatly reduces the amount of glazing to create a cool, subterranean experience of its own through select skylights, echoing the controlled opening design in the park's shading structure.

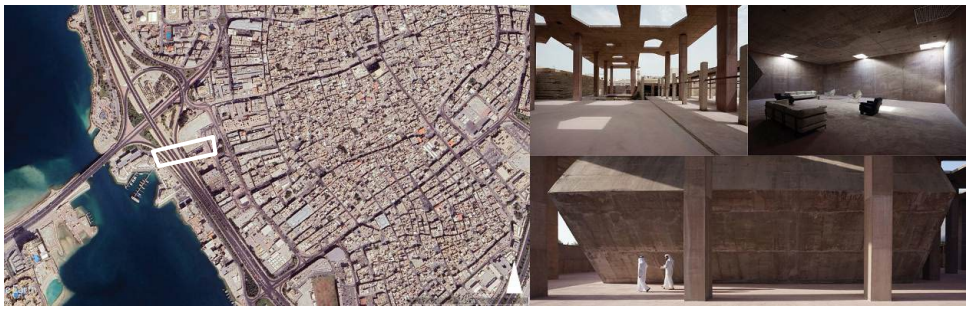

Figure 5. Left: satellite map of Pearling Path Visitor and Experience Centre (outlined), right: composite of photos of project. Map courtesy of Google Earth, photos courtesy of Archive Olgiati[21]

Wadi El Gemal Visitor Centre – Marsa Alam, Egypt

The fourth case study is the Wadi El Gemal Visitor Centre, near the Wadi El Gemal National Park, a park of both natural and cultural significance, with several archaeological remains dating back thousands of years. Designed by MADA Architects in collaboration with the Egyptian Earth Construction Association and completed in 2008,[22] the project takes a partially different design direction than the case studies described so far by using local resources in the construction process, which can then be dismantled and reused if needed. The building displays its construction techniques accordingly, first for ease of assembly and disassembly, and to introduce new architectural methods to the region using the same local materials the indigenous people do, who assisted with the construction of the centre due to the remoteness of the site. Materials included local Gazarena wood and palm ribs used as screens and window shading, and basalt load-bearing construction – as seen in Figure 6. The orientation and technical details of the building also serve to respond to climatic conditions, with the mass of the basalt building designed to shield the outdoor spaces from uncomfortable predominant winds, while the double-layer corrugated roof circulates air into the interior of the building. The building's orientation and sequencing of indoor and outdoor spaces also serves to supplement the proposed functions, and frame views of the surrounding landscape: the desert, mountains, and Red Sea beyond.

Figure 6. Left: satellite map of Wadi El Gemal Visitor Centre (outlined), right: composite of photos of project. Map courtesy of Google Earth, photos courtesy of Nour El Refai and Ramses Nosshi for MADA Architects[23]

Mleiha Archaeological Centre – Sharjah, United Arab Emirates

The penultimate case study is the Mleiha Archaeological Centre; completed in 2016,[24] it is in the Paleolandscape of Faya near Sharjah, a site newly inscribed on the UNESCO World Heritage List.[25] Designed by Dabbagh Architects, the project's form begins with concentricity, as the building circles itself and undulates around an existing tomb, the tomb of Umm Al Narr – as shown in Figure 7.

Figure 7. Left: satellite map of Mleiha Archaeological Centre (outlined), right: composite of photos of project (bottom right photo: Umm Al Nar tomb can be seen in the bottom right corner, enveloped by the project). Map courtesy of Google Earth, photos courtesy of Gerry O'Connor for Dabbagh Architects[26]

The form rises from the ground in an extension of the outdoor space on the roof, allowing a different form of interplay of interior and exterior spaces than seen in previous case studies, and the resulting viewing terrace frames the site and the tomb within in a new way, as do both the entrance courtyards shaded by local trees and the openings of the building itself. The materiality chosen is locally sourced here as well, with the sandstone cladding selected to match the colours of the site while facing the sun for most of the day, with glazing minimised on the south façade encircling the tomb and its plaza.

Petra Museum – Petra, Jordan

The final case study is the Petra Museum, located in the entrance area of the Petra Archaeological Park in Jordan. Designed by Maisam Architects and completed in 2019[27], it is an element in the strategic masterplan developed for the area, which includes an updated visitor centre, plazas, and the museum in question, all responding to what was previously a disorganised first impression of the UNESCO-listed park. Much like the previous case studies, the architects intended for the project to blend into the surrounding landscape so as to not overwhelm the heritage near to it. Thus, the lower floor is carved from locally sourced stone using traditional techniques to match the materiality of Petra – as shown in Figure 8. This is contrasted by the simple upper floor, determined by the

architects to be a metaphor for the relation between past and present. Of course, the heaviness of the materiality improves the building's climate performance through its thermal mass; the overhang of the upper volume also casts shadow on the lower volume, assisting this design feature further. The architects also work to ease the surrounding microclimate further through the reflective water pools introduced, which add an element of evaporative cooling to the immediate vicinity.

Figure 8. Left: satellite map of Petra Museum (outlined), right: composite of photos of project. Map courtesy of Google Earth, photos courtesy of Maisam Architects[28]

COMPARISON OF CASE STUDIES

The case studies previously discussed will now be compared along several qualitative axes: materiality, image of the site, and quality of space, to evaluate the main commonalities and points of difference – as summarised in Table 1.

Case Studies	Materiality	Image of the Site	Qualities of Design
AlUla Saudi Arabia	Local sandstone	Retreat from context (entirely hidden design; frames site views)	Thermal mass, subterranean (cave-like) design, perforated façades
Meknès Morocco	Concrete, wood (designed to decay with time)	Oriented with site (partially hidden design; frames site views)	Self-shading structure and design, strategic glazing
Muharraq Bahrain	Concrete	Retreat from context (introspective design)	Thermal mass, minimal glazing, shading structure, skylights
Marsa Alam Egypt	Local basalt, local wood, local palm	Oriented with site (exposed design; frames site views)	Ventilation, local materials, deconstructable
Mleiha UAE	Local sandstone cladding, copper cladding	Oriented with site (exposed design; frames site views)	Local materials, shading
Petra Jordan	Local stone	Retreat from context (exposed design; no sightlines to site)	Local materials, evaporative cooling, oriented with site

Table 1. Summary of qualitative comparison of selected case studies

In terms of materiality, the case studies are split – where two projects chose a clearly visible concrete materiality (albeit offset by wooden louvers in one case), while the other four focused instead on using some form of locally-sourced construction materials. This generally consisted of local stone –

i.e., basalt, sandstone, etc. – and to a lesser degree, local wood – i.e., palm and Gazarena as in the Marsa Alam case, reflecting the reduced availability of a material such as wood in more arid climates such as the ones common to the MENA region. The choice of local materials does serve to blend the project into the site by referencing or complementing the same colours of the surrounding landscape. As for the image of the site, the case studies almost all worked to either have a minimal impact on their sites' vistas (either by withdrawing entirely from view as in AlUla, or otherwise moving away from the main sights as with Petra or Muharraq), or if not possible, instead frame the sites' vistas in some manner, as with Marsa Alam, Mleiha, or Meknès. As for perceived qualities of the design, despite the apparent differences in form and concept clear when comparing the case studies, there are many factors that all the projects share which seem to respond to site-specific climatic conditions and user needs in turn. These include the aforementioned use of local stone as thermal mass for the buildings, heavily reduced usage of glazing, and designing for improved ventilation, increased shading, and integrated evaporative cooling needs. In contrast, some unique points of note from the case studies include the ability to deconstruct a project, as in Marsa Alam, or otherwise design it to disappear for a circular impact, as in Meknès, and the use of skylights to reduce glazing needs further, as in Muharraq.

CONCLUSION

The paper presented discusses the qualitative commonalities and unique differential aspects between selected contemporary architectural case studies near archaeological sites in the MENA region, so as to define which factors these projects either share or differ in regarding both design and context. Whether referencing the culture and history of the sites they serve in their design choices, considering the local environment and surroundings, or responding to common climatic conditions, it is clear that despite both the inherent visual differences and geographic distance between the resulting projects of the selected case studies, the architecture of all the projects consider and respond to similar factors which in turn permeate the deeper reasonings behind the design conceptualization and finalised construction of these architectural projects.

NOTES

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AN INVESTIGATION INTO RURAL ARCHITECTURE AND CULTURAL CONTINUITY IN THE KABAOĞUZ VILLAGES

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INTRODUCTION

The Kabaoğuz Villages comprise ten mountain villages founded by Oghuz whose tribes of nomadic origin, migrated from Central Asia and settled in the Anatolian region. In the historical memory of the Oghuz tribes, led a nomadic life, livestock breeding constituted their primary means of subsistence.[1] The villages were established with the settlement of the Kızık clans of the Oghuz Turks in this region and were named Kabaoğuz. The inhabitants migrated to the highland pastures in summer and spent the winter in the villages, as their livelihood depended on livestock breeding. Strongly influenced by the heritage of their nomadic ancestors, the Kabaoğuz people continued livestock breeding and transhumance activities in seasonal cycles until recent years, in the same way as their ancestors had done. Located in the Central Black Sea Region in the north of Türkiye, they lie within the boundaries of the Gümüşhacıköy district of Amasya Province (Figure 1). The villages of Bademli, Çal, Dumanlı, Kağnıcı, Kızık, Kızılca, Kutluca, Derbentobruğu, Pusacık, and Saraycık are all referred to as the Kabaoğuz Villages. The villages are situated at altitudes ranging between 950 and 1100 meters, while their highland pastures (Apaz and Dumanlı Yayla) are located at approximately 1600 meters.

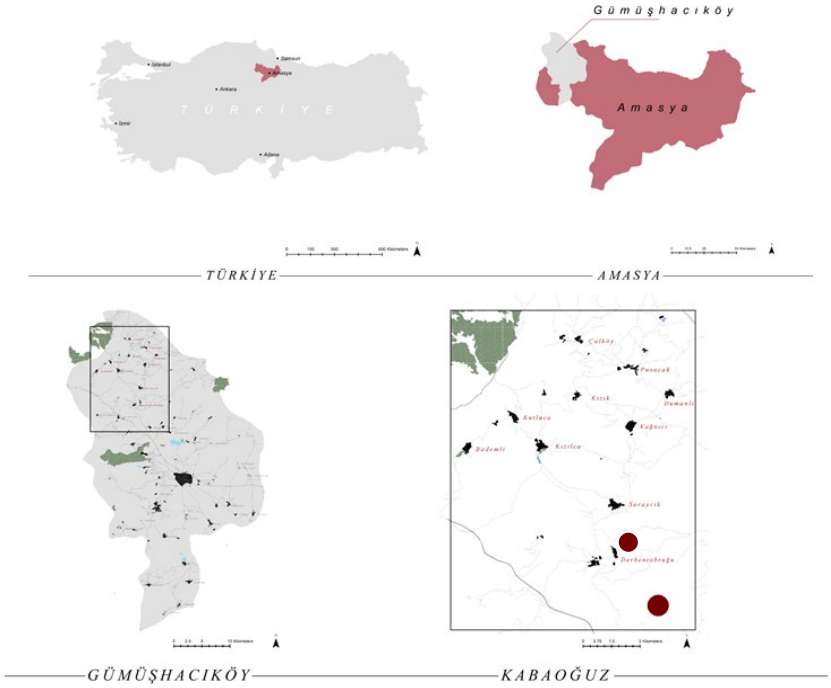

Figure 36. Kabaoğuz Villages

In the 1990 census, it was recorded that 6,062 people resided in the Kabaoğuz Villages.[2] In 2000, the census identified a population of 4,424 in these villages.[3] According to the address-based population registration system, the population decreased from 2,137 in 2021 to 1,989 in 2024.[4] The data indicates that the total population of the villages declines by approximately 50 percent every decade. Due to the significant decline in population, livestock breeding is no longer carried out with large herds as in the past; however, the tradition of migrating to the highlands in May continues today. In these mountain villages, people earned their living by raising sheep and goats, while agriculture was practiced on a scale sufficient to meet the needs of the animals.[5] In the past, tobacco cultivation was widespread, involving people of all ages. However, in the Kabaoğuz Villages, tobacco production has ceased due to the outmigration of young people and its reduced profitability compared to earlier times. In recent years, the production of rosehip and walnut, and the supply of milk and dairy products to local cooperatives have come to the forefront.[6] Today, livestock breeding continues but not widespread as before; however, migration to the highlands is undertaken not for livestock production, but as a cultural ritual. People who have left the villages for various reasons continue to carry their culture into the future through the traditional Kabaoğuz Highland Festivals. This tradition, maintained for the past 29 years, brings villagers together through a festival held in the highlands.

Among the Kabaoğuz Villages, Derbentobruğu stands out for maintaining its rural identity while preserving both its tangible and intangible heritage. According to 2024 data from the Turkish Statistical Institute, the village has a population of 200 people and consists of 100 households.[7] Declining agricultural activities and income levels have led to significant outmigration. Today, most houses are used only during the summer months for holidays or family visits, and the permanent population of the village is largely over the age of 50.[8] The village's sources of livelihood are agriculture and livestock breeding, and it has a highland pasture known as Yakın Yayla.[9]

This article presents research on how to ensure the preservation of the rural architectural fabric of Derbentobruğu Village, one of the Kabaoğuz Villages that largely retains its originality but is under threat, with traditional and cultural roots dating back to ancient times. It addresses issues of cultural

continuity and architectural conservation, discussing the measures that should be taken and offering recommendations. For this purpose, (i) the tangible and intangible cultural heritage has been documented, (ii) proposals for preserving cultural heritage have been formulated, and (iii) evaluations have been conducted regarding the continuity of rural architecture.

METHOD

In the cultural heritage research conducted in the Kabaoğuz Villages, the fieldwork is carried out in two stages: Oral Interviews and Documentation Studies. The first stage, Oral Interviews, is completed through semi-structured interviews aimed at identifying local knowledge holders and obtaining information on tangible and intangible cultural heritage. Based on the data collected, the key elements for documentation are identified and then transferred to the second stage. In the Documentation Studies stage, the selected elements are recorded using digital tools such as photography, video, and 3D point cloud scanning. In addition, their geographical locations are determined to ensure accurate spatial representation (Figure 2). The data collection process is conducted twice, once in 2021 and again in 2025. This timeline reveals the current condition of Derbentobruğu Village in the post-COVID-19 pandemic period, while the 2025 study contributes to understanding the changes that have occurred over the time.

Considering the data obtained, the conservation issues of the rural heritage in the Kabaoğuz Villages are revealed. Finally, the study is concluded with the development of recommendations focusing on community-oriented initiatives, such as the Women's Cooperatives Center, and the preparation of an action plan and an annual event calendar for the Kabaoğuz Villages.

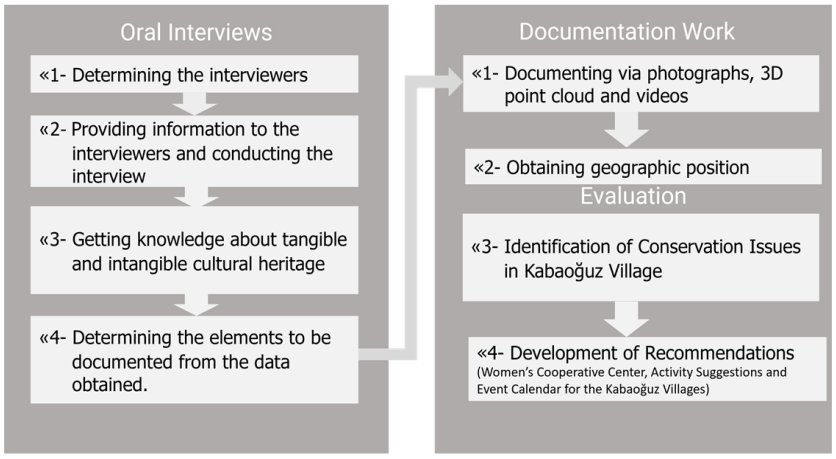

Figure 37. Methodology Diagram

TANGIBLE AND INTANGIBLE CULTURAL HERITAGE OF THE KABAOĞUZ VILLAGES

Tangible and intangible cultural heritage together constitute an inseparable whole that forms the cultural heritage of all societies around the world. Intangible and tangible heritage are inextricably linked through traditional, social, or cultural practices and knowledge that are transmitted from generation to generation, imparting meaning, value, and context to objects, places, and other physical spaces.[10]

In the Kabaoğuz Villages, tangible cultural heritage has also been shaped by intangible heritage. When examining the formation process of cultural heritage, it is seen that spatial production has emerged through cultural practices—driven by basic human needs, economic activities, and means of livelihood—together with environmental conditions such as climate and geography.[11] (See Figure 3)

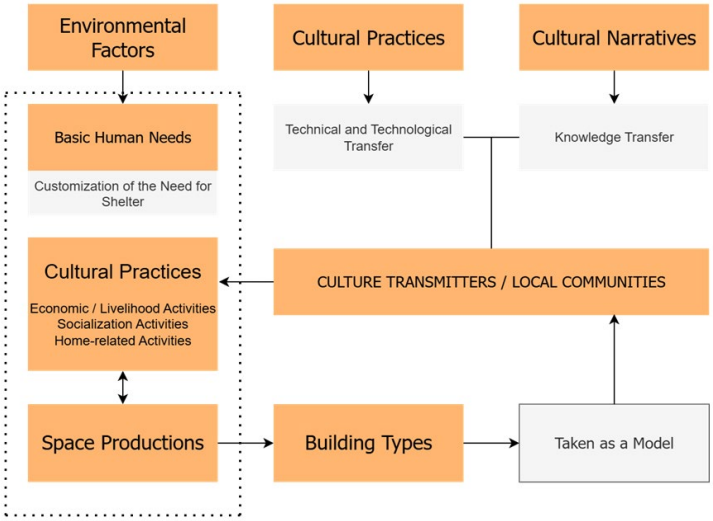

Figure 38. Development Process of Cultural Heritage

In the Kabaoğuz Villages, under the influence of environmental factors, the mountain settlements have been established in accordance with the slope, and timber construction techniques have been employed in spatial production. The traditional houses in the Kabaoğuz Villages were built using the *hımış* (half-timbered wall), *dizeme* (timber stacking), and *çantı* (log) techniques (Figure 4). These construction methods are understood to have developed in harmony with the climatic conditions, topography, and production practices of their geographical setting. The surrounding forests were used as a source of materials, and the characteristics of the houses emerged in line with cultural practices. Due to the villages' high-altitude locations, snow loads are considerable; therefore, hipped roofs, suitable for the climatic conditions, are commonly found in the buildings.

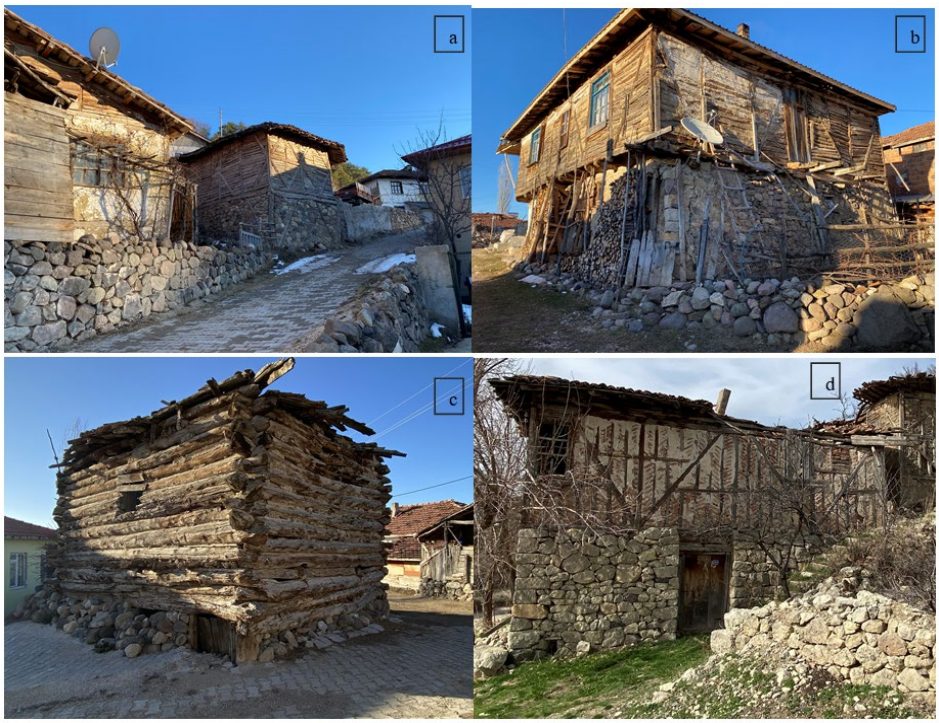

Figure 39. (a) Kızılca village (2021)- dizeme (timber stacking), (b) Kutluca village (2021) -dizeme (timber stacking), (c) Bademli village (2021)- log (çantı), (d) Saraycık village (2021) – half-timbered wall (hımış)

Tangible Cultural Heritage of the Kabaoğuz Villages- Derbentobruğu

Derbentobruğu consists of two distinct neighborhoods, the upper and the lower neighborhoods. The two neighborhoods are connected, and it is learned that they were formed because of sociological conflicts. Derbentobruğu contains a mosque, a milk cooperative station, a fountain, a village laundry, and a village meeting area. Each neighborhood has its own mosque; however, the village headman's office is in the lower neighborhood. The lower neighborhood also contains a primary school, which is currently closed. In the rural fabric, village squares hold socio-cultural and religious significance. Important meetings, events, festivals, rituals, and similar cultural activities take place in these spaces. In Derbentobruğu, the village squares in both the upper and lower neighborhoods serve as mosque forecourts. Additionally, the lower neighborhood contains two other village squares. The first square, located at the entrance of the neighborhood, contains the milk cooperative station, the primary school, the village meeting area, and a fountain. The second square, where the mosque is located, is a place where villagers rest and socialize under the shade of trees (Figure 5).

Figure 40. Traditional Settlement Pattern of Derbentobruğu Village

In Derbentobruğu Village, gardens are an important environmental asset. The buildings do not occupy the entire plot on which they stand, allowing for the creation of gardens and private green spaces. Residents also use their gardens for agricultural production. To store the products they produce, gardens contain storage spaces. These structures, known as herkil, are traditional food storage units. They consist of multiple compartments and are used to store grains such as wheat, as well as other products. The oven/tandoor located in the garden is a clay oven, resembling a fire pit, used for baking bread and sometimes other foods.

In the traditional fabric, the construction techniques observed in the Kabaoğuz Villages include *dizeme*, *çantı*, and *hımış*. Traditional houses are two stories high, with the ground floors used as barns and haylofts. In terms of plan type, they follow the *inner hall* (*iç sofa*) layout, which is a typology of the traditional Turkish house.[12] On the first floor, referred to as the main floor, are the rooms where daily life takes place, where guests are hosted, and the WC. Unlike in the rural fabric elsewhere in Türkiye, the toilet is located not on the ground floor or in the garden, but on the first floor. The rooms contain a fireplace (*ocak*), cupboards, a bathing unit (*banyoluk*), and a wooden bench (*sedir*). The *sedir* is a fixed wooden element commonly found in the rooms of traditional houses, serving as a social seating area during the day and as a bed at night. The *banyoluk*, also known as *şapkara*, is a bathing unit located inside cupboards or within the *sedir*. Users heat water in the fireplace and use it in the *banyoluk*. The fireplace also serves as the cooking area in the kitchen section. On the other hand, the ground floors of the houses are used as barns (Figure 6). This arrangement is understood to

have been designed so that, in the region's cold winter climate, the main floor would be warmed by the breath and body heat of the animals kept below.[13]

Figure 41. Plan Typology and Architectural Elements of Traditional Houses in Derbentobruğu Village

Intangible Cultural Heritage of The Kabaoğuz Villages- Derbentobruğu

The Kabaoğuz Villages stand out for maintaining their rural identity while demonstrating a strong commitment to preserving both tangible and intangible heritage. Field research and oral history interviews conducted in 2021 and 2025 reveal a strong sense of community dedication to sustaining cultural practices, despite the migration of young and working-age individuals from the villages. Since 1992, the Kabaoğuz Highland Festival has enabled those who have migrated from the villages to reconnect with their ancestral roots and to revitalize elements of intangible cultural heritage. Organized by the Kabaoğuz Villages Cultural Solidarity and Development Association, the festival is held every July at the Kabaoğuz Highland, hosting a variety of traditional and cultural events. This event attracts not only local villagers but also residents from the district and province, as well as many visitors from outside the region. With activities such as oil wrestling, archery, and kite festivals, it has evolved into an intergenerational tradition where people of all ages come together to celebrate (Figure 7).

Figure 42. Intangible Heritages of Kabaoğuz Villages[14]

From a historical perspective, livestock breeding—rooted in the Oghuz tribes—has been identified as an important livelihood activity in the village. Interviews reveal that, in the recent past, almost the entire village engaged in sheep and small ruminant husbandry, participated in highland migration, and that the dates of this migration were determined by the village elders' council. This migration, described as resembling a ritual, also included preparations that began before moving from the village to the houses in the highlands. It was noted that villagers migrating with their animals to the highlands—where the climate is cooler—also carried with them the household items they would need there. Livestock breeding continues to be an important source of livelihood for the villagers who still reside in the villages. Milk is collected daily from the village's milk cooperative station by the provincial livestock cooperative. Other ongoing activities widely practiced include beekeeping, rosehip and hawthorn production, bread making, and walnut cultivation. It has been learned that, in the past, tobacco cultivation was also part of production, involving the participation of all age groups.[15] In the past, tobacco was dried in the interiors of traditional houses. However, tobacco production has ceased due to the outmigration of young people and the low income it generates.

The Amesia brand was established by women in rural areas of Amasya Province, in cooperation with the Provincial Livestock Cooperative, with the aim of marketing local products to support household incomes. With the participation of women representatives from the Kabaoğuz Villages, the group "Amesia's Working Bee Women" was formed. The local products prepared by the producer women are packaged by the members of the group at the Amasya Provincial Livestock Cooperative and offered for sale.[16] It is known that women from the Kabaoğuz Villages also take part in this initiative. In each village square, the milk cooperative station serves as the collection point for milk obtained from livestock. Producer women from Kabaoğuz bring the milk to these points, contributing to the production of local dairy products. This initiative, which sustains production, is important for the preservation of both tangible and intangible heritage.

Conservation Challenges and Changes Over Time

In the context of cultural continuity, migration is the most significant challenge facing the Kabaoğuz Villages. Many traditional houses, now used only during summer holidays or family visits, fail to meet modern living standards. Economic hardship and rising comfort expectations have driven much of the population to urban areas, threatening the survival of traditional buildings. Some houses have been abandoned and left to decay; others are repurposed as storage. In many cases, villagers build

new reinforced-concrete houses beside or on the site of their timber dwellings, leaving the old structures vacant or demolished. These new constructions, incompatible with the traditional rural context, disrupt the continuity of the architectural heritage.

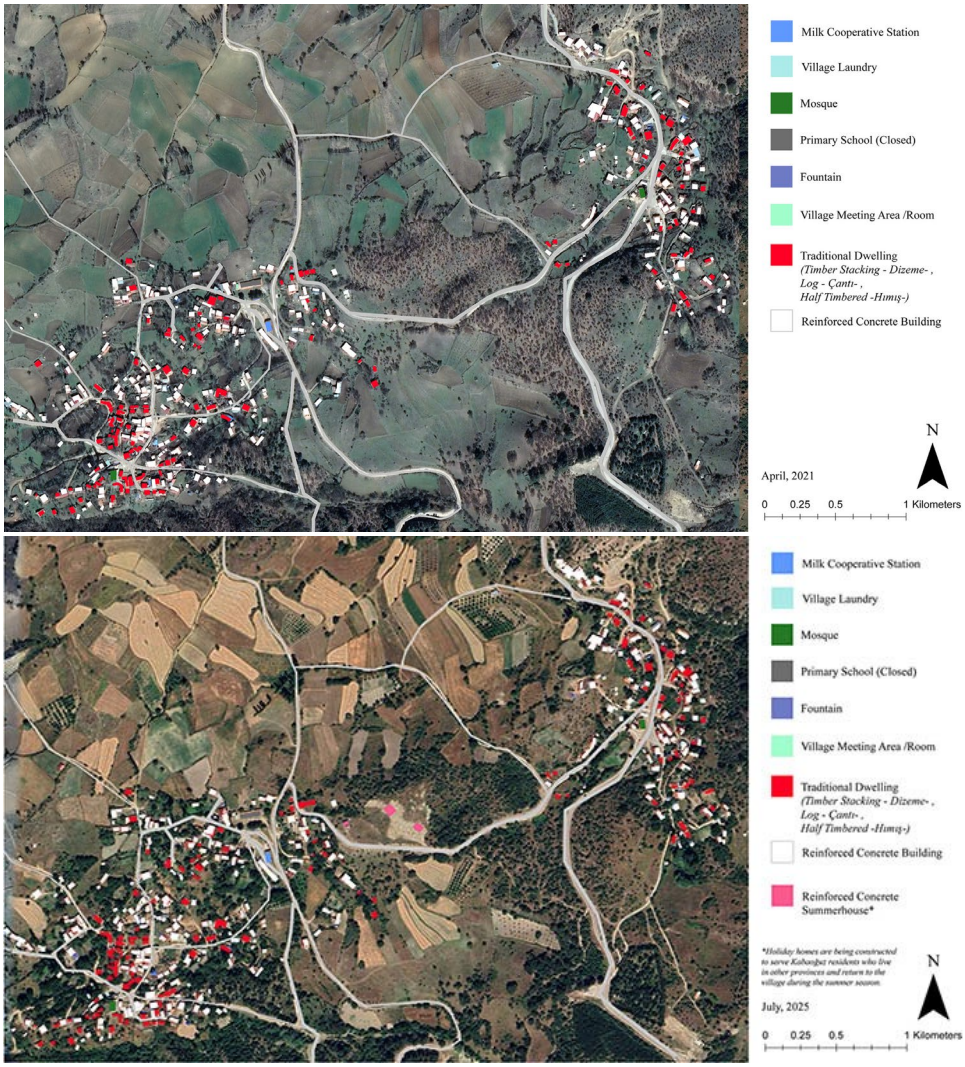

Figure 43. Transformation of the Traditional Settlement Pattern in Derbentobruğu Village (2021–2025)

In the 2025 study, it was found that the traditional timber *dizeme* and *çantı* technique structures located in the area known as the Lower Neighborhood of Derbentobruğu Village—particularly those surrounding the central square—had completely disappeared since 2021 (Figure 8). Due to the declining population in the villages, many buildings are left without occupants, and the remaining residents abandon traditional construction methods in favor of contemporary building systems. This situation is considered to mark the beginning of the deterioration of the rural fabric.

Figure 44. Conservation Issues and Temporal Changes in Derbentobruğu Village

Another significant issue is the lack of maintenance and repair of traditional houses. Roof collapses and moisture problems caused by precipitation, in particular, lead to serious structural damage. As seen in a photograph taken in 2025, one building was left abandoned, and due to the absence of proper maintenance, a temporary solution was applied by covering the roof to prevent further deterioration. Of course, there are still village residents who continue to live in traditional houses. As shown in the image, a building that remains in use can be preserved in continuity, almost like a living organism. However, once it falls out of use, it can enter a noticeable process of deterioration within as little as four years due to the impact of structural issues (Figure 9).

In the 2025 field study, the absence of a tractor previously parked in front of a traditional house can be interpreted as a symbol of a broader decline in local agricultural production (Figure 9). The role of demographic change in this decline cannot be overlooked, as the village's population has increasingly aged over the years and the total population has been halved every decade. The preservation and documentation of existing traditional structures, along with their revitalization through functional transformation strategies, are critical requirements for ensuring the holistic transmission of rural heritage and culture to future generations.

Migrants from the Kabaoğuz Villages who reside in other provinces also construct houses in the village to provide accommodation for certain periods of the year. It has been observed that reinforced-concrete housing projects are being developed. These houses are built to meet summer holiday needs. In 2021, villagers verbally expressed the emergence of such a demand, and by 2025, the field study showed that construction was nearing completion (Figure 8). At this point, it can be suggested that this development may increase the number of users in the village, support local production, and contribute to the continuity of cultural practices, thereby helping sustain the culture. However, this form of construction also inevitably brings the risk of the gradual disappearance of traditional rural architectural settlements.

DISCUSSION AND SUGGESTIONS

There are risks to ensuring the continuity of the rural architectural fabric and cultural heritage in the Kabaoğuz Villages. Field studies conducted in two different years revealed that the number of traditional houses in Derbentobruğu Village had decreased by approximately 15% (Figure 8). This decline is not solely the result of physical deterioration; social, economic, and demographic dynamics

have also accelerated the process. A significant factor in the depopulation of rural areas is the difficulty, especially for young people, in accessing the new opportunities for socialization offered by the modern era. ECOVAST report emphasizes the necessity of supporting local potentials in harmony with the region's resources, culture, and craftsmanship heritage to revitalize rural economies[17]. Integrating production as an inseparable part of rural heritage is an important principle in preserving rural heritage, despite the consumption habits demanded by contemporary life.

Rural tourism is an important resource for supporting rural architecture due to its economic contributions. It is regarded as an opportunity for the preservation of rural heritage.[18] However, it should be considered that, in the absence of tourism planning and management, negative consequences may arise for natural and cultural heritage. As proposed in this study, tourism management should ensure that communities have a say, taking into consideration their right to maintain their own heritage and cultural practices.[19] In short, tourism activities present an important opportunity for supporting rural architectural heritage and cultural sustainability. However, if not properly managed, they may negatively affect both tangible and intangible cultural heritage; therefore, tourism activities should be managed effectively with the prioritization of heritage conservation.[20]

The decline in rural population leads to social isolation, causing young people and members of the workforce to migrate to cities. Traditional practices, celebrations, customs, and festivals can contribute to addressing the challenges faced by villages in this regard.[21] It is evident that without the continuity of intangible cultural heritage, tangible heritage cannot be sustained. In cases where rural architectural heritage is damaged due to physical deterioration, the absence of a community that carries the intangible cultural heritage means that there is no one to sustain the culture. This leads to the rural architecture becoming idle.

Supporting village life and production practices contributes to the preservation of the distinctive characteristics of the village. Involving women and young people in the processes of cultural heritage preservation supports the transmission of knowledge and strengthens the sense of belonging. Encouraging intangible heritage elements such as beekeeping, bread making, the use of the tandoor, traditional festivals, and highland migration ensures the preservation of architectural heritage within a meaningful context.

Although the Kabaoğuz people migrate due to the demands of contemporary life, it has been observed that they participate in the festival once a year as members of the community to which they belong and take an active role in its organization. Motivated by their cultural identity, they engage in activities that shape their culture and continue their traditions each year within this framework.

With these considerations, this article proposes recommendations to ensure the continuity of rural heritage. Thematic routes incorporating both tangible and intangible heritage have been developed. These routes, together with the events organized along them, are intended to strengthen the economic base of the rural settlement (Figure 10). Collective harvest festivals extending beyond village boundaries, when combined with the region's unspoiled natural environment, offer unique cultural values for both residents and visitors. It is recommended to support local production, highlight rural values, and encourage the active participation of women and young people in production through an events and festival calendar spread throughout the year.

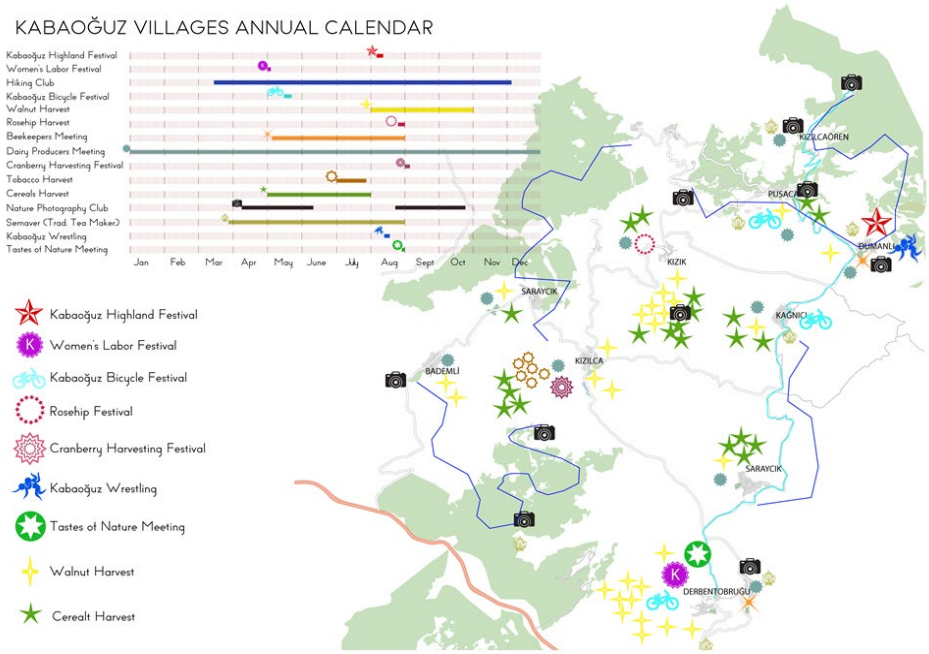

Figure 45. Proposed Annual Cultural Event Calendar for the Kabaoğuz Villages

To architecturally materialize the proposed recommendations, a transformation proposal has been developed for a "Women's Labor House" aimed at supporting production.

CONCLUSION

This research has revealed the necessity of a holistic conservation approach that considers tangible and intangible cultural heritage together. The findings indicate that demographic and socio-economic dynamics—such as a population decline of nearly half every decade, the migration of younger generations, economic hardships, and rising expectations of modern living—pose a direct threat to the sustainability of the traditional architectural fabric.

Throughout the research process, oral history interviews, field observations, and digital documentation studies have emphasized that preserving rural heritage requires more than the mere conservation of structures. They have drawn attention to the necessity of sustaining intangible heritage elements to ensure the continued vitality and meaning of rural cultural heritage.

The conservation approach proposed in this study presents a holistic framework that views community participation as a key resource. In doing so, it envisions women and young people taking active roles in production and cultural activities, supports rural development and economic vitality through cooperatives and thematic tourism routes, and aims to ensure the transmission of cultural values to future.

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[6] A semi-structured interview.
[7] Türkiye İstatistik Kurumu (TÜİK), "İstatistiklerle Türkiye," erişim 6 Ağustos 2025, https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr
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[18] Ibid.,9.
[19] ICOMOS, *International Charter and Guidance on Sites with Intangible Cultural Heritage*, (Istanbul: ICOMOS Türkiye, 2025),.
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THE PRESERVATION OF CULTURAL HERITAGE THROUGH REAL ESTATE DEVELOPMENT: THREE CASE STUDIES OF CONTEMPORARY ARCHITECTURE THAT RESPECTS AND REINFORCES HERITAGE SITES

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INTRODUCTION

Cultural institutions, frequently with historic buildings, need an ongoing source of funds to support the ongoing mission of the institution while maintaining and respecting historic facilities. The one asset these institutions frequently have is land in an advantageous location for commercial development. The goal of the resultant development must be to generate the necessary funds with new buildings that respect and reinforce the historic context. Yet cultural heritage is ultimately a social construct and therefore subject to debate and ultimately politicization. Historic physical structures are open to interpretation.[1] The definition of what constitutes respect for the extant historic context while distinguishing "authentically" between what is historic and what is new has gradually changed in recent years and is no longer as monolithic as it once was.[2] This paper examines case studies of three built projects that have been designed by the author and which address these issues each in a unique way: one is historicist and blends with its context, one is modernist and contrasts with its context, and one is a simplified version of the historic context that strikes a middle ground.

NON-PROFIT/FOR PROFIT ENTITY PARTNERSHIPS AND HISTORIC PRESERVATION

Cultural institutions can be either private non-profit or public governmental authorized institutions. In both cases it is possible to create a partnership with a for-profit developer, which in the case of a public entity is called a PPP, a public/private partnership. These partnerships involve a collaboration where both entities leverage their unique strengths to achieve a shared goal, in this case the revitalization and preservation of cultural heritage institutions and monuments. Non-profits bring access to land, the single most important thing, along with community expertise and relationships, while developers offer financial resources, construction expertise, and access to capital. These partnerships can be organized in various ways.

In the US, officially recognized historic structures of significance for the larger community are listed on the National Register of Historic Places or on the registers of individual states and communities. The National Park Service (NPS) is responsible for the Department of the Interior's historic preservation programs. If applying for federal tax credits, there are guidelines also for additions to historic buildings, which can be applied as well to interventions in historic districts. These guidelines

state that, “There is no formula or prescription for designing a compatible new addition. A new addition to a historic building that meets the Department of the Interior Standards can be any architectural style-traditionalist, contemporary or a simplified version of the historic building. However, there must be a balance between differentiation and compatibility in order to maintain the historic character and the very identity of the building being enlarged. New additions that are either identical to the historic building or in extreme contrast to it fall short of this balance. Inherent in all of the guidance is the concept that an addition needs to be subordinate to the historic building.”[3]

Attitudes towards the preservation of the past have been constantly evolving since ancient times. In the 20th century concerned professionals created the Athens Charter of 1932 and then the Venice Charter of 1964, the latter of which particularly represented the victory of a modernist outlook that approved as “authentic” only modernist interventions in historic contexts. The U.S. NPS Standards of 1977 were more relaxed, but not definitive enough to dislodge the preference of professionals for modernist solutions.[4] In 1983 Section 9 was revised to remove the requirement for “contemporary design,” yet the requirement that new work should be “differentiated” yet “compatible” with the old did not dislodge the preference for “quiet” modernist solutions.[5] Yet the rise in recent years of contemporary traditionalist practice, in Europe even more so than in the U.S, along with the ever-present popular opposition to professional opinion in its distain for modern architecture in historic contexts, resulted by 2007 in the recommendations as quoted above, altered to specifically include traditionalist solutions. In Europe, even UNESCO, which championed the Venice Charter for over 50 years, issued the Warsaw Recommendations of 2018 which finally recognized the legitimacy of the reconstruction of historic neighborhoods such as in Warsaw following WWII or in Dresden 50 years later.[6]

Cultural institutions have both an obligation and an opportunity to care both for their own facilities and for the surrounding community, which build on each other to care for and elevate the environment for all. By creatively adapting to changing circumstances, cultural institutions can generate needed income, enhance their relevance, and continue serving their communities.

EXAMPLES OF EXTREME RESPONSES

What follows is a brief review of the range of responses to the preservation of cultural heritage that have seemingly violated the spirit of the NPS standards. (Fig. 1.)

1. Scorched earth: this is the Citycorp Center in New York City of 1977, designed by Hugh Stubbins. Approximately a third of the site for this project was owned by St. Peter’s Evangelical Lutheran church. They allowed their historic building to be demolished and in return received a completely new building, tucked underneath the office tower. 50 years ago the historic structure was sacrificed for the continued well-being of the institution. It seems unlikely that this would happen today.[7]

2. Extreme contrast: Cathedral Square is an ongoing redevelopment of the city block that surrounds the Cathedral of the Catholic Diocese of Philadelphia. As recently as five years ago, the cathedral stood surrounded by parking lots and the precast concrete buildings of the 1960s and 70s. In the current fashion, Solomon Cordwell Buenz Architects have proposed all glass high rise buildings surrounding and, in our view, overwhelming the historic basilica.[8]

3. Totally historicist: The three building, two block complex built by the Church of Jesus Christ of Latter-Day Saints is just to the north of the Catholic Cathedral across Vine Street. This is a totally new complex of convincing historicist design clad in granite and brick. The unusual classical design for the Temple was chosen by the church in response to its location both in immediate proximity to the Beaux-Arts Family Court building to the left in the photo, and to the Catholic Cathedral, but also in response to the context of historic Philadelphia as a whole, the birthplace of the nation. The cultural institution being protected here is the city itself.[9]

CASE STUDY ONE: SYMPHONY HOUSE

The following three case studies have attempted to navigate between the extremes of the previous examples, and to show a range of responses that respond to the specifics of each individual situation. All three were designed by BLT Architects of Philadelphia, with Michael R. Ytterberg as both the Principal-in-Charge and the Design Principal.

Figure 1. Clockwise from upper left: The Philadelphia Pennsylvania Temple of the Church of Jesus Christ of Latter-Day Saints, FFKR Architects, 2016, with the Meeting House and Alexander apartment building beyond, RAMSA, 2017, Philadelphia; Citycorp Center, Hugh Stubbins, and St. Peter's Evangelical Lutheran Church, Edward Larrabee Barnes, 1977, NYC; Cathedral Place behind the Catholic Cathedral Basilica of Saints Peter and Paul, Napoleon LeBrun, 1864, SCB Architects, 2022, Philadelphia; Two Cathedral Square, SCB Architects, pending, Philadelphia.

A proposal of Dranoff Properties of Philadelphia, with BLT Architects, won an RFP issued by the Philadelphia Industrial Development Corporation, the non-profit public-private economic development corporation founded by the city. It was a requirement of the RFP to include as a partner a performing arts organization, in this case the Philadelphia Theater Company. The project overall is a condominium, with the theater owning its portion, named the Suzanne Roberts Theater. The land was purchased by the developer. (Fig. 2.)

Figure 2. Clockwise from upper left: Philadelphia City Hall, John McArthur, 1894; Symphony House, BLT Architects, 2007, on the left, and Arthaus, KPF, 2022, on the right, Philadelphia; Symphony House on the left, the Drake Hotel, Ritter and Shay, 1929, and the Kimmel Center, Viñoly Architects, 2001, Philadelphia.

The blocks of Broad Street leading south from Philadelphia City Hall were designated the "Avenue of the Arts" in 1993 in recognition and support of the preponderance of Philadelphia's performing arts venues located there.[10] As of 2024 there were 8 venues and 2 performing arts schools. The blocks immediately south of the City Hall are lined with late 19th and early 20th century office blocks, uninterrupted by late 20th or 21st century glazed towers, prior to Arthaus (see below), creating a cohesive district. The blocks surrounding the site of Symphony House contain numerous structures on the National Historic Register, including the iconic Academy of Music, the oldest continuously used opera house in the U.S.

Figure 3. Symphony House, BLT Architects, 2007, in context, Philadelphia.

A surface parking lot, once the site of a gas station, was developed to extend and strengthen the city's historic performing arts district. The project includes a 32 story residential tower, parking, retail, and a legitimate theater. The design is historicist in nature. In the aerial photo one can see that Symphony House joins the cluster of masonry clad towers that characterizes historic Philadelphia, letting the vaulted all glass roof of the Kimmel Center, the Raphael Viñoly designed home of the Philadelphia Orchestra, stand out as the focal point of the Avenue of the Arts. The design of Symphony House is intended to recall the romantic set back silhouettes of the luxury residential towers of the 1920s and 30s, a time when city living was at its most glamorous. Its massing intentionally recalls the Drake Hotel, to the west of the Kimmel Center.

The glazed walls of the theater connect the audience with activity on the street. The result is to activate the Avenue of the Arts for additional blocks to the south. When all the venues have events on a weekend evening the life on the street is a model of vital urban living. The Avenue of the Arts was designated one of America's "Great Streets" by the American Planning Association in 2008.

In 2022 the same developer completed Arthaus, directly across Broad Street from the Kimmel Center, designed by KPF. A rather elegant structure, if a little shocking as the first glazed tower in this masonry context, its glazed shaft forms a pair with the Kimmel Center.

(Fig 3.) Unlike Arthouse, Symphony House was designed to fit in. Without necessarily imitating the design of any specific precedent, we believe that it draws upon and reinforces the language of the masonry architecture of historic Philadelphia, whether of the low-rise residential neighborhood to the east, Washington Square West, or the great towers of the 1920s, both near and far.

Figure 4. Clockwise from upper left: 3737 Chestnut, BLT Architects, 2015, with Saints Agatha and James, Edwin R. Durang, 1887, at the lower right, the Tabernacle Presbyterian Church, Theophilus P Chandler, 1886, beyond, and graduate student housing by Richard Neutra, 1969, in the distance, Philadelphia; International House, Bower and Fradley Architects, 1970, Philadelphia; The Philadelphia Episcopal Cathedral, Charles. T. Burns, 1889 & 1906, Philadelphia.

CASE STUDY TWO: 3737 CHESTNUT

The Philadelphia Episcopal Cathedral embarked on a program to ensure the long-term well-being of its mission and historic facilities.[11] The proposal of the Radner Property Group of Wayne, PA, won the RFP. BLT Architects was brought in later. The land for the project, surrounding the historic building, had been acquired by the church over a period of years. The church was both a partner in the project and a condominium owner in the final result. The land continues to be owned by the church and is leased to the development. Payments are made in perpetuity for the maintenance of the historic building. (Fig. 4.)

Figure 5. Exploded axonometric diagram of 3737 Chestnut, Philadelphia, on the right, with the typical tower plan, sanctuary level plan, and basement plan on the left.

The neighborhood around the cathedral, known as University City, had long ago lost its historic consistency.[12] It is surrounded by Drexel University, the University of Pennsylvania, and the University City Science Center. Directly to the east is International House, one of Philadelphia's great Brutalist landmarks of the 1960s.

The project included a 25 story apartment tower with parking, offices for the bishop, new offices and assembly spaces for the Cathedral, and retail. The design is unapologetically modern while weaving its disparate parts together on a complicated site. As built the tower called out directly to those of Center City Philadelphia to the east. Another historic survivor is the Catholic church of Saints Agatha and James across Chestnut Street. The church further to the east has been converted into a theater. Emphasizing the eclectic nature of the localized context, one can see beyond the church a Penn Graduate Student Housing complex designed by Richard Neutra.

