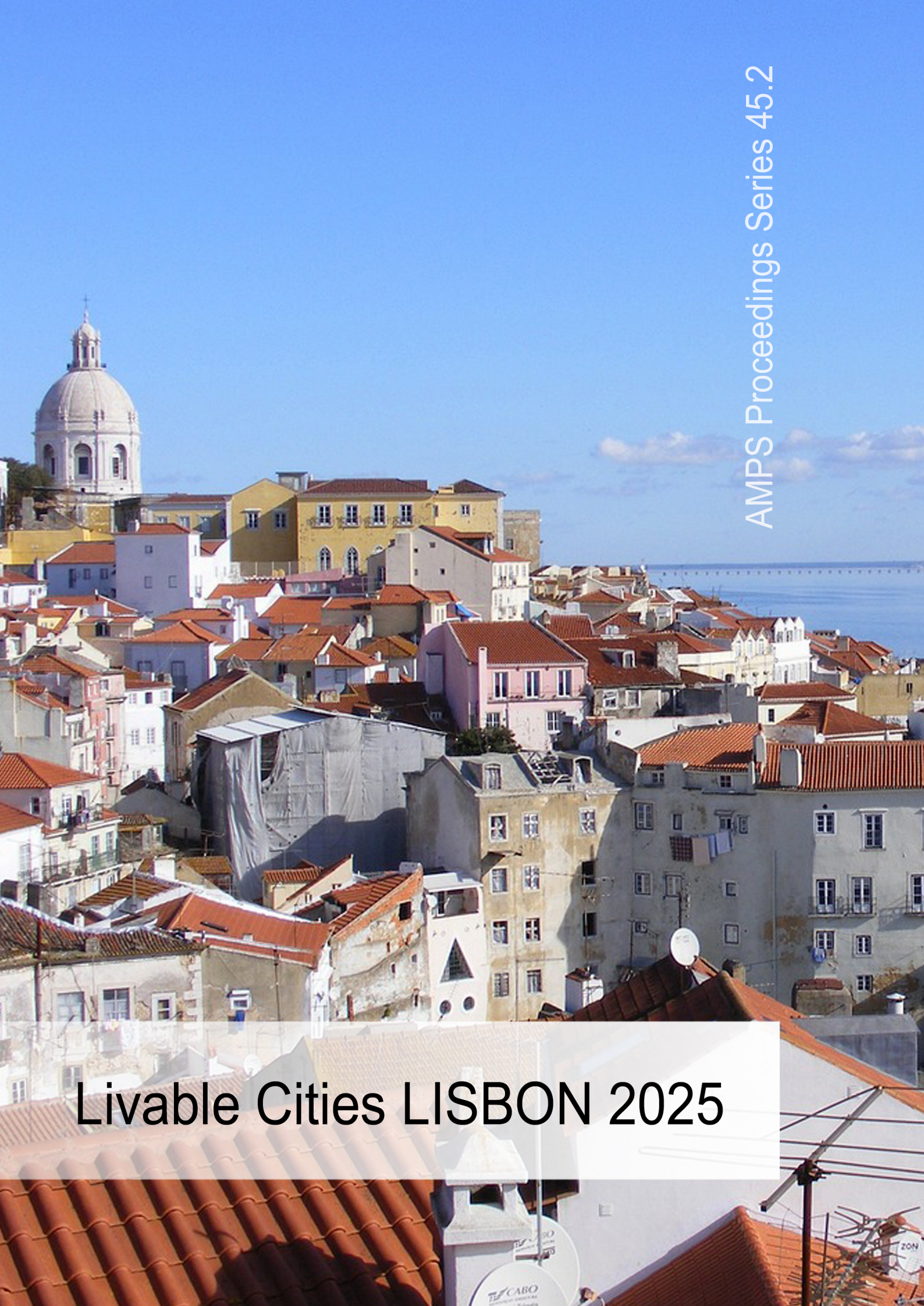

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Lisbon. Livable Cities

Cities, Culture, People & Place

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INTRODUCTION

Lisbon. Livable Cities

Cities, Culture, People & Place

Lisbon, the capital of Portugal has increasingly become a ‘mecca’ for European expats wishing to relocate. Attracted by sun, beaches, food, culture and a low cost of living, it has been ranked as the world’s third most livable city for foreigners. Inevitably, the results of this have been varied. Seen as a boost to the local economy, it also adds to property prices. It places strain on public services like health and transport, and is criticized repeatedly from a social sustainability standpoint.

Livable for many then, Lisbon is also a city of challenges for others. Like a multitude of other places across Europe, it has experienced epochs of deindustrialization, periods of population growth and decline, and varied phases of investment and disinvestment. It has had architectural and urban ‘golden ages’, as well as times of abandonment and degeneration. It has seen attempts at city boosterism, concerns about resilience and public health, efforts to improve its sustainability, and attempts to preserve its heritage. It has been a site of innovations in housing, and a place of social unrest.

In all this it is prototypical – a city that has documented the social and urban changes of recent times – whether they be Daniel Bell’s post-industrial society, Jane Jacob’s life and death of cities, or David Harvey’s city and social justice. It has echoed Richard Florida’s cultural city and reflects the traits of the smart city. It is the home of UNESCO world heritage sites and a place where public transport can be, and is, complicated and slow. It is a city and, as such, is contested.

Interested in examining the city as a site of livability across times and places, the papers collected in this volume offer here were responses to the above context from the perspective of urban life and social issues broadly defined.

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THE UNCANNY IN THE LIVED EXPERIENCE OF CONTEMPORARY ATHENS

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INTRODUCTION: THE NOTION OF THE UNCANNY

The notion of the "uncanny" (das Unheimiliche in German), as articulated theoretically by Sigmund Freud in his famous essay (published in 1919) and reread by other scholars, has been valued by many disciplines, mostly by critical cultural theory and urban studies. It represents a feeling of anguish and discomfort, even fear, generated from something once familiar that is not familiar anymore, and usually originates from repressed childhood complexes. In Freudian thought, the uncanny is linked to the death drive, to the fear of castration, to the fear of being buried alive, or to the impossible desire to return to the womb, which is a kind of homesickness. The endless drive to repeat is also uncanny, for its association both with the death drive and the "doubling".[1]

The uncanny has been used as an aesthetic category and as an interpretive model for specific types of experience. Anthony Vidler, in his work "The Architectural Uncanny", delving into its spatial manifestations, attempts to interpret the unsettling qualities of selected architectural and urban projects that implicitly or explicitly pose the question of the unhomely in modern culture.[2]

Having these two emblematic texts as the basic point of reference, and after a brief overview on the related literature, I will attempt to trace uncanny elements in the urban experience of contemporary Athens, focusing on its central area; other metropolises of Southern Europe may share similar experiences.

THE URBAN UNCANNY

Rooted by etymology in the environment of the domestic, the dwelling, the home, the uncanny opens up to problems of identity and the relation between the individual and the urban environment, and has served as a metaphor for a fundamentally "unhomely" modern condition.[3] Heidegger, for example, links uncanniness to anxiety and ontological homelessness. For Heidegger, one could certainly be housed (and be "at home") but still be homeless; ontological homelessness renders beings far more homeless than any other form, because it is in this form that beings are distanced and separated from themselves.[4]

Some cities are indelibly associated with the notion of the uncanny. Pompeii, for example, represented the literary and artistic uncanny for most of the 19th century: the excavations revealed an unsettling merging of past and present, the unburied dead bodies (buried alive under the ashes), views of the intimate aspects of the city's life, and a different side of classicism, far from the Apollonian grace of Winckelmann's aesthetics.[5] Ruins possess nevertheless uncanny qualities, because through their persistence in time, and their unexpected return, they arouse the tension between the homely and the

unhomely.[6] In European modernity, Greece, and Athens in particular, seem to embody par excellence the concepts of repetition and return; their modern trajectory was from the beginning already haunted.[7] Venice, on the other hand, has been joined with the idea of death (as we can see in many novels and films): "a liminal place, neither wholly solid nor liquid",[8] slowly drowning.

For the critics of modernity, the uncanny has been used to describe the experience of the modern metropolis and the alienation and estrangement of the individual when confronted with heterogeneous crowds, as well as the anxiety of time, and several modern diseases, among them phobias associated with spatial fear (such as agoraphobia or claustrophobia). All these have been considered as aspects of modern nostalgia for an idealized pre-industrial birthplace.[9] Simmel, for example, refers to the "blasé" attitude people develop to protect themselves from the "intensification of consciousness".[10] In a place ripe for uncanny disruptions, the urban subject is profoundly alienated from their emotional self.[11] As depicted in Baudelaire's poems and scrutinized in Benjamin's work, the flâneur, although indulging the spectacle and benefiting from the anonymity of the crowds, found refuge in the old arcades, transformed by the gaslight into interior spaces.[12] Besides the chaotic nature of the modern metropolis, the rapid transformations of the urban environment formed an additional cause of disturbance and alienation. As depicted in Baudelaire's poem "The Swan" ("Le Cygne")[13] the poet's soul is devastated by the extensive reconstruction of Paris initiated by the Perfect Georges Haussmann under the Second Empire.[14]

For the modernist avant-gardes, the uncanny served as an ideal instrument of "defamiliarization", shock and disturbance, as if the world "could only be recalled to itself by shock".[15] Modernists shared equal desire to forget as well as to remember. In Le Corbusier's case such a forgetting would take the form of erasure of the city in favour of a tabula rasa, which is an extreme paradigm of defamiliarization.[16] Moreover, the uncanny proved extremely relevant as a way to think the two "postwars", after 1919 and 1945, and reemerged as an aesthetic sensibility since the mid-sixties, reflecting a general skepticism of the idea of "progress".[17]

In post-modern discourses, the uncanny has been reformulated by theorists such as Lacan, Derrida and Baudrillard, and reappropriated in the study of contemporary urban environments as well. The notion of the simulacrum (a proliferation/extension of the double in some way)[18] seems most adequate to represent the postmodern experience. As Vidler points out, in the postmodern city we experience "the continuous repetition of the same, the continuous movement across already vanished thresholds that leave only traces of their former status as places".[19] We cross nothing to go nowhere. Hence, displacement from place results in temporal and spatial disorientation. No longer being in place reveals ontological insecurity, since ontology is rooted in the central place of being.[20] Architecture, as Vidler claims, may also be invested with uncanny qualities; it may play with the ambiguities between absolute flatness and infinite depth, or between transparency and obscurity, or it may recall the fantasy of dismembered/ distorted bodies.[21]

The literature of the urban uncanny continues to provide valuable insights into the contemporary urban experience. From a broad perspective, according to Lucy Huskinson, "the urban uncanny denotes the slippage or mismatch between our expectations of the city, as the organized and familiar setting for citizens, for their work, habitation, and living, and the often surprising and unsettling experience it can evoke within them. The city is uncanny when it reveals itself in a new und unexpected light; where, for example, its familiar streets and buildings suddenly appear strange, even hostile…"[22]

UNCANNY ASPECTS OF CONTEMPORARY ATHENS

In the late 2000s, the outbreak of the global financial crisis fiercely affected South European regions and cities in the form of debt crisis and internationally imposed economic adjustment strategies, inducing high rates of unemployment, poverty, and housing precariousness of the most vulnerable

groups of the population. The decline of the central area of Athens had already started during the late 1970s, when the middle classes gradually abandoned the centre for a better quality of living in the northern and southern suburbs.[23] Urban regeneration and public investment programs on the occasion of the 2004 Olympic Games did not reverse the decentralization of important activities and functions; in fact, some of the infrastructure works even accelerated this process. The economic recession from 2010 onward and the subsequent social unrest had major spatial impact in Athens' central area, as well as in its more distant neighbourhoods: reduced economic and professional activity, closed stores, derelict spaces of consumerism that once thrived. Anti-austerity uprisings, demonstrations, and battles with the police severely injured the historical centre and left behind burnt buildings, even historical landmarks. Another very significant consequence was the dramatic increase of homeless and extremely deprived people, among them many poorly integrated immigrants.[24] During the crisis, Vassilis Arapoglou has attempted to link a widespread feeling of the uncanny in Athens, with the psychosocial consequences of the neoliberal crisis and its management.[25]

Urban Ruins

Stadiou Street, being the right side of the so-called Historical/Commercial Triangle (Figure 1), in the core of Athens Metropolitan Area, used to be a most prominent space, actually the main commercial artery of central Athens, very popular among Athenians, who swarmed day and night. During the recession of the 2010s, it was fiercely transformed into an urban desert. Today, the uncanny effect derives from the continuous presence of urban ruins, some of them dating from the early eighties, when a number of department stores were burnt and never restored, and others from the crisis era.