Figure 6. Clockwise form upper left: 3737 Chestnut from the southwest, from the east in front of the International House, and the view of Sains Agatha and James form a typical apartment, Philadelphia.

(Fig. 5.) The complicated program of this project was made more complicated in execution by a property owner who refused to sell to the Cathedral. This hold out is shown in gray in the plan. The hold out hoped to demand an outrageous sum of money for his property as it completely divides the two halves of the available land, but ingenious planning made use of a five foot gap between the last pier of the historic Cathedral and the holdout property that enabled the apartment tower to connect to the loading dock behind the Cathedral through the Cathedral itself. As every square inch of the property was put to use, the play area for the basement daycare found its way to the roof of the office building.

(Fig. 6.) The bulk of the apartment building was broken up into a cluster of vertical volumes, glazed near the cathedral, with metal panels on the street in order to relate to the broader context. The angles of the glazed portion responded to zoning code restrictions that are no longer in place. The entire complex reads as a series of buildings integrated into the surrounding context, not as one massive development. The little plaza in front of the office building was intended to connect to the plaza in front of the International House, creating a continuity of public space on private property.

Figure 7. Clockwise form upper left: Aerial view of Military Park, with NJPAC at the upper left, prior to construction of One Theater Square, Newark; the view to the Empire State Building between NJPAC and One Theater Square, Newark; NJPAC, Barton Myers Associates, 1997, Newark; NJPAC District Masterplan, BLT Architects with Barton Myers Associates, 2008.

The integration of the complex into the context can be experienced throughout. The color scheme of the church continues under the apartment tower where the church offices are now located. Living in some of the apartments puts the residents in direct contact with the historic context. The office building continues the roof line of the hold out town house in order to integrate it, too, into the overall composition.

Figure 8. Clockwise from upper left: Aerial view of Military Park, with NJPAC, after construction of One Theater Square, BLT Architects, 2018, Newark; One Theater Square from the southwest; One Theater Square from the north, with NJPAC on the right of the photograph.

CASE STUDY THREE: ONE THEATER SQUARE

In 1986 the State of New Jersey determined to build a state sponsored performing arts complex in Newark, New Jersey's largest city. A large site in the historic center of Newark was set aside and master planned by SOM. The New Jersey Performing Arts Center (NJPAC) was opened in 1997.[13] The street grid was altered to conform to the master plan, creating an (American) football shaped plaza in the center and three sites, occupied for many years by parking lots, set aside for income producing development to support the arts center. The central plaza connects the Passaic River to the east with Military Park, created at the founding of Newark in 1666. It is now surrounded by a historic district with numerous buildings on the historic register. The sword apparent in the photograph is the Wars of America monument of 1926, created by Gutzon Borglum, the sculptor of the monumental heads of American presidents at Mount Rushmore![14] (Fig. 7.)

Figure 9. Above, Artside, SOM, 2027. Newark; below, Cooperson Family Arts Education and Community Center, Weiss/Manfredi, 2027, Newark.

NJPAC is the focal point of this cultural district. The design successfully interacts with the public by expressing each performance space as an individual building which addresses the street through its own lobby and façade.[15] The skyline of New York City, a mere 8 and a half miles away, is visible from the practice rooms on the east side of the building.

The proposal of Dranoff Properties of Philadelphia with BLT Architects won the first RFP issued by the performing arts center in 2006. NJPAC was a partner in the development, and receives rent from a long-term lease to the developer for the site, as well as rights to parking in the public garage. A master plan was created that proposed three similarly shaped towers on the three subsidiary blocks, with a pedestrian bridge across McCarter Highway to a public pavilion on the river. What is now One Theater Square, opposite the performing arts center facing Military Park, was to be a 44 story apartment building, at the time the tallest proposed building in New Jersey.

Figure 10. Clockwise from upper left: City Hall at the head of South Broad Street (The Avenue of the Arts), Philadelphia; Trinity and St. Peter's Episcopal Cathedral in Military Park, with One Theater Square in the distance, Newark; the Philadelphia Episcopal Cathedral with 3737 Chestnut on the right, Philadelphia; 3737 Chestnut from the south, Philadelphia; One Theater Square from Military Park, Newark; Symphony House from the south, Philadelphia.

(Fig. 8.) The 2008 crash intervened, and the final project, completed ten years later, was half that height. The design includes a 22-story apartment tower with adjacent parking garage for both the apartments and the arts center, along with ground floor retail. The design strikes a middle ground between the historic context and a forward expression. The materials of the building match those of the performing arts center in order to create a cohesive identity for the overall development. In addition, the building restored the continuous street wall of East Park Place, alongside Military Park.
The façade of the parking garage is treated as an extension of the residential building. The new building and NJPAC work together to define the public plaza between the buildings. One Theater Square has restored the street wall on both of its facades, doing its part in the restoration of a traditional urban fabric, still recovering from the damage of the riots of 1967. The completion of One Theater Square brought residents back into the inner city and was key in starting a subsequent building boom that has transformed and continues to transform the city.
(Fig. 9.) The performing arts center recently announced the development of the remaining two sites. The material and urban planning goals that characterized the development of One Theater Square seem to have been dropped. Two leading New York architecture firms are involved. The result is two object buildings that neither continue to restore the street wall of the traditional city nor continue to create an overall complex with a cohesive identity.[16]

LESSONS LEARNED

(Fig. 10.) In summary, it is hoped that the three case studies presented here present a convincing argument for effective additions to historic contexts that promote the continued vitality of cultural heritage institutions and monuments both through economic support and through reinforcement of the visual context in which the historic structure or structures is the focal point. The three projects presented conform roughly to the three approaches laid out in the previously quoted National Park Service guidelines. Whether preserving and reinforcing a specific historic structure or a historic district, the principles are the same, and the following points are crucial to our approach.

- The attitude of the client is all important, both of the cultural institution and of the developer, both of whom must have awareness of the issues and have a sense of mission.
- Respect for the presence of the past rejects the current tidal wave overwhelming our cities with cheap modernist development.
- Contextualism means respecting the "massing, size, scale and architectural features" of the historic structure and its environment.[17]
- Eclecticism – the circumstances of the project drive the appropriate expression.
- Background buildings, designed by competent designers. Leading architects tend to focus on their own work, frequently in opposition to the historic context.

The U.S. Standards admit to a variety of approaches that, in effect, are contested for each site and project, with the result being an agreement, or stalemate, of the stakeholders involved. What this situation does acknowledge is the fluidity and living nature of our relationship to the past.

"When we realize that past and present are not exclusive but inseparable realms, we cast off preservation's self-defeating insistence on a fixed and stable past. Only by altering and adding to what we save does our heritage remain real, alive, and comprehensible."[18]

NOTES

[1] "The concept of 'heritage' [has] expanded to include almost any human artifact or cultural practice that was deemed significant to some community with sufficient political clout to make itself heard." Steven W. Semes, *The Future of the Past* (New York and London: W.W. Norton & Company, 2009), 143. "Political clout" does not define political orientation, yet for the community of architects and preservation professionals since at least World War II, traditional architecture, and attempts to reconstruct traditional architecture, which are demonstrably popular, are inherently conservative, while modernist architecture, which is demonstrably not, is inherently liberal. This belief is based on a false representation of the architecture of fascist regimes in the 1930's. Hitler liked traditional architecture, as did Stalin, his enemy, while Mussolini approved of modern architecture. 1930's government buildings in the U.S., a democracy, were uniformly realized in a stripped-down Classicism. But this disposition continues to the present day, as represented in recent publications such as Alan Chandler and Michela Pace, *The Production of Heritage*: *The Politicization of Architectural Conservation* (London: Routledge. 2019) and Robert Bevan, *Monumental Lies: Culture Wars and the Truth about the Past* (London, New York: Verso, 2022).

[2] The past is not fixed, it can only be continuously excavated from under layers of both physical remains and virtual memories. Already in the 19th century Alois Riegl, the art historian, "proposed a distinction between intentional and unintentional memorials," i.e., recuperation of a distinct moment in time, generally a reinforcement of current political power, versus the overlapping layers of lived history of the population at large. Svetlana Boym, *The Future of Nostalgia*. New York: Basic Books, 2001), 78. Even Chandler and Pace and Bevan are forced to admit that historical artifacts as inert objects do not have a fixed political meaning, and certainly not one assigned by professional experts. "Communities can be allowed to want what they have, rather than necessarily aiming for what is expected from a professionalized heritage industry." Chandler and Pace, Chapter 6. Elsewhere they quote the following, "Heritage is about the process by which people use the past – a 'discursive construction' with material consequences." D.C. Harvey, "The History of Heritage." *The Ashgate Research Companion to Heritage and Identity* (Franham: Ashgate Publishing. 2008), 19. "Architectural style is politicized by the purposes to which it is put and the motivations of those doing the shaping." Bevan, 62.

[3] "Historic Preservation Tax Incentives: New Additions to Historic Buildings." National Park Service, June 6, 2024, accessed June 21, 2025, https://www.nps.gov/subjects/taxincentives/additions.htm#:~:text=In%20accordance%20with%20Standard%209,building%20to%20preserve%20its%20character.

[4] In the 19th century the opposition between Viollet le Duc's creative restorations of medieval monuments in France contrasted with the hands-off attitude of John Ruskin and William Morris in England, which allowed only maintenance and not reconstruction. Ruskin and Morris anticipated the opinions of modernist architects of the 20th and 21st centuries, whereas popular opinion has always been in favor the of the restoration and reconstruction of damaged or destroyed historic structures and context, as in the completion in the 19th century of unfinished medieval monuments in Italy and Germany, the rebuilding of the Campanile in Venice at the end of the century, the rebuilding of colonial Williamsburg in the U.S. in the 20th century, etc. See Semes, 115-143, for a brief history of preservation philosophy.

[5] "The Secretary of the Interior's Standards for the Treatment of Historic Properties: History of the Standards," National Park Service, September 22, 2022, accessed August 10, 2025, https://www.nps.gov/articles/000/treatment-standards-history.htm#:~:text=October%201977,1979.

[6] "Warsaw Recommendation of Recovery and Reconstruction of Cultural Heritage," UNESCO, World Heritage Centre, and the Ministry of Culture and National Heritage of the Republic of Poland, *The Challenges of World Heritage Recovery: International Conference on Reconstruction*, The Royal Castle, Warsaw, Poland, May 6-8, 2018, https://whc.unesco.org/en/news/1826.

[7] "Citygroup Center," Wikipedia, August 8, 2025, accessed August 10, 2025, https://en.wikipedia.org/wiki/Citigroup_Center.

[8] "Cathedral Place," and "Two Cathedral Square," SCB Design, *Solomon Cordwell Buenz East Coast Experience*, Issuu, May 11, 2023: 28-31, accessed August 10. 2025, https://issuu.com/solomoncordwellbuenz/docs/scb_east_coast_experience/28.

[9] "Philadelphia Pennsylvania Temple," Wikipedia, April 16, 2025, accessed August 10, 2025, https://en.wikipedia.org/wiki/Philadelphia_Pennsylvania_Temple.

[10] "The Avenue that Art Built," Avenue of the Arts, Inc., accessed August 10, 2025, https://www.avenueofthearts.org.

[11] "Philadelphia Episcopal Cathedral," Wikipedia, February 22, 2025, accessed August 10, 2025, https://en.wikipedia.org/wiki/Philadelphia_Episcopal_Cathedral.
[12] "University City, Philadelphia," Wikipedia, August 7, 2025, accessed August 10, 2025, https://en.wikipedia.org/wiki/University_City,_Philadelphia.
[13] "New Jersey Performing Arts Center," Wikipedia, June 6, 2025, accessed August 10, 2025, https://en.wikipedia.org/wiki/New_Jersey_Performing_Arts_Center.
[14] "A Selection of Newark's Historic Landmarks," Newark Landmarks, 2024, accessed August 10, 2025, https://www.newarklandmarks.org/landmarks.
[15] "New Jersey Performing Arts Center, Newark, New Jersey," Barton Myers Associates, Inc., 2011, accessed August 10, 2025, http://www.bartonmyers.com/NJPAC_01.htm.
[16] Joshua Burd, "NJPAC breaks ground on $336 million campus with 350 rentals, arts education hub," *Real Estate NJ: The Voice of New Jersey Commercial Real Estate*, September 19, 2024, accessed August 10, 2025, https://re-nj.com/njpac-breaks-ground-on-336-million-campus-expansion-with-350-rentals-arts-education-hub
[17] Historic Preservation Tax Incentives: New Additions to Historic Buildings." National Park Service.
[18] David Lowenthal, *The Past is a Foreign Country* (Cambridge: Cambridge University Press, 1985), 411, https://archive.org/details/pastisforeigncou0000lowe/page/n5/mode/2up.

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ADAPTIVE REUSE OF TRULLO STRUCTURES: FROM VERNACULAR ARCHITECTURE TO MIXED-USE INTERIOR TYPOLOGIES

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INTRODUCTION

This paper explores the importance of vernacular architecture and the need to preserve it in modern living contexts, using the Trullo of Alberobello's as a case study. It examines the origins, historical significance, development, and contextual background of the Trullo. The study highlights the importance of conserving and adapting Trulli within today's cultural environment, demonstrating their lasting architectural relevance.

Furthermore, it reviews the trullo within a contemporary context by analysing the preservation and reuse of trullo structures for contemporary reuse. It investigates case studies of various Trulli, ranging from a single structure to multiple complexes, which have been reused for modern functions such as tourist accommodations, bed and breakfast, contemporary and territorial museums, retail and cafes, cultural centers, and sustainable interior environments, while sensitively maintaining their original, authentic character.

The inclusion of vernacular architecture in the heritage discourse started with the groundbreaking 1964 exhibition by Bernard Rudofsky, Architecture Without Architects," held at the Museum of Modern Art in New York.[1] This photographic display challenged prevailing Eurocentric design paradigms and signifies the diversity of indigenous architectural styles. Rudofsky showcased structures constructed without formal architects, emphasising their cultural significance, environmental resilience, and structural ingenuity. [2]

Among the showcased examples were the Trulli of Alberobello, which Rudofsky called the "Architecture of humility".[3] This exhibition played a key role in bringing the Trulli to an international audience, sparking academic interest and promoting heritage recognition.[4] Additionally, it set the stage for later conservation policies and design strategies focused on the sustainable adaptive reuse of vernacular architecture, emphasising regional aspects of identity.

Vernacular heritage has become central to discussions on cultural conservation, emphasised by scholars such as Amos Rapoport and Paul Oliver. They pointed out the social and spatial principles inherent in local building traditions.[5] Unlike grand structures, vernacular buildings reflect everyday cultural practices, regional materials, craftsmanship, and other intangible heritage elements. These aspects gained official acknowledgement through the ICOMOS Charter on Vernacular Built Heritage (1999).[6]

This paradigmatic shift emphasised the cultural importance of everyday, historically developed structures. These structures represent more than just their physical form; they also embody intangible knowledge systems that generate and sustain them. They act as repositories of collective memory, regional identity, and ecological consciousness, while also possessing aesthetic and technical significance and ingenuity.[7]

It also expands the range of adaptive reuse practices by positioning it as a strategy for conservation and preservation. This approach emphasises harmonising heritage values with new functions and community needs. Adaptive reuse transforms vernacular heritage from a static relic into a dynamic resource, allowing structures to serve modern social, cultural, or economic purposes while preserving their authenticity. [8]

Historical Review- Town of Alberobello's

Originating from the picturesque Itria Valley in Apulia, Italy.[9] Alberobello is a historic town in the province of Bari, which is internationally acknowledged for its dry-stone conical roofs using prehistoric construction techniques.[10] It is one of the most intact, concentrated, and coherent exemplars of vernacular dry-stone architecture in Europe. These structures are constructed utilising prehistoric dry-stone techniques that have persisted into the modern era, demonstrating a profound connection between local craftsmanship, geography, and agricultural lifestyles. [11] The cultural and architectural landscape of Alberobello received UNESCO World Heritage designation in 1996, under criteria (iii), (iv), and (v), for its exceptional testimony to a longstanding cultural tradition and its sustainable utilisation of indigenous materials and skills.[12]

The UNESCO-protected area includes two central districts, shown in Figure 2, Rione Monti and Rione Aia Piccola, which together house over 1,600 Trulli.[13] Rione Monti, on the southwest slope of the town, has more than 1,030 Trulli spread across 7.8 hectares, while Aia Piccola to the east contains about 590 Trulli within 2.4 hectares.[14] The layout of these districts developed naturally, with narrow pedestrian streets such as Via Monte San Michele, Via Monte Nero, and Via Monte S. Gabriele winding through densely packed trullo neighbourhoods.[15] While Rione Monti centres more on commerce and tourism, Aia Piccola retains a strong residential character, with an authentic, lived-in feel that provides a rare glimpse into the domestic life of historic trullo residents.

Beyond the UNESCO boundary, there exists a rich cultural landscape comprising rural trullo clusters that are frequently unprotected yet remain significant.[16] These encompass abandoned Trulli and small "court" compounds situated in the countryside surrounding Alberobello, particularly near Locorotondo, Cisternino, and Martina Franca.[17] These peripheral regions, which are not officially designated as protected heritage sites, exhibit ongoing transformation and deterioration of trullo structures, presenting potential opportunities for adaptive reuse initiatives aligned with sustainable development principles.[18]

The historic fabric of Alberobello is both dense and layered, consisting of a **core heritage zone**, a **transition buffer**, and a **cultural landscape** beyond, all embedded with varying degrees of preservation, reuse, and transformation. The town stands not only as a material archive of southern Italy's rural life but also as a living laboratory for heritage conservation, vernacular sustainability, and creative reuse practices.

Architectural and typological evolution of trullo

The trullo represents a remarkable example of Mediterranean vernacular architecture, originating in the Apulian region of southern Italy between the 14th and 19th centuries.[19] Initially conceived as singular, temporary shelters for agricultural workers, these dry-stone, conical-roofed dwellings

gradually evolved into multiple-unit configurations and eventually into larger trullo complexes, accommodating a range of functions including residential, public, religious, and productive uses.[20]
The abundance of limestone within the Murgia landscape contributed significantly to sustainable construction practices: the stone was retrieved during the process of clearing fields for agricultural purposes, thereby establishing a nexus between farming activities and the procurement of building materials. As agricultural estates expanded, individual Trulli were interconnected, resulting in the development of multi-domed dwellings. This evolution signified the transition of the trullo from a solitary rural shelter to a complex architectural typology, integrated within a broader cultural landscape.[21]
Structurally, each trullo is characterised by three principal architectural components: the base, the dome, and the cistern.
The base is a double dry-stone wall system, locally known as a Sacco, composed of two stone shells filled with rubble and gravel. This design provides structural stability, thermal insulation, and was constructed entirely without mortar. The dome is a cantilevered conical vault built by local stone masons (casellari). It consists of corbelled limestone layers that rise in concentric rings to form a self-supporting structure. The dome is topped with a decorative pinnacle, often symbolic or apotropaic in shape. The water cistern at the subfloor level, used for water storage and rainwater collection, is connected via a series of stone gutters embedded around the base of the dome.[22]
A typical trullo usually has a square layout with walls around three meters tall and few windows to improve climate control. Its conical roof is covered with thin, overlapping limestone slabs that provide waterproofing, while the exterior walls are finished with white lime plaster to reflect sunlight.[23] These design features provide the structure with substantial thermal mass and insulation, aiding in maintaining a cooler interior during summer and a warmer interior in winter.[24] The architectural logic and material integrity of the trullo system represent an outstanding example of how local craftsmanship**,** climate adaptation**, and** cultural expression converged to create a lasting built form.

Preservation and Adaptive Reuse policies and charters

A comprehensive framework combining international charters, national laws, and regional policies has played a significant role in the preservation and adaptive reuse of Alberobello's Trulli. Since being listed as a UNESCO World Heritage Site in 1996, these structures have been protected under the Venice Charter (1964), the Burra Charter (1979/2013), and the ICOMOS Vernacular Heritage Charter (1999).[25] Additionally, regional policies like the Puglia Law 72/1979 and the UNESCO Management Plan (2008–2010) highlight the authenticity, intervention strategy, and respect for local building traditions.

Contemporary preservation and adaptive reuse

The adaptive reuse of the trullo structures is primarily categorised into two approaches according to their location: the UNESCO perimeter, which constitutes the protected zone, and the buffer area and the area outside the protected zone and the rural regions.
Within the UNESCO World Heritage boundary, reuse projects must comply with strict heritage regulations that emphasise reversibility, the use of authentic materials, and minimal disruption. Key case studies for further analysis include Trullo Sovrano, Casa Pezzolla, Trullo Siamese and Trullo Puglia Wine Bar, all exemplifying preservation through adaptive reuse.

Case study 1

Trullo Sovrano, an early 17th-century two-storey trullo, is situated within the UNESCO World Heritage core. Renowned for its impressive approximately 14-metre-high dome and a cluster of 12 smaller domes built by a priest family, it served as both a residence and a chapel.[26] Today, it functions as a living heritage museum with minimal structural alterations.[27] The intervention preserves the original dry-stone construction, corbelled domes, and interior layout, maintaining authenticity. The standalone historical furnishings evoke 18th-century domestic life, offering an immersive yet subtle interpretative experience.

This approach reflects Riegl's concept of "age value," which involves keeping the passage of time visible and unaltered in the fabric.[28] It operates as a "static palimpsest," displaying a single preserved layer of architectural and cultural significance. The conservation strategy focuses on maintaining the original state and emphasising a particular historical narrative. Inside, free-standing period furniture, utensils, and details foster immersion while respecting the building's original volume and structural design.[29]

Case study 2

Casa Pezzolla, situated in the heart of the heritage zone, is renowned as the museum of the territory. Initially, the home of Doctor Giacomo Pezolla consisted of 15 interconnected Trulli structures.[30] Now functioning as a museum, it highlights the region's history, architecture, and traditions through a layered, interpretive reuse strategy. While maintaining the original limestone walls and conical domes, the project incorporates subtle updates like temporary exhibit installations, modular panels, and integrated lighting to enrich the visitor experience.

Circulation within Casa Pezzolla has been reimagined for horizontal navigation, transforming the clustered Trulli into a sequence of interpretive spaces that guide visitors through different facets of regional life, architecture, and memory. This aligns with Rodwell's theory of "conservation through active use", where heritage remains relevant through ongoing functionality embedded within the community. This adaptive reuse embodies a "dynamic palimpsest" concept, in which contemporary uses and stories are overlaid on the historic fabric without erasing its identity.

The above two museum typologies have different intervention strategies and functions. Trullo Sovrano is reimagined as a historical edifice that emphasises spatial authenticity and historical identity. Casa Pezzolla "Museum of the territory" is designed as an exhibition space to showcase interpretive layers, engaging the public more broadly. These examples showcase different approaches to adaptive reuse: one preserves a particular moment in architectural history, while the other aims to maintain historical continuity through thoughtful adaptation.

Case study 3

Trullo Siamese is among the oldest Trulli located in the town, situated within the Monti District. It is the most unique Trulli in the region, featuring a dual-domed structure that sets it apart from other Trulli structures in the area.[31] Trullo Siamese, as its name suggests, features two entrances without windows and was originally a residence for two brothers.

It has been repurposed into a souvenir shop and a venue for heritage storytelling. The adaptive reuse involves minimal changes to the original interiors, signage, lighting, and temporary exhibition materials.[32] The structure and its authentic fabric have been preserved, with no new architectural elements added; the original walls and vaults remain intact. This strategy for neofunctionalization respects the original spatial layout and dual purpose of the structure, while also preserving its historical and cultural significance and authenticity.

Case study 4

Trulli and Puglia Wine Bar exemplify adaptive reuse architecture in Piazza Gabriele D'Annunzio, just a short walk from the Church of Sant'Antonio. The wine bar is nestled among restored Trulli; transforming this space from a practical dwelling with an underground cellar into a contemporary wine bar demonstrates the careful integration of new functions into a historic building.[33]

The adaptive reuse strategy carefully preserves the original layout of the structure, maintaining its initial form as a two-level Trulli with a subfloor level and vaulted ceiling, interior features, and walls. This trullo was initially used for storing food and wine and has been reimagined as a restaurant and wine tasting venue by utilising the natural insulating qualities of a Trulli subfloor.

Minimal interior adjustments, such as wine storage racks, lighting details, and locally crafted furniture, have been employed to support the new purpose while respecting its historic character and layered history. The approach to adaptive reuse encourages both the conservation of cultural heritage and economic renewal, whilst contributing to the circular economy through sustainable intervention strategies.

Case study 5

Trullo Essensa is situated in the Rione Monti district, an area known for its high density of historic Trulli.[34] Built in the 1800s, this trullo has been carefully restored with minimal intervention, preserving its original spatial qualities while incorporating modern features. It now operates as a private heritage residence, offering contemporary living while safeguarding its architectural and cultural integrity.[35]

The intervention adhered to strict conservation principles in line with UNESCO guidelines and local heritage laws. No structural changes were made to the conical vault or original limestone walls. Instead, the existing stonework was carefully cleaned, repointed where needed, and lime-washed using traditional techniques. Inside, the space remains open about 60 m², hosting sleeping, dining, and living areas arranged without permanent partitions, thus maintaining the voluminous integrity of the trullo’s central room. Utilities like lighting, climate control, and plumbing were subtly integrated.[36]

The furnishing strategy relies on antique or handmade pieces that complement the rustic material palette of exposed stone, terracotta, and white lime plaster, while maintaining a minimalist aesthetic. There are no added glass extensions or intrusive architectural features, and even external interventions like the garden or courtyard are designed to reflect traditional rural domesticity. This approach aligns closely with principles outlined in adaptive reuse literature, emphasising reversibility, authenticity, and typological coherence.[37] Ultimately, Trullo Essensa presents a refined example of low-impact adaptive reuse within a World Heritage setting, demonstrating how vernacular buildings can be respectfully reinhabited and reactivated for contemporary life without compromising their historical, material, or spatial essence.

The case studies discussed above show how adaptive reuse in Alberobello’s ranges from conservative musealisation within the UNESCO boundary to innovative typological adaptation in the periphery. Although differing in scale and programme, all case studies contribute to the preservation and revitalisation of vernacular heritage.

Comparative analysis of Case studies in the UNESCO parameter

Parameter	Trullo Sovrano	Casa Pezzolla	Trullo Siamese	Trulli Wine Bar	Trullo Essensa
1. Historical Typology	Only two-storey trullo, 18th c., private residence and chapel	Complex cluster of 15 cones of the Late 1700s. Home of Dr Giacomo Pezolla	Double-cone structure of the 18th c., with twin entrances, a rare layout	16th–17th c. cellar-based trullo	19th c. single-cone residential trullo
2. Reuse Intent	Living museum showcasing trullo life	Cultural museum of local heritage & crafts (museum territory)	Boutique-souvenir shop for an immersive cultural experience	Wine & food tasting venue	Luxury heritage B&B
3. Intervention Strategy	Minimal intervention conservation-focused	Structural stabilisation, linked pathways, interpretive adaptation	Sensitive retrofitting for comfort	Adaptive reuse of underground spaces for hospitality	Light interior alterations, preserved envelope
4. Material & Authenticity	Retains lime plaster walls, stone cones, and period furnishings	Preserves original stonework, vaulted interiors	Maintains dry-stone appearance, minor modern upgrades	Emphasises patina and exposed stone	Original masonry with traditional finishes.
5. Structural Change / Retrofit	Repointing and stabilisation, no structural alteration	New cells and connections between the floors of units	Minor structural insulation, thermal upgrades	Vault retrofitting for safety and climate control	Minor internal service upgrades without altering load paths
6. Interior Approach	Interiors arranged with historic domestic objects	Museum installations contextual to trullo life	Interiors blend tradition with modern comfort	Atmospheric, rustic finishes highlight original textures	Minimalist and warm, heritage-focused with natural decor
7. Lighting & Services	Discrete, low-impact museum lighting and hidden services	Integrated museum-grade lighting, HVAC systems concealed	Subtle lighting, underfloor heating, invisible climate controls	Soft ambient lighting, controlled humidity	Energy-efficient lighting, solar-assisted water heating
8. Circulation Strategy	Central staircase and axial layout respected	Internal links between Trulli are guided via signage and flow	Independent entrances maintained	Sequential cellar rooms encourage linear flow	Direct access, intuitive layout for guests
9. Palimpsest Quality	Layered with social history and spatial evolution	Rich with agricultural and domestic layers	Tells a story of shared occupancy and transformation	Shows traces of a utilitarian past in textures	Subtle layering of rural past and boutique modernity
10. Interpretive Engagement	High: labels, tours, narrative storytelling	High: panels, tools, educational programming	Medium: visual storytelling via furnishings	Medium: immersive sensory experience	Low–Medium: implicit narrative via spatial ambience

Table 1. Comparative analysis of case studies within the UNESCO parameter

International Summer School Bari XI: Survey for planning new technologies and land protection

Proposal of Trullo Tinelli (outside UNESCO perimeter)

In 2018, the Bari International Summer School focused on the region of Bari, offering specialised training in heritage survey and documentation, including fieldwork at UNESCO sites such as Alberobello, Matera, and Lecce. Trullo Tinelli, on the outskirts of Alberobello and at risk of abandonment, served as a key case study for the documentation and heritage reuse proposal. Using digital techniques like 3D laser scanning and GPR, participants documented both ground and subterranean features, capturing the full spatial and material details of the structure. After the survey

phase, participants were asked to develop adaptive reuse proposals aimed at revitalising the trullo Tinelli while respecting its authentic vernacular character.
The reuse strategy I developed for Trullo Tinelli emphasises minimal intervention, spatial integrity, and material authenticity, aligning with international conservation charters such as the Nara Document on Authenticity (1994) and ICOMOS guidelines. The proposal reimagined “Trullo Tinelli” as an interactive museum, outdoor theatre, and piazza. It utilised the dry-stone inner walls and vaults as exhibition spaces for digital projections, creating an immersive experience. In the centre of the Trulli, the double-height space was utilised by inserting a reversible metal staircase, which leads to the top level and a small deck from where visitors can experience the conical roof and its structural details. In the middle of the space, a designed interactive installation aims to keep visitors engaged. This immersive experience turns the interior into a dynamic narrative space, blending history, architecture, and memory.

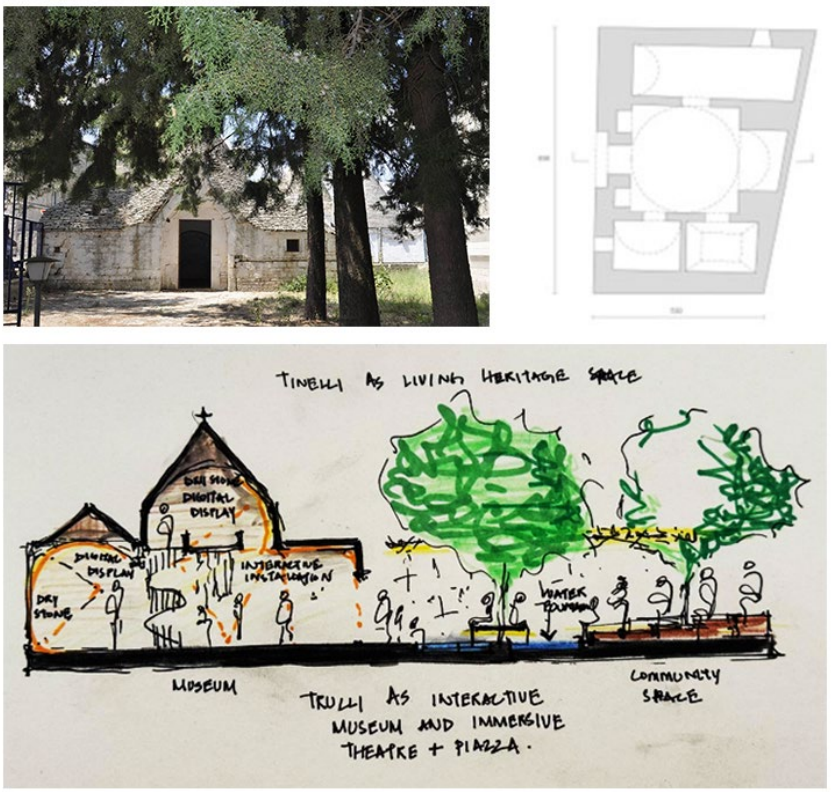

Figure 1. Winning design proposal of trullo Tinelli by the author

The outside underutilised space is reimagined as a public piazza, retaining the original trees on site and incorporating a water body that separates the museum's entrance zone from the elevated street space, which was designed with the neighbourhood's typology in mind. The zone has a school and chapel nearby, and the idea is to reactivate this space in day and night as a social and cultural precinct. Once an underused open space, the space has been reimagined as a community performance area with subtle seating arrangements, a lightweight shade canopy, and a central water feature. During the day, the space serves as a resting and gathering place for nearby schools and the local community; at night, it transforms into an open-air stage for performances, storytelling, or regional events. This design not only revives a neglected trullo but also strengthens its social and cultural ties with the neighbourhood,

engaging with the landscape and highlighting the trullo's role as a living heritage space. In doing so, the project shows how vernacular architecture can be reinterpreted through contemporary interior and spatial strategies, fostering continuity, education, and community identity.

Conclusion and Recommendations

The trullo stands as a symbol of cultural resilience, adapting over centuries without losing its authenticity or connection to the local landscape. It encapsulates a palimpsest of history, the genius loci of the place where layers of tradition and function remain legible through form and material.

This paper has critically evaluated the adaptive reuse of Trulli through the lens of spatial transformation, interior interventions, and typological innovation. Case studies such as Trullo Sovrano, Trullo Siamese, Casa Pezzolla, Trulli Puglia wine bar and Trulli Essensa within the heritage perimeter demonstrate how minimal, non-invasive strategies can preserve authenticity while enabling public engagement. These cases emphasised palimpsest integrity, preserving visible traces of historical use while accommodating didactic and experiential reinterpretation.

Meanwhile, projects outside the UNESCO boundary where Trulli have been adapted into boutique hotels, artisan workshops, cultural venues, and experiential tourism accommodations show how vernacular typologies can be reimagined to serve contemporary socio-economic needs without compromising heritage values.

These interior typologies demonstrate how this flexibility, environmental performance, and aesthetic continuity can be maintained even in adaptive interventions. Many of these projects apply principles from contemporary adaptive reuse theory, which encourages reversibility, readability of interventions, and respect for historic fabric while fostering new programmatic relationships.[38]

These preservation and reuse practices need to be integrated into interior architecture education and design discussions. This expansion will help future designers learn about context-sensitive interventions, reuse possibilities, and how to approach heritage from within," viewing the interior as a space of memory, materiality, and experiential continuity. Educational programs should incorporate digital documentation tools like 3D scanning and GPR, along with adaptive reuse strategies that prioritise minimal, reversible actions. This approach promotes new typologies that activate historic interiors while respecting their material logic. Such pedagogy supports the adaptive reuse of vernacular heritage both as a conservation method and as a driver of spatial innovation, creating immersive, multilayered environments.

NOTES

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DOCUMENTING THE TANGIBLE AND INTANGIBLE HERITAGE OF MUD-BUILT MOSQUES IN THE VERNACULAR SETTLEMENT OF AL-KHABRA, SAUDI ARABIA: TOWARDS A DIGITAL TWIN FOR SAFEGUARDING AUTHENTICITY

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INTRODUCTION

Vernacular mosque architecture has become an increasingly important topic in architectural research across the Islamic world. However, few studies have been carried out in the Arabian Peninsula overall, and especially in the Kingdom of Saudi Arabia. Vernacular mosques in Saudi Arabia have received very limited attention from the perspective of their previous users. The mosque, beyond its religious function, historically played a central role in community life, acting as a center for social, cultural, and environmental interactions. Within traditional settlements, mosques were instrumental in linking households and promoting social unity. Therefore, understanding the mosque's architectural and spatial characteristics in relation to its local socio-cultural and environmental context is essential.

Initial documentation of Saudi Arabia's vernacular mosques was largely carried out by Western travelers.[1] Since then, local scholarly involvement has been relatively limited, though a revival of interest can be seen in some works.[2] The establishment of the Abdullatif Al-Fozan Award in 2014 has further encouraged attention toward mosque architecture across the Kingdom.[3] While various studies have explored mud-brick architecture typologies in central Saudi Arabia,[4] few have focused specifically on mosques or investigated their relationship with vernacular settlement patterns in the Najd region.

This study addresses that gap by examining the architectural and cultural significance of two historic mud-brick mosques in Al-Khabra, a heritage settlement in the Al-Qassim region of central Saudi Arabia. The research explores the integration of these mosques into community life, their environmental function in extreme heat, and their roles as spaces for religious and social gathering. It also interrogates their contrasting conditions: one recently renovated and the other preserved in its original state. This comparison provides a critical lens on preservation practices and architectural authenticity.

The study is guided by three core questions: What are the defining architectural characteristics of the vernacular mosques in Al-Khabra? How can their historical significance and unique features inform contemporary restoration? What is the ongoing relevance of such structures today, and what

challenges must be addressed to ensure their preservation in modern Saudi contexts? The paper aims to document and analyze the tangible and intangible heritage of two vernacular mud-built mosques in Al-Khabra, highlighting the impact of restoration and the role of digital tools in heritage preservation.
To achieve that, this study adopts a mixed-methods approach combining architectural documentation, oral history, and interpretive analysis. First, the Large and Small Mosques of Al-Khabra were digitally surveyed using an Artec Ray II 3D laser scanner, supported by hand-measured drawings, to generate accurate digital models for spatial and construction analysis. Second, semi-structured interviews were conducted with eight elderly former residents who lived in Al-Khabra prior to its depopulation in 1991. Their recollections offered vital insights into historical mosque use, seasonal rituals, and cultural meanings. A comparative analysis between the recently restored Large Mosque and the untouched Small Mosque highlights the impact of renovation practices on architectural authenticity. The integration of technical and narrative data supports a culturally grounded interpretation of the mosques and informs the development of digital heritage tools that can guide future restoration efforts.
By capturing both tangible and intangible heritage, this research highlights the dynamic relationship between architecture, memory, and environmental adaptation. In particular, it highlights how traditional spatial configurations supported thermal comfort and seasonal use, emphasizing the mosque's role as a behavioral and climatic refuge. Greater proximity to local knowledge and lived experience allows for a richer reading of how built environments perform, socially, environmentally, and historically, within their specific regional contexts.
In alignment with the goals of Architectural identities of KSA 2025, this study advocates for restoration practices that balance technological advancement with cultural authenticity and calls for a more thoughtful integration of digital twins of heritage buildings as a preventive measure to future the rehabilitation of Saudi architectural, hence, safeguarding its authenticity for future generations.

Contextualizing Al-Khabra Mosques

Published studies on Al-Khabra remain notably limited. While only a few urban-scale studies have examined the settlement,[5] Altassan's study focuses on the broader eco-tourism potential and sustainability challenges, but does not analyze the settlement's mosques in any detail. More broadly, vernacular mosques in Saudi Arabia have rarely been analyzed through the view of the previous users or their lived experiences. The Central Region of the Kingdom of Saudi Arabia (KSA), which includes Riyadh, Al-Qassim, and Hail, is home to what is commonly referred to as the "Najdi style" of architecture, characterized primarily by the use of clay as the dominant construction material.
This paper aims to address a significant research gap by investigating how previous residents perceive, use, and interpret mosque spaces within Al-Khabra. It also explores the architectural characteristics of the large mosque in comparison to the small mosque (see Figure 1).

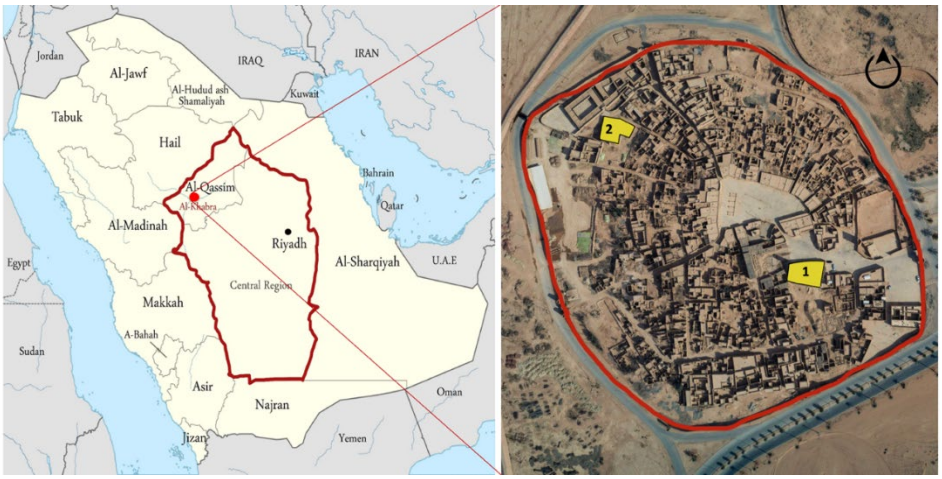


Figure 1. KSA Map (left side) and site image of Al-Khabra village (right side), highlighting Mosques.

Al-Khabra, like other Najdi settlements, contains two distinct mosque types: a large congregational mosque (Jami‘) for Friday prayers and a smaller neighborhood mosque for the five daily prayers. In Al-Khabra in the Al-Qassim region, there is only one mosque of each type. A comparative analysis of the large and small mosques reveals that mosques serve multiple purposes beyond religious rituals. These two mosque types reflect important spatial and social dynamics. Their physical form and placement within the settlement offer insights into the broader functions they fulfill.

As illustrated in the maps in Figure 1, large Friday mosques are generally situated near the central marketplace or souq, typically at the intersection of key streets that connect the main gates of the walled settlements. These locations ensured accessibility and reinforced the mosque’s role as a civic, commercial, and religious hub. In contrast, small mosques are located within semi-public or private residential areas, serving primarily as intimate neighborhood prayer spaces. The strategic location of large mosques near market areas allowed both residents and visitors to participate in religious and economic activities. An early description had been provided of this dual function:[6]

“Their mosque stands by the mejlis, and is a low clay building. Nearby I saw a brackish well, only a fathom deep, where they wash before prayers... Mejlis is held in the Friday market when the nomads come also to pray at noon in the masjid bringing camels, small cattle and samn (a form of butter).”

Friday prayers functioned not only as religious events but also as opportunities for community gathering and regional trade. By contrast, the smaller mosques were isolated from commercial functions and were intended only for the daily prayers of local residents.

Minarets

Minarets in the Central Region exhibit a distinctive architectural form: a cylindrical, funnel-shaped shaft resembling the minaret of the Great Mosque of Samarra, usually set atop a square or beveled base. These minarets are commonly situated directly above the prayer hall, with a staircase providing access. In some cases, such as the Large Mosque in Al-Khabra, minaret is large enough to contain additional rooms, which are used for extra prayer space during Ramadan (see Figure 2). The minaret stands out as a defining architectural element of the Najdi mosque. This region offers valuable insights and presents a promising area for advancing scholarly understanding of these religious structures.

Figure 2. Minarets of the large (left) and small (right) mosques in Al-Khabra, Al-Qassim.

METHODOLOGY

The study employs a mixed-methods approach to document and interpret the architectural and cultural significance of the recently restored Large Mosque, and the untouched Small Mosque in Al-Khabra, Saudi Arabia (Figure 3).

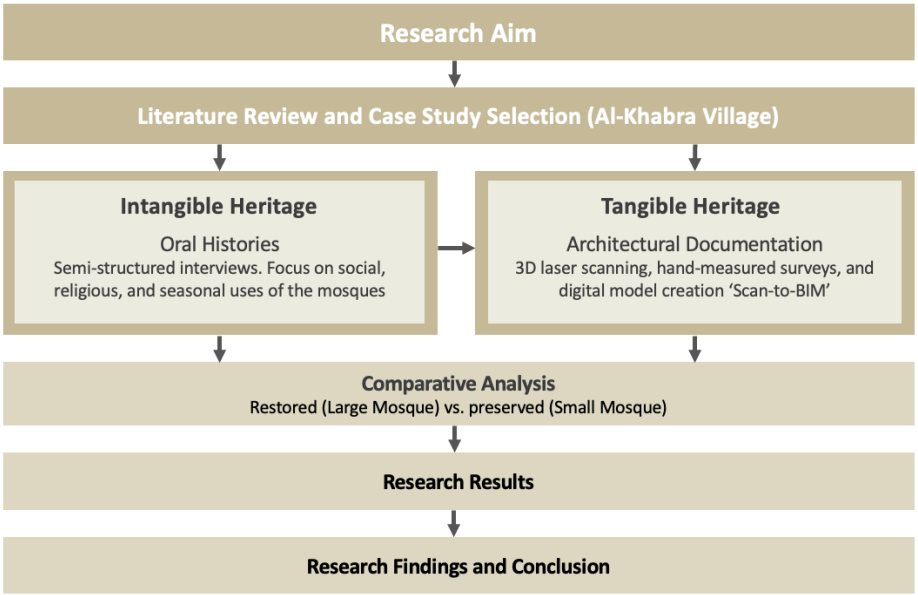


Figure 3. Study methodology and process

CASE STUDIES: THE LARGE AND SMALL MOSQUES OF AL-KHABRA

The renovated Large Mosque and the untouched Small Mosque provide insights into preservation and authenticity. The Large Mosque, near the village market, has six main spaces (Figure 4): Al-Misbah (front covered prayer hall), Al-Sarha (open courtyard), Al-Eshah (women's area), Al-Sath (roof space), Al-Khalwa (basement prayer space), and rear prayer hall. Supported by stone columns and built with wood and adobe bricks, the mosque reflects vernacular construction techniques that promote passive cooling and thermal comfort. Its unique basement and tall conical minaret make it a distinctive heritage structure.

The Small Mosque consists of five main spaces (Figure 5): Al-Makzan (storage), Al-Misbah (front prayer space), Al-sath, Al-Sarha, and the rear enclosed prayer space. Al-Misbah is 3.30 m high and opens to the north for summer ventilation, while the lower rear space (2.70 m) is used in winter for warmth and wind protection. Seasonal adaptations also included using Al-Sarha (open courtyard) in spring and Al-Sath (roof space) in autumn, as recalled by participants. Both mosques show climatic adaptability through features such as Al-Khalwa and the rear enclosed prayer space, offering comfort in extreme temperatures.

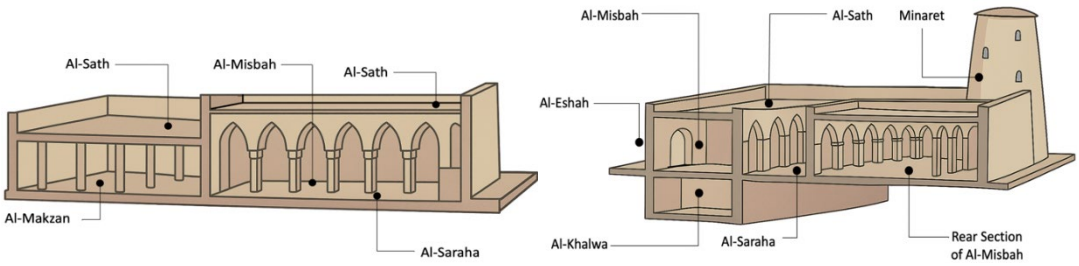


Figure 4. The components of the small (left) and large (right) mosques in Al-Khabra

HERITAGE ANALYSIS: INTANGIBLE AND INTANGIBLE HERITAGE

Intangible Heritage of Mosques through Oral Histories

To understand the intangible heritage associated with the mosque, eight semi-structured interviews were conducted with people who used to live in the village (Figure 5). A thematic analysis, using NVivo software and grounded in participants' own words, revealed recurring themes related to social functions, spatial use, and perceived changes or losses. Table 1 presents the key themes alongside representative quotations.

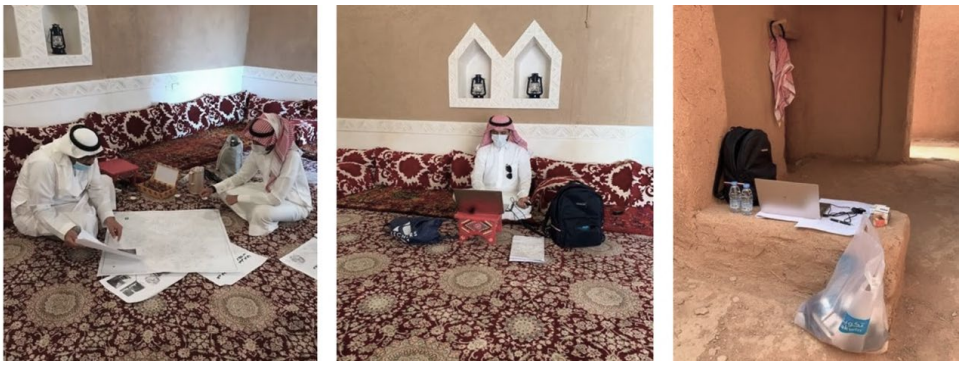


Figure 5. Researcher and one of participants in an interview.