Figure 1. The Historical/Commercial Triangle of Athens

As Dylan Trigg suggests, the ruin may appear obscure, inert, and indecipherable, at best a curiosity.[26] On the other hand, restoration enforces the impression that death can be negated.[27] Theorists like Solà-Morales, in his "Terrain Vague", praise such kinds of spaces for their promising emptiness or uncertainty and ambivalence. Artists, too, are fascinated with empty/ imprecise/ fluctuating spaces, because they contain endless possibilities, far from the productive efficiency of the city.[28] Abandoned spaces in Athens served as sites of several artistic projects during and in the aftermath of the crisis. But, despite their temporary revival, they still estrange with their spectral presence.

Figure 2. The building that houses the historical cinemas "Apollon" and "Attikon" (19-21 Stadiou Str.) [29]

All along Stadiou Street there are also burnt or dilapidated neoclassical buildings, left unrestored for many years, some of them ready to collapse, hidden behind tissues, barriers and scaffolds to protect passersby. This seems rather uncanny in a historical centre, where architectural heritage is supposed to be not only preserved but displayed as well. One of these buildings (illustrated in Figure 2), a landmark and meeting point, originally designed by Ernst Ziller, an influential architect of the late 19th-early 20th century, used to host two of the oldest and most luxurious cinemas of central Athens; the cinemas fortunately survived the fire during a demonstration in 2012, but the upper part of the building block was destroyed. Although the reopening of the cinemas has been repeatedly announced, restoration work has not progressed due to a legal dispute.

Besides them, there are other visible signs of abandonment: still empty stores, neglected or destroyed pavements, declining public space and urban equipment. Klafthmonos Square, in particular, in the centre of Stadiou Street, is rather unwelcoming and devoid of liveliness; the presence of homeless people and drug addicts form a sharp contradiction with the ambitious regeneration projects being carried out in the area.

Regeneration projects

Nowadays, Stadiou is undergoing a significant reinvigorating and rebranding process, that combines entrepreneurialism with touristification: part of the deteriorating building stock is being restored to house banks' headquarters, luxury hotels and spaces of consumerism, addressing an affluent cosmopolitan elite. In a few months, a hypermarket of Mediterranean gastronomy is going to open its gates in the place of a conurbation of bookstores, in the regenerated Stoa Arsakeiou, a most emblematic arcade, following a global trend (Figures 3 and 4).

In the broader area of the centre, cinemas, small bookstores, traditional cafés and other famous spots, essential elements of the city's collective memory, are threatened with extinction, in favour of the tourism industry, which erodes the multifunctional character of the centre. The transformation of office buildings into hotels, and the subsequent increase of commercial uses connected to tourism (restaurants, cafés, bars, mini-markets, etc.), results to the displacement of professionals and uses, that served the needs of the locals and contributed to the liveliness and attractiveness of the city-centre.

Figures 3 and 4. Luxury stores and the (still closed) entrance of Stoa Arsakeiou (54-56, Stadiou Str.)

Gentrification via touristification

Athens has always attracted tourism but the visitors usually made a quick stop on their way to the islands, to visit the Acropolis and the Museum, and stroll about in the touristic old neighbourhood of Plaka. In the late 2010s, Athens gradually turned into an all-year destination for tourists and, during the pandemic, into a preferable residence for digital nomads. Short-time rental of vacant appartements gave an additional income to many households suffering from the economic recession.[30] But the prospects of the touristic industry attracted also foreign investors and speculative agents. Many foreign buyers benefited from the Golden Visa Scheme, one of the cheapest in Europe during this period (twenty-five hundred thousand Euros). Some of the investors bought whole buildings, and profited from the rent gap. Massive renovation of the devaluated housing stock of the city (even of lower floor appartements) to be used by middle class tourists and gentrifiers brought significant change to the housing market.[31] Since then, explosive growth of the short-term rental sector has reduced the affordable housing stock mainly in the Historical/Commercial Centre and the surrounding neighbourhoods, caused displacement

of lower income groups, and skyrocketed rents and prices even in peripheral areas of the city.[32] Despite a series of governmental measures, such as restrictions to the short-term rental sector, incentives for house owners to renovate their houses for long-term rental, special loan agreements for young households, etc., this trend doesn't seem to be reversing. On the contrary, all measures seem to push prices even higher, forming a sharp controversy between generations; older generations with high rates of homeownership profit from the high prices, while the younger ones strive for affordable housing.
During and in the aftermath of the crisis, tourism seems to be the only viable economic model proposed for the city, which inevitably entails gentrification. A number of central areas were already in a gentrification process since the pre-Olympics era (late 1990s), mostly enclaves of the working class (Thissio, Psiri, Gazi, Petralona, Metaxourgio). In the Athenian context, gentrification primarily based on private initiative, but has nevertheless been encouraged by state policies.[33] The list of neighbourhoods under gentrification is constantly broadening. People living in apartment buildings partly converted into tourist lodgings are forced to endure noise, even in rest hours, encounters with strangers in the commonly used spaces of the building, loss of long-term relationships with neighbours, and estrangement from their home and neighbourhood. Additionally, the proliferation of bars has turned some Athenian streets into overcrowded party sites. All these are experienced as uncanny aspects of eviction and homelessness by the affected groups.

Exemplary cases: Omonoia, Exarchia

Even Omonoia Square, on top of the Historical Triangle, captured the interest of the investors. In the last decades, Omonoia has been associated with urban decline, and with high concentration of immigrant populations, many of them undocumented, living in unsanitary, informal shelters; additionally, it was stigmatized as "ghetto" in public discourse, for petty delinquency, organized crime and other "social ills".[34] Today, it is considered one of the rapidly developing areas of the city, its multi-cultural character being an additional attraction. Luxury new hotels and apartment buildings are considered "success stories" by the funds, while euphoric tourists stroll beside homeless and drug addicts, and the locals and seem rather perplexed by the coexistence of decay and pretentious lifestyle.

Figure 5. View of Omonoia Square from Panepistimiou Str.

Figure 6. On the left, an old building transformed into a luxury hotel in Omonoia Square

Another interesting case is Exarchia, one of the oldest central neighbourhoods. Its proximity to many university venues has always attracted students, scholars, artists, and bookstores. It welcomes otherness of any kind, hosts many squats and informal, self-operating immigrants' shelters, and other commons. In tourist city guides, the neighbourhood is marketed as a revolutionary spot due to its functioning as the headquarters of anarchists' groups and its long tradition of grassroots political activity. Activists are welcome to participate in the field. Political action is reduced into a touristic spectacle through suggested sightseeing tours that focus on memorials of urban struggles, street art and graffiti.[35] Visitors seeking authentic experiences end up in spaces of alternative entertainment, especially designed for them. The unique character of the neighbourhood is being transformed in favour of a homogenized model. The old inhabitants lose their points of reference and experience this new context as an unhomely home, while many entrepreneurs feel threatened by the new business model.

Construction sites

At the same time, Athens is once more (after the 2004 Olympics) being transformed into a construction site due to the expansion of Metro lines and the creation of new stations. Though necessary, this project deprives residents of vital public space, given that Athens is a densely built city, with narrow streets, lacking open public spaces, and the completion of the project will take years.

Living with the fences, the huge pits, the noise, the dust and the deprivation of space for everyday activities are alienating residents. Especially in Exarchia, there have been protests against the construction of the metro station in the small square (Figure 7). A court decision obliged the contractors to restrict the construction site to ensure accessibility and safety conditions, and the fences were temporarily removed, but nothing was left from the familiar place. The inhabitants claim that gentrification and the construction of the metro station are state strategies to resume control over and "sanitize" the rebellious neighbourhood.[36]

Figure 7. The construction site in Exarchia

Another emblematic square, Platia Filikis Eterias in Kolonaki, a most prominent neighbourhood of the upper classes, and already redesigned for the 2004 Olympics, is, like Exarchia, completely erased by its former greenery and urban equipment. The huge pit in Kolonaki Square (Figure 8) is a good example of defamiliarization of lived space. The construction site almost touches the thresholds of the surrounding buildings.

Figure 8. The construction site in Filikis Eterias Square

The remodeling of the coastal zone

Other larger-scale interventions are taking place in the coastal zone of Athens, the so-called Athens Riviera (Figure 9). Highlighting the seafront of the city of Athens has been a matter of priority for long time, and was included in the Olympic works, but only a small part of it was realized before the Games. During the economic crisis, large and privileged tracts of land along the urban coast were sold to investors at very favourable terms.[37]

Figure 9. The Athens Riviera [38]

Selling Ellinikon, in particular, the site of the former airport, was among the conditions set by Greece's international lenders to receive bailout loans, an obvious case of privatization of the whole site and the adjacent waterfront area. Now it is being transformed into a new town within the city, with twenty-five thousand residents and twenty thousand workers and visitors per day. It will include a park, luxury homes, hotels, a casino, a marina, shops and offices and Greece's tallest buildings reaching up to two hundred meters in height.[39] The neighbouring municipalities, organisations and initiatives have repeatedly mobilised by all means against the privatisation and the cutting off of free access to the shore, and against other misuses of public space.

Such major projects raise issues related to the use of the public space and the degree of its appropriation.[40] It is doubtful whether the redeveloped area will be an organic part of the city; it is more of a playground for affluent Greeks and foreigners, while lower-budget social groups feel unwelcome even to the beaches. In public discourse, it is compared to Dubai, because it has so little reference to the history and culture of the Greek capital city. Even the euphemism "Riviera" refers to a lifestyle, that the majority of the Athenians cannot afford. The uncanny skeleton of the "Riviera Tower" (Figure 10) rising so close to the seaside produces an alienating spectacle for commuters and visitors driving along the coast.

Figure 10. The Riviera Tower [41]

CONCLUSION

The notion of the uncanny and its force in interpreting the relation between the individual and the urban environment was the stimulus for this paper. We have examined some aspects of the uncanny in contemporary Athens, but there are many other sides of the city's lived experience that furtherly estrange its inhabitants, but could not be included in this paper; for example, the pandemic or the climate crisis have created and continue to create uncanny conditions. Considering all the issues presented above, we conclude that uncanny encounters in the urban experience may put the city's identity at stake and destabilize the relationship between the city and its inhabitants. An unhomely urban environment can be neither livable nor sustainable.