Theme	Representative Quote
Social Interaction	"Many activities were held in the large mosques, such as Friday prayer, community learning, meetings, and hosting guests."
	"There was someone who looked after people and checked attendance… calling names, and people responded 'present!'"
	"Men used to sit in a mud bench located at the exterior of the East facing wall outside the mosque after the sunrise prayer; they called it 'warm Al-Mishraq' means the East."
	"We were always seeing each other in the past, helping and standing together as one community."
Seasonal Space Use	"In summer, we slept in open courtyards or roofs.. now with air conditioning, people wake up lazily with alarms."
	"The khalwah has two levels, 8 m underground, cool in summer and warm in winter."
	"The khalwah had no carpets, just sand. We slept there during Ramadan."
	"In winter, we prayed on the rooftop; in summer, inside the mosque and Al-khalwah. During Ramadan, we prayed in the courtyard."
	"We used to sleep in Al-Khalwah during Ramadan, we'd make a small mound of sand (zabra) to rest our heads on and sleep. After Dhuhr prayer, we'd nap, and when Asr time came, the muezzin would come and wake us up, saying, pray, pray!"
Architectural Details	"Windows in the mosque were at a high level on the external wall."
	"There used to be a garo near the entrance full of water for Wudu, taken from the mosque's well, with a tamarisk tree nearby."
Changes & Loss	"The central courtyard used to be open, but now it is closed."
	"The khalwah is hotter in summer now because they replaced the original mud with other materials."

Table 1. Themes and representative quotations from oral histories.

Tangible Heritage of Mosques through 3D Survey and Architectural Documentation

A. The Scan Phase: 3D Survey and Data Processing

- 3D Survey

The Scan-to-BIM process begins with a laser scanner survey. At Al-Khabra Mosque, challenges emerged due to limited overlap between the courtyard, internal spaces, and external facades. To address this, the Artec Ray II 3D scanner was used, along with Artec Professional software, which enables continuous tracking and alignment of point clouds, ideal for complex layouts with minimal connection points.

The Artec Ray II laser scanner captures up to 2 million points per second, enabling fast and accurate scanning of large environments. At a distance of 10 meters, it completes a full-dome scan at 3 mm resolution in just 1.7 minutes (without texture). Thanks to this speed, the two mosques were surveyed over the course of two consecutive days. The survey strategy involved four main steps:

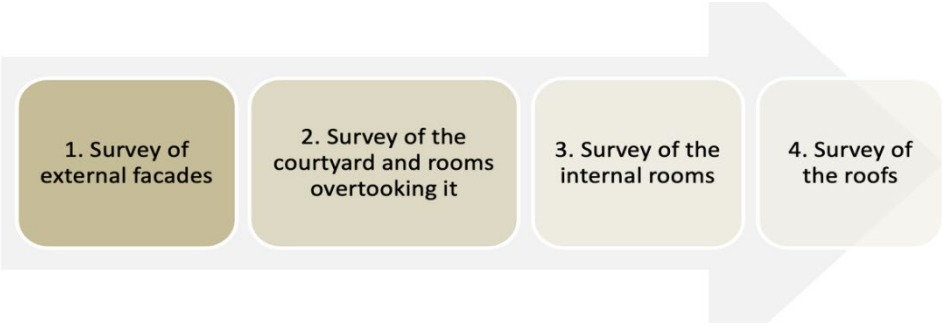


Figure 6. The four main steps for the mosque survey

On the first day, the small mosque was scanned in four steps using an Artec 3D laser scanner. The process covered the courtyard, prayer spaces, external facades, and roof (Figure7). Scans were medium resolution (6 mm at 10 m). In total, 22 ground-level and 3 roof scans were collected.
On the second day, the same method was applied to the large mosque. Its enclosed courtyard made internal and external alignment more challenging. In addition, some areas such as behind the minaret could not be scanned due to limited access. In total, 26 ground-level and 4 roof scans were collected.

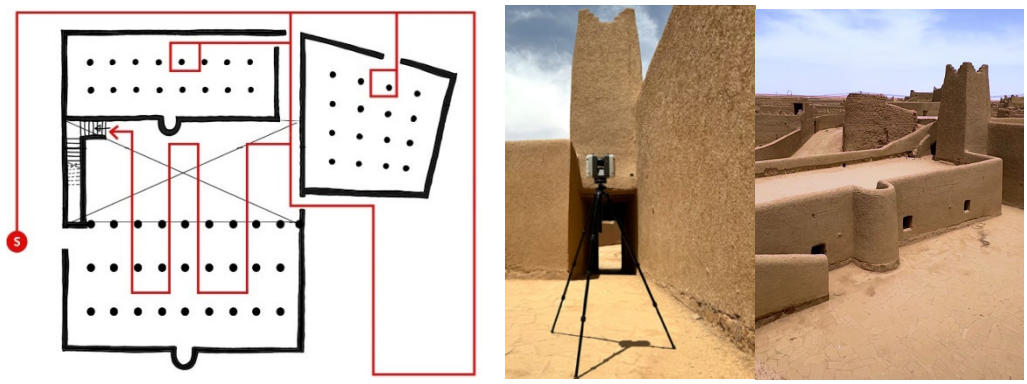


Figure 7. Scan paths of the Small Mosque's central courtyard and adjacent prayer spaces (left) and laser scanner survey of the courtyard (right).

- Data Processing

The collected data were processed using Artec Studio 19 and ReCap. In Artec Studio, the Global Registration algorithm was applied to automatically align scans by detecting overlaps and minimizing geometric errors. This method eliminates the need for manual point selection and is well-suited for large, complex structures like historical mosques. The aligned dataset then served as a solid base for fusion and mesh optimization.
After completing the four-step scanning process, the raw data were imported into Artec Studio 19 for post-processing. Each scan included detailed geometry but also unwanted noise and objects. The initial step involved cleaning the scans using the Editor tool, with the Eraser function manually removing elements like the scanner base and surrounding objects.
After cleaning, the scans remained unaligned. Auto-alignment was first used for rough positioning based on overlapping geometry, followed by manual registration using common reference points. Global registration in Artec Studio then refined the alignment, achieving RMS errors, as shown in Table 2. The final result for the small mosque was a raw point cloud with over 50 million points and a total data size exceeding 25 GB. For the large mosque, the point cloud exceeded 80 million points, with a total data size over 40 GB.

Registration scans	RMS value (m)
Scan of first day (Small Mosque)	± 0.00172
Scan of the second day (Large Mosque)	± 0.00242
All scans	± 0.00207

Table 2. Root Mean Square (RMS) Value of Registration Process

The aligned scans were merged into a detailed 3D model in Artec Studio using Sharp Fusion, followed by noise removal and mesh simplification. High-resolution textures were generated (Figure 8) and applied before exporting the model to Autodesk ReCap for inspection and scaling. Because

Revit does not natively support mesh files, the model was converted to a point cloud (RCP/RCS) and imported as a reference for manually creating BIM elements. Figure 9 shows the data processing workflow for Scan-to-BIM process.

Figure 8. Final point cloud of the Small Mosque (left) and Large Mosque (right) in Al-Khabra

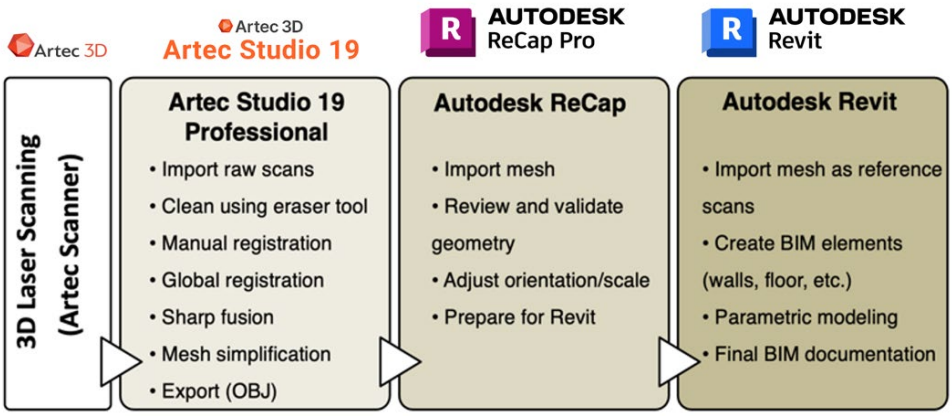


Figure 9. Data processing workflow for Scan-to-BIM

B. BIM Phase: Parametric Modeling and Project Documentation

The complex geometry of Al-Khabra Mosque, with irregular shapes, non-orthogonal walls, and unevenly distributed features typical of historic structures, made BIM modeling challenging. To address this, an intermediate Level of Development (LOD) between 2 and 3 was chosen, based on HBIM classification,[7] to balance geometric detail and constructive accuracy while ensuring realistic visualization. This LOD also provided enough information to support preliminary conservation and maintenance planning. The modeling strategy followed five main steps:

1) Import the processed point cloud data and perform preliminary operations.

2) Model the main structural elements of the mosque.
3) Create custom Revit families for key components (such as roofs, walls, floors).
4) Insert and adjust families in the model.
5) Apply materials and textures for better visualization.
Autodesk Revit was used to create the BIM model of Al-Khabra Mosque by integrating the point cloud data and defining horizontal reference planes aligned with key architectural features. Modeling began with the exterior and interior walls, carefully tracing their irregular geometry, followed by floors, roofs, and structural elements such as columns, arches, and beams. The front prayer area, with its series of arches and columns opening to the courtyard, and the minaret required particular precision due to their complexity. To capture the mosque's historic architecture, custom parametric families were developed for walls, roofs, floors, arches, and decorative features, as default Revit families were unsuitable for traditional forms. A dedicated library was created to reflect the varied shapes of elements like arches and openings, with some simplification applied to balance accuracy and practicality while still preserving the mosque's architectural identity.

Project Documentation

After completing the geometric modeling, a detailed HBIM models of the two Mosques of Al-Khabra were created. From this model, 2D documentation, floor plans, elevations, sections, axonometric views, and perspectives, was automatically generated. Non-visual information, including material types, quantities, construction details, room functions, and surface areas, was linked to individual model elements according to the project's LOD. Photographic references and schedules were added to organize data on spaces, windows, floor areas, and materials. This comprehensive HBIM model not only supports accurate conservation planning and future research but also enables virtual tours and 3D visualizations to promote cultural heritage engagement.

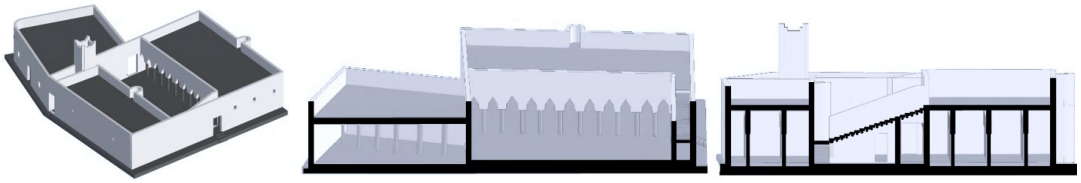


Figure 10. HBIM model, perspective sections of the Small Al-Khabra Mosque

COMPARISON OF SPATIAL AND ARCHITECTURAL FEATURES

The Large Mosque has experienced restoration that changed many of its original features, while the Small Mosque remains mostly preserved and has not been renovated. Their contrasting conditions offer valuable insights into the effects of renovation on authenticity (Table 3). One interviewee expressed disappointment over the changes, particularly the enclosure of the open courtyard "The center courtyard used to be open, but now it is closed," while another recalled, "We used to sit there to feel the sun and enjoy the fresh air." These changes, including a covered courtyard and single-glazed windows, have led to poor ventilation and excessive heat inside, especially in hot climates. Even though these changes aimed to protect the carpet, these modifications compromise user comfort and reduce energy efficiency. In contrast, the Small Mosque retains original elements that can inform more sustainable and culturally respectful restoration practices in the future.

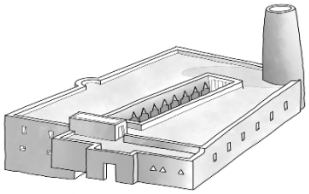
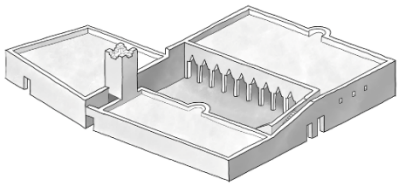
Feature	Large Mosque	Small Mosque
		
Date of Construction	1700 AD	1950 AD
Location	Central market area	Northwest village gate
Area	560 m²	400 m²
Key Spaces	Al Misbah (front prayer halls), rear prayer halls, Al Sarha (courtyard), Al Esha (women's space), Al Sath (roof), Al Khalwa (basement)	Al Misbah (front and rear prayer halls), Al Sarha (open courtyard), Al Sath (roof), and Al-Makzen
Basement/Al-Khalwa	There is basement, it is distinctive feature for thermal comfort	No Basement, it uses rear enclosed prayer hall as winter alternative
Minaret	Tall cylindrical minaret narrowing upward to a cone, more than double the height of the main prayer hall.	Rectangular minaret starting from the second floor, hanging above the entrance.
Lessons	Shows risks of insensitive restoration reducing authenticity and thermal efficiency	Preserves vernacular features, model for climate-responsive design
Current Use	Open for prayers	Not in use for prayers
Restoration Status	Restored with many original features lost, courtyard closed, reduced ventilation	Still retains original layout and open courtyard
	The previous open courtyard (left), and enclosed courtyard after renovation (right).	The open courtyard in the Small Mosque

Table 3. Comparative spatial organization and key characteristics of the Large and Small Mosques.

CONCLUSION

This study combined 3D laser scanning, hand surveys, and oral histories to document and interpret both the tangible and intangible heritage of two vernacular mud-built mosques in Al-Khabra (Large and Small Mosques). The integration of HBIM modelling with community memories not only captured the mosques' architectural details and construction techniques, but also revealed their evolving social, cultural, and seasonal roles.

The comparison between the restored Large Mosque and the untouched Small Mosque demonstrates how modern interventions that disregard vernacular design can compromise both authenticity and thermal performance. The Scan-to-BIM process proved highly effective in producing a digital twin that consolidates geometric, material, and cultural data, facilitating informed conservation, future updates, and long-term heritage management.

Beyond documenting the two mosques in Al-Khabra village, this research supports Saudi Arabia's broader efforts to create an Architectural Identities Map and preserve the nation's cultural heritage. It highlights the importance of restoration approaches that respect both material and cultural heritage, advocating for the integration of digital heritage tools as preventive strategies and policy guides aligned with Saudi Arabia's Architectural Identities 2025 initiative. This study further recommends the thoughtful integration of digital twins of heritage buildings as a preventive strategy to guide future

rehabilitation efforts and safeguard architectural authenticity for future generations. These tools can help ensure future interventions maintain architectural integrity while promoting public education and cultural continuity.

Future work should expand digital documentation to other vernacular settlements, integrate environmental performance analyses into HBIM models, and establish restoration guidelines that respect original materials and climate-responsive features. These initiatives will help balance modern demands with preserving authenticity for future generations.

NOTES

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[5] Mohamed Alnowaiser, “Indigenous Alkhabra Village: A Sustainable Community,” Journal of Engineering Sciences 38, no. 2 (2010): 555–567; Abdulrahman Altassan, “Sustainability of Heritage Villages through Eco-Tourism Investment (Case Study: Al-Khabra Village, Saudi Arabia),” Sustainability 15, no. 9 (2023): 7172.

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[7] Charles Brookes, The Application of Building Information Modelling (BIM) within a Heritage Science Context, Research Report Series no. 29-2017 (Swindon: Historic England, 2017), 1–63.

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THE IMPACT OF CLIMATE CHANGE ON THE CULTURAL HERITAGE OF TRADITIONAL COMMUNITIES IN THE PANTANAL (BRAZIL)

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INTRODUCTION

We propose reflections in the field of sociocultural heritage, which is intrinsically related to the triad: territory, communities, and heritage. Specifically, we intend to highlight the impacts of climate change in relation to the cultural heritage of indigenous peoples and traditional communities in the Pantanal of Mato Grosso and Mato Grosso do Sul (Brazil) – a World Natural Heritage site and Biosphere Reserve (UNESCO, 2000). To date, there is limited research on the impacts of climate change on global cultural heritage. The effects of the environmental and climate crises affect the cultural heritage of fishermen, riverside communities, indigenous peoples, and Afro-Brazilian communities, threatening the safeguarding of their cultural assets. These factors contribute to the acceleration of the process of climate change on a global scale and put at risk the cultural heritage of indigenous peoples and traditional communities, who depend on this territory and biome for cultural reproduction. The methodological procedure adopted in the research consisted of analyzing written documents, including reports from IPHAN (Brazil), IPCC (UN), ICOMOS and UNESCO.

The climate crisis

The climate crisis threatens the environment, architectural forms, archaeological remains, lifestyles, and cultural expressions. Extensive scientific data covered in the reports of the Intergovernmental Panel on Climate Change (IPCC),[1] presented by study groups that include scientists from different parts of the world, demonstrated a high probability that global warming will occur due to a set of human actions and activities. The consequences of climate change are diverse; rising temperatures can cause sea levels to rise and intensify extreme weather events, such as heavy rainfall, changes in the rhythm and characteristics of seasons, floods, and droughts, and a reduction in natural resources and biodiversity.[2] Climate change has a complex impact on the climate system of a given location. However, scientific studies indicate that the phenomenon of climate change is interconnected, affecting seasonal patterns in various parts of the world. In fact, its impacts, both direct and indirect, and on different scales and outcomes, are immeasurable. In recent years, Brazil has experienced several disasters, resulting from rising temperatures, with droughts and fires in different regions.

In line with the data presented by the IPCC[3] – which point to impacts and vulnerability related to climate change and reinforce the need for studies, coping strategies, and public policies aimed at minimizing the expected damage – researchers also warn of the threats of environmental destruction,

the vulnerability of the world's cultural heritage and the relevance and urgency of measures regarding the preservation of this heritage.[4] In relation to climate challenges in the field of cultural heritage, we understand that the climate crisis is not only linked to specific relationships of environmental transformations, which generate degradation, alteration, or destruction of landscapes. This phenomenon also affects the traditional knowledge, identities, and well-being of those who hold them, in addition to material and natural cultural assets. As an example, we can mention some world heritage sites that are at risk due to climate change: historic cities in Europe, such as Venice in Italy, Amsterdam in the Netherlands, Prague in the Czech Republic, the Petra Monuments in Jordan, and the Galapagos Islands in Ecuador.

Debates regarding the effects of global warming have led UNESCO, the body responsible for protecting the world's cultural heritage, to prepare official reports that address the vulnerability of cultural heritage to phenomena resulting from climate change, indicating some actions to address the problem, such as strengthening international cooperation. According to Zanirato and Ribeiro,[5] the UNESCO reports[6] demonstrate that no country is prepared for these effects, highlighting the need to increase the number of scientific studies that make it possible to assess the impacts of climate change on heritage assets and seek adaptations to the effects resulting from these alterations.

Considering the points made by UNESCO, in 2019 the “Committee on Climate Change and Heritage” was formed by the International Council on Monuments and Sites (ICOMOS – BR). The formation of this committee, in a context of worsening effects of climate change, strengthens international commitments and actions that need to be fulfilled in relation to the theme of cultural heritage and climate change, scientifically disseminating the debates undertaken.

Safeguarding cultural and natural heritage is a major challenge in light of the climate change affecting the planet. In addition to the risks to human life and the environment caused by climate alterations, their potential cultural impacts must also be considered. According to the German sociologist Ulrich Beck,[7] since the end of the 20th century, we have been living in a “risk society”, in which the social production of wealth is systematically accompanied by the social production of risks, conditioned by economic factors and aligned with the perspectives of developmental guidelines, which promote environmental destruction and degradation.

According to anthropologist Manuela Carneiro da Cunha,[8] the cultural heritage of traditional communities is both dynamic and historical, and their conditions of reproduction depend, among other things, on access to territory and natural resources. These territories are places of memory and spaces of resistance, as the history, work, and culture of the communities that inhabit them are inseparable from these spaces, which are essential for the cultural reproduction of the group. In this sense, climate alterations directly impact traditional communities that depend on the environment.

In August 2020, when a large number of fires impacted the Pantanal ecoregion, UNESCO issued a warning about the ongoing tragedy.[9] The Pantanal, a World Heritage Site, is experiencing an environmental crisis that is worsening due to climate change, resulting in fires, droughts, and rising rivers, causing flooding. Furthermore, human actions, especially those resulting from the use of land and water through deforestation, destruction of springs, construction of hydroelectric plants, changes in water flow, and the indiscriminate use of pesticides, contribute to socio-environmental devastation in the Pantanal, and accelerate climate change and its effects at not only national but also global levels. This set of crises compromises the natural heritage, flora, and fauna, as well as cultural reproduction among indigenous peoples and traditional communities, increasing the complexity of the scenario. The Pantanal and the cultural heritage of traditional communities that inhabit it and depend on this biome are significantly vulnerable to risks arising from and intensified by climate change.

The Environmental Crisis in the Pantanal Scenario

The Pantanal Complex is located in the territories of Brazil, Paraguay, and Bolivia, totaling approximately 250,000 square kilometers, and is one of the richest wildlife ecosystems and the largest continuous wetland in the world. In Brazil, this biome covers the states of Mato Grosso and Mato Grosso do Sul. It is also a place of residence, work, and cultural reproduction for indigenous peoples, quilombola communities, artisanal fishermen, riverside dwellers and extractivists. However, it is also currently a disputed territory in developmental geopolitics, where the impacts on local communities occur in different ways and with different intensities. A model of environmental preservation and sustainability, the Pantanal is threatened by climate changes occurring on a local and global scale.

Figure 1. Complex of Protected Areas of the Pantanal (MT/MS) [10]

According to the researchers Julio Cesar Sampaio and Aguinaldo Silva,[11] coordinators of the "Cerrado-Pantanal" program of the non-governmental organization WWF Brazil, the Pantanal, as a humid biome, depends fundamentally on the hydrological cycle of floods and droughts for its maintenance. However, one of the main occurrences of the climate change process, longer and more extreme periods of drought, are already being felt in some regions of the Pantanal. Thus, the phenomenon of climate change puts the Pantanal ecosystem at risk, influencing the flood cycle of the Paraguay River, and resulting in long periods of drought, which negatively impacts the local flora and fauna. This process can be accelerated by direct human action. Sampaio and Silva observe that the plateau region concentrates the greatest threats to the Pantanal due to land use and occupation, causing the silting of some rivers. Hydroelectric projects interfere with the hydrological regime of the rivers, with the installation of small hydroelectric plants, known as PCHs, throughout the Pantanal basin. Sampaio, states that "If the situation remains as it is, and public policies are not adopted to ensure the preservation and recovery of the basin, in 20 or 30 years the Pantanal could be 'strangled'." Silva adds, "The global climate system can certainly influence the Pantanal and life in the Pantanal. Changes in the waters of tropical oceans, especially the Pacific, can have major effects on precipitation in the continental interior, and therefore on the occurrence and duration of floods." [12]

In the scenario of the Pantanal Protected Areas Complex, there is a strong and notable water crisis, in which the generation of energy through the construction of hydroelectric plants and waterways

occupies a central space, impacting the regular pulse of the waters that feed the flooded plain, irrespective of other factors, such as deforestation, mining, monocultures, livestock farming, and destruction of springs. The environmental crisis, resulting from the sum of impacts that plague the Pantanal, is further aggravated by the disasters caused by the forest fires that occurred (and still occur) in the Pantanal, as seen in figure 2 (Source: Bruno Rezende/ Government of MS).

Figure 2. Burned area on June 23, 2024 – Pantanal of Mato Grosso do Sul

Due to the environmental crisis in the Pantanal scenario, the Scientific Committee on Climate Change of ICOMOS - Brazil, on the occasion of the increase in fires in the Pantanal, between the months of July and September 2020, prepared the Open Letter “Forest Fires in the Pantanal: Natural Heritage of Humanity and Cultural Heritage”. This letter points out the coexistence of the Pantanal communities with the environment, where the following heritages interact: material, immaterial, and natural, and configure a cultural landscape conditioned by the ‘pulse’ of the waters.

The data presented in the aforementioned open letter demonstrate that the environmental crisis in the Pantanal, in addition to threatening the entire unique environmental diversity of this biome, poses great danger to the physical and cultural integrity of indigenous peoples, quilombolas, artisanal fishermen, riverside dwellers, and extractivists. This situation tends to lead to the forced removal of these communities from their homes and territories, and intensifies historically existing conflicts, aggravated by the COVID-19 pandemic. In addition, it destroys the flora, fauna, crops, and genetic heritage inherited from these traditional communities, taking away their livelihood and source of income, hindering traditional management of the territory, and compromising the transfer of knowledge and ways of doing things, classified as intangible heritage. As an example, around 83% of the area of the Baía dos Guató Indigenous Land, located in the municipality of Barão do Melgaço (MT), was destroyed as a result of the fire that occurred in 2020, according to data presented by the National Institute for Space Research (INPE).[13] Unable to rely on public policies, the Guató people of this region have lost almost all of their territory to the fire that devastated the Pantanal.

Cultural Heritage at Risk

Extreme weather events directly impact indigenous peoples and traditional communities in the Pantanal of Mato Grosso and Mato Grosso do Sul, who depend on the environment, which is intrinsically linked to the group's identity, affective memory, values, and cultural reproduction. This phenomenon threatens the safeguarding of its cultural assets registered at a national level, such as the

celebration *Banho de São João* (Baptism of St. John) and the method used to make the *Viola de Cocho* (a traditional Brazilian plucked string instrument). In addition to posing risks to the lives of those who hold this knowledge, we highlight the environmental impact, resulting in difficulties in accessing the Paraguay River to carry out cultural manifestations during celebration rituals, and to the raw materials for the production of objects linked to cultural practices. Consequently, we stress the risks of interruption and discontinuity in the process of transmitting techniques and knowledge associated with traditional cultural assets in the Pantanal.

The registration of the *Banho de São João* of Corumbá and Ladário as Cultural Heritage of Brazil took place in May 2021, making visible the contributions of different ethnic matrices of the populations that inhabit the Pantanal in the construction of Brazilian identity. The celebration creates a moment of integration between urban communities and traditional communities in the Pantanal region, involving aspects of religious diversity, and is worshipped by Catholic devotees and those of African-based religions, including Candomblé and Umbanda. During the celebration, several processions are held in which the faithful carry decorated floats, prepared over several days, which are taken to the banks of the Paraguay River, where they perform the ritual of *Banho de São João* in the river's waters. This ritual of devotion, intrinsically associated with the river, and which takes place on the 23rd and 24th of June, coincides with the water cycle and marks the beginning of a new phase of nature in the Pantanal, expanding the pasture areas and ensuring an abundance of fish.[14] However, the preservation of the Paraguay River and its surroundings are threatened by the construction of hydroelectric plants, the installation of mining companies, increased deforestation, tragedies caused by forest fires and, consequently, by the phenomenon of climate change.

The Figure 3 below shows, in the foreground, the traditional “Arraial do Banho de São João” festival, the main typical festival in Corumbá – known as the “capital of the Pantanal”. In the background, the fires in the Pantanal can be seen, which surrounded the city between June 22 and 23, 2024. In this context, the drought affecting the Paraguay River, seen in the image, combined with the “wall of fire” and the population’s respiratory difficulties, made access to the river to perform the ritual difficult.

Figure 3. “Arraial do Banho de São João”, Corumbá, June 22, 2024.[15]

The Method of Making the Viola de Cocho was awarded the title of a Cultural Heritage of Brazil in 2005. It is a cultural asset made by hand using raw materials taken from nature, and the flora and fauna of the Pantanal and Cerrado.[16] The geographical reference regarding the production and dissemination of cultural manifestations involving the use of the *viola de cocho* (figure 4) is the Pantanal region and the Paraguay River basin, covering the state of Mato Grosso, in the city of Cáceres, and Mato Grosso do Sul, in the municipalities of Corumbá and Ladário.

Figure 4. Viola de Cocho[17]

The method used to make the *viola de cocho* is also related to the methods used to make other instruments, such as the *mocho* (a snare drum that hangs from the player's belt), also called *tamboril*, with a shape resembles a wooden bench, covered with leather, on which two drumsticks are struck, and the *ganzá*, a hand-held percussion instrument. The *viola de cocho*, *mocho*, and *ganzá* are present in demonstrations made up of cururueiros (people who have knowledge and experience in making and/or handling the *viola* de cocho) and masters of the Siriri dance, evident in the regions mentioned. Such demonstrations occur, in particular, in port cities, such as Cáceres and Corumbá, in the quilombos, fishing colonies, and indigenous villages of the Guató people.

Several types of wood are used in the production of the *viola de cocho*, which has become one of the main symbols of the Pantanal. For the body of the instrument, the wood traditionally carved comes from the "ximbuva" tree *(Enterolobium contortisiliquum*). However, difficulties in accessing raw materials for the production of this instrument due to the fires that occur in this biome, in greater proportions in recent years, make it difficult to collect the ideal raw material for making the viola. The maintenance and safeguarding of the *viola de cocho* are associated with environmental sustainability, access to raw materials – which have been compromised by environmental devastation – and appreciation and dissemination of the way it is made.[18]

CONCLUSION

The effects of environmental degradation on cultural heritage are diverse and increasingly affect the cultural assets of traditional communities, their territories, memories, knowledge, objects, and archaeological sites. The loss of these cultural assets would imply significant damage to memory and

history. As previously stated, the relationship between cultural heritage and climate change is a recent topic. In this sense, it is pertinent that researchers and support institutions address this issue together with communities, producing reports, articles, and promotional materials that aim to provide visibility and contribute to the achievement of public heritage policies.

In the current scenario, in which climate change has repercussions on the Pantanal, a World Natural Heritage Site, it is necessary to take action to address this risk and make efforts to prevent catastrophic events from recurring or worsening, strengthening strategies to protect and safeguard the world's cultural and natural heritage. To this end, a global action plan, with international cooperation, is relevant to integrate climate change measures into national and global policies, strategies, and planning. It is also necessary to include the creation of a plan for disaster risk management of cultural heritage in the agenda of public authorities, which can preserve lives and enable cultural reproduction.

NOTES

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CULTURAL ASSETS AND VERNACULAR MATERIALS: EXPLORING CHANGING LANDSCAPES AND SUSTAINABLE DEVELOPMENT ACROSS BORNEO'S CRAFT SECTOR

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INTRODUCTION

Across Borneo, cultural assets are modes of expression that articulate intangible and tangible cultural heritage, which extends to beliefs, traditions, languages, rituals, dreams and craft narratives located in Indigenous communities.[1] Within Borneo's craft sector, a range of complex challenges have created barriers for craft practitioners and artisans to actively participate within the creative economy. The profound effects of climate change and extractive industries are directly impacting the island landscapes, which are changing in ways do not support natural craft resources (such as rattan, bamboo, timber and bark) to grow and thrive, leading to material shortages. In response, craft practitioners and artisans are adapting ways of making and diversifying in their material use.

This paper presents insights from a two-year collaborative research project, which mobilised 11 community-based projects across the regions of Sabah, Sarawak and West Kalimantan to explore pressing sustainably challenges facing their respective place-based craft practices. The participatory process and outcomes of these projects collectively supports an expanded understanding of craft, which embodies ancestral wisdom and the intimate relations to vernacular materials and land.

The paper begins by situating the research and contextualising key challenges before setting out the underpinning research design, process and approaches. The paper concludes by sharing examples of project outcomes and resultant impact, and key reflections informing next steps. The author presents this research in acknowledgment and deep gratitude to each of the craft practitioners, artisans and members of the surrounding creative communities located across Borneo who collaborated and participated, and to the research team: Wendy Teo, Dr Gamia Dewanggamanik and Professor Lynn-Sayers McHattie.

Changing Landscapes and Borneo's Craft Sector

Borneo is the third largest island in the world, covering an area of approximately 287,000 square miles with a population of approximately 23 million people. Borneo comprises the Malaysian states of Sabah, Sarawak, the country of Brunei Darussalam and the five provinces of Kalimantan in Indonesia. Across these diverse geo-political domains, land is an important natural, cultural and economic asset and is inseparable from Bornean communities' identities as well as an important source of livelihood.

Borneo is home to environmentally diverse and complex ecosystems, which includes lowland and upland rainforests, heath forest, montane, mangrove, peat swamp and freshwater swamp land. However, the accelerating impacts of the climate crisis and rising local tempreatures[2] have led to ongoing environmental degradation and biodiversity loss and damage, compounded by deforestation and land clearances[3] by extractive industries such as mining, gas and palm oil.[4] Subsequently, forest decline, extractive land use and other anthropogenic impacts[5] have impacted upon the availability of organic resources; pressing ecologic concerns that have been explored in relation to craft practices in the creative economy in this research. Scarcity and degradation of the natural raw materials used in craft practices presents challenges for creative communities, practitioners and artisans to adapt ways of making that more sustainable and restorative to the environment and use of alternative materials that can be harvested in harmony with nature. As the landscapes across the island continue to change, threats to cultural production bring into sharp focus the precarity of craft practices and the need for cultural continuity and reparative action. Against this backdrop, in places there is a lack of structural support, unequal access to educational provision and limited infrastructure for artisans working in distributed geographies, which further compounds these challenges. In places, large-scale and low-cost manufacturing and imports are becoming increasing prevalent, replacing traditional ways of making craft by hand. In response to this competition, craft practitioners and artisans are innovating ways of making, exploring new materials to create unique products and adapting how they promote and sell their work.

THE C&VM PROGRAMME

Cultural-Assets and Vernacular Materials (C&VM) was a 2-year programme of research that explored the role cultural assets play in enhancing the creative economy in Borneo. The programme was funded by an international collaboration grant from the British Council,[6] which centred upon an ongoing partnership between the Borneo Laboratory, an arts and cultural organisation based in Kuching Malaysia and The Glasgow School of Art in Scotland[7]. The programme piloted a distributed model of collaboration led by a programme team consisting of a creative director (based in Kuching), two design researchers (based in Glasgow), and a PhD candidate (based in West Kalimantan, Indonesia). Together, a community of artisans, practitioners, and grassroots initiatives were assembled from across Sarawak (Kuching, Betong, Miri, and Long Moh), Kalimantan (Singkawang, Sambas, Palangkaraya, and Jagoi), and Sabah (Kota Kinabalu, Keningau, and Kampung Batu Lunguyan). The grant funds were used to support the design and delivery of 11 projects (see Figure 1), each responding to place-based sustainability challenges, which included exploring and experimenting with new vernacular materials, approaches to documentation and archiving, and prototyping new ways to engage with younger generations.

Figure 1. The C&VM programme cohort of craft practitioners, artisans and community-based initiatives located across Kalimantan, Sabah and Sarawak.

The craft practitioners and artisans leading each project were recruited to the wider C&VM programme through a 'networks of networks' approach as well as through an open call to support the participation of diverse practices operating at a range of stages and scales of development and positioned at different proximities to the market. This included grassroots perspectives as well as recruiting practitioners in positions to advocate and influence change. Recruiting for diverse representation supported the development of a more holistic understanding of the context, and fostered opportunities for greater knowledge exchange within and across the programme cohort.

Programme Design and Approaches

A core objective of C&VM was to embed opportunities for co-production and mutual learning,[8] which followed a framework for collaborative inquiry[9] that scaffolded context-led participation over incremental phases and through a combination of complementary participatory and qualitative methods. Each method supported the project collaborators to determine and pursue priorities pertaining to their individual practices and knowledge(s) in each distinct community-based context. Applied in action, the approach remained porous to collective learning with each community and the particularities of each unique and specific socio-cultural context.[10]

The first phase of the programme centred on recruiting and assembling the cohort. From the outset, developing trusting relationships within each community that respected appropriate cultural nuances was a vital step in the overall research design. The recruitment process was supported through

engagement with community gatekeepers, who guided and advised on cultural protocols, languages and dialects, which included initiating projects within the surrounding community and with the Village Head. As part of informed consent, a Participation Agreement was created to detail the funding to pay for time and materials, which informed the scope and scale of the practitioners' project briefs and, importantly, acknowledged the ownership of the project outputs – ensuring these remained with the craft practitioners.

Phase two of the programme centred on a two-day residential workshop, which provided the opportunity for the cohort to meet in-person, share experiences and insights from their respective craft practices, and explore key challenges. This included, for example, material experimentation, developing approaches to documentation and archiving, and prototyping new ways to engage with younger generations. The workshop was structured through a series of generative activities facilitated by members of the research team to support the cohort to frame and contextualise their place-based sustainability challenge; and develop project briefs[11] through creating a plan for implementation, budget and a project timeline.

Phase three of the programme was dedicated time for the cohort to undertake their individual projects on a distributed basis over a six-month period. To support the cohort, during this phase members of the research team undertook a 'research road trip' to visit and spend time with each community context so to develop a more experiential understanding and to capture work-in-progress. During the road trip, visual and textual data were gathered, which included photographs, fieldnotes and illustrations,[12] which captured the vernacular nature of each material in context. During this phase, the research team also employed the method of participatory filmmaking.[13] The participatory nature of the filmmaking in this case became a deeply relational approach;[14] whereby the film content was not predefined and remained unscripted and left intentionally explorative for the communities to self-determine and direct. Cohort members also began co-created narratives across projects, which they developed through storyboarding and undertaking interviews with each other. As such, the process of co-producing film footage became more significant in the approach than the final film output itself as a dialogical process with peers and place.

The programme culminated in the 'Serumpun: Crafts across Borders' exhibition,[15] where the project outputs and participatory film were showcased at the Borneo Cultures Museum (the second largest museum in South East Asia). The exhibition, opened by the Sarawak Ministry of Tourism, Arts and Culture Permanent Secretary, and attached more than 2500 in-person visitors as well as regional news coverage by local press. Significantly, this community-based 'living' exhibition of craft practice was the first of its kind hosted at Museum. Alongside the exhibition, the C&VM cohort was supported in creating a public engagement programme to enable mutual learning and foster new networks and collaborations. This included workshops, talks and public forums – the content of which mirrored the core thematics around which Serumpun (which translates as 'bundle of grass that shares the same root') was curated: changing landscapes, education, innovation, documentation and artisanal trade. For example, Emily Jenable and Rasmah Rumambai both from Keningau, facilitated creative workshops – a plaited bamboo workshop and a Manik jewellery-making workshop respectively. In other examples, Jennifer P Linggi, Juvita Wan and Pak Sujianto hosted a discursive forum exploring craft activism, followed by sharing sessions with Randi Julian Miranda from HANDEP in Gunung Purei, and Rosemarie Wong, Ar. Ivy Jong and Johnson Tan from Kuching and Betong, which delved deeper into their respective creative journeys and work within craft-based social enterprises.

PROGRAMME OUTCOMES AND IMPACT AREAS

The final phase focused on evaluative re-engagement activities to trace and capture the local and wider impacts of C&VM. Through this process, the research team gathered evidence that demonstrates how the programme catalysed community-based impact in the areas of education, community develop, safeguarding knowledges, and reaching new audiences.

Education

Educational development was a central ambition in many of the C&VM projects, where piloting new approaches to engaging younger generations in craft practices was a particular priority. An example of this can be traced in Sanggar Saratangan's C&VM project, which engaged with young people to support intergenerational knowledge transfer. Sanggar Saratangan are a creative community located in Singkawang, West Kalimantan. Two generations ago, the Sagatani village was surrounded by rainforest and the Saratangan Lake. However, the impact of gold mining activities cleared the forest and land and polluted the river. It became common for young people living in the village to leave school early and, in cases, engage in illegal mining activities. In response, this creative community initiative was set up to support younger generations to develop creative skills and traditions inherited from their ancestors. Through their C&VM project entitled 'Jelai: Pearl of the Forest', the group engaged with groups of young people to explore and experiment with jelai plants, which be used to make various products. During the project, the young people were supported to conduct their own workshops exploring the cultural context and materiality of jelai and the deep links to cultural identity, using filmmaking to retrace these historical roots. Since completing their project, Sanggar Saratangan were invited to expand their craft workshops for high school students in their village:

"We want to bring fellow young people in our village to learn and reconnect with our tradition and culture[...] In this project, one of the main [aims was to engage] the younger generation in managing natural resources in the village, [through] which a series of workshops were conducted at a local high school. Conducting workshops was also a new experience... usually we are the ones given workshop[s] and training... now we get to learn how to teach others and share our knowledge and skills." (Sanggar Saratangan)

Community Development

Across the programme, there were examples of local development through scaling up projects and community-level infrastructure to promote sustainable livelihoods. An example of this scale of impact can be traced in Rasmah Rumambai's project. Rasmah is an accomplished bead artisan based in the village of Kampung Delayan Lama Sook, Keningau. She learned her practice from a young age from her mother and has passed this knowledge down to her daughters. In her C&VM project, Rasmah explored new ways to engage the community and the next generation of craft artisans and prototyped innovative ways to share the skill of beadcraft. Through this process, Rasmah began teaching her skills to others in her community and facilitated the first community-based bead workshop of its kind. She garnered the support of the Murut Boakan Association as well as the Village Chief, who has since given Rasmah a plot of land on the community grounds to build a gallery, permanent workshop and educational space.

Safeguarding Knowledges

Across the programme, there were a range of different examples of approaches developed to recording, archiving and documenting craft processes to protect these knowledges for future generations. Examples of this can be seen in projects undertaken by Sepatokimin, a community-driven initiative that seeks to empower local craft communities across Indonesia. The group undertook two

simultaneous projects: one which developed a digital archive to document the extensive history of Singkawang Songket weaving; and the second, images from which you can see here, developed new ways to record and archive species of rattan. Their documentation process included going to the forest to forage and collect different types of rattan in multi-sensory ways through identifying the characteristics of its leaves, thorns, and by aroma. Working in collaboration with the Botanical Research Centre to identify each rattan species by scientific name also led to finding alternative methods for propagation. In light of the growing concern around the scarcity of rattan, the group archived and shared this knowledge for future craft communities to harness through designing and building an online platform and digital repository. Since the completion of this project, Sepatokimin have refined and further developed their printed and digital publication on rattan archiving in Jagoi and are now on their second print-run due to popularity. They are now planning to further develop and scale up their archival work and have engaged in collaboration with The British Museum and their Endangered Material Knowledge Programme.[16]

Reaching New Audiences

Lastly, a significant area of impact were ways in which cohort members reached new audiences for their work and have since established new partnerships. An example of dissemination were several participant-authored publications presenting insights for practice, process and context. For example, Emily Jeneble published an autobiography, which traces the evolution of her bamboo weaving practice that has been passed down through her family and which Emily now shares with local craft communities to support economic development. In another example, Jennifer P. Linggi from Sabah, published work from her C&VM project that documented Murut and Dusun motifs and patterns; craft knowledges that are often passed down through generations orally and are at risk to being lost. Reflecting on her project and participation in the C&VM programme, Jennifer highlights ongoing challenges in relation to the re-telling of craft-based narratives:

“[…] crafting a story that would resonate with those delving into century-old traditions, which the practitioners see as an integral part of their lives, posed a daunting challenge. The dilemma of accurately portraying and documenting cultural subjects always lingers – how to capture the essence while honoring and remaining faithful to the community’s beliefs and perspectives. Much is inevitably lost in translation, both linguistically and in terms of their innate understanding of the world. [...] Our collaboration with Borneo Laboratory, [and with] Sarawak and Kalimantan practitioners deepened our understanding of craft challenges and reassured us that our journey is shared. We found a supportive network within the vast tapestry of Serumpun, learning alongside diverse communities. This endeavor broadened our horizons, uniting our cultures in a common thread of creativity and resilience.” (Jennifer P. Linggi)

CONCLUDING REFLECTIONS

Reflecting across the wider C&VM programme, this research foregrounds the conditions and challenges craft communities across Borneo have and are presently facing. The programme supported the ongoing work of creative communities engaging in material exploration, processes of documentation and archiving of material and practice-based knowledges, and the reimaging of ways to facilitate intergenerational knowledge transfer. Beyond climate-related sustainability challenges, preserving cultural production extends to the broader context of more distributed communities in their respective geographical areas that shape their experiences.

The C&VM programme centred on deeply respecting the situated and place-based knowledge(s), wisdom, practices, vernacular materials pertaining to cultural assets; framed here as an expanded notion of craft that reflects the need to consider plurality within globally oriented development

agendas. This perspective challenges the, often, homogenising nature of development agendas by identifying place-based resources and practices as community-based 'living' cultural assets, rooted in embodied inter-relationships and knowledge systems that are intrinsically tied to the land. Amid material scarcity and ecological degradation, the C&VM projects demonstrate how locally grounded, relational practices can become strategies for resilience and climate action; practices that call for reframing development agendas to prioritise cultural continuity and ecological reciprocity in the co-development of sustainable futures. Looking forward beyond further C&VM dissemination activities, members of the research team are expanding the inquiry in areas of more-than-human research and cultural-based climate justice.

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VERTICAL HORIZONS: HERITAGE AND THE CORNISH LANDSCAPE

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INTRODUCTION

Reframing our gaze on landscape[1]

Urgent crises

The pressing environmental and climate challenges of our era are not being addressed at the speed required, or to the extent needed.[2] And progress is currently eroding as Western democracies shift rightwards into a mire of social media disinformation. We argue that the idea of what a landscape *looks like* needs to be reframed in order to think about how we can fix these challenges.

The conventional aesthetics that shape ideas of landscape, and that continue to be reproduced in the art and heritage sectors, are a failing ideology. Recent scholarship that addresses climate catastrophe has tended to overlook the structuring aesthetics of Western ideas of landscape, ignoring or rejecting it outright as representation, focussing instead on ecologies and indigenous or non-Western traditions. And while acknowledging this urgent and vital work, we argue that without redressing the governing visual ideology that sits behind how we understand or shape how the natural world looks – our collective landscape imaginary – we will not be able to get to where we are trying to go.[3]

Problem - the uncritical reproduction of the horizontal structuring of space

The conventional aesthetic structures of landscape act as a constraining factor in our ability to address climate and environmental change. And so, we ask the following critical questions: What happens if we stop reproducing landscape through established perspectival and horizontal aesthetics? How can new aesthetic structures break systemic barriers and provoke change: in terms of human-to-human relationships (the underlying class structures of the landscape), and the human-to-non-human ones that also shape the landscape and its uses? What might expanded ideas of landscape look like, ones that incorporate a more-than-human perspective and include what is hidden, what is under the ground?

THE LIMIT~~LESS~~ING HORIZON: WESTERN VISUAL STRUCTURES AND HERITAGE

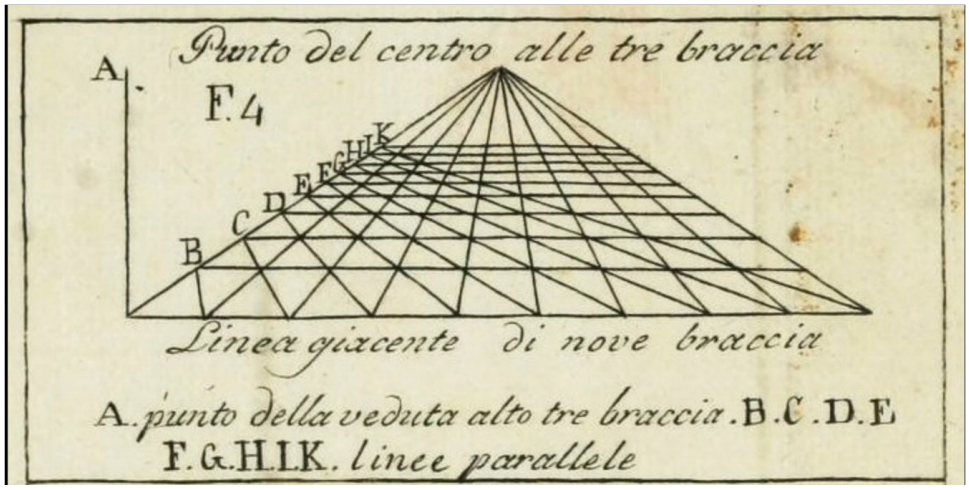

Figure 1. Alberti's diagram showing perspective lines leading to a vanishing point in Della Pittura (1804)

The Aestheticized View of Landscape

Linear perspective, invented by the architect Filippo Brunelleschi in the early 1400s and theorised by Leon Battista Alberti in his treatise *Della Pittura* in 1435, underpins Western pictorial structures, and can be seen as an origin for our Cartesian formulation of three-dimensional space (see figure 1).[4] Indeed, Descartes, responding more to perspective's rational qualities than to its mimetic ones, saw its ability to mathematically demonstrate extensive space as exemplary.[5]

Under the terms of Descartes's dualism, the perspective grid organised the relationship between the human subject, who was now viewing the landscape object, which became conflated with something called 'real space.' And this ordering has remained alive in the collective imagination since.

Figure 2. Meindert Hobbema, The Avenue at Middelharnis, 1689, oil on canvas 103.5 x 141 cm. National Gallery, London

As ‘natural’ or ‘real’ space, landscape is understood in these amalgamated pictorial-spatial terms. Figure 2, a seventeenth-century painting by Meindert Hobbema, currently in the National Gallery collection in London, exists as a beautiful painting, but it also shows the limits of the aesthetic underpinnings of landscape as a visually fixed, spatial concern – it doesn’t provide imaginative access to other viewpoints, or to the deeper enmeshments of the human and the nonhuman worlds. And in the UK, the notion of the landscape view is deeply intertwined with tourism and an often-romanticised aesthetic of the industrial past. The photograph now reinforcing the landscape as a primarily visual object.

Alberti’s conception of the “vanishing point” set space as something to be viewed by an individual, while perspective’s fixed horizon (Alberti refers to this as the “centric line”) had ramifications well beyond painting.[6]

Cartesian Horizontalities and European Navigational Legacies

These perspectival and rationalized visual structures enabled advances in mapping and navigation practices, which gave Britain and other European countries the power to travel further afield under faster and safer conditions, accelerating trade and the practices of colonialism. In figure 3, Hendrik Hondius’s seventeenth-century map, the perspective grid has been adapted from the individual subject viewing a spatialized object, to an overall, God-like understanding of space through the same mathematical and rational coordinates (Alberti’s gridlines now wrap as latitude and longitude around the surface of the globe). While the engraving from a Dutch sailing handbook dated 1608, shows all the instruments of measuring and mapping space set within a perspectival ‘box’ (figure 4). Perspective here, orders the seventeenth-century spatial imagination.

Figure 3. Hendrik Hondius, New Geographic and Hydrographic Map of the Whole World, 1630

Figure 4. "The light of navigation", Dutch sailing handbook, 1608, (showing compass, hourglass, sea astrolabe, terrestrial and celestial globes, divider, Jacob's staff and astrolabe)

Latitude and longitude together produce space and time as linear, placing heritage in the past and preventing its understanding as today or as tomorrow. While space becomes a navigable, fixed container that at its heart is pictorialized.

The success of Western cartography, and of perspectival painting's (and the subsequent photographic tradition's) merging with 'real space' means that the landscape object is primarily understood in horizontal, territorial terms, which includes the conflation of aesthetic considerations and how much it looks like a beautiful painting (see figure 5). It is a horizontal concern, an extensive surface, over there in the distance – a nice view – one attached to a strict (if often invisible) rationally organised subject/object spatial arrangement. Its problematic aesthetics need no interrogation because it looks like what we see, while its ties to capitalism remain hidden. Industrial landscapes enter this aesthetic definition only when they are considered to be of the past (and so can be categorised as 'leisure'); seen in terms of relaxation; a place to visit when work is completed. A place to rejuvenate to prepare for work again. In the UK specifically, the idea of landscape continues to be deeply intertwined with tourism – presented as a static space for the human subject to use at their and for their leisure. We urgently need to reconfigure its spatial dynamic and its fixed position within our collective imaginary.

Figure 5. The northern section of the Presidential Range in New Hampshire's White Mountains. Viewed from the NW side of Mount Washington. From left to right are Mount Clay, Mount Jefferson, Mount Adams, and Mount Madison

Reframing the Landscape Gaze

In *Terror Incognita*, and *In Unchartered Waters*, 2022, (figure 6) Simson's work plays with the horizontality of landscape, with the idea of a fixed horizon, and in both paintings the horizon is discomfortingly unstable. The space within the paintings appears not as *extension,* but rather it contains a psychological undercurrent of unease. Both works have also been made using graph paper, and so allude to the practice of mapping, but the graph paper is disintegrated and partial. We are in uncertain territory.

Figure 6. Henrietta Simson, Terror Incognita and Unchartered Waters, (2022), 62x47cm (each), oil and graph paper on linen

BEYOND THE SURFACE: EMBRACING VERTICALITY AND TRANSFORMATION

The temporal and vertical planes

What happens if we flip the horizon? How can a vertical and temporal understanding of landscape speak to these issues? If we extend the plurality of the 'critical zone' – an idea adapted by Bruno Latour and Peter Weibel in 2020 – so that it encompasses the landscape image, rather than rejecting it as representation, can we alter our troublesome landscape aesthetics?[7] This conception sees the Earth not as a globe, or a surface, but as a series of 'zones' that encompass underground bodies of water, minerals and microbes, soil and surface rocks, extending to the air and the lower parts of the atmosphere. It is the space of Gaia, an entanglement, where life happens. Conceiving landscape thus

helps us to wrest it from the horizon line, but it doesn't necessarily shift how we understand it, our relationship to it. For this, we need to enlist help from the past, from the pre-representational, pre-perspectival landscape imaginary of the fourteenth and early fifteenth centuries.

Figure 7. Scenes from the Life of Mary Magdalen: The Hermit Zosimus Giving a Cloak to Magdalen
Giotto, 1320s, Magdalen Chapel, Lower Church, San Francesco, Assisi, fresco

Figure 7 shows Giotto's fresco of Mary Magdalene in her cave high up in the mountain of St Baume in the south of France, painted in the 1320s in Assisi, Italy. Baume, being French for balm, lends healing connotations to the landscape; suggests the landscape as a salve. According to legend, the Magdalen spent the last 30 years of her life living in this cave. She was lifted to heaven by angels several times a day, to receive her heavenly nourishment.[8] The image of a holy figure in a wilderness landscape near or in a cave was very common in this kind of Franciscan painting and shows us how these landscapes were understood as existing outside of habitual time and space.[9] They were part of the medieval Christian's penitential imaginary, whereby contemplating the stories and these spaces brought about a spiritual transformation.

While we are not suggesting a return to a medieval Christian worldview – and we have both discussed elsewhere in our individual research how the landscape itself carries material-semiotic meanings – there are useful parallels to draw between the latent materiality/spirituality of these landscapes, and the political and ecological complexities of what is and what isn't thought of as landscape today.[10] These paintings can help us to see vertically, to see the underground as a central locus of expanded landscape awareness, not one defined through capitalist extraction, but rather as an aid with which to transform the idea of landscape itself.

Cornwall: a g/local lens for critique

These aesthetic and structural issues can be usefully explored in the representation of mining heritage in the UK. Specifically, we explore these issues in Cornwall where the politics of landscape and heritage have served to reproduce object/subject distancing in the aesthetic orderings of landscape. Located in the south-western corner of Britain, Cornwall is characterised by rich and extensive critical metal and mineral deposits particularly copper, tin, arsenic and lithium. Here landscapes are designated as either beautiful and worth preserving as heritage (an ongoing legacy of the interest in

the picturesque among middle-class tourists in the nineteenth century), or as an economic resource to be extracted from.

This distinction is evident in the contrasting visual representation of these different 'types' of landscape. Designated as World Heritage by UNESCO, the visually striking landscapes of the coastal zone have been packaged for tourism and commercial gain. But controversially, this traditional heritage framing has tended to idealize the past, often ignoring economic and ecological collapse and the social and cultural impacts of deindustrialization on working-class miners and communities. For some commentators this economic shift to the 'soft' industries of leisure and tourism is a threat to Cornish culture and identity, which has been historically based on technological innovation and engineering success both locally and globally.[11]

In contrast to the heritage sites of the Atlantic coast, the interior heartland of Cornwall is characterised by the ruins of historic mining, alongside modern industrial processes and prospecting for future extraction and economic growth. This paper focuses on two landscapes, in particular. Wheal Maid (Gwennap Parish) was used as a dump for waste from surrounding mines in the now closed and de-industrialized tin and copper mining district. Wheal Martyn (St Austell) is in China Clay Country where Imerys Minerals Ltd operates to extract and process kaolin.

Figure 8. Wheal Martyn Pit as Critical Zone, St Austell, Cornwall

Figure 8 shows a vertically aligned digital image of Wheal Martyn pit. Here is a landscape in constant flux, never static, simultaneously growing taller and deeper as clay is extracted from granite on a daily basis. It is a landscape whereby the underground is brought to the surface, where the substrate becomes the mountainous heights, the horizon impossible to determine. The fluctuating contours of its deeply excavated space, over one hundred metres, and its towering sides, help us think space as vertical, dynamic and destabilised. Any photographic realism, maintained by the colours of the original, has been discarded, allowing for vertical *zones* to emerge. Its visual inferences become more those of the transformative wilderness spaces of Giotto's frescoes than the contemporary aesthetics of landscape. Here, the spiritual wilderness of the past collides with the industrial wilderness of the present. However, the visual similarities hide the complexities of a different kind of emptiness. Modern industrial processes have carved out a deep void in a place that was once inhabited – by

communities made up of schools and chapels, male voice choirs, crafts and farming activities. This weave of social – and spiritual – practice once stood in this newly sculpted industrial landscape.

Figure 9. Wheal Maid Tailings, Camborne-Redruth-St Day, Cornwall

Figure 9 shows a (digitally manipulated) image of Wheal Maid. Located in Gwennap Mining District Wheal Maid, a former copper mine, is listed by UNESCO World Heritage. In the 1970s and 1980s the site was used as a dump for mineral processing wastes and tailings from adjacent mines, and is one of the most contaminated sites in the UK.[12] Situated within the heart of Cornwall's historic tin-mining district, the landscape of this abandoned tailings site appears to seep. This site whose tailings contain unrecovered metallic elements including arsenic, cadmium, chromium, copper, iron, lead, nickel and zinc is a landscape that has been reclaimed by the local community as a commons space. Sitting in the industrial heartlands, it is proximal to those communities most affected by mining and the industrial uses of landscape, rather than to the tourists who visit Cornwall's aestheticized edges. Its human-non-human entanglements and the toxic mineral injustices that need addressing, wait to be incorporated into ideas of landscape and linger in the photographic negative of the image.

CONCLUSION

Cornish heritage and its romanticized visualizations, underpinned by the idea that the industrial landscapes are somehow of the past, is challenged by sites like Wheal Maid, where past industrial activity continues to play out into the present and an uncertain future, the life-spans of toxic waste in the earth, air and water set to remain with no clear sense of resolution.

The latent underground: informing a new collective imagination

The Material and Spiritual Dimensions

The aesthetic structures of the landscape image continue to perpetuate a perspectival, dualistic 'realism,' an effect of representational thinking that sees landscape as passive background, or in this case, a setting for the human narratives of bygone eras. The grid of space and time, of latitude and longitude that orders the landscape imaginary omits the possibility of understanding the past as being about the future.[13] Heritage reproductions of Cornish extraction tend towards a framing as historical, romanticized and coastal, with large swathes of the extractivist landscapes of the present excluded from this imaginary. What we argue, and have begun to articulate here, is that we need alternative imaginaries and visualizations for promoting extractivist heritage that are open and reflective towards the problems caused by mining past and present, locally and globally. This ingrained structuring of space is unfit for a twenty-first-century heritage sector because it focuses on the horizontal, ignoring the underground, and so any possibility of relationship with it beyond a visual background. It fixes the human subject as outside of the whole, and it fundamentally ties landscape to 'object,' keeping

subjectivity an exclusive characteristic of the consuming, viewing public – exploited by the industrial capitalism that reaches further into the future.
By recognizing the hidden layers, the transformations and the non-human elements that shape our world, we will be able to perceive, interact with, and conserve a genuine imaginary of landscape and heritage. This reframing is essential in a twenty-first-century world grappling with climate and ecological crises.

NOTES

[1] This paper draws from arguments made by Henrietta Simson in her Phd thesis, 2017. See “Landscape after Landscape: Pre-Genre Italian Backgrounds in a Post-Genre Digital Age.” PhD diss., University College London. http://discovery.ucl.ac.uk/1563810/.
[2] “Progress in Adapting to Climate Change 2025 report to Parliament,” Climate Change Committee, 30 April 2025, accessed 15 November, 2025, https://www.theccc.org.uk/publication/progress-in-adapting-to-climate-change-2025/.
[3] Prominent voices in recent scholarship include T.J. Demos and his critique of the Anthropocene Aesthetic in *Against the Anthropecene. Visual Culture and Environment Today* (London: Sternberg Press, 2017); Heather Davis and Etienne Turpin *Art in the Anthropocene* (London, Open Humanities Press, 2015), Bruno Latour and Peter Weibel *Critical Zones: The Science and Politics of Landing on Earth* (Cambridge Massachusetts: MIT Press, 2020)
[4] Leon Battista Alberti, *On Painting* (London. Penguin, 1991).
[5] In his discourse on Optics, René Descartes argues that linear perspective’s rational qualities (interpreted by the mind itself rather than an object’s ability to resemble itself via a direct image) prove his theorem which thus departs from the optics of the day. See René Descartes, *Discourse on Method, Optics, Geometry, and Meteorology*, trans. Paul J Olscamp (Indianapolis: Hackett, 2001), 90-113.
[6] Hubert Damisch argues that linear perspective has become paradigmatical and remains fundamental to Western thought. *The Origin of Perspective*, trans. John Goodman, (Cambridge Massachusetts: MIT, 1994). For a contemporary critique of linear perspective see Hito Steyerl, “In Free Fall, A Thought Experiment on Vertical Perspective,” e-flux journal #24 (2011): https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective.
[7] “Critical Zones. In search of a Common Ground” was an exhibition and thought experiment curated by Peter Weibel and Bruno Latour at ZKM, Karlsruhe, Germany, accessed August 10, 2025, https://www.anthropocene-curriculum.org/project/anthropocene-india/anthropocene-mumbai-2018/critical-zones-in-search-of-a-common-ground.
[8] Jacobus de Voragine, *The Golden Legend*, c.1259-1266.
[9] Amy Neff has written about the penitential underpinnings of the landscapes of Franciscan painting in, “Byzantium Westernized, Byzantium Marginalized: Two Icons in the Supplicationes variae,” *Gesta*, Vol. 38, No. 1, International Center of Medieval Art (1999), 83.
[10] See Henrietta Simson https://researchers.arts.ac.uk/1667-henrietta-simson/publications. Also Nicola Whyte “Sacred Heritage, Spiritous Waters and the Subterranean Imagination in Early Modern Britain” in Jay Johnston, Marion Gibson, Jamie Hampson, Nicola Whyte, eds., *Emplaced Beliefs* (forthcoming, Berghahn 2026, chapter 10).
[11] See Bernard Deacon, Andrew George and Ronald Perry, *Cornwall at the Crossroads: Living Communities or Leisure Zone?*, (Exeter: Cornish Social and Economic Research Group, Redruth, 1988); Philip Payton, *Cornwall. A History*, (Fowey: Cornwall Editions Limited, 2004) and Bart Zwegers, *Cultural Heritage in Transition: A Multi-Level Perspective on World Heritage in Germany and the United Kingdom, 1970-2020*. Studies in Art, Heritage, Law and the Market 4, (Springer Nature, 2022).
[12] See Verity Fitch, Anita Parbhakar-Fox, Richard Crane, Laura Newsome, “Evolution of Sulfidic Legacy Mine Tailings: A Review of the Wheal Maid Site, UK,” Minerals 12(7) (2022): 848, doi: 10.3390/min12070848.
[13] In *For Space*, (London: Sage, 2005) Doreen Massey critiques the conventional idea of space as a static concern, able to be mapped in this way, and argues instead that it is “multiplicity” and “heterogeneous.”

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TOGETHER STRONGER: TRAINING CITIZENS AND HERITAGE PROFESSIONALS TO PROTECT MONUMENTS FROM CLIMATE CHANGE THREATS

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INTRODUCTION

Climate change threatens cultural heritage, with both heritage professionals and local communities feeling powerless to respond. Over the last decades, natural disasters have intensified causing damages and, in many cases, irreversible loss to various types of heritage. The central question that brought up the necessity for this research project was whether these climatic threats could become an "opportunity", a wake-up call, for people to become proactive in the protection of their local heritage. "Simvadizoume" project, designed by DIADRASIS NGO, aimed to empower different stakeholders, from youths to local authorities and heritage professionals, to contribute to heritage protection by implementing participatory preventive activities. To achieve this, an adaptable educational methodology was developed, where the core message of collaboration and active participation remained unaltered, but the tools and the language were tailored in a way to enable communication with different audiences. The overall methodological tool presented, which included multidirectional training sessions and gamified learning experiences, gave valuable results for raising a spirit of collaboration to jointly protect monuments from threats of climate change.

CLIMATE THREATS ON MONUMENTS

Climate change is undoubtedly one of the major threats of our times, impacting daily life, influencing political decisions, and shaping global economy. Analyzing its impacts, it becomes obvious that it causes damage on cultural heritage, both tangible and intangible. The primary effects of climate change negatively affect a monument's preservation, such as its structural stability. Secondary effects are more indirect, like economic instability or the gradual abandonment of heritage sites, which further threatens the monument's long-term preservation. As recent studies have confirmed, the effects of climate change often degrade the state of conservation of many historical materials by accelerating decay rates and, in some cases, triggering new forms of deterioration.[1] Additionally, climate change has increased the intensity and the frequency of hazardous events such as droughts, floods and landslides, which can bring about dramatical and irreversible effects on cultural heritage.[2] Recent cases, such as the total loss of the historic Jagger Library in Cape Town , destroyed by a runaway wildfire in 2021,[3] or the 2020 floods in Karditsa, central Greece, which flooded the Archaeological Museum's storage areas, are only two of many examples of monuments that suffered climate related damages.[4]

Concern about the effects of climate change on monuments keeps rising, triggering, for the last twenty years, significant efforts by scientists and professional bodies to analyze these threats. Numerous reports, policy documents and guidelines have been produced, reflecting this world-wide mobilization to search for effective responses and solutions.[5] Among these studies, the ICOMOS Climate Change Working Group, in 2019, was the first to state that "cultural heritage can act as a leverage for climate action." In that same publication it acknowledged the role of citizens in risk reduction and proposed concrete ways for their participation in the protection of monuments from the impacts of climate change.[6] As DIADRASIS has for over fifteen years extensively worked with public participation in heritage protection, the team recognized an opportunity for a meaningful project that would have at its core the triptych: people – monuments – climate change. Could such negative facts as disaster and loss become an opportunity for active citizenship?

CLIMATE THREATS ON MONUMENTS AS AN OPPORTUNITY

Public engagement and participation in heritage protection is a recent trend in cultural heritage practices. For many decades, any interaction with cultural heritage beyond the simple visitor-observer role was discouraged, at times even considered inappropriate. A turning point in changing this perceptive occurred during the 1990s, with the launch of various initiatives encouraging citizen involvement. Most notably the "Adopt-a-Monument" program. Initiated by Archaeology Scotland, this program has since expanded globally, encouraging communities to embrace and protect local monuments.[7] In this spirit, DIADRASIS started designing Simvadizoume project, using the climate change threats as a lever to foster community participation in the preservation of their own local heritage— by "making a monument ready" for extreme weather events.

While developing the context of the project, relevant initiatives in the field of climate activism were reviewed. The environmental movement, the foundations of contemporary climate activism starting with the "Silent Spring" by Rachel Carson in 1962, is now over eight decades old.[8] Through these years much has been achieved, mainly, integrating green educational programs from nursery schools to adult education schemes. One of the movement's most notable achievements is the development of direct communication campaigns, with powerful messages that speak directly to the heart of the audience. Perhaps the most iconic slogan is: "There is no planet B." That message inspired DIADRASIS on how to effectively communicate the threats of climate change on cultural heritage. And as there is no planet B, there are also no Monuments B. Cultural heritage and monuments are evidence of any place's collective memory and identity, carrying unique values. Therefore, once a monument is lost, it cannot be replaced; it is lost forever. This correlation became the emotional trigger, the driving force of our project: "No Planet B, No Monuments B. Let's do something about it!". With a clear purpose and a strong message, a participatory methodology was designed that brought to life"Simvadizoume Project".

THE PROJECT

"Simvadizoume Project": *active participation and cooperation of citizens and heritage professionals for the protection of monuments from climate change*.

Figure 46. Simvadizoume project

"Simvadizoume" in Greek stands for "walking side by side". As the title and subtitle indicate, the project aimed to create shared knowledge and understanding, enabling effective cooperation to protect cultural heritage from climate threats (Figure 1). The project was developed along three main axes: 1. empowering citizens 2. training heritage experts 3. facilitating their mutual collaboration.

As the core of the project was the "together stronger" philosophy, it was essential to partner with institutions that would represent different society actors. DIADRASIS NGO, the coordinator, offered its expertise in implementing activities that promote and protect cultural heritage within small communities. It also contributed to its international experience in capacity building and awareness activities both for the wider public and for heritage professionals. The Directorate of Conservation of the Hellenic Ministry of Culture is responsible for all matters related to the conservation of cultural heritage, monuments and collections all over the Greek territory. From their overall expertise, they brought a remarkable field experience in intervening during crises related to natural disasters. Finally, the Municipality of Kea was the ambassador of the project, linking the researchers with the island's monuments and local communities.[9]

The island of Kea was selected considering several key factors. As a small island, it provided a well-defined geographical area, featuring diverse geomorphological characteristics and challenges, thus making it an ideal pilot case. Other than its size and its special characteristics, Kea is home to a rich archaeological heritage, with findings back to the Neolithic era. The monuments of Kea present a wide variety both in their typology (archaeological, Byzantine, folklore, Industrial – as illustrated in Figure 2) and in their geographical distribution (mountainous, coastal, etc.).[10] Lastly, a significant catalyst was the network which was already existing between locals and DIADRASIS from an earlier collaboration in 2019.[11]

Figure 47. Kea's Industrial Heritage, the Enamel and Metallurgy Factory.

Finally, from all the climatic effects on monuments, we decided to focus on those caused by extreme weather events, such as fires and floods. This choice was made with our target audience in mind, which consisted predominantly of non-heritage experts. Opening a dialogue on a topic familiar to everyone - extreme weather events – would make it easier to build trust and spark curiosity about what active citizens can do to make a difference. Moreover, the whole content was structured around the concept of prevention, emphasizing on practical actions that can be taken to prevent massive disasters and avoid the irreversible loss of cultural heritage. As the project aimed at a challenging "bridging" of professionals, authorities and the wider public, it was deemed necessary to define the area of action and the specific objectives to establish trust and mutual understanding.[12]

THE METHODOLOGY

The project started with multidirectional research which aimed at understanding the nature of climate change, the islands' monuments, as well as the perception of the locals and that of heritage professionals. Following the initial literature review, DIADRASIS organized an in-situ research to map the characteristics of the local monuments and evaluate their vulnerability against main climate threats. Via macroscopic analysis, forty-one monuments — spanned from different eras and materials — were documented. The goal was to record their current conservation state, as well as features of the surrounding area, including vegetation, accessibility and other characteristics. To understand the locals' willingness to participate in monuments' protection, a quantitative research was launched. The research had a double scope; on the one hand, to perceive the general perspective on climate change and heritage protection, and on the other to distinguish the most renowned monuments and those with the strongest sentimental value to the community. The answer to the latter question defined the site/ location of the upcoming voluntary action that took place at the end of the project.

At the same time, an online questionnaire was distributed to heritage professionals across Greece, working in both private and public sectors. Apart from the online questionnaire, valuable insights were collected from interviews conducted with renowned heritage professionals and significant stakeholders in the public sector. The goal was to comprehend the level of readiness of heritage professionals towards extreme weather phenomena, as well as their willingness and openness to collaborate with civic societies.

From the above-mentioned quantitative and bibliographic research, it occurred that there is great need to raise awareness and offer relevant training sessions to different stakeholders.[13] Many people

pointed out that children and youngsters should be a priority. Hence, educational programs and seminars were designed for quite a range of beneficiaries, of differing ages and profiles. In Kea, all elementary school children attended the educational programs, becoming the future "Defenders" of their local monuments (Figure 3).

Figure 48. Educational Programs for children, caring for a local monument.

Moving on to the seminars for the local community, these were strategically addressed to local associations, namely pre-existing organized structures of people with a solid base of active citizens who easily understand the necessity of participating in community-based activities. The seminar aimed to motivate participants to act and design a preventative action on a local monument to protect it against extreme phenomena. During that voluntary action, eleven trash bags of flammable materials were removed from the Archaeological Site of Agia Irini, as a preventive measure against fires before the summer months.

After training the locals, DIADRASIS conducted a seminar for heritage professionals, following their needs expressed during the initial research (Figure 4). Analyzing the research results, even though they seemed aware of the multiple effects of climate change on monuments, they lacked tools and skills on how to include citizens in decision-making regarding the protection of monuments. Therefore, four real case studies of Greek monuments were presented to heritage professionals, who in turn, together with examining and evaluating their climate related threats, had to present action plans, allowing the active involvement of citizens in monuments' readiness against extreme weather phenomena.

Figure 49. Training for Heritage Professionals.

Alongside the core activities, dissemination has been a crucial part of the project in terms of multiplying its beneficiaries. The dissemination campaign included digital and live events. The most appealing activity was an online photo competition. In fact, two hundred eighty-five people were inspired by climate change and participated in the competition.[14] The twenty winning photos[15] became part of an open-air photo exhibition at Kea, which was strategically run during the summer months, when the tourist flow was high.

Overall, as mentioned at the introduction, it was essential for this project to convey a straight-forward message, one that anyone could relate to and understand. In this case, the project focused on mutual understanding, role recognition, and a boundary-setting basis between citizens and heritage professionals (Figure 5). For this reason, all promotional materials followed this core narrative, visually clarifying the areas and levels of “action”, aiming at a more active and effective collaboration.

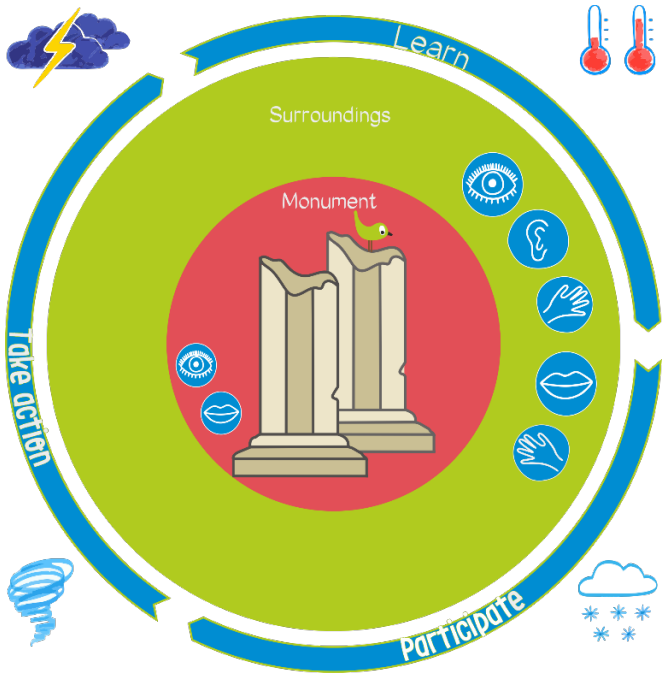

Figure 50. Project's key message

THE CHALLENGES

Overall, "Simvadizoume" was a challenging yet rewarding project, that covered an extensive topic, with multiple activities within a strict, short period. The primary challenge laid in Greece's highly centralized system of heritage management. Unlike other countries, Greece is very restrictive regarding interventions in heritage sites and monuments. According to Law 4858/2021 (Article 1), "the sole authority responsible for the protection of tangible cultural heritage is the Greek State. No intervention on a monument, archaeological site, or historic location is permitted without prior approval from the public authorities. Any violation—whether within or beyond the designated protection zones of monuments—is punishable by imprisonment of up to three years".[16] When it comes to facing global challenges, as those of natural disasters, collaboration between local communities and the Ministry of Culture is mandatory. So far, limited initiatives have been conducted, mainly due to bureaucratic obstacles that discourage both sides, leading to inaction. Within this legal framework, it has been quite challenging to propose hands-on activities for citizens to contribute to monuments' readiness against extreme weather events.

That strict framework was also reflected in the overall perception of the project from heritage professionals, especially those working in the public sector, and the citizens. At the beginning, many participants seemed skeptical and insecure to take part in such a collaborative and radical project. However, the collaboration with the Directorate of Conservation, a public body within the Hellenic Ministry of Culture, was the perfect catalyst. Their contribution was multilayered: it suggested practical ways to meaningfully engage citizens and at the same time it helped foster a sense of "trust" among heritage professionals, reassuring them about the quality of the project's results.

KEY FINDINGS

After completion of the project the starting assumption was reviewed and evaluated. As the response of different audiences proved, climate change and natural disasters could become an opportunity for active citizenship and collaboration among stakeholders. For this to happen there are three key points to keep in mind for future similar endeavors:

A. Clarity and boundaries

Once again, it was observed that rules and boundaries generate freedom. The success of the project stands in convincing the most suspicious stakeholders from both local communities and authorities that a hand on collaboration is achievable. Being clear and direct as to who does what-where and explaining how prevention and activities around a monument can be a solid act of protection, the project has brought excellent results.

B. Training

The project was designed with a large part dedicated to training. Interestingly, training came about as a necessity during questionnaires and interviews of the research stage both from citizens and heritage professionals. These training courses gave participants a better level of understanding and at the same time created communities that share a vision. Nevertheless, for this to become a long-lasting effect, training and activities should be repeated and upscaled. Unfortunately, in this case it has not been possible due to the end of the current funding.

C. Multipliers

Children's educational programs are an intrinsic part of all DIADRASIS community engagement projects. In this project it was observed that, together with training the future generations, the effect was that of the spokeman. School children that through the program became "Defenders of the monuments" brought the message and the enthusiasm back to their families, generating further curiosity on what was happening with this project. In that sense the children of the island became multipliers of our outputs., It has therefore been decided that in future projects children's educational programs should be the first of the series of activities, with them becoming active ambassadors of the entire effort.

CONCLUSION

"Simvadizoume" project was launched at a strategic moment, when discussions on climate change and culture heritage had just started at a national level. "Simvadizoume" is not just another generic project about climate change. It went beyond simple awareness activities by suggesting hands-on methods of protecting monuments. Despite the multiple challenges, it managed to celebrate cooperation among citizens and heritage professionals by identifying the "roots" of the problem, namely the lack of shared knowledge, limited training in practical skills, and the absence of a common language. To answer the above needs, the project's core was training and awareness activities.

To conclude, Simvadizoume was an ambitious project. It covered multiple issues in a short time and became a milestone, a turning point for DIADRASIS to evolve. The project served as a pilot case study which created a tested methodology, applicable to various regions and monuments. Taking into consideration successes, failures and lessons learnt, the project keeps evolving. Since then, it travelled around Greece and abroad and has become a whole new chapter: a program that, when meeting efforts by local stakeholders, keeps becoming a tool for collaborative active citizenship on monuments.

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HERITAGE, RISK, AND CLIMATE IMAGINARIES: A CASE STUDY OF DIKE REINFORCEMENTS ON MARKEN ISLAND, THE NETHERLANDS

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INTRODUCTION

What is the value of heritage in the contemporary climate change debate? This has become one of the central questions in heritage studies today. Over recent years, scholars have increasingly studied the various ways in which heritage can be engaged in Climate Action.[1] Particularly focusing on its potential by serving as a platform for experimenting with innovative adaptation and mitigation measures, as well as recognizing heritage's ability to foster social resilience, stress urgencies, and offer valuable insights from past experiences.[2] The primary aim of this scholarly endeavor is to reposition heritage as a significant and integral factor in anticipating, mitigating, and adapting to new climate realities in the far and near future. This has often resulted in research that positions heritage as a valuable provider of climate services, thereby moving heritage practices and management into the climate policy domain – and vice versa. Although these efforts are invaluable, what is often overlooked is how heritage in turn influences and shapes how people perceive and experience climate risk. Similarly, how and why people respond in a particular way to adaptation measures, and how local understandings and narratives of what heritage and climate change entail, influence these responses, is yet to be scrutinized. Scholars have called for a more in-depth understanding and value-based consideration of the social and cultural consequences of climate impacts and adaptation measures, particularly in coastal and maritime communities.[3] And argue that citizens' attitudes and behaviours must be better understood, to help mitigate the negative effects of climate change.[4] The implementation of climate policies and adaptation measures often comes with unintended and sometimes damaging consequences for the communities involved, recognized by Samuels as processes of maladaptation.[5] A better understanding of bottom-up perspectives and engagements with local heritages can prove fruitful in identifying risks of maladaptation and fostering meaningful, culturally grounded climate resilience.

Responding to these calls, this paper explores how heritage communities make sense of climate-related risks through intangible heritage engagements, such as lived experiences, generational memory, and embodied and affective responses. This intersection of heritage, memory, and affect will be analyzed through the lens of climate imaginaries, understood as a way of historically grounded sense-making. Besides being a measurable risk, climate change is also a cultural phenomenon grounded in stories, narratives, discourses, and various ways of understanding the climate past. These climate imaginaries are based on personal experiences or cultural memories, and how people situate

themselves within climate histories. Formed by distinct historical trajectories and experiences, these climate imaginaries represent climate change and influence how communities perceive risks, as well as how they choose to navigate the associated challenges. How communities understand risk and hazard, and what they perceive to be a disaster within these climate imaginaries, is a product of historically produced patterns of vulnerability and the degree of cultural adaptation to the circumstances of a specific locale.[6] Therefore, climate imaginaries are legacies of the past, "involving collective meaning-making, affect and lived experiences", which play a silent but significant role in adaptation planning and decision-making.[7]

Moreover, heritage is rooted in the notion of meaningful ties to specific landscapes and events: a connection to a place that has emotional resonance.[8] Besides the physical alterations of cultural landscapes due to climate change, they are also deeply affective, altering the way communities interact with, perceive, and value their environments. In turn, these environments have the ability to instill, evoke, and reinforce cultural memory and (re)produce affective responses that influence climate imaginaries. These intangible values, the memories and affective registers through which heritage is understood, are as significant in adaptation planning as the physical artifacts and sites traditionally associated with heritage. I therefore maintain that climate imaginaries themselves can be understood as a form of intangible heritage practice. They are shaped through memory, affect, and locality, and have a direct influence on how communities respond to environmental change.

By examining the case study of dike reinforcement planning on Marken, a former island in the Netherlands, this paper investigates why a celebrated case of participatory climate adaptation failed to sustain local trust. Drawing on ethnographic fieldwork conducted on Marken in 2025, I argue that the breakdown of this collaboration cannot be fully understood without attending to the role of local heritage, emotional experience, and place-based knowledge. While institutional actors operated within a technocratic planning paradigm, residents brought to the table a deeply rooted, historically informed understanding of risk. The latter, shaped by generational memory and how people place themselves in climate history. Marken challenges us to rethink how to approach climate adaptation planning while mitigating the risk of maladaptation.

LIVING WITH WATER

Marken, a small village of about 1800 inhabitants in the Markermeer, has a long and intimate history of living with water. For centuries, its residents adapted their houses, landscape, and livelihoods to the rhythms and risks of the Zuyderzee, enduring frequent inundations. In 1871, a newspaper article in the Heldersche en Nieuwedieper Courant, for example, refers to at least 7 severe inundations throughout the previous year, and states that during these floods "even the artificial mounds do not keep the residents safe any longer. They must flee to the attics of their home".[9] The floods often resulted in great economic losses, damages, and poor living conditions for the local community. Periods of high-water, also posed severe health risks. In 1889, the Vlaardingsche courant writes that during these periods, the island became a breeding ground for illnesses such as "malaria and swamp fevers".[10] Ultimately, the last major flood of 1916 resulted in numerous casualties and extensive damage to homes and infrastructure. In response to this catastrophic event, the Dutch government issued the construction of the Afsluitdijk (closure dike), a 32-kilometer-long dam and causeway between the provinces of North-Holland and Friesland, which was finalized in 1932. Its construction officially separated the Zuyderzee from the North Sea, slowly turning it into the freshwater body we know today as the IJsselmeer. After the creation of the Houtribdijk in 1976, the lake was split into two basins, marking the formation of the Markermeer in the South. In 1975, Marken was connected to the mainland by a dike. However, to date, many residents continue to identify as islanders.

These histories are not just background; they inform how residents understand safety and risk today. The traumatic event of 1916 became etched in local memory, passed down through generations as a formative part of Marken's identity. During the flood, Marken was nearly wiped from existence if it had not been for the dike breaches on the mainland. Many historic accounts narrate the fears and anxieties people experienced during the flood and the losses they had to endure.[11] And when thinking about it today, many still feel a sense of grief and sorrow for their predecessors.[12] One woman reflecting on the 1916 flood, recalled how her grandmother, who survived the flood, remained fearful of water for the rest of her life. And how her grandmother's fear shaped her own fearful emotional relationship to water and strong winds, revealing how emotional responses to water hazards persist across time.[13]

Although engineering works such as the Afsluitdijk and the Houtribdijk have since enclosed the sea and significantly reduced flood risks, water continues to hold a powerful emotional and cultural presence in Marken's identity. The island, with its dikes, artificial mounds, and pole house structures, remains a testament to this versatile past. The landscape as a carrier of memory and its emotional charge contributes to a heightened sense of vulnerability and risk.

THE DIKE REINFORCEMENT PROJECT: FROM COLLABORATION TO CONTENTION

As is the case with all dikes in the Netherlands, each decade the safety of a module is reassessed by the Ministry of Infrastructure and Water Management (MIWM) or the local Waterschap (Water Authority) to ensure dry feet. In 2005, RIWM decided that two of Marken's dikes were weakened and required reinforcement. This decision marked the beginning of a lengthy and intensive participation process. The local residents, organized through a council known as the Eilandraad (ER), worked closely with local authorities to co-develop a design framework for the new dike. Based on shared heritage and expertise, this collaboration resulted in the co-created Projectplan Waterwet (PWW), which outlined the parameters for the future dike, including its desired height and spatial integration with the landscape. The ER stressed that a safe and future-proof dike was their top priority. In the local news, the participation process was celebrated as a best-practice example of successful citizen participation.

Historically, the dikes surrounding Marken were never owned by the Markers themselves, since the island was always under someone else's jurisdiction or custodianship. Their safety depended on external authorities, which fostered both dependency and a sense of abandonment. For over 160 years, community members had been petitioning for stronger and higher dikes, with newspaper records dating back to the 19th century. During one of my interviews, my interlocutor stated that after pleading for higher and safer dikes for over 100 years, for many, the recent participatory process finally felt like momentum to actively contribute and secure a safe future for their island and its inhabitants.[14] Hence, during the early stages of this reinforcement planning, there was a sense of hope—citizen participation appeared to finally be yielding results.

However, the promise of co-creation began to falter when the final design presented by the contractor deviated from the community's expectations. Most notably, the height of the new dike was lower than what residents had proposed and advocated for in the PWW. Although from a technical perspective, this adjustment aligns with future flood risk models and legal safety norms – assuring a safe dike for the upcoming 50 years - the proposal sparked significant local resistance. The community questioned whether the reinforcements were sufficient. Residents described feeling dismissed, unheard, and unsafe. In response, the ER commissioned an independent consultancy to reassess the calculations. Even after the Human Environment and Transport Inspectorate (ILT) ruled that the design was indeed technically sound in early 2025, and that the MIWM acted within their judicial agreements, the local community remains unconvinced. As a result, the ER decided to dissolve their reinforcement

workgroup entirely, ending approximately 15 years of cooperation on this topic between the community and the authorities.

During recent conversations with a regional liaison, they mentioned that they are under the impression that the tensions are easing, and that people are more accepting of the fact that this is the final design for the new dike. Nevertheless, she also acknowledges that whenever she brings up the dike's design or safety, even jokingly, the mood in a conversation changes; people go stark, state that they don't want to talk about it, and change the subject. Similarly, in conversations with residents, emotions ran deep. Some described feeling abandoned and worried. Others, when asked about the new dike, became visibly uncomfortable or refused to engage in the topic. Everyone who did address the topic mentions that it is truly unfortunate what happened and that they stand by their neighbours who represented them during the participation process. In line with this, when I was having a conversation with an elderly woman at the bus stop a few weeks ago, and mentioned the new dike, she scuffed and said: "we'll have to see. It is not good you know? The new dike. Not high enough, and the water is only getting higher".[15]

To outsiders, this may look like a failed participation process, which, to a large extent, it is. But I argue that these reactions are not just emotional responses to recent events; they are rooted in a much longer history of water-based trauma and generational memory. The statement by the elderly woman captures the tension at the heart of Marken: a technically safe dike that still feels unsafe, and as a result, a future imagined through the lens of past loss and concern.

TECHNOCRATIC PLANNING AND LIVED HERITAGE

The breakdown of trust in Marken illustrates a broader tension between technocratic planning and local heritage. From the perspective of the engineers, the final dike design was justified by data, modelling, and compliance with national standards. But for residents, safety was not just a matter of statistics. It was emotional, historical, and deeply place-based.

This dichotomy was also recognized by one of the experts related to the dike reinforcement:

"What makes this place so specific, is the island culture—and the emotion surrounding high water. It's something we just can't truly grasp. We engineers think: we're building a safe dike. But the people here carry the emotion of 1916, when the dike broke and the island was devastated".[16]

This dissonance is not unique to Marken. Across climate adaptation contexts, planners and engineers often prioritize measurable risk over cultural memory and embodied knowledge. Yet for communities like Marken, whose histories are defined by experiences of water, flood, and adaptation, affect and emotion are essential dimensions of how risk is understood and acted upon. Residents brought more than opinions to the participatory process. They brought historically informed understandings of their landscape as protective or vulnerable. In many ways, the dike functioned not just as infrastructure but as an affective threshold. It demarcated the boundary between safety and threat, between past loss and hoped-for resilience. When this threshold was altered without adequate acknowledgment of its symbolic and emotional weight, the result was not only disappointment but a rupture in trust.

This illustrated how various climate imaginaries and understandings can exist simultaneously. The data-driven understanding wielded and underwritten by the local authorities in their adaptation planning strongly differs from the living imaginaries of the local community. As has been the case in Marken, deviating understandings of climate risks can cause local resistance, mistrust, and, in the long run, maladaptation. In turn, when imaginaries overlap and align, it can result in soft landings for adaptation initiatives, bolstered by the local communities.

CONCLUSION: PLANNING WITH THE PAST

Marken invites us to rethink how adaptation planning engages with the past. Merely relying on technical solutions is not enough. Climate planning must be culturally grounded and emotionally resonant. When local heritage is misunderstood and treated as sentimentality or secondary to technical data, adaptation efforts risk alienating the very communities they aim to protect. Instead, planners must recognize heritage as a form of knowledge, as well as a substantial factor that influences how people understand, narrate, and respond to risk. Heritage and emotion shape climate risk perception in ways that challenge technocratic assumptions. If not attended to, the social foundations of resilience can erode.

The Marken case also highlights the fragility of trust in participatory processes. Successful collaboration depends not only on inclusion at the beginning but on perceived respect and recognition throughout. When community contributions are sidelined late in the process, or at least are perceived as such, the damage to relationships can be lasting. This may have implications for further collaborations in the future. In addition, all the potential benefits of inclusive adaptation planning for fostering climate awareness and resilience are squandered by the negative effects and outcomes of the process. Heritage must be factored in as a valuable vehicle for Climate Action, but to mobilize its potential it needs to be properly considered in adaptation planning.

More broadly, Marken urges us to reconsider how we envision and enact the climate futures. Rather than viewing adaptation as a neutral, technocratic process, we must see it as a form of future -making in which many stakeholders are involved, including heritage communities. It is an active process in which climate futures are anticipated, envisioned, and understood, and an important vehicle for communities to gain agency over their possible climate futures. Future-making as a cultural process is a deeply situated and value-laden practice. The islanders' longstanding plea for stronger dikes is not just a demand for safety, but an act of imagining and shaping a climate future where their children and their heritage can endure. To engage with these futures meaningfully, we must take seriously the emotional, cultural, and historical landscapes in which they are rooted. Hence, climate adaptation is not only about engineering resilience but about navigating cultural memory, emotion, and identity. Therefore, planning with the past means more than accounting for historical data. It means listening to the ways in which history is embodied, narrated, and understood, and lives on in landscape and memory.

NOTES

[1] E.g. Sandra Fatorić and Linde Egberts, "Realising the Potential of Cultural Heritage to Achieve Climate Change Actions in the Netherlands," Journal of Environmental Management 274 (2020), https://doi.org/10.1016/j.jenvman.2020.111107; Scott Allan Orr et al., "Climate Change and Cultural Heritage: A Systematic Literature Review (2016–2020)," The Historic Environment: Policy & Practice 12, nos. 3–4 (2021): 434–77, https://doi.org/10.1080/17567505.2021.1957264.

[2] Climate Change and Cultural Heritage Working Group, *The Future of Our Pasts Engaging Cultural Heritage in Climate Action: Outline of Climate Change and Cultural Heritage*, (ICOMOS, 2019).

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[4] Leila Scannell and Robert Gifford, "Personally Relevant Climate Change: The Role of Place Attachment and Local Versus Global Message Framing in Engagement," Environment and Behavior 45, no. 1 (2013): 60–85, https://doi.org/10.1177/0013916511421196.

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[6] Susanna M. Hoffman, "Disasters and Their Impact: A Fundamental Feature of Environment," in *Routledge Handbook of Environmental Anthropology,* eds. Helen Kopnina and Eleanor Shoreman-Ouimet (London: Routledge, 2017).

[7] Linde Egberts and Svava Riesto, "Raise the Dikes and Re-Use the Past?: Methodologies for Studying Climate Adaptation Planning as Heritage Practice", Maritime Studies 20, no. 3 (2021): 267–78, https://doi.org/10.1007/s40152-021-00226-1.

[8] Divya Praful Tolia-Kelly, Emma Waterton, and Steve Watson, *Heritage, Affect and Emotion: Politics, Practices and Infrastructures*, (London: Routledge, 2017), https://doi-org.dianus.libr.tue.nl/10.4324/9781315586656.

[9] "Binnenland. Staten-Generaal.", Provinciale Overijsselsche En Zwolsche Courant, July 5, 1871, accessed via Delpher on 21 August 2025, https://resolver.kb.nl/resolve?urn=MMHCO01:000065283:mpeg21:p002.

[10] Téo, "Vlaardingsche Courant", Vlaardingsche Courant, October 9, 1889, accessed via Delpher on 21 August 2025, https://resolver.kb.nl/resolve?urn=MMSAVL02:000443109:mpeg21:p0000.

[11] Thijs Boer and Johan Moes, *De watersnood van 1916: Verhalen en Herinneringen van Marken*. (Marken: Stiching Watersnood Marken 1916, 2016).

[12] Fieldnotes March 2025.

[13] Thijs Boer and Johan Moes, *De watersnood van 1916: Verhalen en Herinneringen van Marken*. (Marken: Stiching Watersnood Marken 1916, 2016), 25.

[14] Interview March 11, 2025.

[15] Conversation March 15, 2025.

[16] Interview March 15, 2025.

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TARGETING WINDOWS OF OPPORTUNITY: CULTURAL HERITAGE AS A STRATEGIC RESOURCE IN THE GREEN TRANSITION

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INTRODUCTION

The ongoing green transition[1] brings hope and high expectations, yet also presents urgent socio-cultural heritage challenges. Not least for communities in northern Sweden where large industrial developments follow from the recent resurgence of the mining industry, with high expectations to deliver Europe's independence in critical raw materials.[2] Although industrial activity is rarely the single cause for conflict, the coexistence of new industrial developments and cultural heritage values inherently generate goal conflicts. These are often difficult for municipalities and other stakeholders to manage, particularly regarding concurrent demands for sustainable urban development.

Drawing on findings from a three-year transdisciplinary research collaboration, *Goal conflicts in the green transition: A method toolbox for cultural value creation in planning,*[3] this article underscores the potential for stakeholders[4] to transform goal conflicts into synergies. It demonstrates how co-creation and dialogue-based methods can support municipal capacity-building, long-term foresight, and policy development in planning practices. However, in order to recognise, maintain, and develop cultural heritage values, a conservation approach needs to be holistically integrated in the planning process. A conceptual development regarding cultural heritage emphasises heritage as a dynamic process through which values are ascribed.[5] Conservation, in turn, can be defined as the dynamic management of change,[6] a perspective that is also reflected in evolving approaches to cultural heritage within spatial planning.[7] To successfully develop sustainable, attractive living environments,[8] a dynamic approach to heritage and conservation allows stakeholders with different understanding of meaning and value creation to contribute to planning processes. This, in turn, requires the need of value-based mapping methodologies for the conservation practice to be developed in synergy with planning practice.

Through exploring the planning processes relating to three Swedish learning-cases in the municipalities Borlänge, Kiruna and Älvsbyn, each facing urgent socio-cultural and urban transformation given their potential to deliver critical resources for the green industrial transition (Figure 1), the research team has noted that certain goal conflicts could have been avoided through fruitful stakeholder co-creation on some occasions. This, in turn, suggests that loss of cultural heritage

values could have been avoided or diminished on several occasions, which calls for development of practice and policy in planning.

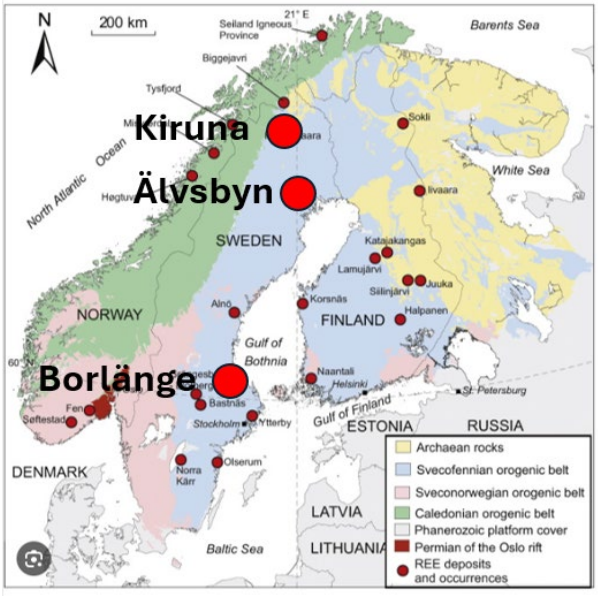


Figure 1. The three learning-cases have been marked on a map indicating Europe's rare earth element resource potential: An overview of REE metallogenic provinces.[9]

Through a practice-based, transdisciplinary and co-creative methodological approach, the project developed a process-oriented method toolbox designed to serve stakeholders and practitioners in industry, local councils, consultancies, and civil society. The toolbox integrates cultural value-creating perspectives and socio-cultural heritage considerations to the planning process for a sustainable built environment, specifically by supporting stakeholder collaboration, dialogue and co-creation early in the process and continuously throughout.