NOTES

[1] Sigmund Freud, *The Uncanny*, trans. David McLintock (London: Penguin Books, 2003).
[2] Anthony Vidler, *The Architectural Uncanny. Essays in the Modern Unhomely* (Cambridge MA and London: The MIT Press, 1992), xi.
[3] Vidler, x.
[4] Parshan Ranasinghe, "On Being, Nothingness and Ontological Homelessness: An Heideggerian Inquiry into Authenticity", Cosmos and History: The Journal of Natural and Social Philosophy, 16, no. 1 (2020): 191, 208, 210.
[5] Vidler, 45-55. Freud, among other scholars, was well aware of the uncanny effects of Pompeii and had devoted a long essay to the analysis of Wilhelm Jensen's fantasy *Gradiva*, taking place amidst the ruins of the ancient city (53-54). Freud himself experienced a different version of the uncanny while visiting the Parthenon in Athens; he described this incident after many years in his essay *A Disturbance of Memory in the Acropolis* (1936).
[6] Dylan Trigg, *The Aesthetics of Decay. Nothingness, Nostalgia, and the Absence of Reason* (New York: Peter Lang, 2009), 131, 138.
[7] Álvaro García Marín, "The Origin is Already Haunted: Greece as the Uncanny of Modernity", Modern Greek Studies Online, ed. Kostas Skordyles, 1 (2015): 2-3.
[8] Julian Wolfreys, "The Urban Uncanny: The City, The Subject and Ghostly Modernity". In *Uncanny Modernity: Cultural Theories, Modern Anxieties,* ed. Jo Collins and John Jervis (Palgrave Macmillan, 2008), 168-180.
[9] Vidler, *The Architectural Uncanny*, 4-6.
[10] Georg Simmel, *The Metropolis and Mental Life* (1903), accessed July 9, 2025, https://www.blackwellpublishing.com/content/bpl_images/content_store/sample_chapter/0631225137/bridge.pdf.
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BAUKULTUR AS A SOLUTION TO OVERTOURISM: SUSTAINABLE URBAN DESIGN FOR PRESERVING LISBON'S IDENTITY AND HERITAGE

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INTRODUCTION

Lisbon has swiftly transformed into one of Europe's premier tourist hotspots, attracting millions each year with its charming streets, lively culture, and rich architectural history. Nonetheless, with its rapid tourism growth, the city is increasingly confronted with concerns about overtourism and its associated challenges such as escalating housing prices, the displacement of residents, and the commercialization of cultural heritage, effects that are intricately linked to the processes of gentrification and the weakening of socio-cultural cohesion and cultural identity. Researchers are increasingly drawing attention to how unregulated tourism can turn cities into exclusive zones dominated by outsiders, frequently to the detriment of local communities and sustainable development.

In this context, the idea of Baukultur provides a comprehensive and culturally attuned approach to urban development. Baukultur prioritizes excellence in the built environment, sustainability, and the incorporation of local culture into urban design and planning practices. Grounded in participatory governance, architectural authenticity, and a profound respect for heritage, Baukultur offers an appealing alternative to the commercialization of urban spaces due to global tourism trends. This article examines how Baukultur can serve as a strategic framework to mitigate the impacts of overtourism in Lisbon and foster inclusive, resilient urban regeneration through the maintenance of the city´s identity and heritage.

OVERTOURISM IN LISBON AND ITS ACCOMPANYING CHALLENGES

Lisbon has emerged as a popular destination for tourists and global investors due to its recovery from economic difficulties and an improved international reputation.[1] According to the most recent data from INE (Instituto Nacional de Estatística) in 2024, Portugal welcomed 29 million visitors, reflecting a 9.3% increase compared to the previous year, while the Greater Lisbon area saw a 4% rise in tourist arrivals, corresponding to 26.2% of national tourist demand. This encouraging trend is expected to continue, with projections forecasting thirty-three million visitors in Portugal by this year of 2025. Nonetheless, considering that Portugal has just about 11 million residents (548,000 if we speak of the city of Lisbon alone), this rapid rise in tourists presents numerous difficulties: the influx of visitors has resulted in increased property prices, pushed residents out of their communities, and changed the urban environment of the city.

The transformation of historical neighborhoods into popular tourist destinations has led to an increase in short-term rental units and a decrease in local businesses. The rise in these types of accommodation started in April 2009 when the first property was listed on Airbnb in Belém, Lisbon.[2] By June 2025, there were 26,260 registered guest houses in the AML (Lisbon Metropolitan Area), with 18,965 of them situated within the Lisbon municipality itself. This led to researchers[3] pointing out that while tourism can provide economic benefits, it also brings significant social challenges, particularly for community members who find it increasingly difficult to afford to live in their own neighborhoods.

The pressure on housing affordability is evident in the real estate market statistics: according to INE during the first trimester of 2025, the average house price across the country stood at €232,000, whereas in the Greater Lisbon area, prices were higher, reaching an average of €381,000. Similarly, the rental market has experienced significant hikes, with the median rent for new leases at €8.22 per square meter nationally (a 10% increase), and €13.16/m² in Greater Lisbon, highlighting the mounting financial pressure on residents due to demand fueled by tourism.

From here on, we are addressing the "impacts of tourism on a destination, or parts thereof, that excessively influence the perceived quality of life of citizens and/or quality of visitor experiences in a negative way," as the World Tourism Organization[4] puts it. In simpler terms, we are referring to overtourism, which occurs when the demands placed on a city surpass its capacities: ecological, physical, social, psychological, or economic.[5]

Although the local population is quick to notice the socio-cultural effects of overtourism in their area, such as pressure on infrastructure, displacement, and the erosion of identity and traditions,[6] researchers tend to be more careful. They acknowledge that tourism can precede gentrification or be drawn to neighborhoods that are experiencing gentrification.[7] Thus, the key idea is tourism may either stem from or lead to gentrification. Considering this, we must reflect on the journey that led us here.

Research indicates that urban policies in Lisbon may have played a role in fostering gentrification. Additionally, some specific investigations show that governmental policies have actively facilitated the "touristification" of the city, as public and private entities have prioritized regeneration driven by tourism over considerations of long-term urban fairness. This has resulted in a scenario where «in a perverse process (…) taxpayers unwillingly subsidized their own displacement and the production of a city that is not for them».[8] Consequently, the urban landscape of the city is increasingly influenced by consumer interests rather than community needs.

In terms of population displacement, studies provide more focused insights, suggesting that the urban rehabilitation initiatives undertaken in the last few decades of the 20th century within Lisbon's historic center may have eased the path for gentrification.[9] Thus, let us explore the concept of gentrification and its implications, as well as the policies that appear to contribute to it.

Policies and gentrification

As any literature describes, the term "gentrification" was introduced by Ruth Glass in 1964[10] and refers to the movement of the middle class into areas previously occupied by working-class residents, which is marked by the renovation of residential properties and the resulting displacement of long-term residents who can no longer afford the increasing costs. This phenomenon is regarded as a direct outcome of urban renewal strategies and incentives for private investment, as suggested by researchers for the city of Lisbon. This indicates that we need to examine these policies.

They include: the easing of regulations around short-term rental markets; urban renewal and investment incentives that concentrate on tourism infrastructure; the marketing of Lisbon as a tourist hotspot and business center; limited oversight of tourism expansion; and tax and legal advantages for foreign investments. In the context of Lisbon, highlighting the gap between economic incentives and the preservation of culture, regeneration has become a significant driver of gentrification, linked to tourism,

and actively endorsed by government policies.[11] This suggests that urban development strategies have encouraged gentrification and made it attractive to tourists and international investors. Furthermore, considering the various social dimensions impacted by this phenomenon, it also implies that overtourism should no longer be seen merely as a tourism issue or as an urban challenge, but instead as a social issue within the city's framework.[12]

BAUKULTUR FRAMEWORKS

Our initial proposal was based on the belief that Baukultur can assist in tackling the problem of overtourism by safeguarding heritage and identity. Thus, it is essential to clarify its significance. Baukultur, which translates directly to "building culture" or "the culture of building," is a notion that can be best grasped as a framework promoting holistic, sustainable, and culturally sensitive urban development. This concept extends beyond architecture to include the entirety of the built environment as a cultural artifact.[13]

First implemented in Germany and Switzerland through regulations that require participatory urban planning, sustainability, and cultural awareness, Baukultur can be seen as the "combination of all cultural, economic, social, and ecological factors that affect the quality and process of planning and construction".[14] It is a framework that suggests cities should embody the values, histories, and aspirations of their communities through inclusive and high-quality urban design.

Officially adopted by the Davos Declaration in 2018, Baukultur, a concept initially influenced by the utopian Bauhaus movement, brings together central ideas from the Athens Charter (1933) and the later Machu Picchu Charter (1978) which already proposed the valorization of local history and culture, a more contextualized and humanized architecture, and community participation in the urban planning process.[15] Building on the New Leipzig City Charter (2020), which values cultural, social, ecological, and economic interaction, and the Valletta Principles (adopted by ICOMOS in 2011), which call for coherent development and the harmonious adaptation of historic spaces to contemporary urban life, this initiative also revisits, to a certain extent, the theme of anthropocentrism and assumes that human activity conditions and alters the built environment, placing culture as one of the central manifestations of humanity and a key point in its philosophy.[16] Presenting itself as a manual of good practices and an assessment tool based on pre-established qualitative criteria,[17] the initiative seeks to integrate the material dimensions of architecture, respecting local techniques and traditions, and the social and psychological needs of the population. It is, therefore, a holistic and culturally sensitive approach,[18] which aims to create urban spaces that integrate aesthetics, functionality, and social responsibility, and promote the preservation of heritage and cultural identities.

Rooted in eight major principals,[19] Baukultur looks to:

1. Provide quality-oriented and context-specific processes, maintain transparent and inclusive participatory governance, and involve the community in city making processes.
2. Address populations requirements for health, comfort, safety, and accessibility; propose adaptable re-use and safeguard of built heritage.
3. Assure responsible land use and settlements, sustainable mobility, energy efficiency, and use of durable construction materials and methods supporting sustainability.
4. Emphasize cultural significance and long-term investments over short-term economic gain.
5. Foster inclusive communities and mixed uses, thus facilitating interaction and shared responsibility, which lead to social and spatial cohesion.
6. Embrace built heritage and contemporary creation: local features and their characteristics whether it is age, scale, typology, or materiality.
7. Foster people's emotional response to the place and enhance the sense of identity and belonging.
8. Improve individuals' life satisfaction and quality of life through aesthetics.

Reinforced by a variety of legislation and resolutions introduced in recent years by the European Union, alongside the establishment of the New European Bauhaus policy and funding initiative by the European Commission in 2020 (which utilizes the Davos Baukultur Quality System as a foundational guideline), as well as the European Green Deal and the Renovation Wave strategy, Baukultur is also in harmony with the EU's cultural sustainability goals. A strong example of this is the New Urban Agenda developed by UN-Habitat, which reflects numerous Baukultur principles, advocating for cities that are inclusive, safe, resilient, and sustainable,[20] highlighting the importance of citizen engagement, cultural preservation, and the necessity for urban design that expresses local identity, core concepts that resonate well with Baukultur.

GENTRIFICATION, HERITAGE, AND SUSTAINABLE URBAN REGENERATION

Overtourism in Lisbon manifests not only in the physical and cultural degradation of its historic neighborhoods but also through profound social consequences that affect community cohesion and equity.[21] Among the foremost issues recognized by Lisbon's residents are gentrification and displacement,[22] which result from rising housing costs and a growing sense of alienation, thereby exacerbating social inequalities. This phenomenon, long studied in urban sociology, is understood as part of a global process propelled by neoliberal policies and real estate speculation, as some researchers insightfully demonstrate.[23] However, the pressures of overtourism extend beyond tangible heritage loss, manifested in the commercialization[24] and physical deterioration of historic neighborhoods, to intangible dimensions, where commodification and prioritization of economic gain undermine cultural identity,[25] customs, and social fabric.