The proposed toolbox and a *value-based conceptual framework* were developed from parallel co-creation processes in the three learning-cases (Figure 2) by synthesising insights from architecture; planning; urban design; history; conservation; and cultural heritage research. Cross-fertilisation occurs through a recurrent Actors' Forum with contributions from both research and practice. This iterative design process promotes, and leverages upon, aesthetic, socio-cultural, and functional value creation that is ongoing and rooted in local development initiatives within each municipality.

By exploring the interplay between *cultural and industrial heritage* and *urban and industrial development*, particularly in the context of society's demand for attractive living environments, this article argues that a toolbox, supported by a conceptual framework, can assist stakeholders in capitalising on *windows of opportunities*[10] within planning processes related to a sustainable built environment. In its concluding remarks, the paper underscores the need for further conceptual development concerning the *value definition* across different disciplines. It particularly calls for continued research to bridge the fields of *architecture and planning* with those of *conservation and cultural heritage*, hereby generating positive impact on the planning process, its policy and practice.

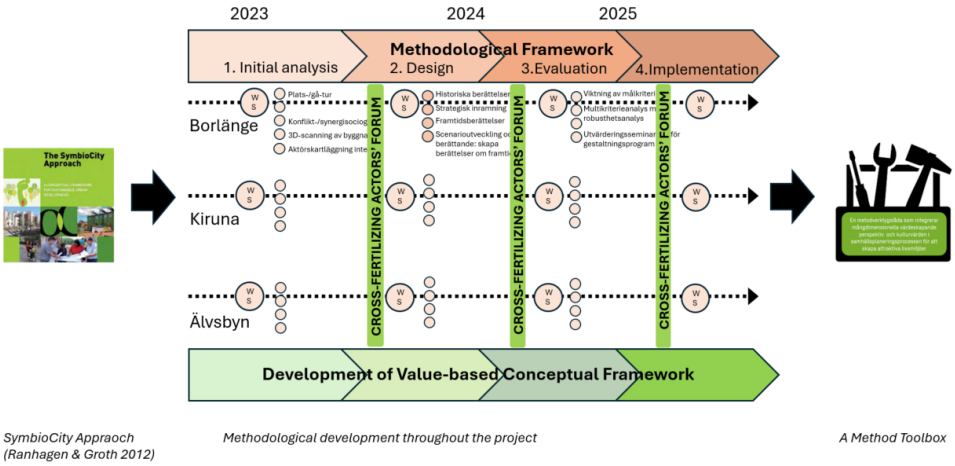


Figure 2. The project's methodological framework and development of a Value-based Conceptual Framework. Based on the SymbioCity Approach, parallel co-creation processes develop around learning-cases in three municipalities. A value-based conceptual framework emerges, supported by a process-oriented method toolbox as the main delivery from the project.

THEORETICAL AND METHODOLOGICAL PERSPECTIVES

Goal conflicts are recurrent in urban planning and development and often characterized by uncertainty, power imbalances, multiple, ambiguous and/or conflicting goals.[11] Concerning sustainability, conflicts between environmental protection, economic growth and social justice are common.[12] Goal conflicts, included in what Ravetz, Neuvonen & Mäntysalo[13] terms ´syndromes´, are viewed by Oseland & Haarstad[14] as "*...competing and incompatible objectives within currently existing policies*"[15] and argue that goal conflicts are often not overcome, but rather evaded, overlooked, or denied – displaced temporally, sectorially and scalarly. Three levels of goal conflicts are identified by Baker, Marston & Mcclure:[16] (1) philosophical conflicts between different ways of thinking and different fundamental values, (2) policy conflicts which involve incompatible or competing policy objectives, and (3) instrumental and implementation conflicts which involve incompatible or competing approaches to implementation. The first level is typically prevalent in conservation and cultural value creation processes, while the two latter are apparent in urban or industrial development processes.

Managing complex and wicked[17] conflicts have called for opening from a focus on formal, rational planning procedures[18] to develop explorative approaches that support co-evolutionary shifting from 'syndromes' to synergies[19] and "*...simultaneously support coordination and diversity*".[20] The project therefore draws on an interdisciplinary, multi-dimensional and human-centered conceptual planning framework - The SymbioCity Approach (SCA),[21] which seeks to integrate i) various aspects of sustainability with ii) essential urban systems, iii) institutional aspects and iv) a spatial perspective (Figure 9 (left)). SCA also includes stepwise cyclical working procedures, drawing upon a combination of procedural planning theory,[22] the Strategic Choice Approach[23] and communicative[24] and collaborative planning.[25] SCA underlines the options for finding synergies between urban systems, institutional factors and stakeholders in search of sustainable processes and solutions when handling different kinds of conflicts.

The project's methodological framework (Figure 2), as well as several transition frameworks,[26] is used by applying a set of twenty tools in four main procedural stages: a) initiation, b) design, c)

evaluation, and d) implementation. *Initiation* includes conflict mapping, analysis of the involved actors and their capacity for planning and transition, and development of key issues, goals and visions. *Design* includes development of scenarios and future images. *Evaluation* includes evaluation and analysis of the designed scenarios for the refinement of normative future proposals and measures. *Implementation* includes development of implementation pathways by means of back-casting and incentives for realization as well as arenas and forums for realization. For the application of transdisciplinary co-creation[27] during these procedures, a plethora of tools for generative and analytical purposes can be orchestrated with sensitivity to various situations (Figure 2). The application of tools in the four stages in the project´s three learning-cases are presented below in the section 'Co-creative methods and tools'.

At the core of this experimental planning approach for both research and practice is the design-based co-development of boundary objects - artefacts (stories, visions, scenarios, policy packages) that can simultaneously project disparate interpretations while constituting a solid nexus for communication and collaboration among disparate worldviews,[28] articulate selection pressures, and concentrate resources in order to make transition possible.[29] For our research purpose, it allowed for a deeper understanding of actor perspectives and essential features of the conflicts and potential synergies and was abductively triangulated with site and actor observations and studies of historical documents and municipal plans. A transdisciplinary Actors' Forum (Figure 3), organised on four occasions, was used to support transferability,[30] for tying observations to a broader context of multi-disciplinary peer-community,[31] and to leverage upon aesthetic, socio-cultural, and functional value creation that is rooted in local development initiatives.

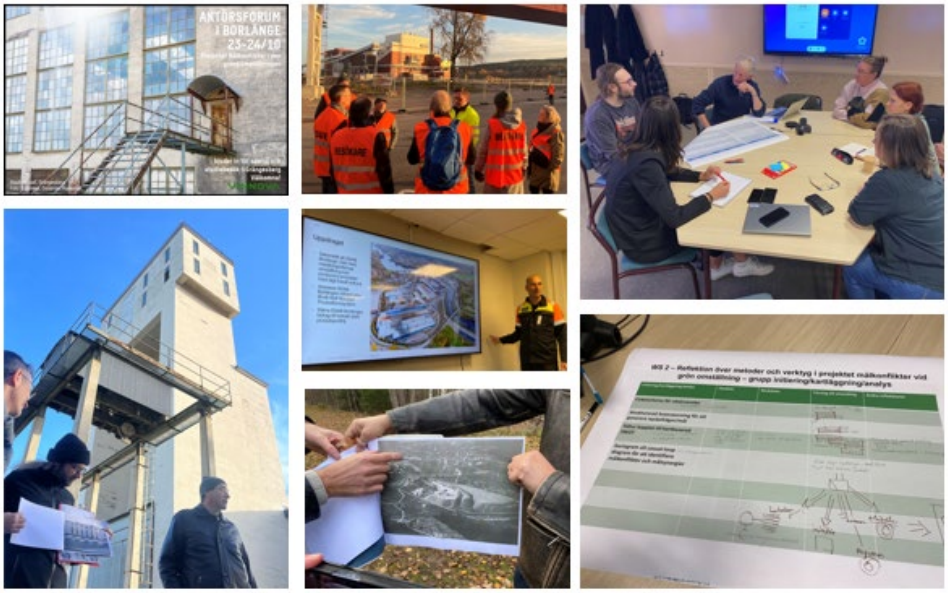


Figure 3. Photos from a typical two-day Actors' Forum (Borlänge October 2024) with study visits and presentations from consortium partners and researchers followed by co-creation workshops with 20-30 participants.

CO-CREATIVE METHODS AND TOOLS

The research is based on learning-cases in three Swedish municipalities, chosen as they are subject to industrial development related to the green industrial transition, which in various ways challenge the conservation of cultural heritage. Below in Table 1 we present key characteristics for the three learning-cases.

	Borlänge	Kiruna	Älvsbyn
Inhabitants in municipality (2024)[32]	51 425	22 426	7774
Characteristics	Borlänge is an industrial town where SSAB steel forging plant – Domnarvet is centrally located. At Kvarnsveden, adjacent to the city center, Northvolt recently initiated battery production on the site of the disused Stora Enso pulp mill. Industrial development is closely tied to the town's development and visible through its historic layers.	Kiruna is a mining town, significantly affected by the expansion of mining activities. The state-owned mining company LKAB is extending operations at the Kiirunavaara mine, where the iron ore deposit runs beneath the town. As mining progresses, subsidence has necessitated a relocation of the town centre and the construction of new residential areas.[33] In addition, LKAB is exploring the possibility of mining a rare earth minerals deposit,[34] while the new mining company Viscaria is in the process of reopening a copper mine adjacent to the town.[35]	In Älvsbyn Municipality, the mining company Boliden is currently applying to reopen a copper mine in Laver where mining previously took place between 1936 and 1946, during which a small model town was established.[36] Today, the site is abandoned with only the foundations of houses and industrial buildings remaining, while many buildings were relocated, for example to Vistträsk nearby, when the mine closed. If the mine is reopened, it will be significantly larger than before arguably with a considerable impact on the landscape.[37] There is concern that the project could negatively affect reindeer herding, causing environmental damage to the nearby Pite river.
Learning-case focus	The learning-case addressed competing interests regarding on the one hand the local council's mission towards sustainable urban development and, on the other, SSAB´s own site planning. At Kvarnsveden, conservation issues arose following the site´s transformation and demolition of industrial cultural heritage as part of Northvolt's ambitions to redevelop the site.[38]	The learning-case addressed discrepancies between national and local priorities regarding attractive living environments, including the management of historic environments as well as the practice of reindeer husbandry.	The learning-case served to explore how collaboration between the local council, its citizens and civil society associations as well as local industry actors might develop, exploring the potential for dialogue and co-creation to both safeguard cultural heritage and let the local community grow and participate in developing an 'attractive' urban development.

Table 1. An overview of key characteristics of each learning-case.

The SCA was applied in co-creative triple-helix working groups to explore and refine methods and twenty tools related to the stages initiation/mapping, design, evaluation, and implementation. These

methods and tools were orchestrated to support an iterative and cyclical process in accordance with the conceptual framework. In the case of Borlänge, the SCA steps and tools were applied in a comprehensive way, while the cases of Älvsbyn and Kiruna concentrated their efforts in certain parts of the Model as shown in Table 1. Some examples:

Stage 1 Initiation (Figure 4-5): All learning-cases were explored using a practice-based collaborative method called *Pedagogical Walkthrough*.[39] In Borlänge, teams of participants explored the border zone between Domnarvet industrial plant and Borlänge city centre respectively the Kvarnsveden emptified site: the built environment, green areas, transport infrastructure and the interplay between these elements. The participants documented their reflections in *walkthrough protocols, radar graph diagrammes and on large maps and ortophotos* whereby the experienced problems and qualities were graded for selected observation points along predefined routes.

The analyses of the existing situations were the starting point for a *structured brainstorming* where key issues for the future were identified. Existing and potential goal conflicts and goal synergies were then identified using a *relational diagramme* for mapping connections between the prioritised key issues and for grading of the experienced magnitude of conflicts and synergies.

In Älvsbyn, several *Pedagogical Walkthroughs* with stakeholders from the public sector, industry and civil society were conducted on site in Laver, followed by synthesizing discussions. The focus was on identifying the values that different stakeholders found on the site and exploring how these values could be activated both in the short and long term. The value-oriented walkthroughs included a deeper documentation of different actor-perspectives in comparison with the basic walkthrough protocol.

In Kiruna, a workshop related to the analysis of the public spaces of the mining town was held, focusing on the role of culture in shaping public spaces within the new town center. Activities included a walkthrough and structured brainstorming which also included civil society stakeholders.

Stages 2 and 3. Design and Evaluation (Figure 5-6): To explore future potentials for improvement and development of two Borlänge sites, a *backcasting approach* was combined with a *scenario methodology.* Scenarios were developed using *scenario matrices* which in a first step were adapted to the specific characteristics for each site. Two different and polar dimensions for sustainable spatial development were chosen in the scenario matrices as a basis for a design exercise where each group developed four scenarios. The scenarios were evaluated by the teams using *MCA, multi-criteria analysis*, with twelve predefined sub-criteria covering four main criteria of relevance for the project: cultural heritage, circularity, climate neutrality and attractivity. In a second step scenarios were developed for a larger urban area including both sites and the surrounding town covering built environment, landscape and infrastructure. Each group developed one of four scenarios based on a scenario matrix and compared the scenarios of the other three groups using MCA using actor-based weight-profiles.

In Kiruna two classes from a local upper secondary school were involved in design-oriented activities focusing on envisioning future options for treating goal conflicts and finding new future strategies (Figure 7). The envisioning was a test of more informal ways of finding future images than scenario-making.

Stage 4 Implementation: In Borlänge, key projects[40] for the implementation of the scenarios were identified and prioritized by the working groups. Conflicts and synergies between the projects were also analysed. A stepwise implementation process in three phases were proposed – short, mid-term and long term. Formal and informal steering instruments and possible stakeholder constellations were analysed for each key project. The research team also regularly updated a historic timeline that was created early in the project, adding information about the site relating to planning decisions and other relevant actions, the purpose of which has been to identify and document potential windows of opportunities (Figure 8).

The key project conceptual tool was also applied in Älvsbyn and Kiruna mainly focusing on general barriers and drivers for the implementation of changes with the perspective of avoiding and reducing conflicts between different stakeholders.

Figure 4. Example from Phase 1 in Älvsbyn using the method Pedagogical Walkthrough for initial analysis.

Figure 5. Example from Phase 1 in Borlänge using mapping and analysis to identify thematic areas and key questions, following a pedagogical walkthrough.

Figure 6. Example from Phase 2 and 3 in Borlänge using methods for scenario development and story-telling.

Figure 7. Example from Phase 3 in Kiruna using co-creation and scenario development with students in a local school, for design and evaluation.

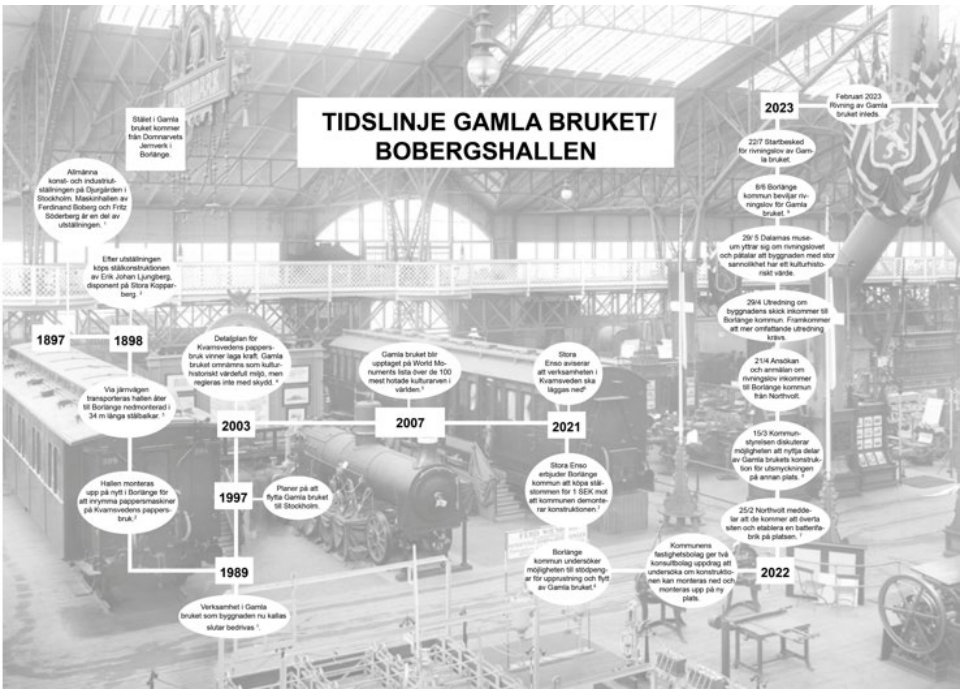
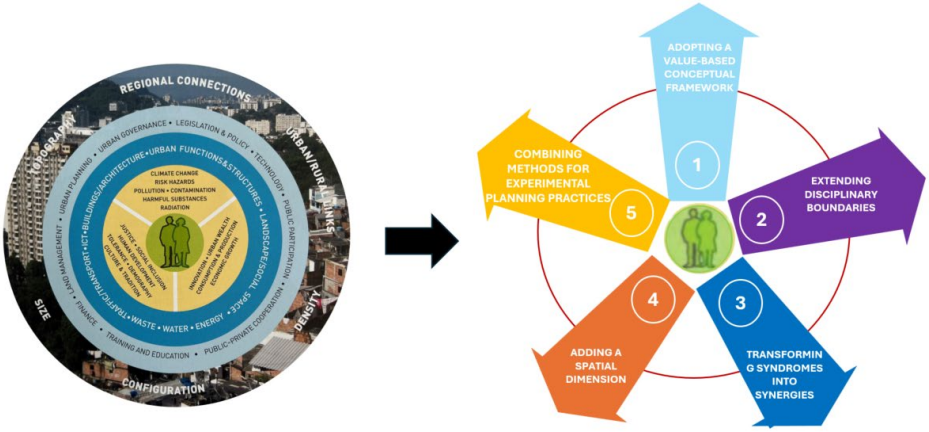


Figure 8. Example from Phase 4 in Borlänge establishing a Historic Timeline of Windows of Opportunities in Kvarnsveden.



SymbioCity Approach (Ranhagen & Groth 2012)

Key findings and tentative value-based conceptual framework

Figure 9. Methodological development of the SymbioCity Approach leads to key findings and a tentative Value-Based Conceptual Framework.

RESULTS

In this section we present empirical observations and synthesised findings from the co-creative processes with learning-cases.

The learning-cases reveal several 'syndromes'[41] related to the conditions for developing green industry in relation to cultural heritage. Mapping in phase 1 shows that there are different understandings and scarcity of knowledge among stakeholders about what cultural heritage means, indicating a displacement of the cultural heritage issue.[42] Involved stakeholders also work on different time-schedules with various commitments to statutory formal planning. During workshops and Actors' Forum it became clear that they do not actually meet in early stages but rather confront each

other's value sets quite late in the process. Due to lack of cross-sectorial interaction, the conflicts thus become level 1 conflicts of philosophical nature,[43] displaying a difference in basic understanding and diverging values and visions for desired futures. This is most apparent in the cases of mining establishments versus reindeer husbandry in Kiruna and Älvsbyn. In Borlänge, since the industries themselves are found to be drivers of cultural heritage production and integral to the urban identity, the conflicts are rather level 2 and 3[44] conflicts, much due to the recent demolition of the industrial cultural heritage and competing land-use interests. Specifically, there was identified an earlier tendency for municipal planning practice to overlook such conflicts to ease business development, thereby avoiding to identify or act on windows of opportunity.[45] Relational diagrams to map the syndromes illustrated that few such conflicts are unresolvable. They can often be turned into synergies by co-creative formulation of joint key issues and goals, for cultural heritage conservation as well as development of industry and attractive urban environments in symbiosis. In the cases of Kiruna and Älvsbyn, the Pedagogical Walkthrough was a key tool for bringing forward additional perspectives, presented on 'neutral ground' to facilitate joint discussions and learnings.

When it comes to developing synergies from the syndromes, the Actors' Forum indicated an overall need for match-making and arenas where actors may develop a joint cultural understanding through knowledge-sharing and an exchange of ideas in the initial phase. This need is not so much related to formal procedures as to informal capacity-building. For example, in Älvsbyn, Boliden´s vision for the mining industry 25 years ahead was initially not at all aligned with the municipality´s planning. Similarly, in Borlänge, SSAB had elaborate plans for sustainable development that were not coordinated with the municipality before the project intervened. However, based on actor mapping, co-creation activities, learning-case coordination and the development of boundary objects in the shape of scenarios, the stakeholders achieved synergistic[46] proposals for the fringe area of the SSAB/Domnarvet site where industrial and municipal needs could be integrated. For Kvarnsveden, several values related to cultural heritage, urban attractiveness and climate neutrality were expressed in the scenarios helped to raise awareness on next steps in the site development (plot division, greening-the-city approaches and integration with the surrounding areas). The tools demonstrated that many of the conflicting viewpoints could transform to synergies, especially after going through the scenarios for evaluation using the multi-criteria analysis tool.[47] Further, the Borlänge scenarios also formed a basis for analysing actor constellations related to pathways for implementation, windows of opportunity and key projects for the realisation of the most performative scenarios. It thus became clear that it is impossible to leverage on windows of opportunity when stakeholders run in parallel silos. Misunderstandings about roles and responsibilities easily arise from lack of communication could be detected and remedied. A backcasting approach can, for example, serve to realise synergistic ideas rather than just negotiating conflictual viewpoints and provided liberation from established trenches.

As a synthesis of these empirical observations, we have outlined five key findings concerning our developed conceptual framework and toolbox (see Table 2 and Fig. 9).

1	**Adoption of a value-based conceptual framework:** The structure of the SCA framework and orchestration of tools provided a much-needed cross-fertilization of knowledge and perspectives that led the participants to express shared understanding of key issues, joint visions and goals and developed capacity to handle and explore goal conflicts from which followed a capacity to strategically navigate the complex processes.
2	**Extending Disciplinary Boundaries:** The framework and toolbox were supportive for quadruple-helix co-creation in the early stages of planning, particularly between otherwise separate disciplines such as planning and cultural heritage conservation, thereby supported the transgression of disciplinary and discursive barriers. The iterative design process and the synthesis of insights from architecture, planning, urban design, history, conservation and cultural heritage research also promoted, and leveraged upon, aesthetic, socio-cultural, and functional value creation that is rooted in local development initiatives.
3	**Transforming Syndromes into Synergies:** While traditional social science methods often focus on critical analysis, this project's transdisciplinary and co-creative, action-oriented and experimental approach based on SCA supported the transformation of conflicting goals and viewpoints into synergistic propositions and pathways.
4	**Adding a Spatial Dimension:** Making the conflicts and potentials explicit by developing spatial boundary objects enabled the identification of new synergies, windows of opportunity and joint constructive re-framing of the conflicts. This appeared different to traditional cultural value conservation and development processes.
5	**Combining Methods for Experimental Planning Practices:** The context-sensitive orchestration of methods and tools in each learning-case provided an iterative and integrative shift between analysis and synthesis that supported inter- and transdisciplinary reflection-in-action and reflection-on-action.

Table 2. An overview of key findings concerning the developed conceptual framework and toolbox.

DISCUSSION

Analysis of the empirical findings reveal that the four stages of the conceptual framework reflect the three levels of conflict presented in the theory and methods section,[48] thus seemingly capturing important dimensions of what constitutes goal conflicts. At the start, the learning-cases displayed level 1 conflict in Kiruna and Älvsbyn and level 2 and, to some extent, level 3 conflict in Borlänge. Applying the developed framework and toolbox did not fundamentally alter this in the case of Kiruna, mostly because the conflict had been too long on-going, but in the case of Älvsbyn, a window of opportunity has opened to recast the framing of the mining establishment into a broader process of sustainable societal transformation. In Borlänge, which had conflict situations of a more resolvable nature, the framework and toolbox stimulated capacity-building and collaboration in addition to the creation of boundary objects where syndromes were largely turned into synergies, thus shifting level 2 conflicts into 'level 1 and 2 synergies'.[49] In Kiruna, zooming in on selected concrete parts of the overall mining-societal value conflict opened for more nuanced dialogue on certain aspects of the experienced value-displacement.

In all three cases, the cross-sectorial, multi- and transdisciplinary co-creation of stepwise results, impacted on the actors' informal social networking and knowledge resources. It also made the actors identify means for co-realisation and value-creation. The boundary objects that were developed helped make the conflicts more outlined, promoted synergies and counteracted displacement.[50]

Drawing from this and our findings in the results section, we conclude that the framework and toolbox was useful for planning practice in turning syndromes and conflicts into synergies. Loss of cultural heritage value could have been avoided on several occasions if it would have been applied earlier in the learning-cases. New options for finding synergies in the future were also identified. We also argue

that the framework carries the potential to transgress disciplinary boundaries and support the development of a joint discourse where architecture and planning integrate with conservation and cultural heritage. However, further research is needed for further development of the integration of theoretical foundations and methodological approaches.
A remark on the methodology is that the arrangement of the co-creative processes was part of a research project, which not always can constitute the foundation for a successful process in other cases.

CONCLUSION

In this article, we claim that the presented and tested framework and toolbox can support municipal capacity-building, long-term foresight, and policy development in planning practices. We find that all these were achieved to varying degree in the three cases, and that the design-based approach has been fruitful for the shift from syndromes (goal conflicts) towards synergies. Further, we argue that a process-oriented method toolbox accompanied by conceptual development may help stakeholders to leverage on *windows of opportunities* in planning processes relating to a sustainable built environment. This, in turn, suggests that loss of cultural heritage values could have been avoided or diminished on several occasions. We also demonstrate that the integration of an architectural and urban planning approach to managing goal conflicts by means of a developed, SCA-inspired design-based framework that integrates cultural heritage research demonstrates promising prospects for the management of value creation in the green transition, yet also calls for continued research relating to the development and integration of theoretical foundations and methodological approaches to practice. These concluding remarks therefore stress the need for conceptual development relating to *value definition* in several disciplines, as illustrated in Figure 10, and we suggest that further research is needed to bridge the research fields in *architecture and planning* with *conservation and cultural heritage*, hereby generating positive impact on policy and practice.

Figure 10. As a next step, the value-based conceptual framework may serve continued development of discourse (research and practice) relating to two fields (architecture-planning & conservation-cultural heritage).

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NOTES

[1] The European Commission Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, 'The European Green Deal', COM (2019) 640 final, at 2 (EGD).

[2] The European Commission in Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions (2020) stated that access to these resources "is a strategic security question for Europe's ambition to deliver the Green Deal"; Sanja Bogojević, The European Green Deal, the rush for critical raw materials, and colonialism. *Transnational Legal Theory*, *15*(4), (2024): 600–615. https://doi.org/10.1080/20414005.2024.2399408

[3] This is a two phase research and innovation project funded by Vinnova, the Swedish Innovation Agency 2023-2025, a consortium comprising thirteen partners coordinated by Sweco Architects: https://www.vinnova.se/en/p/goal-conflicts-create-opportunities-learning-from-the-north-where-green-industry-meets-cultural-heritage-values/

[4] Stakeholders involved in project activities typically include representatives from the partner organisations, e.g. the mining industry (e.g. project leaders, sustainability and Social License to Operate managers, R&D coordinators, communications staff and others involved in early stages of planning and permitting processes); from the municipality or region (architects, planners and others responsible or involved in cultural heritage, urban development, or permitting, processes); and consultants, such as architects or planners who are commissioned either by the industry, the municipality or region.

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[8] Sustainable, inclusive and aesthetically pleasing built environments are an EU objective promoted through the New European Bauhaus initiative, as outlined in the Davos Declaration 2018. Similarly, well-designed living environments are a stated objective of the Swedish government, as presented in the proposition *Politik för gestaltad livsmiljö* (Prop. 2017/18:110).

[9] Image credit: LKAB. Downloaded from Engineering and Technology 2023-01-13. *Europe's largest deposit of rare earths - fundamental for the manufacturing of devices ranging from mobile phones to missiles - has been found in the Kiruna area of Sweden.*
https://eandt.theiet.org/2023/01/13/europes-largest-rare-earth-deposit-found-sweden

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[47] Especially, elaboration on the weighting of targets and evaluation criteria and discussions about how to interpret the boundary objects was helpful to stimulate the understanding of different viewpoints and the possibility to find alternative solutions to how to manage goal achievement. The evaluation from different actor perspectives mentioned in the section ´Methods and tools´ was also deemed supportive and a novel approach to evaluation by the participants.
[48] Based on the presentation of the three levels of conflict by Douglas Baker, Gregory Marston and Lachlan Mcclure, Synergies and goal conflicts for climate change policy and spatial planning. In Zeile, P, Elisei, P, Schrenk, M, & Popovich, V (Eds.) *REAL CORP 2013 - Proceedings of the 18th International Conference on Urban Planning, Regional Development and Information Society*. CORP - Competence Center of Urban and Regional Planning, Austria, (2013): 871-877. The initiation stage in our framework focus on philosophical issues related to values and understanding for the identification of key issues, elements of conflict, potential for synergies and for joint visions and goals. The design and evaluation stages comprise policy issues. The implementation stage handles issues related to more technical arrangements, where values and policy aspects are expected to be settled
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ENHANCING THE ENVIRONMENTAL SUSTAINABILITY OF MARITIME GREENWICH IN LONDON: NEGATIVE OR SCRUBBING SUGGESTED SOLUTIONS TO GREENHOUSE GAS AND POLLUTANTS EMISSIONS

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ABBREVIATION

ASTM	American Society for Testing and Materials
BIM	Building Information Management
CO_2	Carbon Dioxide
CH_4	Methane
DAC	Direct Air Capture
DACCS	Direct Air Carbon Capture and Storage
GHG	Greenhouse Gas
H_2CO_3	Carbonic Acid
IDE	Integrated Development Environment
LCA	Life Cycle Assessment
MPa	Megapascal
NDIR	Non-dispersive infrared
NES	Negative Emissions Strategy
NET	Negative Emissions Technology
N_2O	Nitrous Oxide
NO_3^-	Nitrate Ion
OS	Optimization Strategy
$PM_{2.5}$, PM_{10}	Particulate Matters
SO_2	Sulfur Dioxide
USB	Universal Serial Bus
UV	Ultraviolet

INTRODUCTION

Maritime Greenwich, a UNESCO (United Nations Educational, Scientific, and Cultural Organization) World Heritage Site in London, is a globally recognized historical touristic destination.[1] However, increasing pressures from mass tourism pose significant threats to the area's cultural and environmental integrity, underscoring the urgent need for the implementation of sustainable tourism

principles.[2] Sustainable tourism aims to accommodate current tourism demands while preserving cultural and natural heritage; thereby safeguarding opportunities for future generations.[3]
This paper proposes strategic solutions to address the complex demands of environmentally responsible tourism. These solutions are designed not only for Maritime Greenwich; their application may be extended to major urban zones worldwide, i.e., contributing to climate change mitigation approaches.

Environmental Sustainability

The 2022 wildfires in London underscored the escalating climate crisis impacting the metropolis, posing threats to both cultural heritage and green spaces.[4] Historical Maritime Greenwich, highlighted broadly in the red zone on the map – Figure 1, lies at the center of this concern. Considering the urgent need for environmental sustainability, several critical questions arise: Is Maritime Greenwich affected by pollution? What are the primary identified pollutants? What defines green tourism? And how can it be effectively implemented?

Figure 1. Urban plan of historical Maritime Greenwich - London

Based on recent environmental assessments, London — including Maritime Greenwich — may be classified as an urban area with significant pollution levels.[5] These pollutants can be classified into two main categories. Category One includes greenhouse gas (GHG), which contribute to climate change.[6] Category Two comprises pollutants that directly impact human health.[7] The former are regulated by Climate & Energy Policies,[8] while the latter are regulated by Air Quality Regulations.[9] It is important to note that this classification is preliminary, as greenhouse gas may also adversely impact human health through indirect effects.[10]

Accordingly, the primary GHG in London include carbon dioxide (CO_2), methane (CH_4), and nitrous Oxide (N_2O).[11] The main air pollutants in the Royal Borough of Greenwich are nitrogen dioxide (NO_2) and particulate matter ($PM_{2.5}$ and PM_{10}).[12] Green tourism aims to minimize the negative social, economic, and environmental impacts of tourism while promoting long-term sustainability. In this context, eco-efficiency refers not only to optimizing human activities and energy consumption to reduce pollutant emissions but also to actively removing pollutants that exceed acceptable thresholds through environmentally "friendly" solutions.

Why is it necessary to scrub/remove or absorb atmospheric pollutants that exceed allowable thresholds? This question arises from the fact that once certain GHG and pollutants are released into the atmosphere, they can persist for centuries. For instance, released methane and nitrous oxides can remain in the atmosphere for hundreds to thousands of years.[13] Consequently, merely optimizing emissions is insufficient to achieve a pollution-free environment and may fall short of meeting the targets set by the Paris Agreement.[14] Active and passive pollutant removal—through scrubbing, absorption, or other environmental remediation techniques—is essential for ensuring a clean and healthy environment, particularly in touristic areas. The approach proposed in this paper is specifically applicable to Maritime Greenwich; however, it can also be adapted for implementation in other densely populated urban areas.

METHODOLOGY

As discussed above, addressing atmospheric environmental issues requires remediation and mitigation strategies that step beyond the mere optimization and reduction of current and future emissions. Given that this paradigm remains relatively novel in contemporary environmental research, three methods were adopted to develop plausible solutions. First, a comprehensive literature review was conducted using advanced bibliometric analysis tools.[15] Second, a virtual laboratory was developed on high-performing computer platforms to simulate energy performance and associated emission of pollutants. These simulations investigated various building envelope layouts and materials composition, utilizing advanced analytical software such as COMSOL Multiphysics, EnergyPlus, and DesignBuilder, integrated with Building Information Management (BIM) tools. Third, novel experimental investigations were undertaken—initially in a non-controlled environment and subsequently within controlled laboratory settings—using advanced instrumentation to test and validate proposed solutions.

Literature Review

The literature review enabled the identification and analysis of state-of-the-art technologies for the removal of air pollutants such as CO_2. Among these, Direct Air Capture (DAC) emerged as a promising solution. This technology operates by drawing ambient air through a fan and directing it over a surface coated with chemical sorbents that selectively bind to CO_2 molecules. However, the high operational costs, the use of chemicals, and the complexities associated with the logistics of carbon storage[16] – commonly referred to as Direct Air Carbon Capture and Storage (DACCS)[17] operation - represent significant challenges to the large-scale implementation of this technology.

From a different perspective, a leading Italian firm has developed a photocatalytic cement capable of reducing nitrogen oxides (NO_x) in the atmosphere.[18] This innovative cementitious material incorporates titanium dioxide (TiO_2), forming TiO_2-cement composites that initiate a photocatalytic reaction in the presence of ultraviolet (UV) radiation. The concrete can be applied as a finishing material on external walls, roofs, and ground surfaces. It adds air purification capabilities to the treated surfaces, along with additional benefits such as antibacterial, anti-dirt properties, and heat-

island reduction effects. Many projects have been executed using this green cement product in various construction applications.

Virtual Laboratory Set-up

Through the virtual laboratory setting, the effects of various building-envelope layouts and material compositions on the external urban environment were simulated, then evaluated by analyzing their associated greenhouse-gas emissions. Initially, the impact of a single-layer concrete wall versus a double-layer concrete wall was assessed in terms of energy performance and associated emissions to the external environment. Subsequently, various composite wall assemblies were investigated, including configurations with a concrete core, a glazed ceramic external finish with cork paneling selectively applied to specific areas rather than uniformly across the entire exterior wall surfaces. This latter assessment provided valuable insights for the experimental analysis detailed in the Section "The Fan-Cork Experiment".

Advanced Instrumentation and Laboratories

The advanced laboratory and experimental setup enabled a comprehensive parametric analysis of the proposed novel approaches. For this purpose, various experimental tools were employed, including Arduino-based sensors and associated software configurations, to record non-controlled ambient external CO_2 levels. The Arduino[19] setup consisted of a microcontroller unit connected to a non-dispersive infrared (NDIR) CO_2 sensor, powered via Universal Serial Bus (USB) and programmed using the Arduino Integrated Development Environment (IDE) to log real-time data at fixed intervals for further analysis – Figure 2.

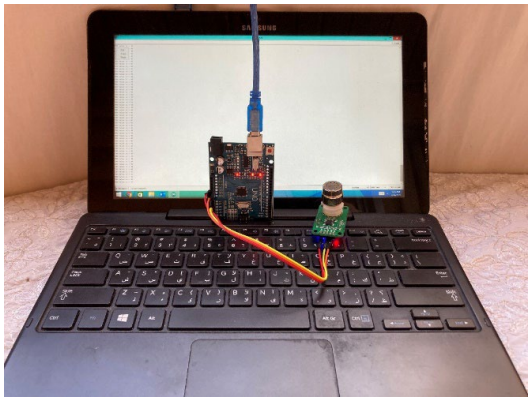

Figure 2. Arduino sensor and platform

To analyze the performance of the living concrete, advanced laboratory instruments were employed. The experiment was conducted in dedicated laboratories at the Department of Biotechnology, University of Verona, in collaboration with the Department of Architecture, Built Environment and Construction Engineering of Politecnico di Milano. The growth of microalgae on the concrete tile surface was monitored within a sanitized, sealed, and controlled chamber. Photosynthetic chlorophyll fluorescence was measured using a closed FluorCam FC 800-C imaging system[20] to assess the biological activity on the concrete surface.

STRATEGIES

As explained earlier, achieving pre-industrial carbon levels requires not only optimizing energy systems and adopting net-zero technologies but also incorporating carbon – and other pollutants - scrubbing techniques. To address this need, the "Methodology" section above outlined the approaches used to develop relevant solutions. These methods were broadly classified into three categories: first,

a literature review to extract key insights; second, the establishment of a virtual laboratory for simulation and performance assessment; and third, the application of advanced laboratory techniques to capture photosynthetic activity and assess related parameters.
Tailored to the case of Maritime Greenwich, two strategies have been identified as suitable for enhancing environmental sustainability and promoting green tourism. These are: first, an Optimization Strategy (OS), and second, a Negative Emissions Strategy (NES). These approaches will be described in the two paragraphs below.

An Optimization Strategy

The first strategy is the Optimization Strategy (OS). It focuses on optimizing pollutant emissions associated with any proposed future activity within the Maritime Greenwich area and its buffer zone. This can be effectively evaluated through the implementation of Life Cycle Assessment (LCA) studies conducted prior to the initiation of such activities. The LCA process follows four main steps: 1. definition of the scope and goal(s); 2. compilation of an inventory of anticipated pollutant emissions; 3. assessment of the environmental impacts of these emissions; and 4. interpretation of the results to inform sustainable decision-making – Figure 3. This process should be conducted in alignment with the ISO 14040/44 standards for environmental management and life cycle assessment.[21]

Figure 3. Steps of a Life Cycle Assessment

For instance, if a team intends to build a concrete structure in the peripheral area of the Maritime Greenwich, then the team would revert to green concrete[22] applicable through the life cycle phases of the building material: 1. Production / Execution phase, 2. Use phase, and 3. End of Life phase.[23]
Moreover, energy consumption and transportation impacts—both within each phase and across the life cycle stages — should be thoroughly evaluated to ensure a comprehensive approach to environmental sustainability – Figure 4.

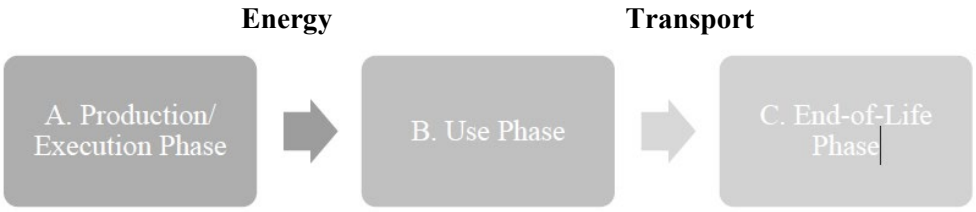

Figure 4. Life Cycle Phases of Concrete

A Negative Emissions Strategy

While most scientists and industry stakeholders are focused on optimizing pollutant emissions — aiming to reduce them to zero through net-zero technologies — this approach alone proves insufficient to eliminate the harmful effects of existing pollutants. Consequently, a Negative Emissions Strategy (NES) becomes essential. This strategy involves the active/passive removal, scrubbing, or absorption of pollutants from the atmosphere. Our approach to implementing this

strategy is framed through a "negative thinking" construct, which refers to a methodological research process aimed at identifying effective pollutant scrubbing solutions from the external environment. These solutions must be efficient, economically viable, and practical for implementation, with minimal technical or operational complexity for end users. This negative thinking approach can be applicable in Maritime Greenwich through three key steps: 1. Assessing and Mapping Pollutants, 2. Developing Mitigation Solutions, and 3. Testing and Monitoring. These key steps will be explained in the paragraphs below.

Assessing and Mapping Pollutants

Identifying and mapping the prevalent pollutants that exceed established environmental thresholds within the area is a critical first step. This can be accomplished by deploying a network of environmental sensors to monitor the actual concentrations of greenhouse gas (GHG) and/or other identified noxious pollutants. Should the measured levels exceed the allowable thresholds,[24] then immediate intervention is required to scrub through one or more of the three proposed negative emissions or scrubbing solutions outlined below. In the case of Maritime Greenwich, sensors have been strategically positioned to detect NOx, $PM_{2.5,}$ and PM_{10} concentration levels.[25] The reading of the current level shows a slight excess of NOx concentration in comparison to the targeted annual mean.

Developing Mitigation Solutions

Based on a thorough assessment of the excess pollutants, mitigation solutions can be developed using a negative emissions approach derived from one or more of the three following realms: 1. The chemical realm, 2. The physical realm, and/or 3. the biological realm. Each realm offers distinct mechanisms for pollutant removal, which can be selected or combined depending on site-specific conditions and pollutant characteristics.

Chemical realm solutions involve neutralizing pollutants through targeted chemical reactions that convert harmful compounds into inert or less harmful forms. Physical realm solutions utilize devices and technologies — such as filtration systems, scrubbers, or adsorption units — to capture and remove pollutants from the environment. Biological realm solutions rely on cultivating specific organisms, such as microalgae or other photosynthetic species, capable of absorbing pollutants and releasing oxygen in return, thereby enhancing environmental quality through natural regenerative processes.

Testing and Monitoring

Implementing the proposed solutions requires continuously testing and monitoring their effectiveness to ensure long-term success and environmental integrity. This involves both laboratory-based and in-situ measurements to evaluate the performance, durability, and environmental impact of the deployed solutions. Monitoring includes historical and real-time continuous data collection on key air quality indicators, using sensor networks and advanced analytical equipment. Additionally, periodic validation through standardized testing protocols ensures the reliability, scalability, and sustained efficacy of the mitigation strategies over time.

RESEARCH AND EXPERIMENTATION RESULTS

Building upon the constructs, methodologies, and strategies outlined above, the following paragraphs present proposed solutions derived from key insights obtained through the literature review, analyses conducted within the virtual laboratory setup, and novel experiments carried out in both controlled and non-controlled laboratory environments.

NOx abatement and CO_2 Aqueous Absorption

As indicated earlier, photocatalytic concrete - used for coatings, pavement, roof tiles, precast panels, and as a finish material – can abate high NOx concentrations through a series of chemical reactions, i.e., a sequential oxidation process.[26] This process is activated by light and may be traced as follows:

$$NO \rightarrow HNO_2 \rightarrow NO_2 \rightarrow NO_3\text{-} \quad (1)$$

The resulting nitrate ion (NO_3^-) is non-toxic and is washed away by rain.

After extensive research on the properties of carbon dioxide, it was confirmed that CO_2 is soluble in water. In brief, CO_2 enters water through its interface with the atmosphere. Once dissolved, aqueous carbon dioxide ($CO_2(aq)$) reacts with water to form carbonic acid ($H_2CO_3(aq)$) via a reversible reaction.[27]

$$CO_2(aq) + H_2O \rightleftharpoons H_2CO_3(aq) \quad (2)$$

Carbonic acid (H_2CO_3) is considered non-harmful under normal environmental or physiological conditions.[28]

The Fan-Cork Experiment

This experiment involved pressurizing atmospheric air onto a cork panel using a standard fan in a non-controlled environment. The setup was conducted in April within an urban Mediterranean climatic zone, specifically on the loggia of a fourth-floor apartment, where ambient CO_2 concentrations ranged between 450 and 480 ppm. The cork panel used measured 100 cm × 70 cm × 0.5 cm. Upon directing pressurized air over the panel, CO_2 levels recorded by an Arduino-based sensor platform decreased significantly to a range of 100–150 ppm – Figure 5.

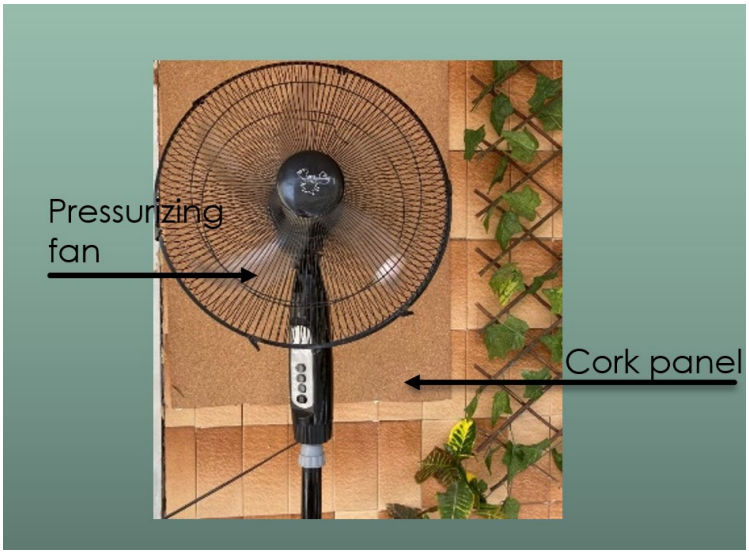

Figure 5. Setup of the Fan-Cork Experiment

Cork is a sustainable material,[29] harvested without harming the tree, as it regenerates its outer bark. It is also known for its porosity and thermal insulation properties. The observed CO_2 reduction is likely attributed to the porous structure of cork, which may facilitate the physical adsorption of CO_2, analogous to its application in wine bottles stoppers.[30] Once saturated, the cork panel can be safely buried in soil, where it naturally decomposes without disrupting the ecological balance.

Figure 6. CO_2 levels recording

The Symbiotic Living Concrete Tile

The symbiotic living concrete tile was developed through a two-stage process. Stage One served as an exploratory experiment, while Stage Two involved advanced laboratory analysis.

In Stage One, the macroalgae *Ulva lactuca* was introduced to symbiose with a concrete tile submerged in a seawater aquarium. The concrete mix was designed to perform at a compressive strength of 35 MPa in 28 days. Adjacent to the setup, an Arduino-based platform was used to monitor ambient CO_2 concentration levels, which showed a significant decrease from 450 ppm to 100–150 ppm during the experiment[31] - Figure 6.

In Stage Two, *Chlorella vulgaris*, a species of microalgae, was cultivated on the surface of an ASTM (American Society for Testing and Materials)-certified concrete finish block in dedicated laboratory conditions. The living concrete tile exhibited sustained photosynthetic activity from Day 0 through Day 18, at which point the experiment was deliberately concluded.[32]

DISCUSSION

This paper presents a novel methodology and suggests strategies to transform Maritime Greenwich into a model for green tourism by adopting "user-friendly" negative emissions technologies (NET)s. Though still exploratory, it proposes an integrated threefold approach — physical, chemical, and biological — to mitigate greenhouse gas (GHG) and other pollutants. The ultimate objective is to position Maritime Greenwich as a reference for sustainable tourism. While promising for localized remediation, these solutions require further scientific validation in the event of broader applicability.

To support targeted mitigation, sensor networks should monitor pollutants that may exceed regulatory thresholds. These values must be assessed against national/international standards to ensure compliance and effectiveness.

Among the biological approaches, the photosynthetic living concrete tile — with *Chlorella vulgaris* — offers a low-cost, low-maintenance alternative to conventional green infrastructure like trees and vegetated walls. Further potential lies in optimizing microalgae performance through species beyond *Chlorella*, which may offer enhanced carbon capture and durability.[33]

Other avenues include CO_2 absorption by cork, pending the determination of the saturation level and the testing in an advanced laboratory setup. Expanding cork forests can provide both paneling

material and carbon sinks. Likewise, remediating Thames River discharges — and extrapolating globally — can help restore freshwater flows that absorb CO_2. Though ambitious, these systemic strategies offer strong potential in climate mitigation.

CONCLUSION

The study evaluates three proposed solutions — chemical, physical, and biological — for scrubbing carbon dioxide (CO_2), the main global warming agent. The framework may also apply to other GHG such as methane (CH_4) and other pollutants like sulfur dioxide (SO_2). Similarly, the green concrete approach could extend to limestone materials that passively absorb atmospheric CO_2.

These interventions aim to localize a global challenge within Maritime Greenwich, considered a model urban module – Figure 7. Scaling such approaches across other modules — by identifying pollutants and implementing mitigation strategies — can collectively yield meaningful environmental impact. This modular, place-based methodology offers a scalable path to planetary health.

Figure 7. Scaling down a global issue

Although technically simple, the proposed solutions have profound implications. Their success requires interdisciplinary collaboration, refinement, and sustained commitment. With adequate testing, validation, and policy support, Maritime Greenwich could become a living laboratory and replicable model for climate-responsive urban transformation.