Addressing these multifaceted challenges requires governance frameworks capable of mediating between continuity and change, emphasizing community agency and involving residents actively in decision-making processes related to tourism development and urban planning.[26] Central to this approach is the concept of community resilience, which relies heavily on strengthening local social infrastructures and empowering local actors.

In response, Baukultur provides a holistic framework[27] that not only advocates for technical conservation methods to safeguard Lisbon's built and intangible heritage but also foregrounds inclusive, context-sensitive planning that integrates social, cultural, and environmental dimensions. In tackling gentrification and displacement, Baukultur recommends mixed-use developments promoting housing diversity (exemplified by Parque das Nações [Park of Nations] district which successfully combines residential units, offices, commercial spaces, and diverse services) and prioritizes the maintenance and adaptability of buildings and public spaces. It insists that urban design evolve into a participatory dialogue with communities, ensuring that housing, public spaces, and services authentically reflect local identities and needs. Furthermore, architectural continuity (exemplified by the practices in downtown Lisbon) through the preservation of historic layouts and adaptive reuse of heritage structures is essential to maintaining the urban morphology and cultural coherence of the city's core.

Simultaneously, Baukultur addresses the commodification of cultural heritage, which transforms historic neighborhoods into tourist-centric spaces at the expense of authenticity and resident welfare, frequently changing the nature and purpose of historic sites, hastening deterioration instead of conservation.[28] This commodification is observed in the replacement of local services by souvenir shops, the decline of artisanal crafts, and overcrowding, which collectively degrade both the physical environment and the symbolic unity of communities. The loss is not limited to material assets but extends to Lisbon's intangible heritage, its UNESCO-recognized traditions, artisan crafts like cork and azulejo tile work, culinary customs, and social practices that together compose the city's unique cultural tapestry recognized internationally. Protecting intangible heritage fosters place-based sustainable lifestyles, supporting local economies and reducing the environmental costs of mass consumption.

Baukultur thus envisions heritage preservation as a dynamic process,[29] enhancing the interplay between tradition and modern creativity through selective dismantling, adaptive reuse, and tiered protection policies. Strong regulatory measures, such as controlling the influx of generic souvenir shops, supporting authentic local businesses through initiatives like the "Lojas com História" [Stores with History] program, and incentivizing genuine cultural products, are crucial for sustaining Lisbon's cultural economy and identity.

Importantly, Baukultur integrates ecological sustainability into heritage preservation, recognizing the built environment's role in community well-being[30] and environmental stewardship. Retrofitting historic buildings with energy-efficient technologies, employing traditional and locally sourced eco-friendly materials, and repurposing obsolete structures for new cultural or affordable housing uses not only reduce the environmental footprint but also preserve Lisbon's architectural integrity.

Complementing this, Baukultur emphasizes (as we have seen) participatory urban governance that includes residents, heritage experts, and local businesses; it stresses aligning conservation efforts with climate adaptation and resource management imperatives such as upgrading public transport, prioritizing low-emission mobility, and managing tourist flows in sensitive heritage zones which serve to mitigate pollution and relieve stress on vulnerable urban fabrics.

However, the effective reconciliation of social, cultural, and ecological concerns under Baukultur requires assertive municipal policies that channel tourism revenues into conservation and sustainable infrastructure, the enforcement of regulations limiting unsustainable commercial activities, and the encouragement of community-led urban resilience. By embedding these integrated principles, Lisbon can nurture an urban environment that preserves cultural authenticity, promotes social equity, and enhances environmental sustainability, thus ensuring that both its rich heritage and vibrant communities thrive amid the pressures of modern tourism.

Policy recommendations for implementing Baukultur in Lisbon

To implement these ideas, changes in policy are crucial (it is essential to recognize that current urban policies have significantly contributed to the excessive tourism pressures faced by Lisbon). Additionally, it is important to note that Baukultur, as a holistic and context-aware framework, can be utilized both proactively, to steer development prior to the occurrence of unsustainable or unsuitable interventions, and reactively, to tackle and remedy urban and cultural problems that have already arisen[31]. In this context, Lisbon is making considerable progress toward sustainability through initiatives like the Climate City Contract 2030, the current National Policy on Architecture and Landscape and the Metropolitan Mobility Plan, even though these efforts are currently functioning independently. Therefore, what we propose in this paper is to promote a greater connection among existing projects, bolstered by six essential policy changes that aim to incorporate Baukultur principles, thereby establishing a solid basis for future development and the systematic unification of urban culture and sustainability. As a result, we recommend:

1. Institutional integration: we must embed Baukultur into Lisbon's legal planning framework, ensuring all regeneration projects are evaluated against cultural and sustainability criteria.
2. Governance reform: it is urgent we create participatory urban planning forums and establish neighborhood-level planning councils with decision-making authority to ensure local input in the decision-making processes.
3. Incentivized conservation: it is essential we provide tax relief or subsidies for heritage-friendly renovations and discourage speculative real estate investment.
4. Education and awareness: we must promote public awareness campaigns directed at citizens and tourists alike. It is essential that these campaigns remain focused on culture, heritage, and community living.

5. Tourism management plans: we need to develop comprehensive strategies that cap short-term rentals, regulate visitor flows, and reinvest tourism revenue into community infrastructure for the benefit of local communities.
6. Alignment with EU cultural sustainability goals: it is mandatory we create working/focus groups to start implementing sustainable policies into local/national decision-making processes.

CONCLUSION

The future development of Lisbon as a dynamic, equitable, and sustainable urban area fundamentally relies on its ability to balance the demands of tourism-driven expansion with the need to maintain its unique social and cultural identity. The complex issues arising from overtourism, including heightened social inequalities, rapid gentrification, and the commercialization of cultural heritage, cannot be effectively addressed through solely economic or technical approaches. Rather, these issues require a comprehensive cultural and ethical reassessment of the foundational ideas guiding urban governance and design.

In this context, Baukultur offers a thorough and integrated conceptual framework that emphasizes quality, community involvement, and environmental sustainability in urban planning and policymaking. This framework presents Lisbon with a practical approach for ongoing development that protects local identity and promotes authenticity in the urban environment. By redefining urban design as a culturally rooted and community-focused practice, Baukultur facilitates the creation of social and spatial conditions that empower local communities and helps maintain vibrant, evolving urban spaces that are more than just consumer destinations.

Moreover, considering global trends marked by increased urbanization and tourism demands, Lisbon's adoption of Baukultur could serve as a compelling example of how cities can manage and balance conflicting priorities. By developing a cohesive, multidimensional vision that aligns heritage preservation, environmental care, social equity, and urban vitality, Lisbon has the potential to make a meaningful contribution to both the academic and practical discussions surrounding sustainable urban futures, moving beyond the confines of growth-oriented frameworks.

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THE STREET AS PLACE IN CONTEXT OF THE EVOLVING CITY

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INTRODUCTION

Neighbourhoods in Chennai contribute to a degree of individual identity that promote diversity in the city. Perception varies from the person who is a resident to the public who uses the street. "The relationship between architecture and behaviour exists within the broader framework of the relation between society and its spatial form."[1] A discussion will follow showing a comparision of three streets from three different economic backgrounds with their varied perception and patterns of behaviour depending on stakeholders.

Questions

What is the role of the street for each neighbourhood?
Who uses the street?
What are the elements that construct the physical environment of the street?
What is the different forms of and use found in the neighborhood.
What are the kind of social encounters the street in each neighbourhood promotes.
How does the street contribute in terms of a social context of image, privacy and identity.

LITERATURE REVIEW

Amos Rappoport offers a framework to study the character of the street. He comments "It appears that people react to environments in terms of the meanings the environments have for them."[2]

From another standpoint Gibson suggest a radically new basis to explain the perception of solid superposed objects, a new theory based not on cues or signs ". "The idea of affordance refers to properties of the environment that are relevant to the way in which human beings move, perceive and inhabit it. Affordances of the environment can be spatial The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill."[3] The spatial affordances are paths, streets, etc as well as patterns of encounter "based on co-presence and co-visibility and the socio-spatial are position, movement, access, placement, interaction, avoidance, meeting, concealment or exposure ,given the social setting."[4]

Simon Unwin comments "In towns and cities the walls of streets and squares inhabited. The houses, shops and other buildings form the walls of the public spaces."[5] The inhabited wall is space that is subtracted from a dense hard block and in this sense the facades of the houses which are continuous buildings that line the street in lower middle-class neighbourhood.

Jane Jacob's book looks at ways of fostering life in the city. She studies the socio- spatial dynamics of the city. She suggested that through mixed use, a neighbourhood and its streets promote vitality and the

experience of safety with a larger degree of social exchange. She gives particular significance to the sidewalk, as an area of social interaction for adults and children who are thereby watched by people and coined the behaviour pattern and concept of "eyes on the street".
Kevin Lynch looks at five basic elements in the Image of the City. He comments that an image of the city is perceived at a macro level through five elements. "Districts are structured with nodes, defined by edges, penetrated by paths and sprinkled with landmarks."[6]
Bill Hillier and Julienne Hanson, in The Social Logic of Space discuss on the nature of social encounters and categorize them in terms of the spatial and the trans-spatial. Spatial encounters are those that happen within people who live in the same space, the street or neighbourhood in this case and the trans-spatial categories refers to encounters between people who interact outside their place of occupation. Spatial and the Tran-spatial are referred to as correspondence and non-correspondence pointing to correspondence as being of that area and non-correspondence being from another area.' "this distinction between correspondence and non-correspondences systems tells us something of what the system is like locally and how it is experienced as an encounter system."[7]

METHODOLOGY

First there will be a discussion in three parts, first the elite street will be described in terms of the parameters given in the figure below, followed by the two parallel streets in the middle class neighbourhood and lastly the lower middle -class street. Followed by findings and conclusion.

street		
physical		social
Location Connectivity Width Length Presence of pavements Presence of trees Condition of street	Building –typology Land use Density as in number of dwellings along the street Types of architectural styles Compound wall Gate Parking	Activities on the street-users and function Socio-cultural aspects Interface Privacy Identity Appropriation of the street Socio-spatial and tran-spatial encounters

Figure 1 Parameters of study

DISCUSSION

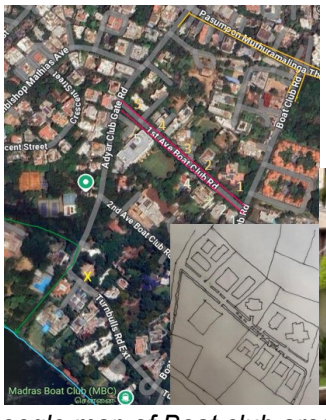

Figure 2 Google map of Boat club area

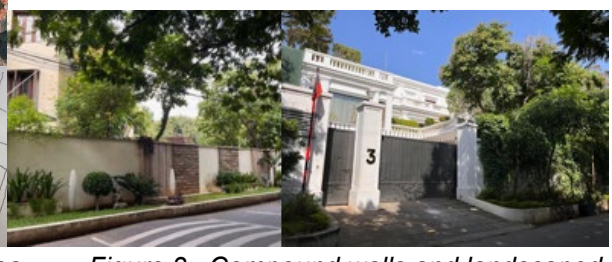

Figure 3 Compound walls and landscaped pavements

Street in elite neighbourhood

The three residential streets under study are located in South Chennai. The first is an internal street in an elite residential neighbourhood called the Boat Club area. Part of the neighbourhood follows the edge of the Adyar river and the neighbourhood is named after the boat club located there. Refer figure 2 which shows an approximately 9-metre-wide street which connects to two main streets that lead into the residential neighbourhood from a main road of the city. “Madras Club” is situated in this area, which was a club for English families till the 1960’s. It is an area of lower density, refer insert in map, as large villas are built in large compounds following the English bungalow. Houses belong to primarily industrialists and politicians. Houses are visible only beyond high compound walls and impermeable gates shielded by security booths set in the compound wall. The street is well maintained, with a marked carriageway, speed breakers and has pavement space provided in most areas. Refer Figure 3. Trees line the street. Pavements are used in different ways. In certain areas they are raised beyond the average city pavement level to more than a foot in height and landscaped with grass and evenly planted trees and provide a seat to rest and in other areas they are decorative with landscaping, lights and sculpture and in other areas offer surface for use such as yoga.

High walls beyond the building regulation of 5’ height define the physical character of this street. Entrances are significant through high gates of translucent material which offer no visibility and are in some houses set in from the street. Names written on the entrances are replaced by large numbers in metal which are sometimes back lit for effect.

The street is used by walkers who do not live there but come there to walk and exercise. It offers itself a safe aesthetically designed environment climatically comfortable from the shading of the trees. Individual walkers and group walkers can be seen at the cooler times of the day. Tran-spatial friendships and solidarities are built.

Figure 4. Paralell streets in middle class neighbourhood from Google maps

Figure 5 2nd cross Street

Figure 6 2nd and 3rd cross streets

Parallel streets in the middle-class neighbourhood

The second example under study is a pair of parallel streets in a middle- class neighborhood. Two streets as seen in the Figure 4. The two streets are parallel and sandwiched between two main roads. One - Kavignyar Bharathi Dasan Road, a major road in the city which leads off the main city spine and is in character commercial and institutional and Cenotaph First street, a primary residential street with a range of socio-economic establishments and independent residential apartments from higher middle class to lower middle class. The streets under discussion are parallel to this and set in. They are the access streets for part of a plotted development of houses on small plots of land. consisting of independent houses, flats and vacant land. Two corner plots have been converted to commercial and institutional uses. Refer Figure 5 The independent houses are of varying time periods and architectural styles from post-independence houses to a villa style to a contemporary newly constructed house. Contemporary houses are designed using a minimalist architectural language of plain surfaces with an interplay of mass and volumes and secured within higher compound walls with wooden impermeable gates. Some apartments echo a similar language. The apartment blocks are four storeys in height and follow the preferred contemporary language of the builder. The compound walls follow building regulations and are five feet high. Most houses have two separate entries to their plot, a wider gate for a single car and a smaller wicket gate for pedestrians. The gates of the older houses are of made of steel grillework and provide a semi-transparent layer through which there is a degree of visibility of the house inside the compound wall. In Figure 6, a security guard sits on a chair outside the house and keeps vigil. In the newer houses and flats impermeable high gates in wood and steel, high compound walls offer no view of the interior. The houses and apartment blocks have front and street facing balconies which are used by their respective residents. Vacant plots are visible where the building has been demolished and the plot is to be redeveloped. In the corner in one plot construction is in progress. In one of the older houses the owner is seen sitting in the balcony with his “eyes on the street”. Some houses have owner names in addition to house door numbers. The street is maintained moderately with intermittent pavements. Trees are planted in areas designated for pavements. Pavements are intact in certain areas only and in some areas are planted. There are a range of activities that take place in the street. Due to its location, and connectivity, people of all ages and gender can be seen in the morning. At approximately 7.30 to 8 am the street is used by office goers, maids and house staff, children, a mobile vendor drives in his motorized tricycle selling leafy greens, nearby students and young people socially interacting in pairs and encounters are trans-spatial in nature. A little earlier it offers a place for walkers who primarily live in the neighbourhood and is a play space for boys and offers encounters which are spatial in nature. In the weekends children play cricket and ride tricycles and play ball. Every morning as customary a kolam or symbol is drawn on the front pavement to ward off evil and protect the house. One of the streets ends in blank wall, which is the compound wall of a block of flats, so as customary to cultural beliefs as the flow of energy is stopped by the wall, a niche is constructed to house a few dieties. Daily a priest changes the flowers for the God’s. Passersby are seen to stop in front of the niche for a prayer. In the case of a social function by an individual owner a temporary “pandal’ or shelter is constructed and extends on to the street and a part of the street is appropriated. The street is used extensively for parking extra cars owned by house owners. In the corner in one plot construction is in progress. In the corner of one street a house has been given a facelift with a glass façade and its compound wall has been eliminated.

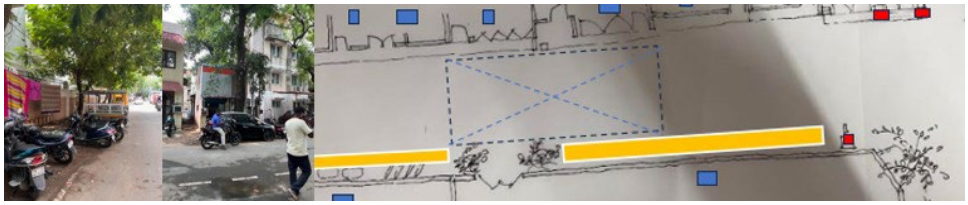

Figure 7. Part of the lower middle class neighbourhood street.

In one of the older houses the owner is seen sitting in the balcony with his “eyes on the street”.

Figure 8. Street in lower middle -class neighbourhood

Street in lower middle -class neighbourhood

The street links as mentioned earlier Bharathidasan road to Cenotaph Road first street and is therfore busy at all times of the day, with commuter traffic. It also connects to the streets of the middle -class neighbourhood and as a street features a mix of a range from the lower to the basic middle- class housing seen in continuous buildings with small frontages that line the street edge to apartment blocks for the middle class. The street is not well maintained and, in most areas, has no pavement. The edges of the street are sparsley landscaped by trees. The buildings are primarily houses with common walls that directly interface with the street and a few apartment buildings which follow building norms and have regular set back provisions. In one case there is a shop that is directly accessible from the street. The street is lined by parked public transport as in autos and two wheelers. A housing unit for lower income group housing in progress is located in the front of the street near the main high road. With both ends being occupied by the end by middle class apartment blocks. A renovated house turned into a playschool is on one side of the street. A shrine is located on the area which should have been a pavement. A mother is seen brushing her daughter’s hair in front of the house due to paucity of light inside. Identity in the Hindu house is seen in the kolam in the front entrance and a God sculpted in concrete above the door opening on ground floor and window opening on first floor. In the adjacent house belonging to Muslims, green tile covers the façade and the entry is set in. “Visual privacy is one of the vital aspects of Islamic house designs.”[8] In addition a water dispenser for public use has been provided. For an occasion the entire street was apportioned corresponding to the space in front of the Muslim house and a temporary pandal was built. In front of the space in the front of the Hindu house is used to dry clothes and park a bicycle. Density is at a maximum. The house facade give reference to Simon Unwin’s “inhabited wall”.

FINDINGS AND CONCLUSION

In all three streets it is visible that the street is perceived as a public space, but manifest differently. “One of the cardinal rules of the street as public space is to provide as setting for sociability”.[9] This is evident from the perception of resident to the perception of the public. In the elite neighbourhood, time is felt to be less dynamic and temporary but weighty and still and seen in the manifestation of establishment as represented in the houses and is a measure of status and exclusivity. In the middle-

class neighbourhood time is dynamic and the streets give tribute to the evolving city seen in change where older houses are demolished to give way to new apartment blocks and real estate thresholds are realized and property becomes a commodity for sale. The upward moving zeitgeist of the middle class is evident in cars parked on the street and the gentrification of the street. In the lower middle-class neighbourhood except for the redevelopment of government social housing change is minimal and seen only in façade treatments.

Privacy is paramount in the elite neighbourhood. Even the trees that shade the street create a barrier to afford privacy to the houses. The house owner of this neighbourhood uses the street as a communicator to reach his house. On the other hand, to the public the street offers itself as a clean well maintained and shaded area and an excellent place to walk, jog and engage in exercise in the morning and evening. A man exercises on the pavement, selfies and photo shoots are taken here. In effect two realms exist side by side, without any exchange between them, the string of houses and the street, a haven for walkers - a park. Social interactions and relations are essentially tran-spatial. Yet solidarities are created through placemaking. Placemaking occurs at different spots -where the raised pavement offers itself as a seat to read your messages on your mobile or rest, a photo shoot spot or a pause space for you and your regular walker friends to interact. The street is a 'park' a destination space with landmarks. The focus is on image, exclusivity and privacy through a strong edge and expression of individuality and interest in aesthetics.

In the two parallel streets of the middle-class neighbourhood, perceptions are different. The street is a public space and home to, due to connectivity a mix of people from maids going to work, to school boys, to office workers, to locals of that neighbourhood. There is a constant flux of people moving. Privacy is obtained in a different manner than in the elite neighbourhood, as young pairs can communicate hidden in the crowd. The street contributes to the residents wellbeing as it offers a place to walk, for children to play, for an ironing man to set up on an unused pavement, as a parking place, as a moving market place of commodities seen in the travelling salesman. There is life on the street and the street offers varying narratives observable from balconies and where privacy in the older houses are not significant and front doors are visible through the pedestrian grilled gate. Name boards proclaiming the owner are seen unlike in the Elite neighbourhood where compound wall and gates only display numbers. The street is apportioned for use either as parking or as a temporary extension of an individual house's social space. Pavements are decorated with landscaping and reveal the middle-class mentality of 'best use of money" as in the use of tyres and old plastic cans for containing plants and landscaping. In the elite neighbourhood. Newer buildings ape decorative compound walls and design features of the elite street. Two realms co-exist with no interchange to maintain the exclusivity. Refer figure 9.

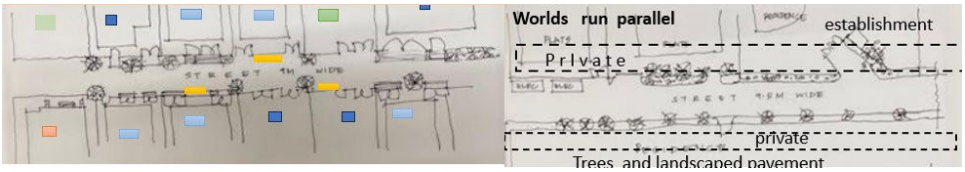

Figure 9. Street in lower middle- class neighbourhood and elite neighbourhood.

In the lower middle class neighbourhood the street is an extension of the house. The threshold between street and house is minimal except if its culturally determined as in the Muslim house where the entry is set in and the entire visage of the house is one of grilles and enclosure. The street is a marketplace a community space, a shared public space generated by the common goal of survival. The street thus pays tribute to diversity and transformation and a social cohesiveness and dependence where there is an interplay of mutual benefits between communities to offer a range of experiences that establish the

character of the city and reinstate its socio-cultural heritage. “Community is anticipated to offer beneficial contributions to build a strong and vibrant society.”[10]

Figure 10. Comparative study of lower of Lowerass street, Middle class and elite neighbourhood street.