PATENT

The findings are patented under the French Law:
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THE WILD NATURE OF OUR HERITAGE: DOES HERITAGE BENEFIT THE MORE THAN HUMAN?

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INTRODUCTION

"Th[e] combination of cultivation with half-wild and wild country is one of the most precious parts of our national heritage". [1]

Writing as Britain started its recovery following the Second World War, ecologist Arthur Tansley urges us to cherish wild and half-wild country as an integral part of the nation's heritage. Nature, he sets out, is a priority and must feature in the plans to rebuild and restore the nation. This positioning of nature as part of heritage has been an endeavour ever since and has increasingly become embedded as part of heritage discourse over the last eighty years. But now, as we face the urgent global issues of climate crises, ecological destruction and biodiversity loss, Tansley's call to action is more urgent than ever.[2]

The effectiveness of current responses however is being challenged, including heritage's discourse and institutional practices.[3] As such, we are asked to develop a radically expanded notion of heritage and (re)consider its implications for the natural world and how heritage can usefully contribute to today's poly-crises.[4] By critically evaluating how we fundamentally think about, advocate for, and practice with nature in heritage settings, we can better identify the role heritage plays and how its practices may prepare us for the future.

WHY LOOK AT NATURE – AND ANIMALS – IN HERITAGE?

'Nature' typically refers to the natural world and physical environment and is commonly accepted to be home to myriad non-human animals. However, beyond these high-level ideas, what precisely comprises nature varies significantly according to cultural assumptions and political beliefs.[5] As these beliefs and assumptions fundamentally influence the possibilities we can imagine for nature, they offer a necessary and productive point of enquiry.[6]

The current paper examines, conceptually, how heritage thinks of nature and the non-human animals that inhabit it. Drawing on critical heritage studies, posthumanist theory, and ecological research, it interrogates the assumptions that underpin current heritage approaches to nature. Specifically, it asks**:** How is nature and the animals that inhabit it conceived of in heritage frameworks? What roles do animals play? And how might we reimagine heritage practices to better account for non-human animals' agency, experiences, and value?

NATURE-CULTURE DUALISM - AUTHORISED HERITAGE DISCOURSE

Authorised Heritage Discourse

Authorised Heritage Discourse (AHD), as outlined by Smith, refers to the dominant institutional and cultural narratives that define what counts as heritage and who has the authority to decide.[7] Rooted in Western, object-orientated traditions, AHD often privileges built monuments, elite histories, and expert perspectives. The emergence of critical heritage scholarship has subjected AHD to scrutiny across many dimensions.[8] One of these dimensions is the enduring 'nature versus culture' paradigm. In this paradigm distinctions are drawn between culture and nature: culture is frequently thought to be a synonym for 'human' or 'created by human'; nature is everything else out there, including the non-human animals. This framing situates humans (typically Western, male, and expert) as separate from and superior to nature, and nature and its non-human animals are essentially objects to be studied, conserved, or used in service of human values.

This anthropocentric stance is a legacy of Enlightenment enquiry which sought to identify what it is to be 'human'. What is it that makes humans distinct from nature and different from other non-human animals? Imperialist projects, preoccupied with 'progress', built on Greek and Christian ideologies to establish how (some) humans have developed specific skills or technologies that justified their supremacy above others. Abilities such as self-awareness, experiencing certain complex feelings, the use of tools all evidenced human distinctiveness and dominion over non-human animals.

Contemporary Challenge

Contemporary discourse has begun to challenge this view however[9]. Evolutionary biology[10] and animal welfare science[11] have revealed the limitations of such distinctions. Acknowledgement that prehistoric and medieval records reacquaint us with the reality that we evolved to hunt or be hunted alongside all others with whom we shared the savannah and that this co-existence was central to daily life. Cave drawings, texts and folklore illustrate clearly the entangled lives of humans and non-human animals. Influences from non-Christian religions, scientific theories around natural selection and moral concerns of animal welfare have further reunited human and non-human animals.[12]

Heritage has been slow to engage in this updated frame of reference. Lorimer illustrates that there are two key modes of engagement in relation to nature and non-human animals: one centered around notions of mastery, the other preoccupied with ideas of naturalism.[13] Mastery over nature looks to economy, science and technology as answers to issues arguably created by techno-scientific practices in the first place, embroiling us all further. Naturalism, then, holds that there was some pre-modern point in time that stands as *the* point in which nature was of preferred condition or quality. Both approaches are inadequate and can be seen across heritage frameworks which reinforce human-centred perspectives, often overlooking the agency, emotional lives, and experiences of non-human animals. As will be demonstrated below, non-human animals are still largely reduced to data points, ecological functions, or aesthetic objects, denied subjectivity and the recognition that they too have an active role in shaping heritage. This framing not only misrepresents the more-than-human world but also limits our ability to respond ethically and effectively to today's ecological crises.

FURRY EMBODIMENTS: ANIMALS IN HERITAGE

Animals turn up in several contexts within Authorised Heritage Discourse. Woven into multiple modes of heritage, animals can be found central to many practices, however the roles they play and the benefits they realise are rarely explored. With the aim of initiating this exploration, UNESCO will provide a useful site of reflection. Frequently serving as the apotheosis of AHD, UNESCO is instrumental in defining which types of heritage are considered valuable, and why. Therefore, the

following examples demonstrate how non-human animals are featured in UNESCO and therefore AHD.

Species

Animals are most explicitly present in the domain of natural heritage. For example, UNESCO[14] recognises a site of natural heritage to be of 'Outstanding Universal Value' (OUV) if it contains: "outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals" [15] or "the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation".[16]

Two-hundred and thirty-five places of OUV are recognised by UNESCO. This includes places such as Virunga National Park, in Democratic Republic of the Congo, known for providing habitat to the globally threatened mountain gorilla. Komodo National Park in Indonesia, is recognized as it is home to the Komoda dragons who live nowhere else on earth. As home to the largest population of European Bison, Białowieża Forest in Polen is inscribed on the World Heritage List. These samples of UNESCO's natural heritage sites illustrate how animals are an important feature but primarily as *a species*. That holds that an animal is of particular value when if it belongs to a species group that is involved in a certain ecological process or is an endangered, threatened species treasured for its scarcity.[17] A foundational construct in biological sciences and conservation practices, there are several definitions as to what makes up a 'species' but it is ultimately a method of classification or categorisation.

Conceiving animals as a species is problematic as it assigns a particular set of values by virtue of how they are categorized and for what purpose.[18] A concept laden with assumptions of objective worth, species classification significantly influences practices and policies that are defined at a species level. Described by Roy Scranton as 'biological arks': an extant population of animals that are viewed as representatives of the species, valued for the endangered genetic data they carry or niche ecological role they perform over and above the value they possess as individual beings[19]. What happens then when animals fall between or outside these biological groupings? What are the implications when practices prioritise a specific species category over another? Instead, Sandler proposes that animals should be considered based on "capacities, relationships, and human moral frameworks, not on biological grouping into species".[20]

Spectacle

The second role which employs animals in heritage can be considered along dimensions of spectacle. Take falconry: the traditional practice of training and flying falcons and other birds such as hawks, eagles or owls. Falconry is recognised by UNESCO through its inscription on the Representative List of the Intangible Cultural Heritage of Humanity and is considered a living human heritage in twenty-four countries.[21] Falconry practices originated over four-thousand years ago predominantly for hunting for food, the importance of falconry-as-heritage has moved more recently to focus on the relationship between birds and falconer, the historic significance of tradition as well as the practice itself. Indeed, UNESCO asserts that the universal value of the tradition includes "methods of breeding, training and caring for birds, the equipment used and the bonds between the falconer and the bird".[22]

As such then, there are many aspects that comprise the falcon's role in this form of heritage: breeding, husbandry, displaying and interacting with humans (handlers or audience). There are also multiple ways in which the role of the birds acquires significance: indicating wealth, conferring status and

privilege and assuring masculinity (dependent on the specific cultural context).[23] Ultimately, though, the key aspect of the birds' role here is to perform. Whether this performance is through acts of copulation or hunting, by successfully completing the required training or as part of displays such as historical re-enactments, their value in heritage pertains to the acts they perform in order to sustain the traditions associated with falconry. In doing so, the birds are objectified, almost serving as 'props' to the tradition who breed, learn, perch, fly or hunt to maintain the heritage practice.[24] So, while the narratives surrounding Falconry describe attitudes and infrastructures of care, collaboration and safeguarding, ultimately the animals are viewed through a human-lens. This tradition reflects the unequal and uneven relationship between human animals and non-human animals. Any inherent value of the birds as themselves and their agency is lessened, if it exists at all. The birds are essentially viewed as facilitators of human heritage which is prioritised over ethical and welfare implications. Their biological needs, flight, solitude, and predation, are deprioritised for heritage objectives.[25]

Symbol

The third role is that of animals as symbols. Animals are commonly accepted to signify different identities, such as national symbols, sporting mascots and cultural or community signifiers in a variety of heritage settings. However, some ideological and ethical questions come into sharp focus when we consider the implications for the living counterparts.

The English Lake District was recognised by UNESCO as cultural heritage in 2017.[26] A landscape of OUV due to the interactions between its geology and geography combined with a millennium of collective farming traditions based on the rearing of cattle and native breeds of sheep. As such, the traditional means of animal husbandry, managing the land or producing products such as meat, milk or wool implicate animals as central to the cultural legacies of the area. For instance, a celebrated feature of the English Lake District is Herdwick sheep. This is a local breed of sheep which evolved specifically in the challenging climate of the Lake District and is considered a key part of the area's cultural heritage. So critical are these sheep to the area that they are considered "not just a breed but a cultural icon".[27]

Here we encounter the key challenge with animals-as-symbols, succinctly articulated by Bergman: "every animal wears a double face: it is both creature and symbol, fact and analogy".[28] How does heritage balance the role of animals as itself – an individual being with life history, concerns and needs - with the role of animals as a representation, something relatively static and one-dimensional?

The risk of becoming iconic is that the animals, how they are thought about, and what they mean to humans, become highly dependent on the significance of the symbol at any point in time. Laden with politics, power and preferences, such symbols are not neutral. By ascribing a role of cultural symbol, heritage discourse and practices focus more on making meaning and interpretation and less on the daily lives of the animals themselves. Blind spots arise in which animals are viewed only in accordance with the images and associations of the symbol projected and their own challenges become blurred. This, in turn, influences the type and depth of the resulting human-animal encounters where the daily lives of the animals may be taken less seriously. Furthermore, being assigned symbolic status can distort or divert from heritage priorities. When an animal becomes an icon, it may receive disproportionate attention and resources, while less iconic but equally threatened species are neglected.[29]

WHY LOOK AT ANIMALS IN HERITAGE?

As these examples illustrate, animals are central to many forms of heritage and are included, in some shape or form, in heritage's dominant discourse. As such, they are considered valuable for what they enable or represent: "furry embodiments of heritage".[30] What is less clear though is how animals

themselves are considered, how heritage practices provision for their needs and wants, and, in turn, how such considerations can better inform heritage practices of the future. Peter Coates describes heritage as a 'species crossing concept'[31] yet exploration and understanding of the role of and benefit to animals themselves in heritage practices is limited.[32]

Heritage is a primary site of human-animal encounter and animals play a central role, yet heritage discourse continues to privilege human perspectives and purposes. As we can see above, heritage's anthropocentric lens risks turning animals into objects of heritage, reducing their roles to species, spectacle, or symbol. Such framing limits our ability to imagine more just, inclusive, and ecologically sensitive futures.

A reimagined heritage practice must begin by recognising non-human animals as sovereign beings. Beings that possess agency, lived experience, and their own ways of knowing As David Abram argues, animals are not passive presences in human worlds but active co-creators of shared heritage landscapes.[33] A suitable expanded form of heritage practice then deliberately includes and considers non-human animals for their own sake. Such an approach demands ethical, ontological, and methodological change.

CONCLUSION

Returning to Tansley's clarion call, we are reminded that the wild and half-wild beings with whom we live are not backdrops or resources. They are part of our heritage, not just in symbolic or instrumental terms, but as co-inhabitants of a shared landscape.

To meet the challenges of the poly-crises, heritage must become a radically expanded field, one of radical empathy, critical reflection, and multispecies entanglements. Only then can it serve to better prepare for the possible futures of both human and non-human life.

NOTES

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[8] Laurajane Smith, *Uses of Heritage*
[9] Rodney Harrison, "*Beyond 'Natural'*
[10] Frans de Waal, *Are We Smart Enough to Know How Smart Animals Are? (*New York: W. W. Norton & Company, 2017).
[11] Marc Bekoff, *The Emotional Lives of Animals*. (Novato, CA: New World Library, 2007).
[12] Emma Marris, *Wild Souls.*
[13] Jamie Lorimer, *Wildlife in the Anthropocene.*
[14] There are two of four criteria used by UNESCO when establishing whether a site is considered 'World Heritage'. https://whc.unesco.org/en/criteria/
[15] UNESCO. "The World Heritage Convention: Selection Criteria." UNESCO World Heritage Centre. Accessed August 7, 2025. https://whc.unesco.org/en/criteria/.
[16] UNESCO. "The World Heritage Convention: Selection Criteria."
[17] Sandler describes several value types that can be ascribed to 'species': species can have instrumental value (what they do for us); subjective final value (what we value them as); and, objective final value / inherent worth (they are meaningful in themselves, not merely for what they represent).
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HERITAGE PRESERVATION AND INTERPRETATION – A CASE STUDY OF INDIA

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INTRODUCTION

Heritage management is the delicate balance between tradition and modernity in the protection of collective memory.[1] Public places and heritage sites reflect historical influences and social change. Preservation and interpretation of heritage is crucial to protect cultural identity and the continuity of historical legacies for future generations. Interpretation turns heritage buildings into more than artifacts of the past—they create significant connections and cultural continuity. Combining conservation with education raises public debate and increases understanding of historical contexts.[2]

India, with over 3,000 protected monuments under the Archaeological Survey of India (ASI), holds a vast and diverse cultural heritage. From ancient rock-cut temples to colonial-era buildings, these sites serve as tangible links to rich and varied past.[3]

This paper analyzes the legal frameworks for heritage conservation and interpretation in India in comparison with the United Kingdom. It also evaluates the economic implications of conserving heritage through tourism, urban development, and policy-making. In particular, the research focuses on:

1. Challenges in interpreting, conserving, and preserving its cultural heritage.
2. A comparative study of legal framework of India and United Kingdom to determine best practices.
3. The economic effects of heritage management.[4]

Understanding Heritage Preservation

According to Art 1 of the 1972 World Heritage Convention, cultural heritage comprises of monuments, groups of buildings and sites.[5] Cultural heritage connects the past to the present, so that future generations can inherit the rich legacy of their forefathers. Historical preservation is not just about the physical upkeep of establishments; it is a fine balancing act between restoration, conservation, and adaptation.[6] Restoration means bringing a building back to its original form, sometimes employing traditional materials and methods, whereas conservation is about keeping old sites safe from further degradation.[7] This activity is important because modernization and urbanization have an adverse impact on old monuments and we need to keep iconic buildings sustainable. Conservation leads to intergenerational communication because this process links cultural history with present society and future innovation. Historic preservation is not merely preserving the past, it is also ensuring that history continues to inspire future generations.[8]

PUBLIC SPACES AND HERITAGE DESIGN

Public spaces and heritage design have a central contribution towards the creation of a city's identity, in terms of history and cultural importance. Public space design narrates the history of a city while providing for the needs of the modern world. These areas are sites of collective memory, where heritage exists along with contemporary urban planning to produce a distinctive cityscape that is meaningful to both local residents and tourists.[9] The regeneration of King's Cross in London is a prime example of this convergence. Formerly an industrial railway hub, the area has been regenerated as a lively mixed-use area without compromising its historical integrity. By reusing heritage buildings for commercial, residential, and public purposes, the project has been able to rejuvenate the district in a successful manner, demonstrating that historical preservation can complement urban development.[10] Aside from influencing urban looks, historical preservation also plays a great role in cultural development. Heritage sites promote social interaction, creativity, and collective identity.[11] Social factors and historical influence together enable cities to change while preserving their cultural identity.[12] By combining heritage design with modern urban planning, cities are able to preserve their past stories while cultivating innovation and sustainable development. Public spaces' conservation and careful adjustment guarantee that cities are dynamic yet strongly rooted in their history, making the lives of future generations richer.

IMPLICATIONS OF HISTORICAL PRESERVATION

Historic preservation is more than the simple retention of physical structures; it is a deep gesture of preserving our shared memory so that the experience and lessons of the past remain available to subsequent generations.

The cultural continuity is maintained through preservation, interpretation, and conservation. These come together to cross generations, making historical accounts contemporary in current discourse. Restoration of architectural monuments, documentation of traditions and reuse of heritage and their adaptation create a smooth bridge between past and present.[13] One example of the enduring cultural relevance of the city is Taj Mahal, a UNESCO World Heritage Site.[14] All tourists get emotionally moved by its beautiful architecture and the tragic love story that prompted its build. Visitors feel that the monument that has witnessed centuries of history still speaks to the soul. This reflects that heritage sites are effective vessels of history, conveying feelings beyond time and place. Historic preservation is a bridge across periods, creating a legacy of knowledge, appreciation, and creativity lasting for generations.[15]

CHALLENGES

Various types of heritage sites present unique challenges to preservation. There is often a lack of awareness of the significance of cultural heritage among the general public and policymakers, and thus insufficient support for preservation.[16] Owing to rapid urbanization, industrialization, and economic growth, cultural heritage is sometimes taken for granted and sacrificed. The race between development projects and protecting historic sites is a "race to modernization," where the preservation of cultures is considered to be an impediment to economic growth.[17]

Heritage sites are facing development pressures from urbanization, infrastructure development, and commercialization. Urbanization and development plans in a hurry can intrude upon and damage heritage sites, In India, urbanization and infrastructural developments like metro rail extensions have caused alarm over encroachments on historical sites like the Mehrauli Archaeological Park and Purana Qila in Delhi.[18] Likewise, in the UK, heritage sites like Liverpool's waterfront have encountered development issues, resulting in the city being delisted from the UNESCO World Heritage List in 2021.[19]

Funding gaps remain a major concern. India allocates 1,274 crores annually for heritage conservation, a figure that is insufficient because large no of sites require preservation.[20] Funds to maintain and conserve these sites are also often inadequate, leading to deterioration and neglect. Meanwhile, the UK government has significantly increased funding, with Historic England receiving £101.5 million in 2023 for heritage conservation projects.[21]

Climate change in the form of natural disasters, including floods, earthquakes, and fires, as well as long-term effects like rising temperatures and changed patterns of rainfall, also effect the sites. In India water logging, lack of civil amenities may lead to permanent loss to sites of cultural heritage.

The relationship between cultural heritage and tourism is a complex because it can contribute to economic development, and also lead to deterioration. Tourism, is a major source of income, but leads to physical degradation, overcrowding, because it is managed sustainably.[22]

Vandalism and illicit trafficking also threaten heritage places.[23] There is lack of cooperation among governments, local communities, international organizations, and other collaborators.[24] There is lack of education, legal policies, and other mainstreamed measures. Heritage sites get converted into dead monuments because we are not capable of applying steps which can give livingness to these places. As global systems become more interdependent, there is rise of ethnocentrism, with powerful cultures imposing their values undermining the diversity.[25]

LEGAL FRAMEWORKS AND INSTITUTIONAL ROLE IN HERITAGE CONSERVATION

Strong legal systems are critical to protect cultural heritage amidst urbanization and development pressures.[26] Legal systems present the regulatory and enforcement systems that can help to preserve and protect heritage sites for future generations.[27]

The 1970 UNESCO Convention seeks to avoid the illegal import and export. The 1972 World Heritage Convention is aimed at the preservation of cultural and natural heritage of outstanding universal value.[28] The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict provide guidelines and principles for heritage preservation that influence national legislation and policies.[29] Disputes related to cultural aspects ruled by international economic 'courts' (i.e., World Trade Organization dispute settlement panels and adjudicatory bodies and arbitral tribunals operating under investment treaties), and sets forth legal techniques that reconcile economic and cultural interests.[30]

International agencies like the United Nations Educational, Scientific and Cultural Organization (UNESCO) provide support and facilities for cultural heritage preservation and promotion and foster international cooperation and knowledge exchange in this area.

Legal Framework in India

India possesses a wide-ranging legislative framework for cultural heritage protection. These legislations authorize government organizations like the Archaeological Survey of India (ASI) to locate, declare, and preserve heritage sites, monuments, and objects. Besides this, state-level legislations and municipal bylaws fill in national legislation gaps in regulating urban development and heritage conservation.[31] In India, cultural heritage preservation is regulated by a combination of constitutional law, legislation, and administrative organizations. India has taken many steps to preserve its cultural heritage as a signatory to various accords related to it.

Constitutional provisions under Article 51 A (F) of the Constitution stress upon the obligation on the part of all Indian citizens to cherish and protect India's rich heritage.[32]Article 29 (1) accords the right of conserving particular languages, scripts, or cultures to any section of the citizens living in India.[33] The subject matter is included in the State List of the Constitution. Further, Article 49, Seventh

Schedule Entry 67 (Union List), Seventh Schedule Entry 12 (State List), List III Entry 40 (Concurrent List) in the Seventh Schedule, and Article 51A(F) address matters related to India's cultural heritage.[34] Ancient Monuments and Archaeological Sites and Remains Act (1958),[35] provides for the protection of ancient and historical monuments and archaeological sites. Offences under this act, such as construction or demolition of protected sites, are punishable by fine and imprisonment.[36] National Museum Act (1960), the Antiquities and Art Treasures Act (1972), the National Culture Fund Act (1996), and the Protection of Cultural Property in Armed Conflict Act (2010) establish guidelines for the conservation of ancient monuments, archaeological sites, and cultural property. The National Mission on Monuments and Antiquities (NMMA) also contributes to documentation and preservation of India's dense cultural heritage. Indian Treasure Trove Act of 1878 deals with artifacts and movable cultural property. These acts have been complemented by ratifying international treaties. Heritage byelaws and regulations also take care of the conservation at the local, regional, and national levels.[37] There is adoption of many heritage schemes in India to promote corporate patronage for conservation purposes.[38] National Culture Fund (NCF) provides government and private funding.[39] HRIDAY (Heritage City Development and Augmentation Yojana) combines town planning with heritage conservation so that heritage cities remain true to their past.[40] Swachh Bharat Abhiyan initiatives also involve keeping heritage areas clean.[41] The Indian National Trust for Art and Heritage (INTACH) and the Archaeological Survey of India (ASI) have important roles in research, conservation, and upkeep of ancient monuments and historical buildings, while proactively working on heritage preservation through legal, town planning, and community outreach interventions. Most of the States have enacted mandatory Acts and Rules to serve the intent of conservation and they supplement these national legislations.

Legal Framework in United Kingdom

There is a more formalized legal framework in the United Kingdom for heritage conservation under legislation like the Ancient Monuments and Archaeological Areas Act (1979)[42] that protects scheduled monuments, ensuring their preservation. Planning (Listed Buildings and Conservation Areas) Act (1990)[43] provides specific protection for buildings and areas of special architectural or historic interest. National Planning Policy Framework (NPPF), introduced in 2012 and updated in 2018, emphasizes sustainable development while protecting heritage assets. Section 16 specifically addresses conserving and enhancing the historic environment. Organizations like Historic England collaborate for community-centered initiatives. The organizations are classified into four groups: community sector (involve local groups), heritage sector (conserve cultural heritage), funding bodies (monetary aid), and research organizations. Heritage Sector Organization consist of Heritage Trust Network, Architectural Heritage Fund, The National Trust etc.[44] There are also laws at the regional level such as The Historic Environment (Wales) Act, 2016, The Planning (Listed Buildings and Conservation Areas) (Scotland) Act, 1997 etc.

UK has government-sponsored heritage conservation programs to restore and manage cultural heritage sites, like Heritage at Risk Programme, which catalogues and refurbishes historic buildings at risk.[45] Townscape Heritage Initiative, grants money for renovating historic town centers.[46] The Blue Plaque Scheme promotes public consciousness.[47]

ECONOMIC IMPACTS OF HERITAGE CONSERVATION

Cultural heritage conservation has a wide range of economic impacts, especially in the tourism industry and urban planning. Taj Mahal alone generates millions of dollars annually through ticket sales and associated tourism activities,[48] creating employment opportunities like construction, tourism, and handicrafts. Converting heritage buildings into luxury hotels in Rajasthan has boosted

local employment.[49] Heritage conservation supports local artisans and tour operators, enhancing the economic ecosystem.[50] Heritage tourism generates about 5% of India's national GDP, with more than 12 million international tourists visiting heritage locations every year.[51]

The United Kingdom also gains extensively through heritage tourism which attract millions of visitors annually, boosting local economies and supporting businesses like hotels, restaurants, and shops. Heritage sites contribute more than £31 billion into the economy every year, which pays for over 460,000 jobs.[52] Grants for heritage schemes in UK are large, and Historic England was granted £137 million in 2023,[53] while £300 million was spent by the National Lottery Heritage Fund for conservation purposes.[54] Edinburgh Old Town Regeneration (2021–2023), which was funded £10 million to restore facades and reuse projects.[55] The heritage sector in England contributed approximately £36.6 billion to the economy in 2023, including direct and indirect impacts. It is estimated that in 2022, England's heritage sector employed approximately 201,000 workers. This represents 0.72% of total employment in England.[56]

There is need for innovative heritage management practices that balance historical preservation with economic and social dividends. Through the utilization of public-private partnerships, sustainable funding mechanisms, and community participation, historic sites can continue to flourish while maintaining their cultural relevance for future generations.

Governments of both countries have initiated numerous schemes to strike a balance between economic development and preservation of heritage. India has a Heritage Scheme that provides for the sponsorship of heritage sites by corporate houses,[57] while the National Culture Fund (NCF) allows financial donations from both the public and private sectors.[58] Another scheme HRIDAY (Heritage City Development and Augmentation Yojana) combines urban planning with heritage preservation.[59] In the UK, initiatives like the Heritage at Risk Programme identify heritage sites at risk of being lost forever for restoration purposes,[60] while the National Lottery Heritage Fund has spent £300 million a year on conservation activities.[61]

Recent case studies underscore the financial effect of conservation work. For INR 250 million, the Red Fort in Delhi has been handed over to the Dalmia Bharat group for a period of 5 years under the Adopt a Heritage scheme, adding to the tourism income and local jobs.[62] In the same way, the Edinburgh Old Town Regeneration (2021–2023) in the UK had £10 million of funding allocated, which restored historic buildings successfully while improving tourism and local business.[63]

India is hindered by issues of enforcement and funding constraints, whereas the UK is supported by organized policies and significant funding. Enhancing legal protection, increasing conservation funding, and conducting strategic restoration programs can guarantee that both countries protect their historical heritage for generations to come. UNESCO conventions offer global guidelines for preservation of the heritage. In spite of these initiatives, many of the UNESCO-listed properties, like Hampi and the Elephanta Caves, do not have complete legal safeguards, leaving them exposed to urban growth and deterioration.[64]

Heritage conservation in the UK is more organized and effective than in India because of legal system variations, funding, people participation, and technology. The UK boasts strong legislation, like the Planning (Listed Buildings and Conservation Areas) Act 1990, which receives frequent amendments for its sustainability. Indian laws of 1958 are weak and lack enforcement owing to corruption and bureaucracy. The UK has huge funding and high community involvement, while India has low resources and lower public participation. The UK also uses sophisticated technologies such as digital recording and predictive conservation, while India is yet to implement them.

Notwithstanding these variations, both countries can learn from one another. India can take lessons from strong legal frameworks, sustainable funding mechanisms such as the Heritage Lottery Fund, and community-based conservation. Consequently, UK may like to appreciate focus of India on

intangible heritage like languages, music, and rituals to broaden its conservation strategy. Integration of heritage sites by India with tourism promotions provides lessons on appealing to international publics, while its low-cost preservation techniques give lessons in cost-effectiveness. Both countries can improve heritage conservation through intercultural learning and cooperation.

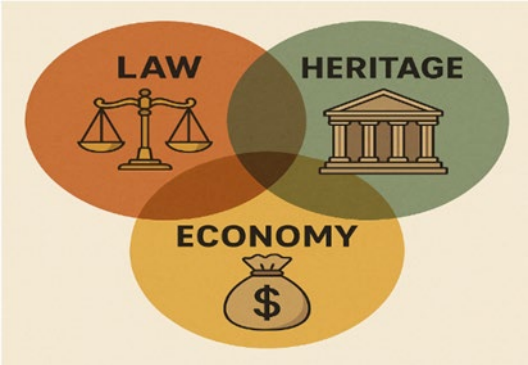

Figure 1. Intersection of Law, Heritage and Economy.

CONCLUSION

Heritage conservation deepens national identity and cultural continuity; its economic dimensions require a delicate equilibrium between conservation and modernization. Sustained funding mechanisms and popular engagement are still central to the objective of ensuring that cultural heritage is an asset to present as well as future generations. Legal systems, institutional participation, and well-supported conservation programs are necessary to maintain cultural heritage. International collaboration is also vital in confronting heritage threats, such as climate change, conflicts, and urban expansion. UNESCO's 1972 Convention for the Protection of the World Cultural and Natural Heritage, Cooperative organizations like the International Council on Monuments and Sites (ICOMOS) and Global Heritage Fund remain significant in the preservation of threatened cultural sites.

Good planning is needed to educate people and make them respectful and aware of these sites without destroying them. Effective marketing techniques are necessary to promote sustainable tourism. Financial measures such as tax relief on cultural heritage investments, public-private partnerships, and implementing a "Cultural Heritage Tax" can be proposed, along with other income generation through limited commercial use of sites, development of heritage parks, production of replicas of artifacts, cultural festivals, and the cultivation of medicinal herbs. Policy changes involve the formation of a single agency for the management of heritage, a multidisciplinary decision-making committee, a centralized inventory of heritage, and a concept of a "Heritage Zone." The overall direction should be on conserving cultural origins and identity in ways that also provide an inclusive and sustainable space for the conservation of heritage.[65]

The destiny of heritage conservation depends on combining sustainable conservation measures, technological advances, and participatory policymaking. With accelerating urbanization and environmental degradation, adaptive reuse, green restoration practices, and digital documentation have become imperative. Governments need to invest adequate funds and provide strict legal frameworks to avert the depletion of cultural resources. Education and public awareness are still important to developing a culture of appreciation for heritage. Encouraging future generations through education in heritage can give them a responsibility to preserve.

Conservation of heritage requires a balance between preservation and economic and developmental interests. Tourism, if properly managed, can play an important role in heritage financing coupled with cultural awareness. But uncontrolled commercialization is threatening site integrity. Environmental policies on sustainable tourism and ethical visitor management need to be a priority to save historical sites from excessive exploitation.

Sustainable development policies that reconcile economic, social, and environmental values are not considered appropriate for a world heritage site. Strong sustainability strategy, with the highest priority given to preserving and conserving the outstanding universal values of the site, is advocated as an alternative.

Heritage conservation is not just an act of preserving monuments; it is an undertaking to preserve our collective cultural memory and ensure the continuity of historical accounts. Globally, heritage conservation is being increasingly understood as a multidisciplinary process involving communities, governments, private agencies, and international organizations. The onus of conserving cultural heritage does not lie with conservationists and policymakers alone; it demands active engagement from society at large.

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SUSTAINING HERITAGE THROUGH CRAFT: A COLLABORATIVE MODEL FOR LONG-TERM CONSERVATION AT THE OLD ROYAL NAVAL COLLEGE

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INTRODUCTION

The United Kingdom's capacity to maintain its historic built environment is under threat. A shortage of skilled craftspeople, compounded by fragmented training provision and a disconnection between architectural education and traditional construction knowledge, is placing the future of our built heritage at risk. The challenge concerns not only the number of tradespeople who need to be trained, but also the quality of skill, the depth of experience, and the mindset required for sensitive heritage repair. Conservation demands more than technical competence; it requires judgement, patience, and a respect for historic fabric that cannot be cultivated through abbreviated training schemes.

This paper explores one possible response to the skills crisis: a collaborative, long-term model of conservation practice built on close working relationships between architects and craftspeople. It draws on over seventeen years of work by Martin Ashley Architects (MAA) at the Old Royal Naval College (ORNC) in Greenwich, a UNESCO World Heritage Site and one of the UK's most complex and high-profile heritage estates. The paper argues that continuity of personnel, mutual trust, and iterative problem-solving can produce higher-quality conservation outcomes while also supporting the transmission of craft knowledge between generations.

This paper focuses on two examples: the conservation of the Chapel pulpit and associated elements, and the refurbishment of the Nelson Room, to examine how our long-term approach fosters conservation quality, supports skills retention, and enables knowledge exchange.

THE UK HERITAGE SKILLS CRISIS

The conservation of the United Kingdom's historic building stock depends on a workforce equipped with specialist knowledge of traditional materials and techniques. Yet over the past two decades, the sector has faced an accelerating shortage of craftspeople trained to work appropriately with pre-1919 buildings (the date that is customarily used to denote the beginning of modern construction methods).[1] According to Historic England, an estimated 86,500 additional workers are needed annually between now and 2050 to maintain and retrofit England's traditional buildings.[2] While this headline figure includes general construction trades, a significant proportion must be trained in methods such as lime plastering, stone masonry, carpentry, joinery, and leadwork. The Historic England Skills Needs Analysis (2024) report notes that more than 70 percent of heritage sector employers experience

difficulty recruiting workers with appropriate skills, with carpentry and joinery ranking as the most challenging to source.[3]

The problem is compounded by the fact that almost one-third of heritage sector tradespeople are over the age of 50, with many approaching retirement. Without structured mechanisms for passing on their expertise, a significant volume of knowledge risks disappearing entirely.[4] Training provision remains fragmented and inconsistent. While organisations such as the Society for the Protection of Ancient Buildings (SPAB), the Building Crafts College, West Dean College, and the King's Foundation offer respected specialist courses, these are generally not embedded into mainstream vocational or higher education pathways. As a result, most construction apprenticeships in the UK do not equip trainees to work competently on historic buildings.[5]

Apprenticeships that focus on heritage skills are few and far between; 63 percent of respondents to Historic England's survey reported that they did not employ apprentices or trainees for work on pre-1919 buildings,[6] and only 44 percent have provided on-the-job training.[7] Beyond the problem of numbers lies the issue of quality. The decline of multi-year apprenticeships in favour of shorter, competency-based training schemes has reduced opportunities for craftspeople to acquire the depth of experience and judgement that heritage work demands.

Cultural perceptions also contribute to the workforce shortage. Heritage crafts can be perceived as niche, with limited progression and low pay, discouraging new entrants, especially younger and more diverse candidates. Gender, age, and training gaps further worsen workforce bottlenecks. Although women working exclusively on traditional buildings make up a higher percentage than those in the overall construction industry (around 13% compared to about 1%), the numbers are still low.[8]

As a result, some traditional building skills are now so scarce they appear on the Heritage Crafts Red List of Endangered Crafts. This includes key heritage skills such as brick-making, gauged brickwork, graining and marbling, vernacular slating, and flintknapping.[9] In a skills assessment by the R&R Delivery Authority traditional construction skills such as heritage glasswork, lime plastering, wood carving and carpentry, stonemasonry, traditional blacksmithing have been identified as difficult to source.[10] This deficit directly undermines our ability to protect historic buildings, increasing the risk of inappropriate repairs and loss of significance through avoidable damage.

THE ROLE OF THE ARCHITECT

The shortage of skilled craftspeople is compounded by a parallel gap in the knowledge and training of those who commission, design, and oversee conservation work. Until the early eighteenth century, building projects in England were heavily centred around the medieval craft guild system, in which the distinction between designer and maker was often fluid.[11] The emergence of a formalised architectural profession from the late eighteenth century, consolidated by the formation of the Royal Institute of British Architects (RIBA) in 1834, marked the gradual separation of 'thinking' and 'making' roles.[12]

In the architectural education that developed thereafter, traditional building crafts were largely excluded from the curriculum.[13] By the twentieth century, architecture students in the UK were being trained primarily as designers and coordinators, with limited exposure to tools, materials, or live site experience. Djabarouti and O'Flaherty's study of architectural education in the UK confirms that many graduates leave university without significant engagement with craft processes or an understanding of the time, skill, and decision-making they require.[14]

This lack of material fluency has direct consequences for conservation outcomes. Without a working knowledge of historic construction or a culture of learning from craftspeople, architects may struggle to specify appropriate repairs, assess the significance of fabric, or engage meaningfully with on-site problem-solving. The issue persists into practice, where communication remains a significant barrier,

with only 29% of architects reporting that they frequently interact with craftspeople during their work.[15]

In the UK, the title "architect" is legally protected under the Architects Act 1997, but the designation "conservation architect" is not statutory. It is a recognised professional specialism awarded through voluntary accreditation schemes such as the RIBA Conservation Register and the Architects Accredited in Building Conservation (AABC) Register. Accreditation is based on peer review of casework, professional references, and evidence of conservation knowledge, often framed by international charters such as the Venice Charter (1964) and the Burra Charter (2013).[16] However, it is important to stress that while many heritage funders and local planning authorities require the involvement of an accredited architect for significant works on listed buildings, there is no legal requirement for such accreditation.

The statutory architectural qualification pathway in the UK governed by the Architects Registration Board (ARB) does not require formal conservation training.[17] The architect is not formally educated in a particular specialism but is expected to have a wide-ranging skillset,[18] whereas the craftsperson is more specialised.[19] The interaction between these two roles is central to the success of conservation projects,[20] but current training pathways often fail to support this collaboration. The introduction of more craft-based learning into architectural education could enhance architects' understanding of materials and improve communication between architects and craftspeople.

THE OLD ROYAL NAVAL COLLEGE

The Old Royal Naval College (ORNC) in Greenwich provides a valuable case study for examining the potential of long-term architect–craftsperson collaboration. As a Grade I listed and Scheduled Monument,[21] architecturally and historically significant site, it demands a high standard of conservation, involves a wide variety of traditional materials and techniques, and operates under the constraints of an active public venue.

Located on the south bank of the River Thames, the ORNC forms the architectural centrepiece of the Maritime Greenwich World Heritage Site, designated by UNESCO in 1997 for its exceptional architecture, landscape historic royal and naval associations, and global scientific legacy.[22] Built between 1696 and 1751 as the Royal Hospital for Seamen, the complex was designed initially by Sir Christopher Wren, with later contributions by Nicholas Hawksmoor, Sir John Vanbrugh, and Thomas Ripley. Its four great courts are arranged symmetrically along a central axis facing the Thames, balancing Baroque grandeur with the practical requirements of housing thousands of naval pensioners. Since the site passed into the care of the Greenwich Foundation in 1998, it has served as a public heritage attraction, a university campus, and a venue for cultural events and filming.[23] This diversity of use presents operational challenges that complicate conservation work, including restricted access windows, strict noise controls, and the need to balance public safety with the preservation of historic fabric. The riverfront location exposes the buildings to harsh environmental conditions, accelerating the decay of stone and timber.

Martin Ashley Architects (MAA) have been continuously engaged at the ORNC for over seventeen years, working on projects that range from minor repairs to major restorations. This long engagement has allowed for the testing of different approaches to procurement and delivery. Over this period, MAA have developed a procurement and delivery model based on direct relationships with named craftspeople and small specialist firms, rather than relying solely on main contractors.

This hands-on approach has enabled a more flexible, craft-led method of delivery, where specialist skills are matched directly to the work required. The following case studies demonstrate how this model has been applied in practice at the ORNC, and how it supports high-quality conservation outcomes through close collaboration with skilled heritage practitioners.

Case Study One: The Chapel

One of the most instructive examples of long-term collaborative conservation at the ORNC is the repair and stabilisation of the Chapel pulpit, together with the associated reader's desk, lectern, and access staircases. These works illustrate both the material complexity of eighteenth-century joinery and the benefits of sustained engagement with skilled craftspeople.

The Chapel of St Peter and St Paul, located in the Queen Mary Court, was almost entirely rebuilt after a devastating fire in 1779. The reconstruction was directed by James "Athenian" Stuart, then Surveyor of Greenwich Hospital, with William Newton as Clerk of Works.[24] Among the new fittings was a triple-decker pulpit, designed in the restrained neoclassical style characteristic of Stuart's later work, and executed by the joiner James Arrow.[25] The pulpit consisted of three stacked stages: the reader's desk at the base, a lectern at mid-level, and the preaching pulpit above. The ensemble was constructed in a combination of oak, mahogany, and lime wood, with decorative veneer, Coade stone elements, and wrought iron reinforcements.

The pulpit and desk were initially placed in a commanding position at the head of the central aisle, however by the nineteenth century, liturgical reforms had reduced the functional need for such multi-level pulpits. At the ORNC, the pulpit was moved to one side of the Chapel, and the reader's desk and lectern were dismantled and placed in storage in the Queen Mary Dome above the Chapel vestibule.[26] This physical separation of elements persisted for more than a century, leaving the stored components exposed to fluctuating environmental conditions and, at times, rough handling.

MAA involvement began when concerns were raised about excessive deflection in the pulpit staircase. A close inspection revealed a complex structural history: original eighteenth-century timberwork interspersed with numerous undocumented repairs, some using inappropriate modern materials. The staircase's oak newel posts had warped subtly over time, while wrought iron reinforcement straps, possibly added in the nineteenth century, had shifted under load. The result was a noticeable "spring" in the structure when ascended, raising safety concerns.

MAA assembled a small team for the intervention, consisting of MAA's conservation architects and surveyor, SPAB Fellow joiner Sam Matthams, and conservation blacksmith Henry Rogers. The project was procured on a day-rate basis, avoiding the rigidity of a fixed-price contract and allowing space for iterative decision-making.

Figure 1. Pulpit stair at the start of repair works.

The dismantling process was undertaken with meticulous care, each component labelled and photographed before removal. Beneath later additions, we uncovered historic graffiti scratched into the pulpit's limewood panels, including the date "May 1851" and initials likely belonging to naval pensioners. These finds were documented in situ and have since been incorporated into the site's interpretative material, demonstrating how craft interventions can contribute directly to the enrichment of public understanding.

Figure 2. Historic graffiti uncovered

The structural solution involved inserting discreet oak blocking between stair treads and stringers to stiffen the assembly and fabricating bespoke mild steel restraint straps to tie the pulpit's vertical members back to the masonry wall. All insertions were reversible and fixed using traditional joinery methods or mechanical fasteners into sacrificial timber pads, ensuring no damage to original material. The works drew on Matthams' skill in hand-cut joinery and Rogers' capacity to forge custom metalwork to tolerances that respected the irregularities of historic timber.

A subsequent phase addressed the reader's desk and lectern, which had remained in fragmentary storage for decades. Matthams undertook the careful cleaning, consolidation, and partial reassembly of these components, guided by surviving fixing points, archival drawings, and tool mark analysis. The decision was made not to attempt a full reconstruction but to stabilise and display the elements as historic fragments. This approach aligns with Drury's argument that conservation should aim to reveal object's history.[27] Today, the desk and lectern form part of the Queen Mary Dome tour, offering visitors a tangible connection to the Chapel's original liturgical arrangement.

Figure 3. Elements presented in the Chapel Dome

However, the steps and balustrade leading up to the Dome required remedial works before the route could be made safe for public access. The works were undertaken by a team of masons, led by Rory Chisholm, the ORNC's in-house stonemason, in collaboration with Rogers. The scope included careful removal of the balustrade, paint analysis, and redecoration, followed by reinstallation onto repaired Portland stone steps.

The existing repairs comprised modern resin-based interventions executed with limited regard for material compatibility or workmanship. These were carefully removed and replaced with new Portland stone indents, tooled to match the historic surface character and detailing of the stair.

Case Study Two: The Nelson Room

The refurbishment and re-presentation of the Nelson Room project centred on the careful orchestration of multiple small-scale craft interventions to enhance historical legibility, material authenticity, and public accessibility within a highly sensitive commemorative space. The Nelson Room is a relatively small chamber accessed from the Upper Hall of the Painted Hall. Its significance derives not only from its architectural fabric but from its historic association with Admiral Lord Nelson: following his death at the Battle of Trafalgar in 1805, Nelson's body was brought to Greenwich and lay in state here for several days prior to the formal lying-in-state in the Painted Hall and subsequent burial at St Paul's Cathedral.[28]

MAA were appointed to develop proposals for the conservation and re-presentation of the room in 2021. One of the most materially complex aspects of the project concerned the stone floor. Over time, the Nelson Room floor had become a patchwork of materials, including original eighteenth-century Öland[29] stone alongside later insertions of Portland, Purbeck, York stone, and other modern replacements. Many historic slabs were cracked or damaged, while visually intrusive modern stones disrupted the coherence of the space.

Figure 4. Damaged and mis-matched stone floor in the Nelson Room before works

Working closely again with the in-house stonemason Chisholm, as well as masons Jonathan Hunt and Jonathan Williams, MAA developed a strategy that prioritised retention and repair of original fabric wherever possible. For original historic slabs that were cracked or damaged but still viable, masons performed repairs in situ to maintain the primacy of the historic material, while inappropriate modern replacements were carefully lifted and replaced with new Öland stone sourced from the same quarry as the original material. This approach required nuanced judgement on a stone-by-stone basis and relied on the mason's experience in matching tooling, surface finish, and subtle colour variation to integrate new work without falsifying the historic floor. As with the Chapel project, this work benefited from continuity of personnel and the ability to adapt decisions as the floor was progressively uncovered.

Stone conservation extended beyond the floor to include careful cleaning and minor repairs to the Portland stone plinth supporting the Nelson maquette (a scale copy of the sculpture that stands at the top of Nelson's Column in Trafalgar Square), the door surrounds, and the vault springing strings at ceiling level. These interventions were deliberately modest, focused on stabilisation and legibility rather than restoration to an imagined 'original' state.

Figure 5. Nelson Room before works

A newly commissioned figurative bronze relief plaque by Anthony Dufort was mounted on the Nelson maquette's stone plinth, using existing fixing points to avoid additional damage to historic fabric. The bronze work required precision casting and patination to achieve a surface that harmonised with the surrounding stone and sculpture.

Figure 6. Nelson Room during works.

New furniture elements were introduced sparingly and with clear reference to historic precedent. Two bespoke oak benches were designed to sit beneath the east and west windows, providing visitors with a place to pause and reflect. Crafted in polished oak, the benches draw on nineteenth-century naval seating found elsewhere at ORNC, while being subtly adapted to avoid obstructing historic window openings. The benches incorporate carved heraldic devices of Admiral Lord Nelson and Vice Admiral Sir Donald Gosling, alongside inscribed dedications. Their production involved close collaboration between architects, joiners, carvers, and metalworkers, particularly in the detailing of polychrome and gilded elements and brass inscriptions. Heating coils or low-level column radiators were discreetly integrated beneath the benches, replacing visually intrusive modern fan convectors and demonstrating how environmental upgrades can be achieved through careful coordination between crafts.

Figure 7. Nelson Room after works are completed.

Reflections and Implications

These case studies illustrate how long-term collaboration with named craftspeople supports quality, sustainability, and skill retention. This approach has been developed over approximately seven to eight years. The shift to working directly with named craftspeople has involved an iterative process of identifying and trialling individuals, not all of whom demonstrated the specialist skills or conservation mindset required for work to historic fabric. Over time, MAA have established a long-term relationship with approximately 12-15 craftspeople, that spans multiple projects.

This model can be more economical for clients than procurement through a main contractor, while also enabling fairer remuneration for craftspeople. Continuity of personnel supports more consistent workmanship and a cumulative understanding of the building, encouraging decisions that prioritise long-term quality over short-term expediency. Day-rate engagement, rather than fixed-price or piecework arrangements, further reduces pressure to accelerate works at the expense of careful execution, relying instead on mutual trust and collaborative problem-solving as site conditions emerge.

While this approach increases the administrative and coordination burden on the architectural team, it is considered justified by the quality outcomes achieved and the efficient use of limited resources, particularly for charitable clients.

Importantly, the model also serves as an informal and effective training environment. MAA's own staff gain hands-on exposure to traditional methods, improving their material fluency and ability to communicate with craftspeople. This bridges, in a modest but tangible way, the gap in architectural education discussed earlier.

CONCLUSION

The UK's heritage skills crisis is not merely a matter of recruitment numbers. It is a challenge of quality, mindset, and the preservation of tacit knowledge that cannot be codified in manuals or short courses. The case studies of the Chapel pulpit and the Nelson Room at the Old Royal Naval College demonstrates that these qualities can be fostered through a deliberate, long-term approach to collaboration between architects and craftspeople.

The ORNC is a demanding working environment: it combines high heritage significance, complex operational constraints, and a continuous need for skilled repair. In this context, sustained relationships with trusted craftspeople have allowed for more sensitive repairs, more efficient use of limited charitable resources, and the retention of site-specific knowledge that might otherwise have been lost. As Feilden notes, "the best further safeguard for the future is to place the building under the continuous care of someone like a […] surveyor, preferably assisted by a permanent small staff of skilled craftsmen who learn to know the structure intimately."[30]

Such a model cannot replace systemic solutions, such as investment in training, greater diversity in recruitment, and the integration of craft into architectural education remain essential. But as a practice-level strategy, long-term craft–architect collaboration offers a viable and demonstrably effective way to sustain both the quality of conservation work and the living tradition of heritage craft.