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SOCIAL ACTIVISM AND STREET ART: A RESPONSE TO TRANSNATIONAL GENTRIFICATION AND TOURISTIFICATION IN PALERMO

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INTRODUCTION

When we approach immigration as a sociological, political, and economic phenomenon, we usually focus on vulnerable groups mobilizing towards more developed nations or cities in search of better conditions. The last decade has seen an increased traction in the North to South flow. The normalization of remote work post-pandemic has played an important part in this change. Nevertheless, other Push and Pull factors of migration have influenced these privileged mobilities. Developed nations and their biggest cities in Northern Europe, Australia, and the United States have seen an increase in their costs of living, as OECD have pointed out.[1]

London, Berlin, Sydney, New York, Florida and many other cosmopolitan areas which continue to be the dream of many, have become unaffordable for long term residents, adding other factors to their discomfort as "being too polluted, too cold, too crowded". Extreme political ideologies, lack of social infrastructure and absence of work-life balance are other things mentioned[2] by these groups as factors that have pushed them out of their hometowns. Many Global South countries have seen this as an opportunity to attract these foreigners; offering affordability, temperate climates, tax incentives, fewer regulations, access to residence, and in some cases citizenship; in return, these countries expect trickle-down effects in their economies. Southern Europe's status during the 2008 global financial crisis, positioned many of its countries in difficult economic situations, reminding us of the inequality between the North and South of this region, as well as their classification as semi-periphery.[3] Some of the neoliberal policies to stimulate the economy implemented by Spain, Portugal and Italy have resulted in overtourism fluxes as well as a rebranding of many of its cities as paradises for retirees, digital nomads and those who seek to push their start-ups, providing them with the comforts of the developed world on a smaller budget. These new groups of middle class, retirees and younger professionals are described by the term "lifestyle migrants", which unlike other forms of migration, focuses on individuals motivated by warmer climate, a slower pace of life, cheaper cost of living or a desire to escape the pressures of their home societies. Lifestyle migration can consist of periods which can go from a couple of months (visa-free) to more permanent relocations. This form of migration, alongside tourism originating in the Global North, exemplifies privileged mobilities, sustained by advantageous citizenship that eases movement.

Southern Europe as Semi-Peripheries

Despite this desire to regenerate the economy, the myth that the Southern Regions can survive off tourism and foreign influx is encountering fallacies. In the last years, we have seen this industry lock economies into low-wage service sectors, seasonal employment, and dependence on global mobility, while benefiting those who already hold capital.[4] Housing has also been impacted by this process, where the dispossession of locals from central areas[5] has occurred due to the hotelification of residences and Airbnb as a phenomenon that has transformed residential areas to be exploited by rent gaps, where landlords earn more from foreign short term stays than from having permanent residents.

Income inequality and housing affordability between locals and newcomers are some of the main problematics pointed out when discussing gentrification and overtourism, yet a third factor this research would like to point out, is the subtle erasure of culture by these masses of wealthier individuals. As international visitors and lifestyle migrants demand convenience and familiarity, English often becomes the dominant language, sidelining local tongues and dialects in everyday transactions. This linguistic shift is accompanied by a preference for Western-oriented services, such as international cafés or standardized retail chains, which gradually replace family-run shops and community-based businesses. The result is a form of cultural homogenization, where unique practices and small-scale traditions lose visibility. The cultural erosion produced by lifestyle migration and mass tourism is further compounded by processes of Disneyfication, where urban heritage and everyday practices are reframed as consumable displays. Historic centres in Rome, Naples, and Madrid are increasingly restructured as leisure-scapes, tailored to visitor expectations while displacing the routines of local life, resulting in what has evolved from traditional gentrification to a transnational one, with the same layers of class and displacement. Such dynamics intensify conflicts over the right to the city as residents contest the loss of affordable housing, community networks, and meaningful participation in urban governance.

Right to the city

This conflict between those who live in the city and those who claim to develop it economically has sparked innovative protests in cities such as Barcelona, Lisbon, Venice and Mallorca. These protests have been portrayed in international media with an anti-foreigner rhetoric, dismissing the light to the local problematic of inequality and following the narratives of anti-migration protests[6] held in the US and Germany. Through the case study of Palermo, capital of the Sicilian region in Southern Italy, this research wishes to shed some light on how art and other ways of innovative activism displayed in public spaces portray the necessity for the touristic/lifestyle migrant system to transform into a more sustainable model, while also reclaiming public spaces for the use of locals.

In the last years, grassroot organizations, activists and artists have made a visible wake-up call on the matter through street art, creative protests, participatory assemblies as well as through the boycotting of some local festivals and Airbnb. Slogans such as “gentrification is colonialism”, “tourism kills the city” are appearing in increasingly more places all over the historic city center. This has made many reflect on the loss of social infrastructure and requalification of public spaces towards tourism, while locals are barely surviving and questioning the identity and future of Palermo as a livable city.

This research intends to demonstrate through comparative case studies, discourse analysis and ethnographic analysis; the response Palermo has had to overtourism and transnational gentrification post pandemic, joining bigger cities in a call for regulation of these movements, reinvestment towards the social development and affordable housing.

LIVABLE FOR WHOM?

Palermo illustrates its experience with a growing population of self called “expats” and rising levels of tourism, with 9 million being recorded in 2024.[7] An island with documented growing inequality, depopulation, but unique cultural diversity due to its history and Mediterranean climate; all these factors result in a not so favorable context when it comes to depending on foreign influxes.

The Sicilian context

As the largest urban center in Sicily with approximately 600,000 inhabitants,[8] Palermo has recently emerged as both a cultural landmark and a laboratory for new urban transformations. In 2024 it was branded Italy’s “digital nomad capital,” attracting remote workers seeking affordable housing and favorable climate. Public authorities responded by allocating €73 million toward the restoration of its historic center,[9] and €135 million for tourism-related infrastructure.[10] Such investments align with broader Southern European strategies to attract foreign income streams through lifestyle migration and tax privileges.

While digital nomads enjoy tax exemptions of up to 70% on their earnings,[11] and retirees from abroad benefit from a flat 7% rate,[12] local residents remain bound to significantly higher taxation and stagnant wages. This disparity institutionalizes inequality within the city’s evolving urban fabric.

Housing and Displacement Dynamics

The rapid spread of short-term rentals has intensified housing precarity. By 2025, platforms such as Airbnb listed more than 7,000 units in Palermo’s historic center, taking over the city with approximately one-third of the central housing stock converted into touristic accommodation, as visible in Figure 1, these are often managed by property groups rather than individual households.[13] Average rents have escalated from €150–250 for individual rooms and €500–800 for apartments within a 5 year period, forcing long-term residents to relocate away from the central districts.[14]

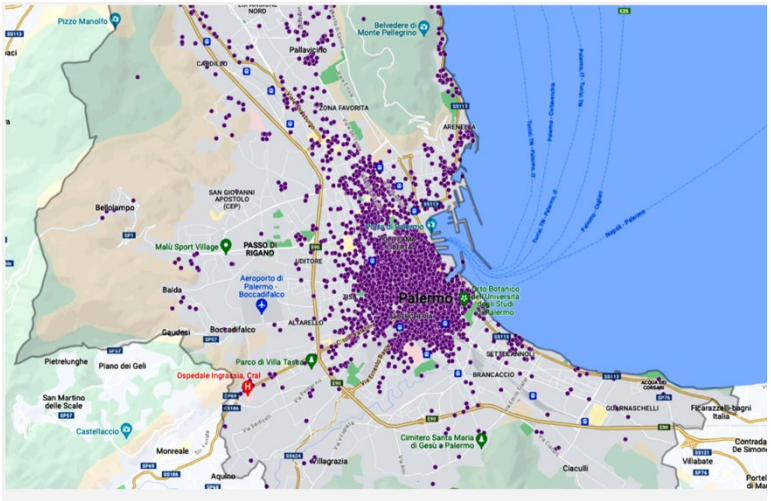

Figure 1. Airbnb conglomeration in Palermo’s historic city center

This trajectory reflects broader patterns across Southern Europe, where touristification produces forms of indirect displacement.[15] The inscription of Palermo’s historic center onto UNESCO’s World Heritage list in 2015 accelerated this transformation, as local businesses gave way to tourism-oriented services. Between 2012-2024 it is reported that 1,500 small to medium businesses shut down only in historic centers in Sicily,[16] while auto-ethnographic observations confirm further homogenization of the urban

offer, with 11 local shops closing down in 2024-2025 only in Palermo's historic center, with at least 5 of them replaced by fast food chains.

Socio-Economic Divides

Despite these flows of capital, Palermo remains characterized by one of the least economically active populations in Italy. Nearly half of its residents are outside the labor force,[17] unemployment stands at around 14%,[18] and average household incomes hover at €16,000 per year.[19] Precarity is especially acute in the service sector, where workers often earn between €700-900 frequently in undeclared or seasonal employment as shared in interviews.

The structural gap between locals and lifestyle migrants is stark. Entry requirements for digital nomad visas and elective residence permits begin at €26,000 per year, levels far above the average income of Palermo's working population**.**

Cultural Encounters and Divergent Belongings

Cultural perceptions further underscore the divide. Lifestyle migrants often valorize Sicilian traditions, cuisine, and landscapes while remaining linguistically and socially detached from the place they elected as their new residence. Interviews were held with lifestyle migrants and participants of social media groups such as "Expats in Palermo", which holds around 2,000 active participants in the online community and their weekly events, meanwhile the expat community group on Facebook reaches 9,000, many of those seasonal, others long term residents. Results suggest that only a minority acquires Italian language proficiency or engages in local labor markets. Instead, most identify as "expats," differentiating themselves from migrants from the Global South, who are portrayed as struggling with integration. This binary reflects the racialized and classed hierarchies of mobility, where Northerners are celebrated as contributors to local vibrancy while other migrant groups are problematized.

CONTESTATION AND RESISTANCE

Residents and grassroots organizations have mobilized against these dynamics, which not only constrain their way of living but also their economic survival. Organizations founded by students, activists, residents, researchers and artists have emerged to not only protests but to try to provide solutions. Caracol Palermo, former Olivella territorial committee, and APRO Palermo (Assemblea Permanente Resistenza Overtourism) are some of them. These structures have developed articulating activities to convey social resistance, change and attention to the dynamics.

To have a better understanding of their intention and action, the reported activism analyzed has occurred between the summer period of 2022 and 2025, on the other hand street art, which continues to be anonymous, has been present for more time but has increased during this period.

Street art

Slogans such as "Tourist go home", "Tourism kills the city" "Tourism is colonialism" and others have anonymously appeared throughout the historic center, voicing residents' frustration with the rapid expansion of tourism and its associated impacts on housing and local commerce. These visual interventions are small in scale but powerful in symbolism, as observed in figure 2 and 3. They disrupt the polished image of Palermo as a Mediterranean cultural capital and insist on acknowledging the social costs of transformation.

By marking walls and public passages, Palermitans articulate a refusal of gentrification and highlight the contradictions of a city investing heavily in tourism while schools and health services face cuts. These messages have an even more powerful incite when we think about the implications of English being used, stating it is not just for locals to be aware but for tourists to understand there is a bigger

problematic that comes from their arrival. When some individuals from the "expat" communities were asked, what they thought of these expressions in the city, many responses varied, with one stating "it was not guided towards them because they knew how to behave", another participant responded, "people shouldn't write that about the hand that feeds them", demonstrating a feeling of superiority when it came to the residents.

The same goes through locals expressing their voice through social media. When a local newspaper reported on the appearance of these signs, proceeding with an article detailing what was behind these expressions protesting mass tourism, users on social media commented on the news, with one stating: "nonthinkers is what is behind this; before tourism, the city centre was plagued with chaos, now we have a jewel" this received many likes, with another using responding "yes in fact, welcome tourists", another user with a lot of positive reactions stated, "this city now has dignity thanks to tourism, it's a huge source of economic development"[20]

An interesting observation to local's reactions of this form of street art can be observed by age groups and their living context with the city. Younger people have a more negative perception of these privileged mobilities, since it impacts having a stable life in issues such as housing, work conditions and use of public spaces; meanwhile the older generation who holds some sort of stability and capital, but experienced Palermo's city centre within the last century plagued by organized crime, see tourism as a salvation from those times.

Figure 2. Street art protesting overtourism in Palermo's port.