NOTES

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THE PRIVATE-PUBLIC HIERARCHY IN HISTORIC CAIRO. THE CASE STUDY OF MAHMOUD MUHARRAM MOSQUE

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INTRODUCTION

The Mosque of Mahmoud Muharram is located on the corner where the blind alley Darb al-Massmat meets the main street, Shari' alJammaliyyah, a major north-south thoroughfare of Fatimid Cairo[1] (Figure 1). In al-Jammaliyyah,[2] which was described as *un rendez-vous de mosquees*,[3] the mosque of Mahmoud Muharram seems like a small and young historic building with insignificant aesthetic, historic or functional values. Three significant historic mosques are located in a close proximity of the mosque: the Mosque of Marzouq al-Ahmadi, the Mosque and Mausoleum of Tatar al-Hijaziyyah and the Mosque of Jamal al-Din al-Ustadar. The latter two mosques are much older than the Mosque of Mahmoud Muharram.

However, once understood in socio-cultural context, the mosque proves to have many layers of values, meanings and relationships. The relationship of the mosque with Wakalat Dhulfiqar and al-Musaferkhanah Palace within the historic urban fabric manifests a clear private-public hierarchy. Also, the relationship of the mosque with the alleyway Darb al-Masmat gives it a social meaning. These relationships and meanings are reflected in the location of the mosque and in its architectural design. Observations and analysis of the mosque within the urban fabric and its socio-cultural context are a case study for the private-public hierarchy in Historic Cairo.[4]

Understanding the private-public hierarchy and its impact on the morphology of the historic urban fabric is essential for taking the right architectural and urban conservation and management decisions. Unfortunately, the mosque and other buildings and urban elements of Historic Cairo have suffered a great loss of integrity and significance due to the absence of the intangible dimensions of the built heritage from conservation and management decisions. The private-public hierarchy is a case in point.

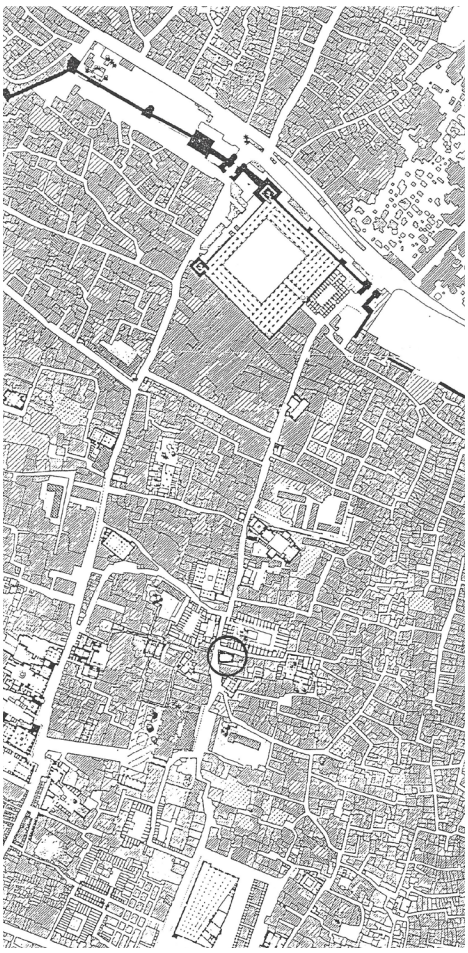

Figure 1. The location of the Mosque of Mahmoud Muharram.

HISTORIC AND URBAN CONTEXT

Mahmoud Muharram, whom the mosque is named after, was a self-made wealthy merchant and a public figure who lived in Cairo around the end of the 18th century AD. He made his fortune from the coffee trade between Egypt and Hijaz.[5] The boom of coffee trade in the seventeenth century added to his fortune and social status.[6] As *Shahbandar al-Tuggar* (chief merchant) of coffee in Cairo, Mahmoud Muharram ran his business from Wakalat (caravanserai) Dhulfiqar (built in 1673 AD), which was the major warehouse for coffee trade in Egypt at the time.[7] Near Wakalatt Dhulfiqar, Mahmoud Muharram built in Darb al-Masmat his magnificent palace, which was later used by the Khedives of Egypt as a royal guesthouse. Since then, the palace was known as al-Musaferkhanah (the guesthouse). Mahmoud Muharram built a mosque (in 1792 AD),[8] which was named after him and situated near both Wakalatt Dhulfiqar and al-Musaferkhanah Palace (Figure 2).

According to the *waqfiyyah* (endowment deed) by Mahmoud Muharram,[9] the building site of the mosque was made up from the purchase of four shops, a vaulted passageway, two plots of empty land and a *zawiya* (a small place for prayers and religious meditation). The time and money which were spent to patch up all these small bits of land and parts of buildings so that to produce a site for constructing the mosque express the determination of Mahmoud Muharram to construct his mosque close to Wakalat Dhulfiqar and al-Musaferkhanah Palace.

The *waqfiyyah* begins with a detailed architectural description of the mosque, the sequence of its construction and goes in detail through the legal, administrative and functional aspects of the mosque.

Then, it describes al-Musaferkhana Palace in similar detail. Towards the end of the *waqfiyyah* and before the legal signatures at the end of the legal text, the mosque is mentioned again with regards to the financial aspects of managing and maintaining the building. This indicates either that both the mosque and the palace were constructed at the same time, but for a reason unknown to us, the completion of the mosque was delayed, or that the choice of the building sites and the planning were done for both buildings at the same time, but the palace was executed first. In either case, we have two buildings, one is religious, and the other is residential. Both were built in relation to each other, and in relation to a third building of commercial use, Wakalat Dhulfiqar.

The relationship of these three buildings offers a great opportunity to reflect on the urban characteristics of the mosque as opposed to the Wakala and the palace, pertaining to their functions and their place on the private-public hierarchy within the urban fabric as well as the social and cultural roles they played. The architectural design of the mosque and the other two buildings also merits reflection, analysis and comparison.

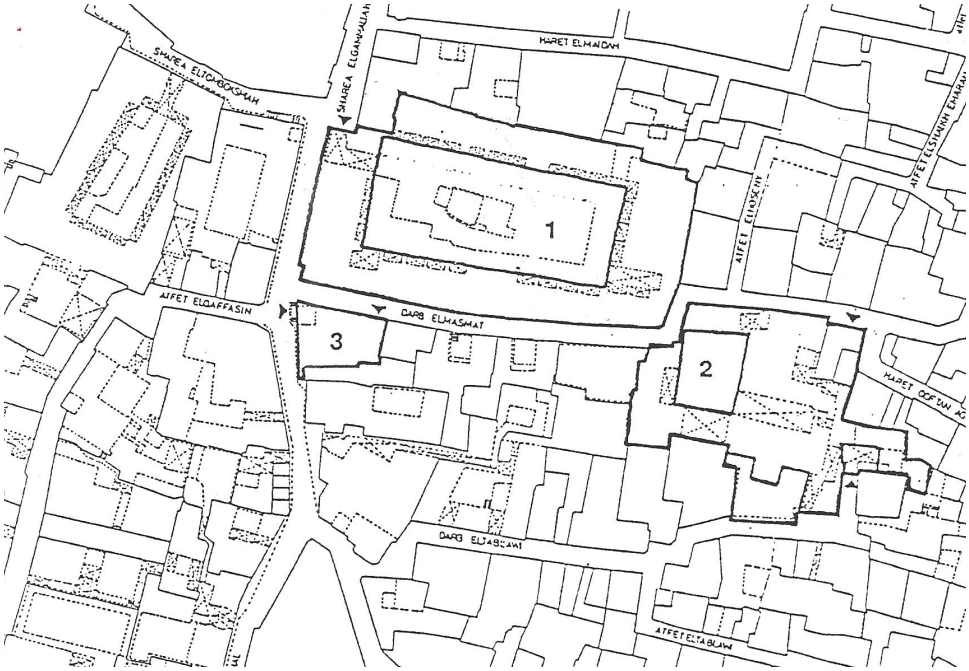

Figure 2. The location of Wakalat Dhulfiqar (1) and al-Musaferkhana Palace (2) in relation to the Mosque of Mahmoud Muharram (3). Arrows show the location of entrances to the three buildings.

THE PRIVATE-PUBLIC HIERARCHY

Observations and analysis of the location of the three buildings in relation to the urban fabric of the walled city of Fatimid Cairo manifests a clear private-public hierarchy (Figures 1 & 2). The Wakala was a commercial building of a national if not international importance. It was a public building receiving caravans and merchants from the rest of Egypt, al-Hijaz and beyond. This explains its location being the nearest of the three buildings to the northern walls of the city. Moreover, the Wakala's entrance is located on the main street Shari' al-Jammaliyyah and is situated on the movement axis of the street. It is also in the nearest possible location to Shari' al-Tombokshiyyah, the street perpendicular to Shari' al-Jammaliyyah, connecting it with the main north-south spine of Cairo, Shari' al-Mu'izz (Figures 1, 2 & 6).

On the other hand, the palace, as a residence for one family, was a private building. Its location is in the depth of the dead-ended alleyway of Darb al-Masmat, the farthest possible from the busy street

Shari' al-Jammaliyyah. The palace had two entrances.[10] The first is exclusively for the residents of the palace at the farthest end of the quiet and blind alleyway Darb al-Tablawy, so that nobody would reach this entrance unless they know it and intend to use it (i.e. one of the residents or workers at the palace). The second entrance is less private. It is the entrance guests should use. Thus, it is the nearer of the two entrances to Wakalat Dhulfiqar and Mahmoud Muharram Mosque. However, it is situated at far from the main street in a recess, which makes it difficult to notice for uninvited strangers (Figure 2).

Although the Mahmoud Muharram Mosque was too small to play a significant role on the scale of the city of Cairo, the mosque was semi-public as it was accessible for anyone passing through Shari' al-Jammaliyyah, which was a major thoroughfare. It was also semi-private pertaining to its high communal importance and charitable function for the residents of Darb al-Masmat. The mosque was Mahmoud Muharram's contribution to his residential neighborhood around al-Musaferkhanah Palace and to his business community at Wakalat Dhulfiqar. This duality of semi-public and semi-private roles of the mosque were reflected in its architecture. The main façade and entrance of the mosque expressed its semi-public role as they are highly decorated and situated on the main street Shari' al-Jammaliyyah. The side façade and entrance manifested the building's semi-private role as the religious and social hub for Darb al-Masmat community. They are not decorated and are situated on the quiet dead-ended alleyway, Darb al-Masmat (Figures 2, 3, 4, 8 & 9).

Figure 3. The minaret and main facade of the mosque from Shari' al-Jammaliyyah looking northwards

Figure 4. The minaret and side entrance of the mosque from Darb al-Masmat

SOCIAL AND CULTURAL ROLES

It is worth observing that the minaret and the main entrance of the mosque are highly decorated and situated in a way so that to be best visible from both southern and northern directions of Shari' al-Jammaliyyah. They are also in the focal point for both Darb al-Masmat and Atfet al-Qaffasin (Figures 2, 3 & 4). Most probably the reason why the minaret is not axially aligned with the main entrance is to place it in the focal point of Atfet al-Qaffasin (Figure 5). This reflects the great social and cultural roles the mosque played, and its symbolic importance as an urban landmark. They are on one end of the private-public spectrum by being public. On the other end is the entrance of the palace on Darb al-Tablawy, which is plain without any decorations and only visible for someone who is a few inches away from it. Even the second and less-private entrance of the palace, which is located on Darb al-Masmat, and highly decorated, is situated in a recess in a plain façade. A passer-by heading towards the dead end of Darb al-Masmat would notice the entrance only if he looked towards it while passing in front of the recess.

Wakalat Dhulfiqar, although a public building, is socially and culturally less important than the mosque. But it is naturally more significant to the public than the palace. The entrance to the Wakala is modestly decorated. However, it is highly visible and accessible at a focal point to the main street, Shari' al-Jammaliyyah, from its northern part (Figure 6).

Figure 5. The minaret and main entrance of the mosque from Atefet al-Qaffasin

Figure 6. The entrance to Wakalat Dhulfiqar as seen from Shar' al-Jammaliyyah looking southwards

COMMERCIAL VALUE OF THE LOCATION

The facades of both the Wakala and the mosque on Shari' al-Jammaliyyah incorporate a row of shops. It is the location, and not the function, of a building which defines whether it should have include shops on the street level of its façade. For the same reason, the lack of shops in the two facades of the palace and the side façade of the mosque is due to the location of these façades on side dead-ended alleyways and not due to their private and semi-private roles.[11] This phenomenon, observed by Meineke-Berg and other scholars, is a prevailing rule which characterized the urban cityscape of Historic Cairo for many centuries.[12]

THE COMMUNAL VALUE OF THE LOCATION

The Qur'an and Sunna[13] warn that markets are places where Muslims are most likely to forget Allah[14] and to defy Islamic ethical rules and manners. Therefore, many markets and trading places have mosques built within or next to them so that the faithful may remember Allah and observe His

instructions[15] during their trading activities.[16] This might have been Mahmoud Muharram's reason for building his mosque close to Wakalat Dhulfiqar.

The distance between the mosque and al-Musaferkhana Palace can also be explained from the Qur'an and Sunna. To the people of Darb al-Masmat, the location of the palace in their alleyway is fortunate because it offers great employment opportunities by Mahmoud Muharram either in the palace or in the Wakala. It also means that Muharram's almsgiving and other charitable activities will go first to the poor of Darb al-Masmat, which follows the Islamic instructions to help those who are nearest, including both neighbors and blood relatives before helping others. The mosque was the place where Mahmoud Muharram could contribute to the social, economic and cultural life of Darb al-Masmat, including almsgiving and charitable contributions. Had the mosque been nearer to the palace, it would have been less modest and too patronizing. On the other hand, had it been built outside Darb al-Masmat, it would have been too far to contribute to the lives of the neighbors of Mahmoud Muharram (fig. 2).

ARCHITECTURAL DESIGN

The architectural design of the mosque is a trade-off between two constraints, the first is the functional requirements of the mosque and the second is the limitations of the site. The major site limitations are its size, the existing structures before constructing the mosque and the streets' directions and alignments (this includes the necessity to incorporate shops on the façade on the main street). Whereas the main functional requirement of the mosque is a spacious praying room, directed towards the qibla,[17] with a degree of soft lighting, sufficient air circulation and tranquility. Ideally these requirements are met by opening the prayer room on an internal courtyard. Other requirements are the relevant services such as the ablution place, the accommodation for the students who lived and studied in the mosque and the storage spaces needed for different items such as books, tools and materials of housekeeping.[18] In addition, the design of the exterior of the building or parts of it, such as the minaret, the main façade and the main entrance, should function as an urban landmark.

The design problems of the mosque were addressed carefully. The small area of the plot of land did not permit a courtyard. Tranquility of the praying room was achieved by raising it above the street level (Figure 7). The ground floor accommodated different services as well as a row of shops on the street level of the main facade. This also permitted the previously existing structures to be incorporated in the ground floor plan.[19] The difference between the main street alignment and the direction of Makkah was absorbed in the thickness of the wall of the main façade and the qibla wall.[20]

The lack of an internal courtyard meant that an alternative solution was needed to create a pleasant microclimate in the praying room. This was achieved by the windcatcher[21] and the upper-level windows, which introduced air circulation and subtle lighting to the interior. The stairs and corridors needed for the movement between the different levels and entrances of the building are all housed in a strip parallel to Darb Al-Masmat.[22] The strip of circulation elements offered a recess of the praying room from the nearby southern wall of Wakalat Dulfiqar, allowing more light in. It is also interesting to observe that this strip of stairs and corridors creates air turbulence for the northern wind just in front of the wind catcher making it more effective. The only window in the northern wall of the praying room is essential for the movement of the air coming in from the windcatcher (Figure 7).

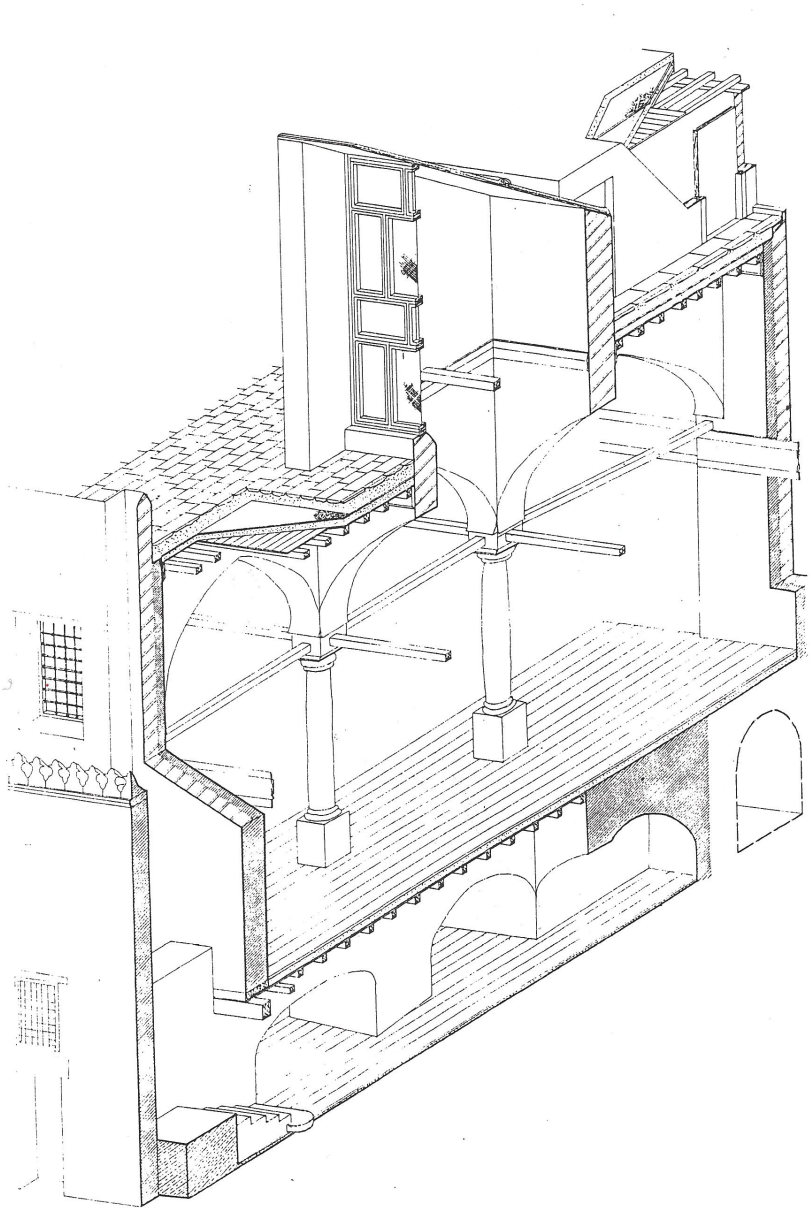

Figure 7. Axonometry of a north-south section, looking eastwards. It shows the different architectural design solutions implemented in the mosque to substitute the absence of a courtyard

The main façade as well as the minaret are designed to establish the mosque of Mahmoud Muharram as an imposing urban landmark in this part of al-Jammaliyyah. The attention paid in decorating the main façade on Shari' al-Jammaliyyah as opposed to the plain secondary façade on Darb Al-Masmat expresses a conscious effort to present the mosque as a landmark for the passersbys in the main thoroughfare of Shari' al-Jammaliyyah (Figures 8 & 9). This view of the mosque was impressive enough that W. S. S. Tyrwhitt painted it around the turn of the twentieth century and gave it the title "a street near EL GAMALIYEH"[23] (Figure 10).

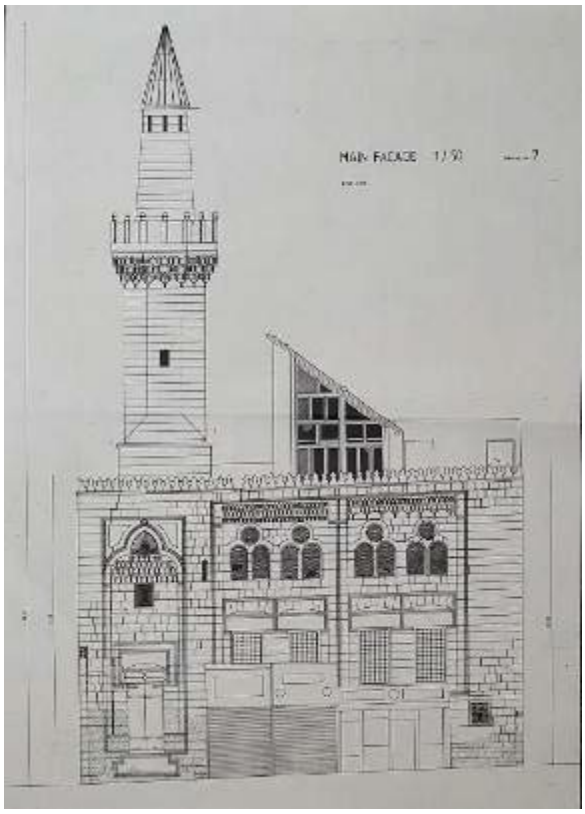

Figure 8. The main façade of the mosque on Shari' al-Jammaliyyah

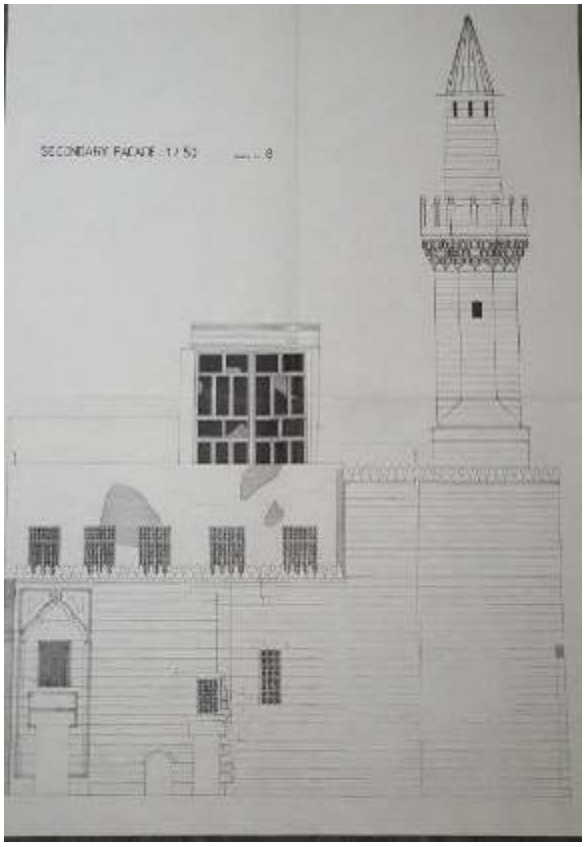

Figure 9. The side façade of the mosque on Darb al-Masmat

Figure 10. "a street near EL GAMALIYEH" by W. S. S. Tyrwhitt

LOSS OF VALUES

The understanding of historic buildings within their urban and socio-cultural contexts as well as the understanding of the design philosophy of their architecture are essential for informed conservation strategies, policies and decisions. The case of the Mosque of Mahmoud Muharram is unfortunately an example of the loss of values due to uninformed conservation policies and practices in Historic Cairo. The mosque has been listed and restored with no attention to its associations with Wakalat Dhulfiqar and al-Musaferkhana Palace. This lack of holistic understanding undermines its significance and meaning. A restoration project was executed for the mosque. On the other hand, fire had reduced the palace to ruins in the 1990s. As for the Wakala, it has been neglected and is currently in a critical state of dilapidation with partial collapse of some parts and the shoring up of other parts. Figure 6 shows the shoring up of the western façade of the Wakala on Shari' al-Jammaliyyah, which has been in place for more than two decades with no known conservation plans for the building.

Another loss of value is the high-rise buildings that replaced the older buildings in the immediate context of the mosque (Figures 3 & 4). The Mosque of Mahmoud Muharram stands today dwarfed by the modern buildings around it. The minaret is no longer a landmark that one day dominated the skyline of the area.

CONCLUSION

It is not unusual for an architect or a town planner when studying the urban values and the catchment area of a mosque, such as the Mosque of Mahmoud Muharram, to start by drawing a circle, the center of which is the mosque. Such approach may lead to the false conclusion that there is no functional need for the mosque since there are so many other mosques that fall within the zone that the mosque is supposed to serve. The catchment area of the Mosque of Mahmoud Muharram is Darb al-Masmat and Wakalat Dhulfiqar at the time when the Wakala was functioning as the center for the wholesale trade of coffee in Cairo and when al-Musaferkhana Palace was lived in and when it played a significant socio-economic role in Darb al-Masmat. The understanding of the intangible aspects of the historic urban fabric and the functional, social, cultural and historic relationships between the historic buildings within the urban context are essential for the full understanding of each of these buildings.

The danger of misunderstanding the urban and architectural qualities of a historic building is not only the danger of being bulldozed in favor of a more desired or economically feasible building. But also, many valid lessons could be learned from the long and continuous urban tradition of Historic Cairo. Meanings, values and lessons are missed due to the loss of values of the Mosque of Mahmoud Muharram in relation to its urban context as well as to its relationship with Wakalat Dhulfiqar and al-Musaferkhanah Palace.

The case of Mahmoud Muharram Mosque shows that the choice of site for a particular building is impacted by the position of the building in the private-public hierarchy, as well as the social and cultural roles it plays within its urban environment. A historic building's choice of site might have influenced various aspects of its final architectural design and urban characteristics. There are unwritten rules for some locations that influenced the historic urban fabric in Historic Cairo. For example, the location of high commercial potential dictates that most buildings in this location often incorporated commercial facilities. Other examples include the qibla orientation vis a vis direction of streets for religious buildings and efforts to create pleasant microclimate indoors.

A crucial rule for locations of historic buildings within the fabric of Historic Cairo is the place of a building on the private-public hierarchy within the city, the immediate urban context and related buildings and activities.

NOTES

[1] Fatimid Cairo is the walled city founded by the Fatimids as their capital in the tenth century.
[2] Al-Jammaliyyah is the name of the urban area around al-Jammaliyyah Street. Also, the side alleyway Darb al-Masmat also gives its name to the neighborhood (*hara*).
[3] The French for "a meeting place of mosques": A. Rone, *L'Egypte a petites journees,* 2nd ed. (Paris : no publisher, 1910), 352.
[4] Historic Cairo is a World Heritage Site. It is inscribed on the World Heritage List in 1979 based on criteria (i), (v) and (vi).
[5] Hijaz is the wetern province of the present Kingdon of Saudi Arabia, where the holy cities of Makkah and Madina are located. Abdulrahman Al-Jabariti. *'Aja'b al-Athar fi al-Tarajim wa al-Akhbar* (Cairo: Bulaq Press,1880), 255.
[6] Andre Reymond. *Cairo. City of History.* Translated by Willard Wood. Cairo: AUC Press, 2000.
[7] Abdulrahman Abdul Tawwab and Andre Raymond. "La waqfiyya de Mustafa Ga'far". Annals Islamologiques. (TOME XI 1973): 182.
[8] According to the inscription above the main door of the mosque.
[9] The manuscript is unpublished (with the exception of some quotes concerning the palace). It is kept under number 1465 in the index book of the archives of the Ministry of Awqaf in Cairo.
[10] Raymond A. Maury, F. Revault and Mona Zakarya. *Palais et Maisons du Cairo II : Epoque Ottomoan, XVIe – XVIIe Siecle. (*Paris: Editions du Centre National de la Recherche Scientifique, 1983), 223-236.
[11] Reflecting on the shops in the facades of the Palace of Bashtak al-Naseri, which is located in the main spine of Cairo, Shari' al-Mu'izz. V. Meinecke-Berg wrote: "No matter what function a building had, be it religious or secular, it is the location that requires particular public utilities to be incorporated into the architecture".
[12] V. Meineke-Berg. "Outline of the urban development of Cairo". In *Islamic Cairo. Architectural conservation and urban development of historic centre,* edited by M. Meineke (London: ARAP, 1981), 8-13.
[13] Sunna is the traditions by Prophet Mohammed.
[14] "The Prophet once approached a group of Muslims while selling and buying from each other. He said: O merchants! They all looked to him. He said: Merchants will stand in the Hereafter as mischievous except the pious ones who fear Allah." Narrated by Tirmdhi. Mentioned in *Al-Taghrib wa al-tarhib*, vol. 3, p. 29. For further discussion on the influence of the Qur'an and Sunna on urban and architectural characteristics (The Organization of Islamic Capitals and Cities, 1988).
[15] Abdullah Yusuf Ali. *The meaning of the Glorious Qur'an*. (London: Nadim & Co., 1975), 62:10.
[16] Abdullah Yusuf Ali. *The meaning of the Glorious Qur'an*. (London: Nadim & Co., 1975), 62: 9-10: "O ye who believe! When the call is proclaimed to prayer on Friday, hasten earnestly to the Remembrance of Allah, and leave off business, that is best for you if ye but know, and when Prayer is finished, then may ye disperse through the land, and seek of the Bounty of Allah; and remember Allah frequently that ye may prosper."
[17] Direction towards Makkah, which is the direction for Muslim prayers around the world.
[18] Information on these materials are mentioned in the waqfiyyah. They include oil for lighting lamps, spare lamps to replace broken glass, extra reed mats as well as cleaning tools and materials.
[19] The structure and architectural arrangements of the ground floor plan suggest that some of the existing structures (or at least their foundations) were incorporated in the arrangement of the ground floor plan of the mosque. (Hossam Mahdy, "The Mosque of Mahmoud Muharram in Cairo, a conservation study". Unpublished M.Sc. thesis submitted to the Catholic University of Louvain. 1991).
[20] Not very successfully done if compared with some of the brilliant solutions found in Cairene Mamluk religious buildings. (Kessler, Christel, M. "Mecca-Oriented Urban Architecture. Mamluk Cairo: The Madrasa-Mausoleum of Sultan Sha'ban II," In *Quest of an Islamic Humanism. Arabic and Islamic Studies in memory of Mohamed al-Nowaihi*, edited by Green, A. H, 99-198. Cairo: AUC Pres, 1984).
[21] As in many other historic building in Cairo, the windcatcher is directed toward the north and north west to catch the preferred cool wind.
[22] This design solution is seen in many other small Ottoman mosques in Cairo. Sometimes to address a different problem of entering the mosque from the qibla wall. For further discussion (Pauty, E. "L'architecture au Caire depuis la conquete Ottomane (vue d'ensemble)". In *Bulletin de l'institute Francais d'archeologie orientale*. TOME XXXVI. (1936): 1-62).
[23] The painting was published in (Margologough, D. *Cairo, Jerusalem & Damascus, three Egyptian cities of the Egyptian sultans*. London: Chatto & Windus, 1907: 86).

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FROM A LABEL AND A DISCOURSE TO A PHENOMENON: CONCEPTUALISING HERITAGE THROUGH THE TRIAD OF MEMORY-HERITAGE-HISTORY FROM THE PERSPECTIVE OF MACAU

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INTRODUCTION

Heritage has been understood as a label for items of historical and cultural significance, which allows consequent harnesses in economic and educational terms. Concurrently, critical heritage scholars comprehend heritage as a discourse that legitimises contemporary historical narratives, critiquing it as being at the service of power and the market. In the contestation over who is legitimate to speak on behalf of a "heritagised" item, and between the communities' memory and the authorised history, a mode of understanding and practising the past in the present is revealed, where memory and history are intermingled, allowing, in turn, subsequent memory (re)making and history (re)writing. In this article, complementing a philosophical discussion of the terms "memory" and "history" with a brief case study from Macau, I propose that such a mode corresponds to the "phenomenon of heritage", emergent in continuous practice of, and ongoing relation between, an event or item and a specific group of people through time. "Heritage" becomes the in-between of memory and history. Such a triad of memory-heritage-history not only affords us a theoretical tool to delve into how people acknowledge a past event in their contemporary time, but also sheds light on how heritage can be better conserved in a sustainable and human way.

UNDERSTANDING AND PRACTISING THE PAST

Conceptualising "heritage"

Heritage, in our daily parlance, refers to those items and practices that have stood the test of time and been passed down to our present. With its implied preceding adjective "cultural", heritage is also related to the questions of identity, locality, even economic value, among others.[1] While our current understanding of heritage is very much informed by conventions and charters issued by organisations like UNESCO and ICOMOS, the idea of "heritage" is no modern phenomenon. David Harvey demonstrates, for example, how, even in the pre-modern period, precedent events could be rebranded and reused in a specific era to serve a particular polity.[2] Françoise Choay, focusing on architectural structures, distinguishes the ideas of "monument" and "historical monument", where the former, a practice in the Antiquities, refers to those establishments specifically built for elicitation of the living memory of a specific event, and the latter, emerging from the Renaissance, entertains the designation

of values such as power, grandeur, beauty and, eventually, national pride, onto these same monuments. Historical monuments, therefore, have been viewed as "witnesses of history" in the 19th century,[3] an ideal that has been adopted by UNESCO's *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972).[4]

In enlisting natural and cultural heritage around the world, we are also *labelling* places that are deemed to show "outstanding universal values",[5] that have passed through the expertising and no less administrative test of the nomination process. The idea of "heritage" has been conceptually revised and bureaucratically expanded, eventually including also the category of "intangible cultural heritage" in 2003.[6]

Being labelled as "heritage", albeit the original intention to protect heritage from destruction and disappearance,[7] heritage has nevertheless been instrumentalised in different areas. Noteworthy is to see how heritage has been harnessed in the name of tourism development. While some scholars have pointed out the benefits of heritage tourism to the local communities and regional economies,[8] others lament the subsumption of heritage management under the category of "cultural assets", complicit in the logic of the market.[9] Even the mere label of "heritage" itself can capitalise items and events into cultural goods,[10] undermining their organic relationship with the local communities, shedding their "authenticity",[11] and debasing them into "platitudes".[12]

The rendering of heritage in tourism and economy is not the sole *discourse* of heritage, for it also entertains a political dimension, put forward by critical heritage scholars like Laurajane Smith in her "Authorised Heritage Discourse" (AHD). The selection and sustenance—and the implied negation and negligence—of items as heritage highlights the educative-ness of heritage on behalf of an orthodox understanding of identity and, thus, of a sanctioned past, as well as the stewardship of heritage in the safe hands of those who are capable of taking care of and protecting the heritage.[13] Heritage, therefore, is *discoursed* in a sense that it serves a grand narrative to control the reading of the past and to legitimize its worldview.[14] Before Smith, David Lowenthal has also criticized that all heritage is "fabricated", aiming at "updating" how we see our past, "jumbling" different past events together in order to form genealogies to a glorious past.[15]

Indeed, that heritage can be narrated with some significance rests on the social fabrics of a given time and space—that is precisely what Choay and Harvey have shown in how practices and architectures of earlier times can be rethought in different epochs.[16] Smith herself also reflects that heritage is a "cultural process that engages with acts of remembering[...]to understand and engage with the present", one that entails "what goes on".[17] Concurrently, heritage is also a ground of conflict and negotiation, where voices of different stakeholders compete to be heard, a "constitutive social process".[18] Picking up Smith's idea of process, we understand further that any label or discourse that results from "heritagisation", understood as the making-of of any items deemed to be "heritage", has its own context and initiation, and argue that the incessant relation of the past and the present that allows certain item to "reach" today is at work behind every heritagisation, the kind of relation that we will call the *phenomenon* of heritage.[19]

The conflation of memory and history in the phenomenon of heritage

Etymologically, we understand *hereditas* as the succession of assets from a deceased person, and *patrimonium* as those one received from a father idealised as the head of a family. In line with the fact that such an idea of heritage being a legal term has gradually been transposed—or metonymised—to a cultural reality, the relating of one's present to the past to justify one's succession to a historically-informed genealogy is apparent. Memory and history thus come into our picture. Indeed, heritage is always presumed to be the repository of the memory and history of humanity. Burra Charter, for instance, also defines *meanings* as relatable to memories, which denotes the cultural significance of a

place.[20] But what do we mean by "memory" and "history" if not treating them as notions taken for granted when delineating what heritage is?

Pierre Nora's seminal conceptualisation of *lieux de mémoire* implies the incommensurability of memory and history: the objectification of an authorised history in a world where we witness "rapid slippage of the present into a historical past that is gone for good" propels memories to be crystallised, to stand as signs so that our "sense of historical continuity persists".[21] He comprehends memory as intimate and relatable while history as distanced and imposing, culminating that "[h]istory is perpetually suspicious of memory, and its true mission is to suppress and destroy it".[22] Whether we can wholesale transpose the concept of *lieux de mémoire* to heritage or not is beyond the scope of this article, Nora's perspective on history and memory does not sustain should we want to discuss how heritage can be a phenomenon that embodies the past reaching the present. For one, his understanding of memory as being unilaterally and eventually consumed by history does not provide insight into how there can always be memory to be "crystallised" in the first place. Likewise, he may have less to say about how history can enter the realm of memory and its effect on our eventual designation of *lieux de mémoire*.

Jeffrey Olick's summary of memory and history being two "varieties of historical consciousness" provides us with a more nuanced understanding of how the past is practised in the present.[23] In a succinct sense, memory, individual and collective alike, is never unitary and error-proof, and is generative in how memory-makers position themselves in the present and how they embody their consciousness of the past.[24] Yet, observing how memory is malleable in specific contemporary social fabrics, and not always aligning to how those who remember will it, Olick reflects that "neither the 'inherent meanings' of the past nor pure exigency in the present can explain why some pasts endure while others die out."[25] Another stream of understanding the past, one that goes beyond yet is parallel to memory, one that simultaneously informs the present yet denies the univocality of meaning to the past, is implied.

Such a stream is our historical consciousness. Aleida Assmann understands history as a disembodied form of remembering, where one yearns for a singular truth.[26] Paul Connerton reflects that a historian's duty is to critique witnesses' testimonials to see how each of them can serve as "evidence" of a past event, without accepting them "at face value".[27] Nevertheless, historiography informs us that history-writing is no unilateral process. Edward Hallet Carr comprehends that history emerges in the incessant interaction between the historian and the archives, the latter never comes as "pure", since "they first have to be read, and are, therefore, refracted through the mind of the recorder." Therefore, history writing is the result and reflection of the historian's "imaginative understanding".[28] Instead of understanding history as seeing the past with oneself transporting back in time, from a hermeneutical point of view, Paul Fairfield, citing Hans-Georg Gadamar, proposes history as the coming together of the horizons of the past and the present "in a tensional unity", where at the same time the present is seen as a horizon "on the move, open to what more may be said and experienced".[29]

The present, thus, is a historical one. The past prepares "preconditions" and "preconceptions" for us in the present to look back in the past,[30] where "back" entertains the double meanings of "back in time" and "again". True that we develop a sense of history through exercising our cultural memory without needing to witness any past event to learn them, and true that a historian may be seen as a "remembrancer" to "remind people of what they would have liked to forget",[31] but *in the practice of the present that is informed by the past*, it seems to me, a force is implied that conflates what we can subsequently analyse through the notions of memory and history, one that threads from the past, before our looking back and attempt to tease it out into two, memory and history, and to weave them back again. The consciousnesses of memory and history can be unknotted in Olick's aforementioned reflection, but it is the continuous blurring of the two that first allows the past to reach the present,

which subsequently allows us to see memory and history as merged. Such a force, such a thread that supports the retrospection through memory and history, is the phenomenon of heritage.

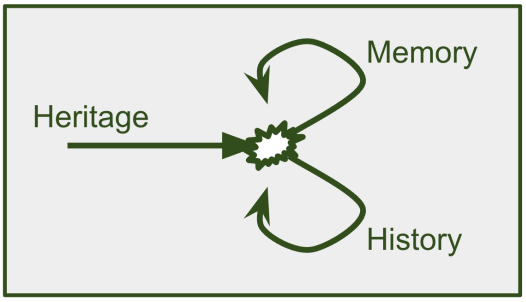

Figure 1. Visualisation of heritage as a phenomenon relative to memory and history

A BRIEF STORY OF MACAU'S ROADS

How does the phenomenon of heritage work out without being reduced to an expression of memory and history? We will now briefly turn to an intriguing case in Macau, ie, how roads have been experienced in Macau at different times.

A small city under Portuguese rule for over 400 years, Macau sees abundant architectures expressing Portuguese aesthetics, the intense coexistence of which with Chinese mansions and temples within the historical centre being merely 16.2 hectare big affords it to be inscribed as World Heritage in 2005. Nevertheless, the coloniser's heyday was long gone since the fall of various commercial sea routes in the mid-17th century, and the coming of other Western powers in Asia like the Dutch and the British. The Portuguese rule in Macau, as discussed by many scholars, was never a sovereign one, always having to make compromises with the Chinese over internal affairs, and being passively affected by the larger geopolitical atmosphere.[32]

Way before the retrocession of Macau to China in 1999, when laying out their urban plans, on par with other colonial powers, the Portuguese also attempted to summon "important" people and events in naming newly-open streets and squares, in order to engrave their historic past in the colony, educating their subjects in the most daily and banal way. Yet, the complicated names, let along its sheer number, represent but intelligible phonemes to Chinese speakers, arousing even confusion to the Portuguese ears. Therefore, citizens came up with their own ways of calling places: Avenida do Conselheiro Ferreira de Almeida becomes "Dutch Camp Avenue" (荷蘭園大馬路), for its alleged place where, after 1622's Luso-Dutch Battle of Macau, the Dutch soldiers were encamped; Avenida de Almeida Ribeiro becomes simply "New Road" (新馬路), or its direct transliteration "San Ma Lou", for it was newly opened in the 1920s, one that traverses the east and west of Macau for the first time, etc. The Portuguese heritagisation project fails in giving way to how the residents remember the places according to them: a remembrance that is not wholly "reminded" by the external imposition of history but one that emerges through continual making sense of the place and is shared through conversation with other fellow neighbours, and yet a remembrance that is nonetheless infused with significant events related to the respective places. In the end, these seemingly made-up names enter the realm of history in the sense that they are officially approved.

Figure 2. The nameplate of the road Avenida do Conselheiro Ferreira de Almeida, wherein the common names for the residents are included in parentheses

Neither will these lengthy official names be used in explanation of where one is or lives—one refers to landmarks and contextual orientations. And thus, a certain bakery and Central Library take the place of Avenida de Cinco de Outubro and Rua de Afonso de Albuquerque in daily conversations. Cathryn Clayton made similar observations almost thirty years ago,[33] and that remains the same now. If a foreigner asks for directions with proper names, chances are that the locals will be so confused that they will take out their mobiles and look that up, as if the latter were actually the tourists.

Yet, these unused names seem to be dormant rather than disregarded. It is only after the colonial project lost its power in its expected timing that these very same gained popularity. These weird-sounding, lengthy street names with their strange-looking Chinese transliterations enter nevertheless the everyday lives of the citizens, not as education of how grand its former governing power was, but, precisely because of the insensibility to history, as an expression of distinction to Macau's neighbouring places, a cultural emblem that is divested from its root and invested with new meanings, meanings that do not simply rest on its "present exigency", as Olick would have it, but meanings that indicate a sense of history that is already there, without which those meanings cannot be forged so conveniently, or rather, "hermeneutically" at hand.

Though these place names only appear on official documents like letters and forms, they suggest a "vicarious recollection" of the past,[34] a memory that, when asked for details, disperses immediately, for no one knows *exactly* what they could have been or meant, as poetically expressed by Marc Augé.[35] There is no wonder why, when individuals demand for change of place names due to their suggestiveness of Macau's "shameful" colonial past, no such demand has gained support from the greater public and died down eventually.[36]

One can argue the same for the case of Portuguese *calçadas*. Laid with black and white stones and arranged into specific patterns and images, these Portuguese pavements can also be found in Portugal and Brazil. They were introduced into Macau's cityscape in the 1990s as a remnant of the Portuguese legacy after their retreat.[37] Yet, they have become so engraved in many citizens' memories for their fitting with the surrounding buildings, that they are accorded with an urban legend that the Portuguese navigators brought them as ballast stones, before they were unloaded for lucrative merchandise in Macau, thus confused to have a longer history. Out of such conflation and vicariousness is the citizen's comfort with their neighbourhood, and a general outcry when the demolishment project concerning the part of *calçadas* at Rua de Eduardo Marques was carried out due to safety reasons, to which people reacted with suspicion of the existence of alternatives and counter-examples, where the

public reacts that such intervention influences the “cultural heritage” and the “cultural landscape” of Macau.[38]

Figure 3. Calçadas in the Square of Senado, Macau

DISCUSSION

The author has written elsewhere how “heritage” emerges as the phenomenon of us incessantly relating our memories to an item by giving it recurrent significations, and how “heritage” acts as a medium that mediates our sense of the past.[39] Here, I venture to philosophically discuss that “heritage” is a phenomenon that allows a certain way of practice in our present, and allows our memory and history to make sense for specific presents. As the case shows, whether it is being labelled or discoursed as such, heritage as a phenomenon lets one imagine a longer time for a short history, as in the case of *calçadas*, and allows one to disregard the burden of history for creative connotations, yet to elevate a momentary meaning to an eternal present, as in the case of the common names for the roads.

Heritage as a phenomenon surges forth before alternative meanings, different narratives of memories, and versions of histories can be bestowed upon it, and concurrently anticipates these alternative meanings. Heritage directs not only our historical views on the seemingly same event, allowing us to continue making sense of it in different eras and atmospheres, but also our memories to sustainably understand a changed event, allowing us to continue making sense of it, though its part has been changed, its components have been altered.

A triad of memory-heritage-history is formed, providing us a way to see how we interrelate ourselves with the past and the non-past, and putting ourselves into the meaning-making process of the present. It also calls for a combined methodology of memory and history in our analysis of what we call “heritage” now. Understanding the memory aspect allows any “heritage” to resist imposing authoritative discourses and homogenisation, but understanding *only* the memory work misses the point that such a “heritage” is also sustained by disembodied and remediated discourses and actions, let alone how it has been recorded and chronicled in the archives. Focusing on history sheds light on how “heritage” has been narrated and recorded, informing our knowledge of it, yet doing *solely* historical analysis of any “heritage” may overlook its primitive reason to ever exist across time, that it is the community that continuously acts upon it for its sustained presence, let alone the creative prospects of “heritage”.

NOTES

[1] Lynn Meskell, “Negative Heritage and Past Mastering in Archaeology,” *Anthropological Quarterly* 75, no. 3 (2002): 567.
[2] David C. Harvey, “Heritage Pasts and Heritage Presents: Temporality, Meaning and the Scope of Heritage Studies,” *A Museum Studies Approach to Heritage*. Routledge, 2018. 14-28.
[3] Françoise Choay, *Alegoria do Património* [Allegory of the Heritage] (Lisbon: Edições 70, 2014), 17-20, 24-25.
[4] Article 1 defines “monuments” as having “outstanding universal value from the point of view of history, art or science”. UNESCO, *Convention Concerning the Protection of the World Cultural and Natural Heritage*, Paris: UNESCO, 1972.
[5] See Article 77 in UNESCO, *Operational Guidelines for the Implementation of the World Heritage Convention* (Paris: UNESCO, 2024), 29; and Article 11.2 in UNESCO, *Convention Concerning the Protection of the World Cultural and Natural Heritage*.
[6] UNESCO, *Convention for the Safeguarding of the Intangible Cultural Heritage*. Paris: UNESCO, 2003. See also: Yahaya Ahmad, “The Scope and Definitions of Heritage: from Tangible to Intangible,” *International Journal of Heritage Studies* 12.3 (2006): 292-300.
[7] See: Preambles of *Convention Concerning the Protection of the World Cultural and Natural Heritage* and *Convention for the Safeguarding of the Intangible Cultural Heritage*.
[8] See, For example, Dallen J. Timothy, “Contemporary Cultural Heritage and Tourism: Development Issues and Emerging Trends,” *Public Archaeology* 13.1-3 (2014): 30-47; Aleksandra Terzić, Željko Bjeljac, and Nevena Ćurčić, “Common Histories, Constructed Identities: Intangible Cultural Heritage and the Rebranding of Serbia,” *International Journal of Intangible Heritage* 10 (2015): 101-120; and Pooja R. and Sathiyabamavathy K., “Religious Festivals: A Niche Celebration to Foster Economic and Socio-Cultural Sustainability,” *International Journal of Religious Tourism and Pilgrimage* 13.1 (2025): 50-61.
[9] Cecilia L. Chu, “Spectacular Macau: Visioning Futures for a World Heritage City,” *Geoforum* 65 (2015): 442. See also Rosemary J. Coombe, “Managing Cultural Heritage as Neoliberal Governmentality,” *Heritage Regimes and the State. Gottingen Studies on Cultural Property* 6 (2012): 375-389.
[10] See, for example, Shiloh Krupar and Stefan Al, “Notes on the Society of the Brand,” in *The SAGE Handbook of Architectural Theory* (SAGE Publications Ltd, 2012), 247-273; and Yujie Zhu and Cristina Maags, “Nanjing: Living Heritage,” in: *Heritage Politics in China* (London: Routledge, 2020), 87-107.
[11] Kate Chi Wo Kwan, “Challenges in Safeguarding Traditional Festivals Facing Tourism Pressure: a Case Study of Macao SAR,” in: *Handbook of Research on Cultural Tourism and Sustainability* (IGI Global, 2022), 368-392.
[12] J. M, Monterroso Montero, *Cultural Territory as a Sustainable Development Factor*. Santiago de Compostela: Universidad de Santiago de Compostela, 2021. See also Sharif Shams Imon, “Cultural Heritage Management under Tourism Pressure,” *Worldwide Hospitality and Tourism Themes* 9.3 (2017): 335-348.
[13] “The Authorised Heritage Discourse (AHD) focuses attention on aesthetically pleasing material objects, sites, places and/or landscapes that current generations ‘must’ care for, protect and revere so that they may be passed to nebulous future generations for their ‘education’, and to forge a sense of common identity based on the past.” Laurajane Smith, *Uses of Heritage* (London: Routledge, Taylor & Francis Group, 2006), 29.
[14] Smith, *Uses of heritage*, 18-28. See also Stuart Hall, “Whose Heritage? Un-settling ‘The Heritage', Re-imagining the Post-nation,” in *Whose Heritage? Challenging Race and Identity in Stuart Hall’s Post-nation Britain*, ed. Susan L. T. Ashley and Degna Stone (Routledge, 2023), 13-25.
[15] David Lowenthal, “Fabricating Heritage,” *History & Memory* 10, no. 1 (1998): 7-12.
[16] Smith, *Uses of heritage*, 55; Dawson Munjeri, “Tangible and Intangible Heritage: From Difference to Convergence,” *Museum international* 56.1-2 (2004): 12-20.
[17] Smith, *Uses of Heritage*, 44. See also Roha W. Khalaf, “World Heritage on the Move: Abandoning the Assessment of Authenticity to Meet the Challenges of the Twenty-first Century,” *Heritage* 4.1 (2021): 371-386.
[18] Smith, *Uses of Heritage*, 82.
[19] Caspar Ka Yin Chan and Walter Chun Hay Chan, “On the Emergence of ‘heritage’: A Reflection on the Festival of Drunken Dragon in Macau” (paper presented at the Third Annual Conference of Macao Studies, University of Macau, Macau, December 4-5, 2023).
[20] Article 1.16 in Australia ICOMOS, The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, Australia ICOMOS, 2013.
[21] Pierre Nora, “Between Memory and History: *Les Lieux de Mémoire*,” *Representations* (1989): 12.
[22] Nora, “Between Memory and History,” 8-9.

[23] Jeffrey K. Olick, "Introduction," in *States of Memory: Continuities, Conflicts, and Transformations in National Retrospection*, edited by Jeffrey K. Olick (Duke University Press, 2003), 8.
[24] See, for example, Henri Bergson, *Matter and Memory*, trans. Nancy Margaret Paul, and W. Scott Palmer, Dover Philosophical Classics. Mineola, N.Y.: Dover Publications, 2004; Maurice Halbwachs, *On Collective Memory*, ed. Lewis A. Coser. Chicago: University of Chicago Press, 1992; Jan Assmann, and John Czaplicka, "Collective Memory and Cultural Identity," *New German Critique* 65 (1995): 125-133; Jan Assmann, "Communicative and Cultural Memory," in *Cultural Memories: The Geographical Point of View* (Dordrecht: Springer Netherlands, 2011),15-27; Aleida Assmann, "Memory, Individual and Collective," in *The Oxford Handbook of Contextual Political Analysis*, ed. Robert Goodin and Charles Tilly (Oxford: Oxford University Press, 2006), 210-224; Astrid Erll, and Sara B. Young, *Memory in Culture*. Basingstoke: Palgrave Macmillan, 2011.
[25] Olick, "Introduction," 7-8.
[26] Aleida Assmann, "Transformations between History and Memory," *Social Research: An International Quarterly* 75.1 (2008): 61.
[27] Paul Connerton, *How Societies Remember* (Cambridge: Cambridge University Press, 1989), 13-15.
[28] Edward Hallett Carr, and R. W. Davies, *What Is History?: The George Macaulay Trevelyan Lectures Delivered in the University of Cambridge January-March 1961*, 2nd ed. (London: Penguin, 1987), 22-24, 30.
[29] Paul Fairfield, *History and Hermeneutics*, of *Elements in Historical Theory and Practice* (Cambridge: Cambridge University Press, 2025), 28-30.
[30] Connerton, *How Societies Remember*. 11; Fairfield, *History and Hermeneutics*, 17.
[31] Peter Burke, "History as Social Memory," in *Memory, History, Culture and the Mind*, ed. Thomas Butler (Oxford: Oxford University Press, 1989), 110.
[32] See, for example, Cathryn H. Clayton, *Sovereignty at the Edge: Macau and the Question of Chineseness*, Cambridge, Mass: Harvard University Asia Center, 2009; Zhiliang Wu, *Shengcun Zhi Dao: Lun Aomen Zhenzhi Zhidu Yu Zhengshi Fazhan* 生存之道：論澳門政治制度與政事發展 [The Way of Existence: On Macau's Political System and Political Development] Macau: Macao Association for Adult Education, 1998; Kaijian Tang, *Tianchao Yihua Zhi Jiao—Shiliu Zhi Shijiu Shiji Xiyang Wenming Zai Aomen* 天朝異化之角——16-19世紀西洋文明在澳門 [The Corner of Alienation in the Celestial Empire—Western Civilisation in Macau from the 16th to 19th Century] Jinan University Press, 2016.
[33] Clayton, "Culture in ruins," in *Sovereignty at the Edge*", 176-220.
[34] Ann Rigney, "Plenitude, Scarcity and the Circulation of Cultural Memory," *Journal of European Studies* 35, no. 1 (2005): 15.
[35] "[...]like these old villagers whom the ethnologist stubbornly tries to get to say why initiates this or that god wear a red feather in their hair or why the god they serve is so named and not otherwise, and we would generally respond to our overzealous interlocutor, that we haven't the slightest inkling, that we've always known them without having a clue about them[...]" Marc Augé, *In the Metro* (University of Minnesota Press, 2002), 18, 23-24.
[36] Macau Concealers 愛瞞日報, "*Aomen Shizheng Weiyuan Jianyi Jieming Quzhiminhua* 澳門市政委員建議街名去殖民化 [Macau Consultative Committee on Municipal Affairs Delegate Suggests Decolonizing Street Names]," Facebook, July 20, 2020, https://www.facebook.com/macauconcealers/posts/3088565217879225/.
[37] According to the presentation, entitled "Architecture and Memory," given by Andre Chak Keong Lui at the symposium "Memory, Meaning, and Value: International Hybrid Symposium" at the University of Macau on December 13, 2022.
[38] "Natiao Bei Chanchu De Shizailu 那條被剷除的石仔路 [That Calçada that Has Been Removed]," *Jornal Cheng Pou* 正報, October 15, 2021, http://www.chengpou.com.mo/dailynews/205484.html; "Baoliu Lunshilu Zunzhong Lishi Fenwei 保留卵石路尊重歷史氛圍 [Conserving the Calçadas; Respecting the Historical Atmosphere], *Jornal do Cidadão* 市民日報, August 1, 2024,
https://www.shimindaily.net/v1/news/voice/%E4%BF%9D%E7%95%99%E5%8D%B5%E7%9F%B3%E8%B7%AF%E5%B0%8A%E9%87%8D%E6%AD%B7%E5%8F%B2%E6%B0%9B%E5%9C%8D/.
[39] Ka Yin Caspar Chan, "Heritage, the Illusion of Inheritance and the Volatility of Memory: a Reflection on the Procession of the Passion of Our Lord the Good Jesus, Macau," *International Journal of Intangible Heritage* 18.4 (2023): 31-48; and Caspar Ka Yin Chan, and Walter Chun Hay Chan. "The Ouroboros that Traverses Time:

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JAMDANI WEAVING, HOUSE FORMS AND CHOICES: STORIES OF JAMDANI PEOPLE AND PLACES, BANGLADESH

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INTRODUCTION

The interaction between landscape, built environment, and human activities has had a significant influence on one another throughout human history. This phenomenon refers to the emergence of different local practices within certain geographical locations and contexts. These practices greatly affect human habitats and the cultural landscape. As societal behaviors change, the morphology of habitats undergoes corresponding modifications to adapt to these changes. For example, weaving, an age-old traditional occupation in Bengal, has given rise to various diverse weaving styles throughout the Bengal region. This paper discusses the *Jamdani* weaving tradition in Bengal, which is the last surviving form of the Dhakai fine muslin. Once, weaving *Jamdani* was entirely a family occupation, but currently, the practice has been expanded, welcoming new weavers outside families in workshop settings. This paper examines the connection between *Jamdani* weaving and its effect on human living environments. Through an analysis of physical spaces, I aim to understand the transformations in *Jamdani* weaving practices, how living spaces and inhabitants adjust to these changes, and how the designs of houses reflect choices and accessibility that highlight the relationship among culture, individuals, and their surroundings. In so doing, this paper will compare two *Jamdani* weavers' homesteads, which trace the influence of traditional family weaving and the adaptation of collective workshop weaving over the house form, space organization, and everyday practices.

JAMDANI MUSLIN AND MUSLIN TRADE

Jamdani is a unique variety of Dhakai fine muslin, highly regarded in ancient history and literature, including the Mahabharata. Notable figures like the Sufi poet Khusrow praised its extraordinary fineness, comparing it to the skin of the moon. Historical travelers such as Ibn Battuta and Ralph Fitch noted that the best muslin came from the Sonargaon region of Dhaka, Bangladesh.[1] This fine muslin was woven from a particular variety of *Gossypium Herbaceum*, a specific cotton cultivated in the Bengal Delta around Dacca, along the banks of the Shitalakhya and Meghna Rivers, locally known as Phuti Karpas (see Figure 1). The Phuti Karpas was unique to a specific area and grew exclusively in "a tract of land... twelve miles southeast of Dacca, along the banks of the Meghna," as noted by the British Commercial Resident in Dhaka, James Taylor, in 1800.[2] The cotton from Phuti Karpas was spun into threads with exceptional tensile strength and at counts higher than those of any other cotton species. Additionally, threads made from Phuti Karpas cotton possessed a silky quality.[3]

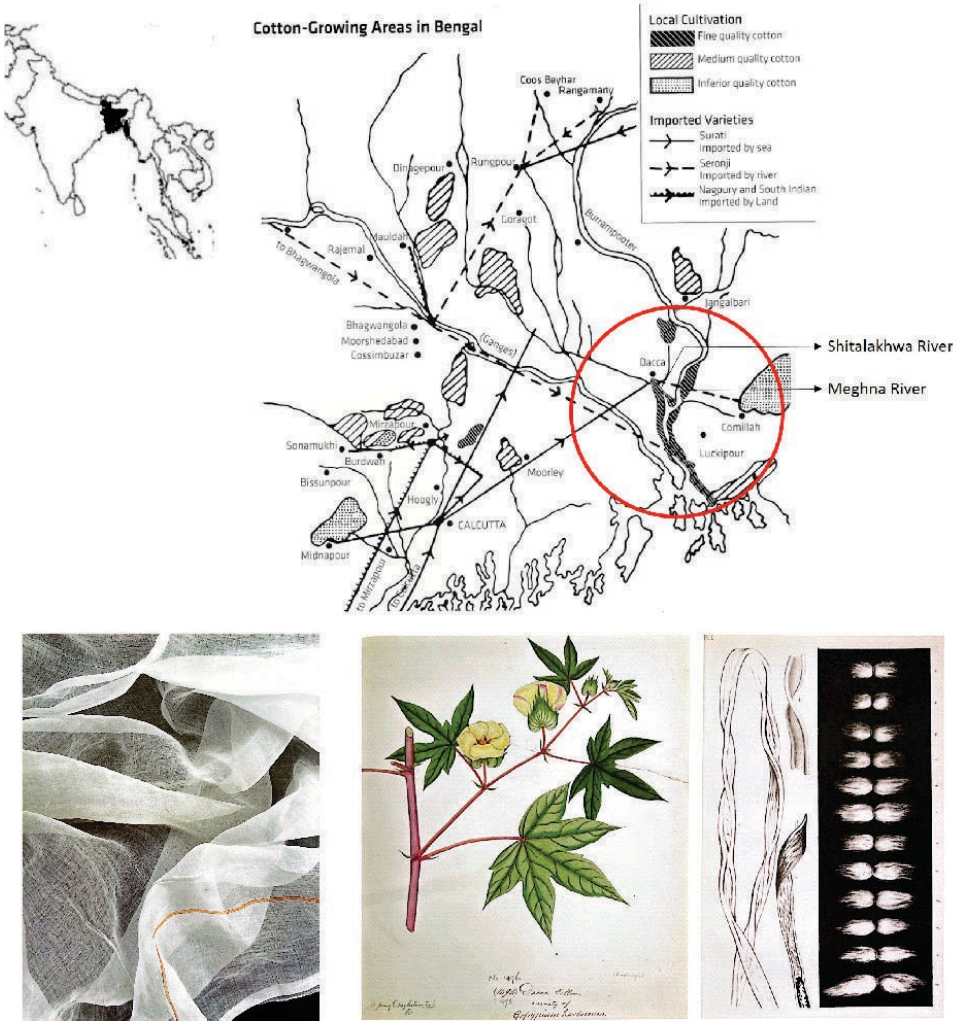

Figure 1. Top:: Cotton growing areas of Bengal, source: Hossain 1988: 32, modified by author; Bottom left: Dhakai Muslin from the colonial period preserved in the V & A museum. Source: Ashmore, Sonia. Muslin / Sonia Ashmore. London: V&A, 2012; Bottom right: Gossypium herbaceum, locally known as Phuti Karpas. The plant and the microscopic image showing the structure of the cotton fiber. Late 18th or early 19th century. Source: Ashmore, Sonia. Muslin / Sonia Ashmore. London: V&A, 2012.

Jamdani is a high-quality cotton muslin fabric, known for its intricate motifs, with a history spanning thousands of years in Sonargaon, Narayanganj. It was considered the most sophisticated type of Indian muslin, likely developed by Persian and Bengali weavers under Mughal Emperor Akbar's patronage.[4] Sonargaon, a medieval capital and trade hub, attracted attention from travelers. In the 4th century, the Chinese Buddhist monk and traveler Fa Hian referenced the muslin trade between Ceylon and Bengal.[5] Yuan Chwang, the Chinese Traveler who traveled Indian Subcontinent in the 630s (CE), wrote about muslin saying “the cloth is like the light vapours of dawn”.[6] Muslin, including *Jamdani*, was exported from Eastern Bengal to various parts of the world, primarily for emperors and their wives. It gained popularity among the Ancient Greeks and Romans. The book "The Periplus of the Erythraean Sea," written around 2,000 years ago by an unnamed Egyptian trader, references muslin from India.[7] In the Mughal era, Muslin was traded extensively with merchants from Persia, Iraq, Turkey, and the Middle East. The Middle Eastern, and later British, French, and Dutch traders used the Silk Road and also the Indian Ocean trading route.[8] Ashmore argues that the British East India Company both recognized and destroyed the trade of Muslin in the colonial period. My research finds

that while muslin could reach a 2000 thread count, none of the muslins from the colonial period displayed that level of fineness. As the European thirst for luxury fabrics increased, British industries started to produce cheaper versions of fine cotton in high quantities and eventually replaced the demand for muslin production.[9] While the craft of Dhakai muslin faded, *Jamdani* persisted due to the dedication of a few master weavers. Since UNESCO declared it an Intangible Heritage of the World in 2013, efforts have been made by the Bangladesh government and NGOs to revive *Jamdani* heritage.

MAKING OF MUSLIN AND PRODUCTION OF SPACE:

Jamdani is not embroidered but figured in simple pit treadle looms, which have remained relatively unchanged over roughly 4,000 years.[10] The weft threads are passed through lifted warp threads to make the required patterns, entirely done by hand. Unlike muslin, *Jamdani* requires the simultaneous effort of two weavers: '*ostad'* or the master, and '*sagred'*, the apprentice. The design motifs are generally inspired by objects from the weavers' environment, particularly plants, flower petals, buds, the shape of flowers, and creepers. Sometimes, complex designs appear as if floral repeats are woven in diagonal arrangements. The patterns were verbal: the '*ostads'*—master weavers called out patterning instructions to the '*sagreds'*—weaving apprentices.

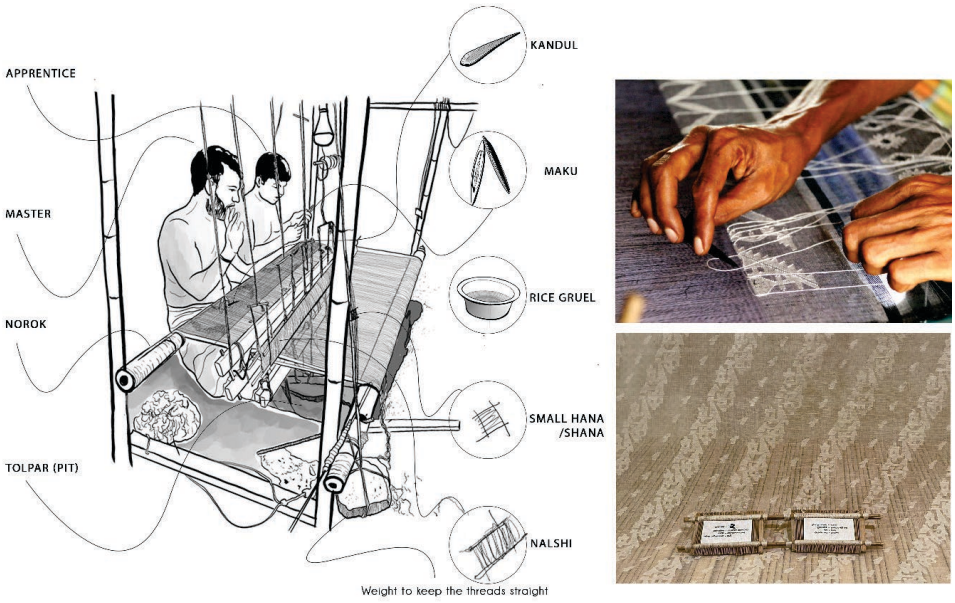

Figure 2. Left: Jamdani is woven on a pit loom that remained the same as ancient time. Jamdani weaving requires two weavers to sit together and work simultaneously. Credit: Summer 2023 Field School Bangladesh; Top right: Weaving the motifs of Jamdani on muslin base; Bottom right: Fine Jamdani fabric displayed in the "Jamdani Festival, Wearable Art" National Exhibition at Chitrashala Art Gallery, Bangladesh Shilpakala Academy in 2023 weaved by master weavers of Jamdani Villages. Photo Credit: Dilruba Shuvra

'A Descriptive and Historical Account of the Cotton Manufacture of Dacca', considered one of the earliest accounts of the history of Dhaka's Muslin, records the detailed process of Muslin making through illustrations starting from the cotton plant. After harvesting in April-May, the Phuti Karpas cotton (with seeds) was collected, combed (with the jawbone of a Boal fish), rolled, and teased. The split cotton was afterward kept inside the skin of a Cuchia fish (Gangetic Eel). Once the cotton was ready, the next steps were spinning and weaving. During the spinning process, only the young women

with supple fingers spun the finest thread when the air contained maximum moisture, and sometimes with water bowls around them to moisten the air more as necessary. "*Spinning was done in the misty conditions of early morning or by transferring the charka to a large boat... to ensure that the thread was kept moist by the ambient humidity*".[11] The boat and the waterbodies thus became a part of the dwelling, making the boat an extension of floating ground. The whole process of making fine cotton thread preparation was run by women. [12] According to the historical account of cotton manufacturing- *"They (women) excel—nay, almost rival Arachne's fabled skill—in spinning; and, doubtless, it is to the delicate organization and fine sensibility of touch with which they are endowed by nature, that their inimitable skill in this art is to be ascribed.*" [13]

The weaving process includes winding, preparing the yarn, wrapping, setting up the reed, transferring to the loom, and weaving. The loom is often set up on a semi-shaded porch called a '*dawa*.' Most weaving tasks are performed by men, while women handle the earlier steps. In *Jamdani* muslin weaving, two weavers collaborate, with young women primarily responsible for interlacing figure motifs into the base.

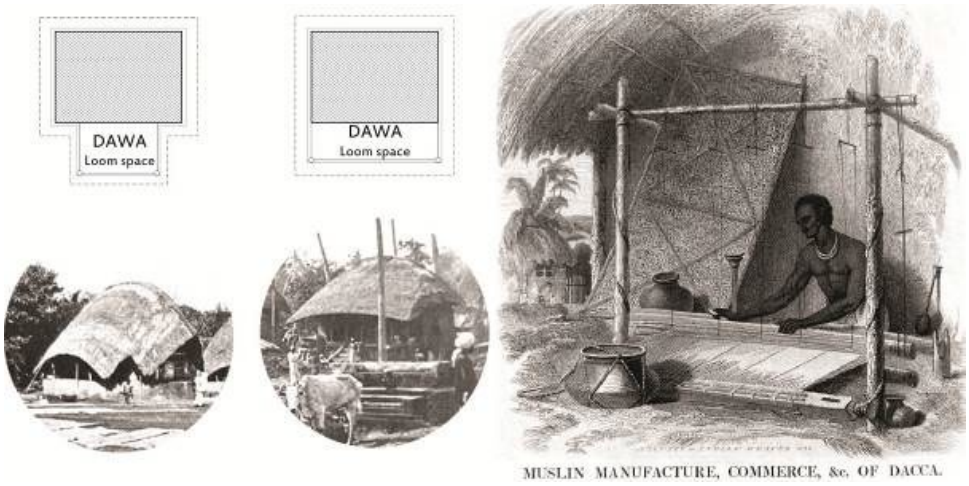

Figure 3. Left: Ancient Bengal Hut with two types of Dawa (porch) with plans. Source: Images are taken from King, Anthony D.The Bungalow- The Production of a Global Culture. New York and Oxford: Oxford University Press, 1995. and plan illustration by author; Right:Muslin weaver weaving in a pit loom on a dawa of Bengal Hut. Source: The sketch is from the book "Cotton Manufacture of Dacca" by James Taylor as mentioned in Ashmore 2012.

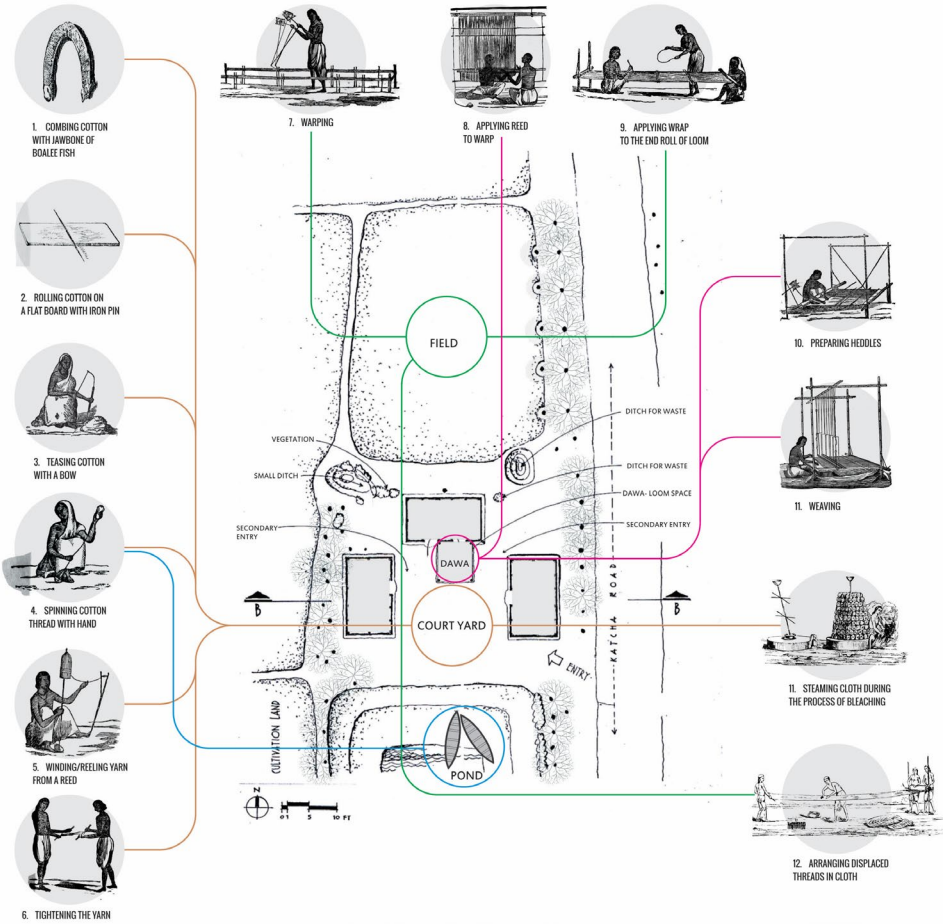

Figure 4. Behavioral setting of muslin weaving in an ancient Bengal landscape and episodes of weaving happening in the setting that produce the physical space. Source: Infograph made by author sourcing images from "A Descriptive and Historical Account of the Cotton Manufacture of Dacca, in Be Bengal" written by A former resident of Dacca (1851) and "Muslin" by Sonia Ashmore. The house map is taken from sketches of Khandaker Hasibul Kabir's drawing of houses in rural Bengal.

Philip Thiel argues that living entities interact with their physical environment by simply existing within it and can manipulate it through their activities.[14] The interplay of land, water, and human actions shaped the environment for muslin production. Spinning and weaving occurred outdoors in a moist atmosphere, involving steps like harvesting, spinning, and weaving. This required a specific organization of spaces that informed the design of courtyards, '*dawa*'-the loom areas, house structures, and water bodies, significantly influencing the daily lives and settlement patterns in the region.[15]

METHODS TO STUDY THE HOUSE FORM OF WEAVERS:

Renee Y. Chow claims that culture is often expressed through how people inhabit their spaces. Individuals build a connection between their way of life and the physical layout of their homes by making choices that reflect their cultural values and traditions.[16] This research utilizes Chow's methodology to explore how house forms reflect behavior, culture, and traditions within their landscapes. To effectively study these forms, it's crucial to understand the complexities shaped by human engagement. I applied ethnographic methods, including participant observation and oral history interviews, to map the layouts of two weavers' homesteads and examine how their practices influence their lives and home designs.

In Summer 2023, in collaboration with three teams 'Grammo', 'Revival', and 'Ethos', I guided a ten-day-long Field School Program in two *Jamdani* villages of Sonargaon- Borogaon and Kazipara. I investigated the experiences of people and places through walking, oral history interviews, participant observation, and homestead mapping. I followed the BLC (building landscape culture) pedagogy to examine the field that considers it as "an underlying fabric on which thematic elements and architectural forms are deployed over time."[17] Sen argues that "the material world constructed by humans is a portal into something greater than the objects themselves… Studying the relationship between an object and its user offers insights that interviews can barely provide."[18] By following Renee Y. Chow's methods of studying places, this approach integrates cultural use and spatial pattern study with place-based morphological investigations of houses. By studying physical spaces, this research studies how house forms reflect ways of dwelling, enabling choice, access, and claim of a cultural group.

CHOICES AND CHANGES OBSERVED FROM THE FIELD

Several cultural landscape researchers incorporated walking in their research methods, such as W. G. Hoskins, J. B. Jackson, Pierce Lewis, and William Littmann. Littmann argues that walking helps to understand the "haptic" quality of a place—how we understand a place through our senses and feelings. "Walking forces the researcher to pay close attention to all material aspects of the landscape, from its geological composition to the materials used in buildings or objects along the street."[19] The research fieldwork began with slow walks through neighborhoods. By calming our minds and moving at a slower pace, we used our bodies as tools to observe and understand our surroundings, which is often overlooked when rushing. Walking allowed us to explore the landscapes of built and natural environments, the choices and changes in *Jamdani* weaving tradition in the present context, and how these choices and changes are shaping weavers' lives and their house forms.

In the past, families managed all steps of weaving—from planting cotton seeds to selling the finished products. However, changes in the landscape as well as in the market have led weavers to buy yarn instead of harvesting cotton themselves, often importing it from India or China. Many now use machines in the local Rupganj market for winding, spinning, and warping threads, rather than traditional methods. Additionally, while weavers once had extensive knowledge of natural dye plants, chemical dyeing has largely replaced traditional methods.[20]

Jamdani weaving has traditionally been a family practice passed down through generations. Recently, many master weavers have shifted to factories, teaching apprentices and employing them, transforming the traditional method into a factory-based approach. This paper explores how families' engagement in *Jamdani* weaving impacts their lives and living spaces, by comparing the stories of two weaving families to highlight how different approaches to the craft influence their household structures.

STORIES OF JAMDANI WEAVERS:

Family 1: We studied Abdur Nur and Rani Akhtar's homestead. They weave together in their home space. Rani Akhtar got married to Abdur Nur whose family has been in the weaving business for more than three generations. Rani learned weaving from his husband after their marriage. They started weaving together in their family loom, Nur as '*ostad*' (master) and Rani as '*sagred*' (apprentice). In their later practice, they frequently changed positions between 'ostad' and 'shagred' in the loom according to their convenience. Although both Nur and Rani maintained their family by weaving *Jamdani* and are very passionate about their work, they decided not to pass their ancestral knowledge of *Jamdani* weaving to their offspring because they wanted a different and brighter future for their

children that would bring social respect and status, which they couldn't earn in their lives by weaving *Jamdani*. Rani shared:
"*Weaving Jamdani is extremely laborious and time-consuming work. People in our society disrespect weavers since we are not educated enough. Weavers usually start working at an early age, and they can't go to school when they work. We wanted our children to go to school, get an education, and get jobs like educated people, earn better, live a respectable life*." (Rani Akhter).

Figure 5. Abdur Nur and his wife Rani Akhter (left), and Md. Abdul Jabbar. Photo credit: Author, Summer 2023 Field School Bangladesh.

Family 2: Another homestead we studied was Md. Abdul Jabbar or Jabbar Mia's. – A forty-two-year-old, and one of the finest *Jamdani* weavers in Kazipara. He learned jamdani weaving from his grandfather at the age of ten. Jabbar has three brothers and three sisters, all of whom are involved in *Jamdani* weaving. *Jamdani* weaving has been a family business for them for generations. But he expanded their Jamdani business by establishing his own factory that has 15 looms with around thirty weavers working under him. His factory also trains young weavers and offers jobs to weavers. His factory only weaves high-quality cotton and half-silk *Jamdani* with rich motifs. Abdul Jabbar is deeply passionate, dedicated and has been relentlessly working with *Jamdani* for almost 30 years. He intends to continue it till the end sharing that:
"*If our new generation is informed about the progress of Jamdani or realizes the future possibilities in this profession, they will not think of changing to other professions. Rather, they would be proud of our Jamdani*" (Md. Abdul Jabbar).

STORIES OF HOUSE FORMS AND CHOICES:

According to Chow, it is necessary to consider how each home spaces are organized and used by the families, by monitoring their way of living and understanding how inhabitation is a constant manifestation of choices.[21] Muktadir and Hassan's research on traditional houses of rural Bengal claims that house forms are culture and region-specific social products.[22] Weaving muslin was an ancient cultural practice for the people of Sonargaon that played a major role in shaping home spaces in this region. A traditional rural 'Bengali House' fundamentally comprises a collection of individual small house units (huts) arranged around a central courtyard. The units are usually single-roomed, detached, and loosely spaced around the central courtyard. The making of plinths for these house units requires large excavations, which result in ponds, tanks, ditches, etc.[23] These water bodies and central courtyard were crucial in the process of muslin making. The fieldwork at Kazipara *Jamdani* village observed evidence of earlier patterns of house forms and adaptations of new formations as well as a response to changes in the practice of weaving. To understand how house forms are adapting to the

changes and the implications of adaptation, the research studies the homesteads of Abdur Nur and Abdul Jabbar, taking a comparative analytical approach.

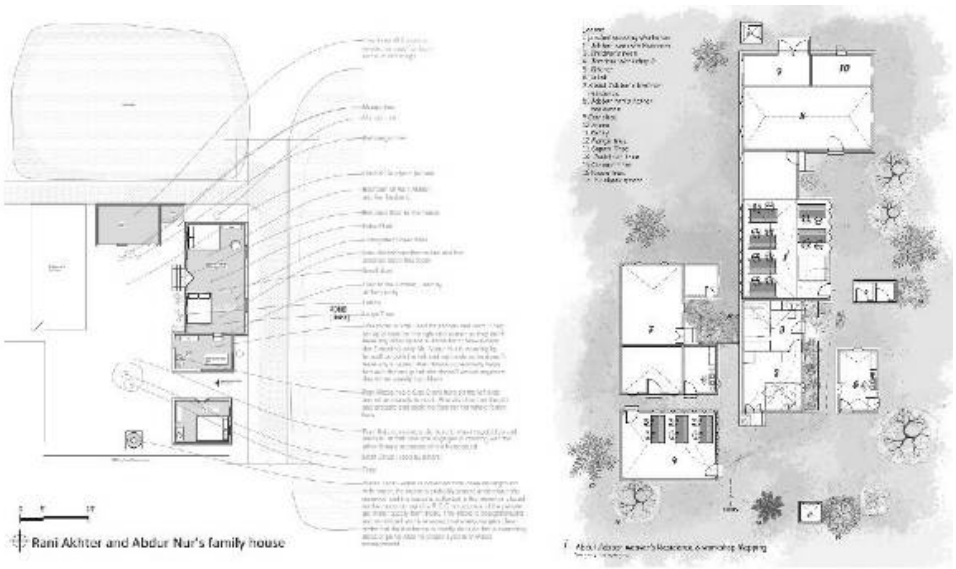

Figure 6. Layout plan of Abdur Nur and Rani Akhter's house (left), and Md. Abdul Jabbar's house (right). Source: Summer 2023 Field School Bangladesh.

The spatial organization of Nur's house retains a connection to the traditional muslin landscape of Bengal, featuring a central courtyard and adjacent ponds. Nur's section of the house forms an L-shaped pattern with attached living units. A narrow passageway from the eastern alley leads to the courtyard, which serves as the entrance to the homestead. In contrast, Jabbar's homestead consists of house units that are arranged in a linear pattern, with a few loosely detached forms. Although Jabbar's homestead can no longer be classified as a central courtyard house, it does include a front yard and a back yard. The front yard serves as a more public social space, while the backyard has a semi-public nature (see figure 6 and 7).

Nur's courtyard has a dynamic nature of privacy, accommodating a variety of activities that range from public gatherings, such as entertaining guests, to private tasks like cooking, family gatherings, and preparing yarn for weaving. Nur and Rani often use the courtyard for tasks related to weaving, including winding, bobbing, and occasionally dyeing and drying the yarn. They typically dry the yarn next to the ponds near their homestead. We have not seen any weaving activities taking place in Jabbar's yards. Most of the preliminary activities related to weaving occur outside the home. Rather than utilizing the yards, weavers prefer the open space inside the factory workshop sheds attached to Jabbar's homestead for the winding and bobbing tasks necessary for weaving (see figure 8 and 9).

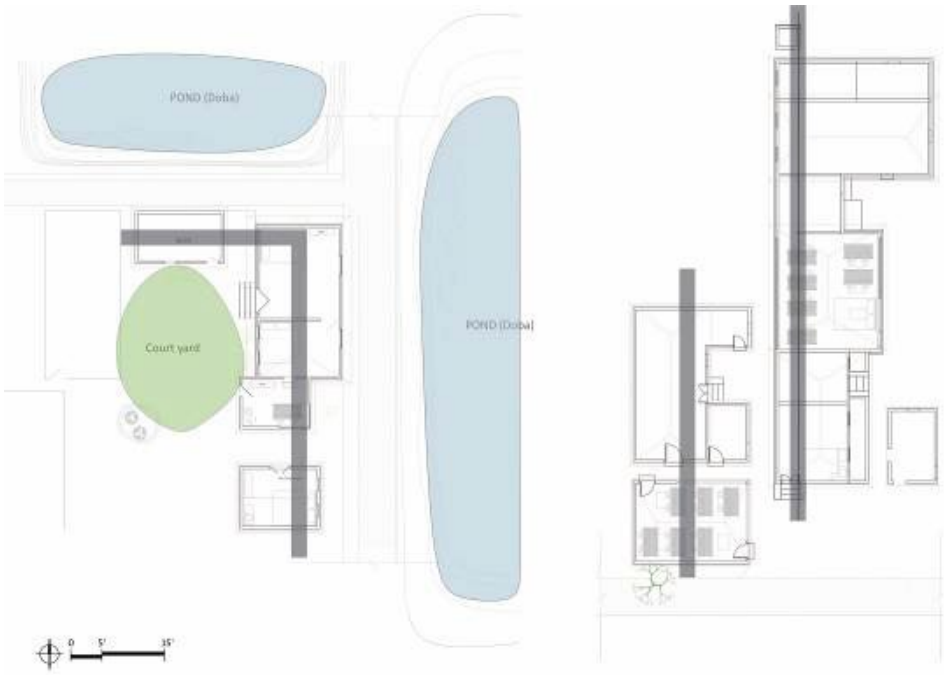

Figure 7. Left: L-shaped space organization of Nur's house around a central courtyard; Right: Linear organization of spaces in Jabbar's residence with front and back yards (right). Source: Author.

None of the houses has a 'dawa' (a semi-shaded porch-like space facing the courtyard) attached to the individual units where looms were traditionally installed. In Nur's homestead, the family loom is situated inside the kitchen. While this choice may seem unconventional, for Nur and his wife Rani, it is the most convenient location for them to weave while managing their family responsibilities. Rani explained that she can easily take breaks from weaving when necessary, whether for cooking, serving meals, or tending to her elderly mother-in-law, as the kitchen is connected to Nur's house unit and is directly accessible from his mother's room. Additionally, the kitchen can be accessed from the courtyard, which serves as the hub for all social activities. For Nur and Rani, the courtyard acts as an extension of both the kitchen and their workspace. Culturally, the kitchen is traditionally viewed as a woman's domain. However, in Nur's household, the kitchen transcends this narrow identity. It functions as a space for various activities, where important decisions are made, the art of *Jamdani* weaving occurs, and family life is managed.

In contrast, Jabbar's residence features the looms set up in two separate loom sheds (locally referred to as factories). The larger shed is connected to Jabbar's house and his parents' house from both the south and north sides, while the smaller shed stands alone at the southwest corner of the homestead, near the entrance. The house units belonging to Jabbar, his brother, and their parents operate independently, without any internal connections. All access to the house units and loom sheds is from the outside.

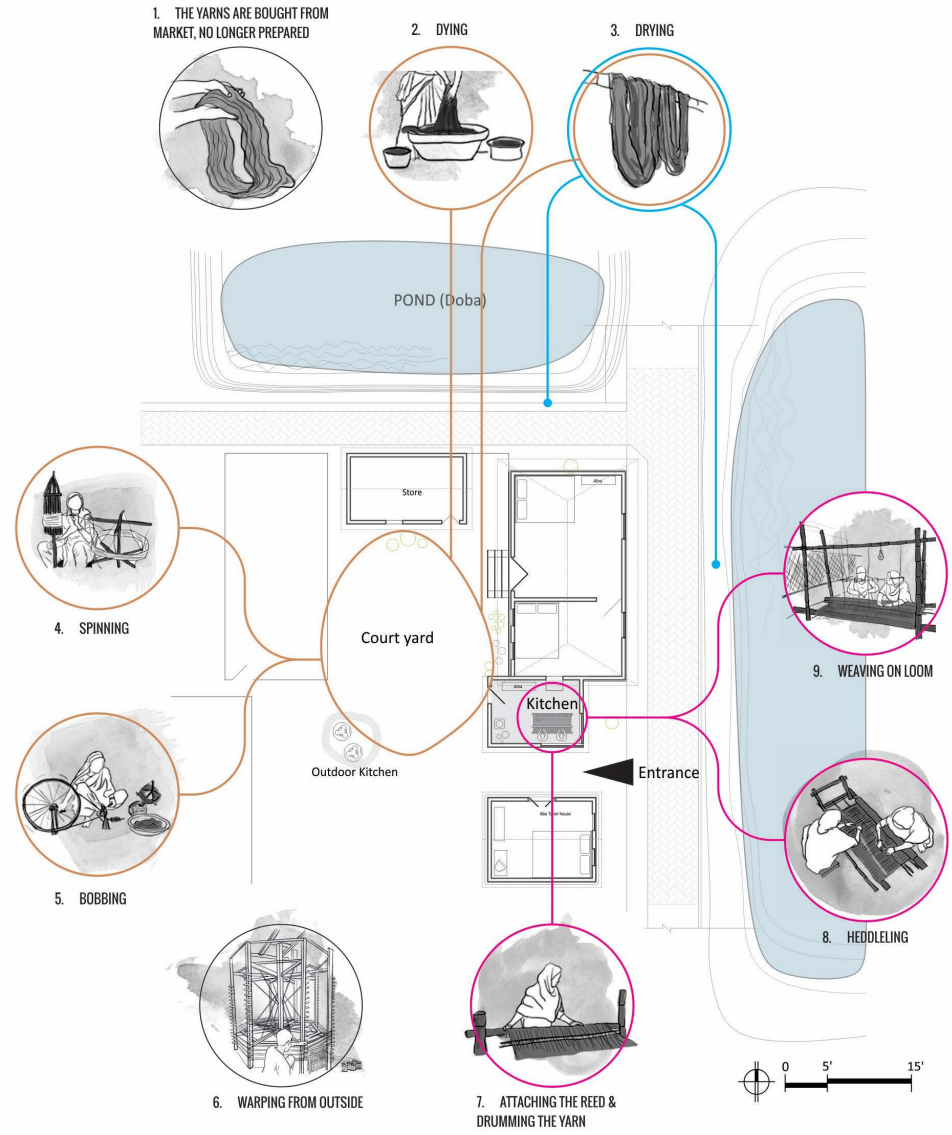

Figure 8. The sequence of activities of Jamdani making happening in the behavioral setting of Nur and Rani's homestead. Infographic drawing credit: author.

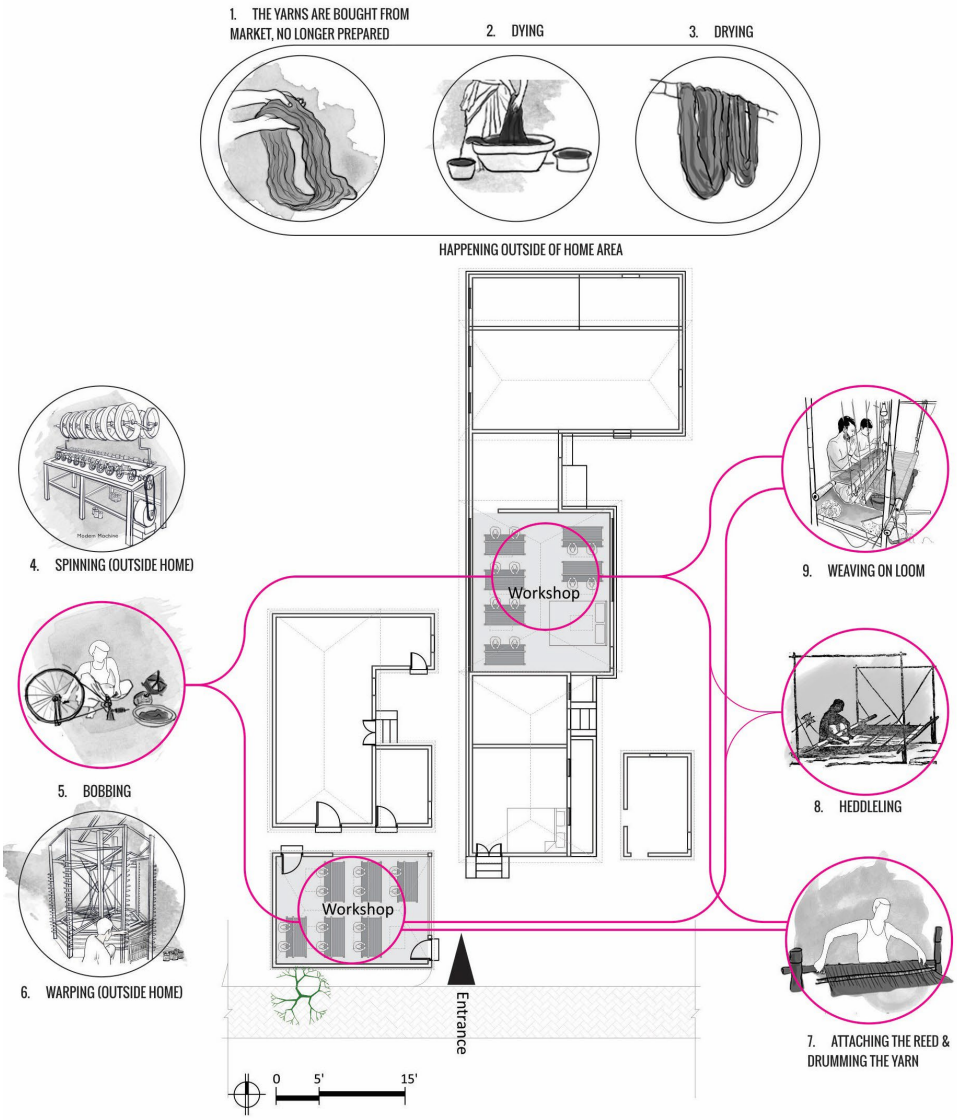

Figure 9. The sequence of activities of Jamdani making happening in the behavioral setting of Abdul Jabbar's homestead. Infographic drawing credit: author.

Both of Jabbar's loom sheds are designed like pavilions, featuring continuous linear windows on two sides to maximize airflow and light. Additionally, the roofs are equipped with skylights to allow even more natural illumination. Nur and Rani's kitchen shares similar pavilion-like features, although it does not have skylights. In both cases, the house units are single-story structures made from corrugated tin sheets, supported by wooden posts, and built on a cement concrete (CC) floor. Abdul Jabbar mentioned that around thirty weavers, including apprentices, work under his supervision; however, the investigation revealed that only two of them are female weavers. At first glance, Jabbar's *Jamdani* workshops appear to be a men's territory outside family connections.

Figure 10. Capacity of access map of Nur's homestead (left); Capacity of access map of Jabbar's homestead (right). Infographic drawing credit: author.

CONCLUSION

Weaving muslin has been an ancient tradition for the people of Sonargaon, and it continues today in the form of *Jamdani*. This practice has significantly influenced the development of human settlements in the area. Throughout history, the production of *Jamdani* has experienced changes, declines, and resurgences. This paper explores the history of muslin and *Jamdani* weaving, the transformations they have undergone over time, and their relationship with spatial production. The analysis of two weavers' homesteads finds that both houses have varying degrees of capacities that accommodate choices made by the residents. The weaving tradition and the scale of weaving shape the ways of living for both families giving residents choices to organize house forms that evoke certain meanings, associations, and actions with required flexibility. In Nur's house, the choice of placing the loom inside the kitchen ensured uniform access to all family members making the space more than a women's space. On the other hand, Jabbar's choice to set up workshops dedicated to *Jamdani* weaving in his homestead expanded the scope of *Jamdani* production in terms of quality and quantity, opened up learning opportunities and jobs for weavers from the community limiting certain affordances and access to other members of the family, especially women. Chow argues that the house forms have the capacity to express and absorb impressions, inspiring a dialogue between people and places that is rich in interpretations over time. Culture and traditions are not static, rather they evolve over time in response to social, political, and economic dynamics.[24] This research explains how weaving *Jamdani* has changed over time, how the changes influence weavers' choices, and how these choices are expressed in house forms, which confirms that house forms are expressions of everyday choices and interpretations of a community's cultural practice.

NOTES

[1]Sonia Ashmore, *Muslin*, 1. publ (London: V&A Publishing, 2012), 11.
[2]Khademul Islam, “Our Story of Dhaka Muslin,” AramcoWorld, May 1, 2016, https://www.aramcoworld.com/articles/2016/our-story-of-dhaka-muslin.
[3] “Our Story of Dhaka Muslin,” May 1, 2016; Labib Hossain, in *Monsoon [+Other] Grounds*, (United Kingdom: University of Westminster, 2020), 113–20.
[4] Sonia Ashmore, *Muslin*.
[5] Dhaka (Bangladesh), *A Descriptive and Historical Account of the Cotton Manufacture of Dacca, in Bengal* (John Mortimer, 141 Strand, 1851), https://books.google.com.bd/books?id=ecnUzOtE98AC.
[6]Khademul Islam, “Our Story of Dhaka Muslin”.
[7] Labib Hossain, in *Monsoon [+Other] Grounds,*113–20.
[8]In the Mughal era, Muslin was traded extensively with merchants from Persia, Iraq, Turkey, and the Middle East. The Portuguese replaced the Arab traders in the early 16th century. In 1966, the East India Company arrived and established a plant in Dacca. In the 17th and early 18th centuries, the French and Dutch were also involved in the Muslin trade. However, with the invasion of the East India Company in 1757, the British eventually acquired control and established colonial authority on the Indian subcontinent. Khademul Islam, “Our Story of Dhaka Muslin”; Labib Hossain, in *Monsoon [+Other] Grounds,*113–20.
[9] Sonia Ashmore, *Muslin*.
[10] Khademul Islam, “Our Story of Dhaka Muslin”.
[11] Labib Hossain, in *Monsoon [+Other] Grounds,*113–20
[12] Although the book “‘A Descriptive and Historical Account of the Cotton Manufacture of Dacca’”- was published in 1851, it is believed that James Taylor wrote this book and took the description of the manufacturing process from the "Account of the District of Dacca by the Commercial Resident”. In section no.8, ‘Process of weaving plain and flowered muslin as practiced by the weavers at Dacca’, Taylor presented the manufacturing process as a production line starting from the plant to the cloth under six phases with visuals that are codified in English alphabets. *A Descriptive and Historical Account of the Cotton Manufacture of Dacca, in Bengal*, 115; Labib Hossain, in *Monsoon [+Other] Grounds*; Dhaka (Bangladesh).
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