Figure 3. Street art in Palermo's historic center

Art as Political Communication

This form of protest is not unique to Palermo but has been recently studied in Barcelona as well. Banners hung from balconies, and, crucially, visual interventions in public space. Graffiti slogans such as *"Tourists go home"* or murals warning of "touristification" act as constant reminders of residents' discontent. These practices embed political critique into the fabric of everyday urban life. González-Reverté's analysis underlines that these protests are not anti-foreigner per se, but rather critiques of an urban model that prioritizes visitor consumption over local needs. These practices also resonate with broader traditions of culture jamming and visual protest. Palermo's anonymous graffiti equating gentrification with colonialism mirrors Barcelona's strategic framing of "touristification" as a systemic injustice.

Artists have also taken into their hands to express discontent through art exhibitions and written expression. This is the case of Gianluca Concialdi and Sofia Melluso, who dedicated an entire exhibition to the theme of mass tourism: "Touristification and economic speculation," the artists explained, "are two sides of the same coin that is attacking the city's historic center." "In this absurdity, art draws more than ever from reality: "The small workshop where I made ceramics," Sofia explains, "was sold overnight to an English entrepreneur who bought the entire building to turn it into a hotel.""[21]

Figure 4. Overtourism exhibition-Palermo

Protests and Civic Activism

Traditional sources of activism have also been present in Palermo, especially with (Southern Europe Network Against Touristification), SET, now APRO, a network of activists working to raise awareness of the problems caused by the current tourism model and possible alternatives.

Caracol, on the other hand, is a collective of high school and university students, active in the historic center, specifically in the Albergheria. Local researchers with architectural, sociology and urban backgrounds saw the city changing and are now studying these phenomena, from a first-person perspective. Together they have organized protests and frequent participatory groups that not only invite locals to voice their concerns and possible solutions but work alongside other cities in Italy, Spain and Portugal plagued with this issue. Protests on June 15th, an unofficial overtourism awareness day as well on the World Tourism Day have become more and more creative. One of these focuses on the clear discontent with the local situation, stating the ways migrants and tourists were treated, as well as the privileges the city center had when it came to services vs more peripheric parts of Palermo. As we can observe in figure 5. These demonstrations have taken a less conflictive action than their counterparts in Barcelona, which have used water guns and have blocked tourist buses.

Figure 5. Protests signs on World Tourism Day.

One of the most significant demonstrations occurred the day of the feast of Santa Rosalia, the city's patron saint. "Touristification is the new plague. Santa Rosalia, where has my home gone?" read a banner hanging as the float passed, as visible in Figure 6.

Figure 6. Santa Rosalia's protest

Boycotting

The housing situation sparked a national movement through the Robin Hood gang; a group of anonymous activists that have appeared in different Italian cities. Their main target: Airbnb, the gang sabotages key boxes for these short rentals, which allow customers to get a code and proceed to self-check in. However, the gang blocks its functioning while placing stickers with messages such as:
"Stop short-term rentals", "No more Airbnb, no more homes without people" as in Figure 7, while also signing with the famous robin hood hats.[22] This has not only created discomfort for tourist and landlords, but might have helped towards regulating these temporary housings: starting in 2025, self check in was no longer allowed, demanding face to face contact and registration of the guest.
This might not seem to make much of an impact, but if anything, we can see the first steps into some sort of regulation regarding overtourism and housing.

Figure 7 Robin Hood gang stickers

CONCLUSION

Within this context, local activism emerges as a counterforce, mobilizing both organized resistance and creative practices in public space. Street art has become one of the most visible registers of discontent towards this new transnational creative class, while taking ownership of urban space, reminding both residents and outsiders that the city is not merely a backdrop for consumption but a lived environment with contested rights. Grassroots organizations complement these artistic acts by fostering awareness and collective mobilization. Drawing on Sicilian traditions and cultural repertoires, they highlight the contradictions of a development model that promises trickle-down benefits yet concentrates wealth among property owners and entrepreneurs.

Palermo thus demonstrates that contesting overtourism is not only about economic justice but also about sustaining spaces of resistance where alternative urban futures can be imagined and enacted. It also brings awareness to a more global issue where those are seen as privileged mobilities in this context, were once displaced from their own cities due to rising cost of living as well as difficult context, creating a transnational chain of gentrification and displacement.

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THE LAYERED NATURE OF NOSTALGIA IN FORCED DISPLACEMENT: THE CASE OF STROVOLOS II

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INTRODUCTION

Nostalgia is a feeling of loss and displacement – a longing for a place and time that no longer exists, or perhaps never truly existed.[1] As an emotional state frequently triggered by abrupt or violent change, nostalgia reveals an intrinsic connection to the experience of displacement. The uncertain and fragmented nature of such environments, combined with the sudden rupture from a familiar place, acts as a catalyst for nostalgia to emerge and flourish. Nostalgia is arguably one of the most vital emotions among "the complex forms of subjectivity and feeling that emerge through geographical mobility".[2]

Yet the inextricable tension between nostalgia and displacement has remained largely unchallenged and underexplored. For a long period of time, researchers attributed a negative connotation to nostalgia, considering it as a passive notion associated with emotional attachments with the past, which prevents displaced people from moving forward and reconstruct their life in the new environments. In studies of migration and mobility, nostalgia has been characterized variously as a "schizophrenic exhilaration" in the wake of displacement[3], or, more pathologically, as a "mentally repressive compulsive disorder".[4]

Over the past two decades, however, nostalgia has undergone a significant reappraisal, gaining traction across disciplines such as cultural geography, refugee studies, and urban studies. Against the absolute dismissal of nostalgia, these studies argue that it can potentially operate as a spatial practice for the exploration of various issues related to displacement such as notions of identity and belonging, home-making practices, migration experiences and future imaginaries. In such discussions nostalgia is frequently applied as a "powerful tool for displaced people to re-establish a connection with their roots";[5] Another brand of research approach nostalgia as a "creative force", a "future oriented practice" that contributes in the understanding of the complex nature of the places of displacement.[6]

In the case of Cyprus, the Turkish invasion of 1974 resulted in the division of the island through the imposition of a de facto boundary, namely the Green Line. This physical and social rupture epitomizes a turbulent period marked by unresolved socio-political tensions between the Turkish Cypriot and Greek Cypriot communities. As a consequence, 200,000 Greek-Cypriots were forced to leave the north part controlled by the Turkish army while 65,000 Turkish Cypriots moved to the north side.[7]

In light of the large wave of internal refugee flows the Greek-Cypriot Government established "the Service for the Welfare and Rehabilitation of Displacement". This was a large-scale program, with a particular emphasis on the idea of reconstruction and the promotion of social cohesion. The central objective of this program was the resettlement of the internally displaced people (IDPs) in government-controlled Republic of Cyprus through the provision of houses and the creation of estates on the outskirts of the three main cities.

The Council of Ministers assigned the Department of Town Planning and Housing the responsibility of coordinating the construction of the settlements. According to an official report the Department was tasked with "the design of low-cost settlements in various areas, with the aim of housing displaced persons in the first stage, and subsequently allocating the newly built homes to low-income groups, once the displaced return to their original homes".[8]

Strovolos II was one of the first settlements to be created. Its construction began in February 1976 and was completed by June when the first families began to settle in.[9] The design of the settlement was assigned to CAEC (Cyprus Architects / Engineering Consultants Ltd). This was a newly established cooperative composed of young architects, designers, urban planners and structural engineers. CAEC was responsible for two of the first five refugee settlements. The Department eventually took over the design of the remaining ones.

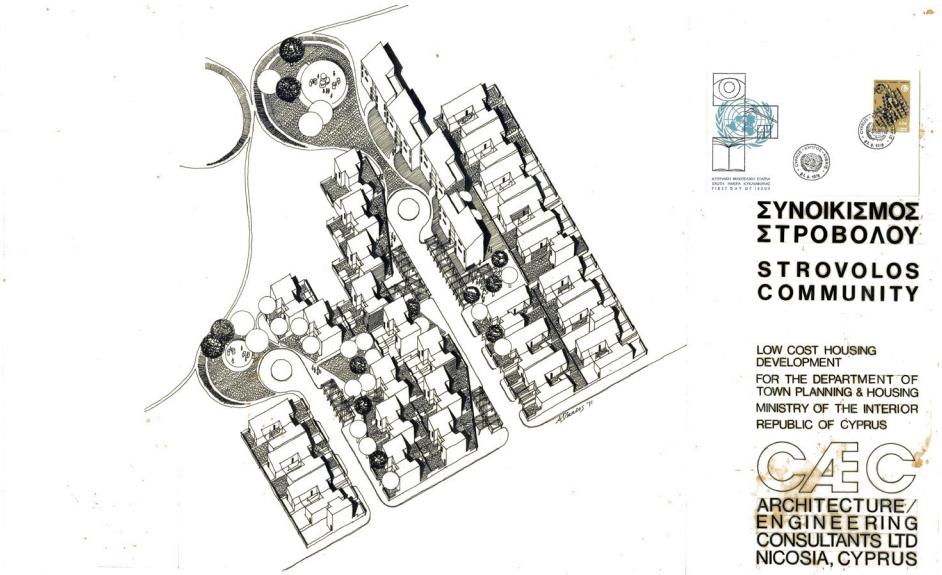

Figure 1. Axonometric drawing by CAEC.

The forced removal of people from their place of origin - along with the home-making practices for the resettlement of these populations through the creation of Strovolos II - are here investigated as key events that contributed to the emergence of nostalgia. What insights can be gained by examining the making of Strovolos II through the lens of nostalgia? How does nostalgia challenge practices of planning, designing, inhabiting and imagining such new and unfamiliar places?

This paper examines how nostalgia has evolved and how it is inscribed or manifested through the making of Strovolos II. The study explores the applied practices that shaped the settlement by undertaking a historical inquiry grounded in archival research. The sources examined include official reports, architectural plans, drawings and various related documents produced by the actors involved in the making of the settlement. Through this analysis, the study seeks to uncover the role played by nostalgia, highlighting whether the nostalgic mechanisms at work - conscious or unconscious - are progressive or conservative, sentimental or potentially critical. The overall aim of this paper is to broaden the discussion on home-making practices within spaces of displacement offering a nuanced understanding of the dynamic role that nostalgia can play in such contexts.

EMBODIMENTS OF NOSTALGIA THROUGH THE MAKING OF STROVOLOS II

The brief: temporary comfort

The brief for the design of Strovolos II was drafted by the Department of Town Planning and Housing, which acted as the main coordinating authority for the project. At its core the brief prioritized the development of a low-cost housing estate, in which the residential units would be of high quality while remaining competitively priced. Within this framework, the brief called on the design team to propose a housing estate that would provide to the IDPs what they called "temporary comfort".[10] This short yet bold phrase encapsulated the central idea behind the making of Strovolos II. The settlement was intended to offer to the residents a degree of comfort, but never to the extent of diminishing their desire to return and their yearning for ancestral homes.

"Temporary comfort" was part of a broader, powerful campaign - namely "Den Xechno" (I Do Not Forget) - promoted by the State in the aftermath of war. This recurring motif systematically permeated social life, from schools and national commemorations to public buildings and television broadcasts. What should not be forgotten was articulated with clarity: ''The memories of our occupied villages, our ancestral hearths, our graveyards, our occupied churches, our occupied homes, our gardens, our orchards''.[11]

Clouded in a paradoxical contradiction, this slogan sought to emphasize the total reconstruction of a mythologized past as the foundation for a totalized future. It offered the promise of an absolute return to a bygone era by reinforcing the temporary status of the present and rendering the future as a complete return to the past. Strovolos II, in its current form, was to be forgotten.

Figure 2. Strovolos II, panoramic view.
Source: CAEC

The selection of the plot: a satellite for the city

Strovolos II is located on the southwestern outskirts of Nicosia, in an area characterized by scattered residential development. The selected plot lay approximately 5km from the city centre - a distance considered "reasonable" according to a report published in 1977.[12]

For the selection of the site an in interdisciplinary group of experts from the fields of architecture, sociology, urban planning and economics was assembled by the Department. The selection of the plot

was driven by socio-economic criteria, with two factors shaping the final decision: First, it was important for the settlement to be located on the periphery of the city in order to ensure a smooth connection between the settlement and the surrounding occupied villages. Given that the majority of the IDPs who would settle in Strovolos II came from rural areas, it was considered crucial for the settlement to maintain a direct relationship with the periphery. Second, the site needed direct access to Nicosia via existing intercity roads and thereby ensuring accessibility to the city's core infrastructure.
Within this framework, Strovolos II was envisioned to function as a "satellite" of the city, with a relatively high degree of autonomy in terms of structure, services, and responsiveness to residents' consumer needs. It was also imagined as a "pole of attraction" for private investment, with the aim of eventual full integration into the urban fabric of Nicosia. The spatial positioning of the settlement was therefore closely tied to the brief's central objective: the creation of a community embedded within the city yet clearly distinct from its fabric and constitutive infrastructures. Shortly after completion, this decision faced significant public criticism. A departmental report noted, "the newly established community may face greater challenges in fostering social ties and contact between residents. The community is likely to be isolated from the rest of the city due to its particular social structure".[13]

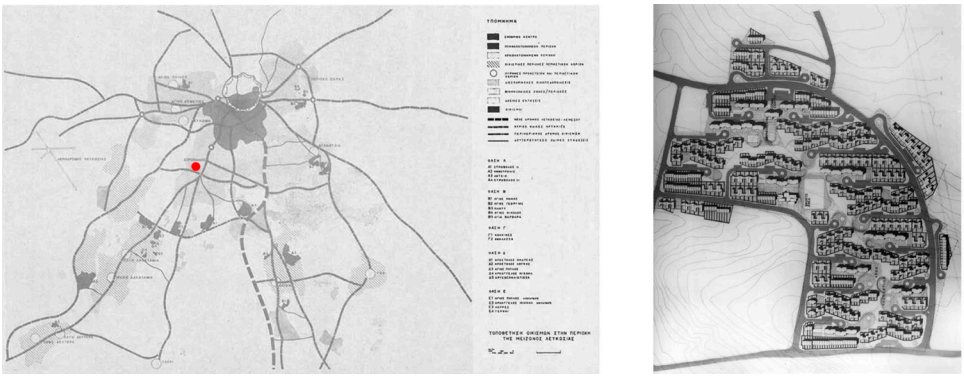

Figure 3. The spatial positioning of the settlement.
Source: Department of Town Planning, Ministry of Interiors, Republic of Cyprus

The concept: a vibrant community, a small-neighborhood

For CAEC, the design of a settlement that would accommodate the IDPs was a particularly ambitious task both in scale and scope. Strovolos II was the first mass housing development, since the early British Colonial period. At the same time, the Turkish invasion and abrupt division of the island, has brought about dramatic changes in the housing sector, which in turn led to an entirely new framework of policies related to the construction. What can be traced from the architects' early sketches is a critical inquiry into the vibrant role that the past would play in this modern present. Central to this exploration was the question of how the spatial and social structures of pre-war life might be reinterpreted and transformed within a new urban context.

Figure 4. Strovolos II Masterplan, drawing by CAEC.

The central idea of the project was developed around the notions of community and the small neighbourhood. Taking into account the characteristics of the occupied villages the design team sought to reflect those qualities not only in the urban layout of the settlement but also at the scale of the housing units. Particular emphasis was placed on fostering a neighbourhood atmosphere - not only as an architectural configuration but also as a social synthesis aimed at sustaining a sense of a vibrant community. These ideas ran in parallel with - and were therefore largely influenced by - the international architectural discourse of the time and the dominant themes underlying urban modernity and domesticity. A systematic analysis of corresponding international urban planning developments and housing typologies -such as Mies van der Rohe's court-houses and the Garden City model – are traced in the earliest sketches produced by the design team.

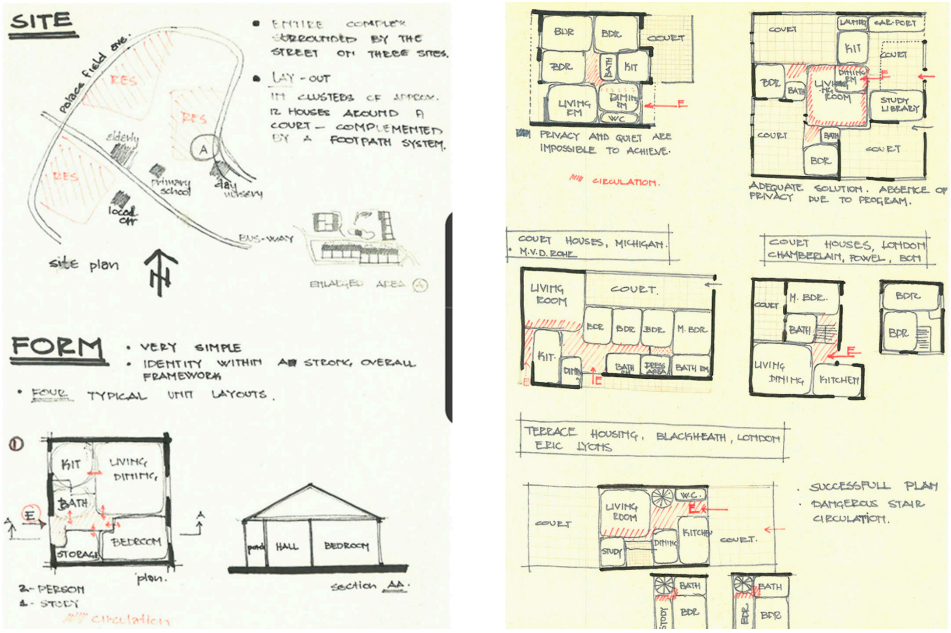

Figure 5. Early drawings and sketches
Source: CAEC

Spatial Configuration and Adaptive Domesticity

The above conceptual ideas are vividly reflected both at the urban scale, through the spatial layout of the settlement, and at the scale of the housing unit. At the level of urban planning, the settlement is laid out in horizontal clusters in which the residential units are positioned in linear sequences. These units shift back and forth, disrupting the monolithic continuity of the zones and generating varying degrees of privacy and intimacy.

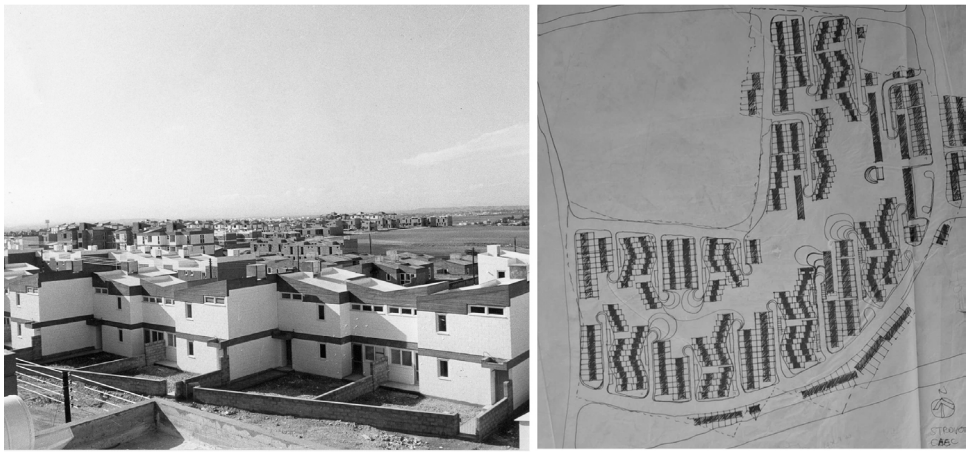

Figure 6. Residential units positioned in horizontal zones.
Source: CAEC

Each urban block is completed by what are referred to as “pockets”: curved public spaces located at the ends of pedestrian routes. Functioning as dead-ends, these pockets effectively limit vehicular circulation, reinforcing the sense of a small, close-knit neighborhood.
The main circulation artery of the settlement is confined to its perimeter. This is an orthodox road network that connects the settlement with the broader urban fabric of the city.

Figure 7. “Urban Pockets”.
Source: CAEC

Given the emphasis on the ideas of the small neighbourhood the particular focus was given in the creation of mixed-development quarters, combining an adequate range of uses such as shops, primary schools, and other vibrant commercial and social activities. By integrating a multitude of social services, the architects aimed to ensure that the settlement could operate as an autonomous “social body”.

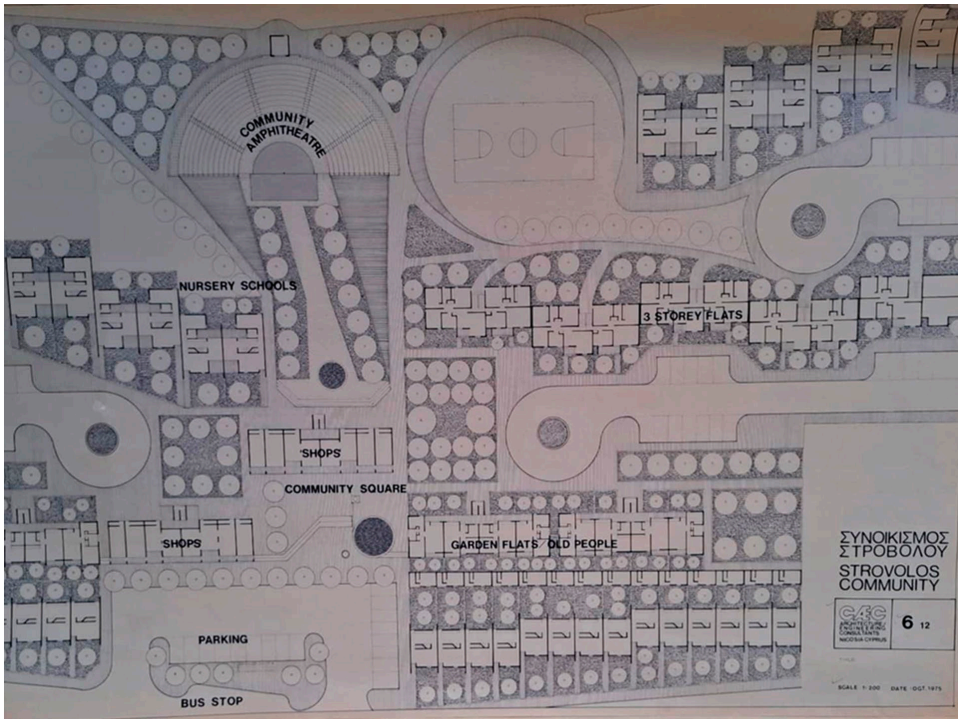

Figure 8. A multitude of social functions and services.
Source: Department of Town Planning, Ministry of Interiors, Republic of Cyprus

At the scale of the residential units, Strovolos II comprises 705 residences of varying typologies. Despite their typological differences, all residences share two fundamental principles: flexibility and adaptability.[14] Surprisingly, contrary to the label "temporary comfort", the design of the residences echoes radically different intentions from the architects. Here, the social synthesis of the Cypriot family and the pre-war domestic life - stood at the core of the design approach. The residences are characterized by a malleable spatial layout, offering to the users possibilities of transformation and expansion of the existing spaces according to their shifting needs and the long-term evolution of the family.

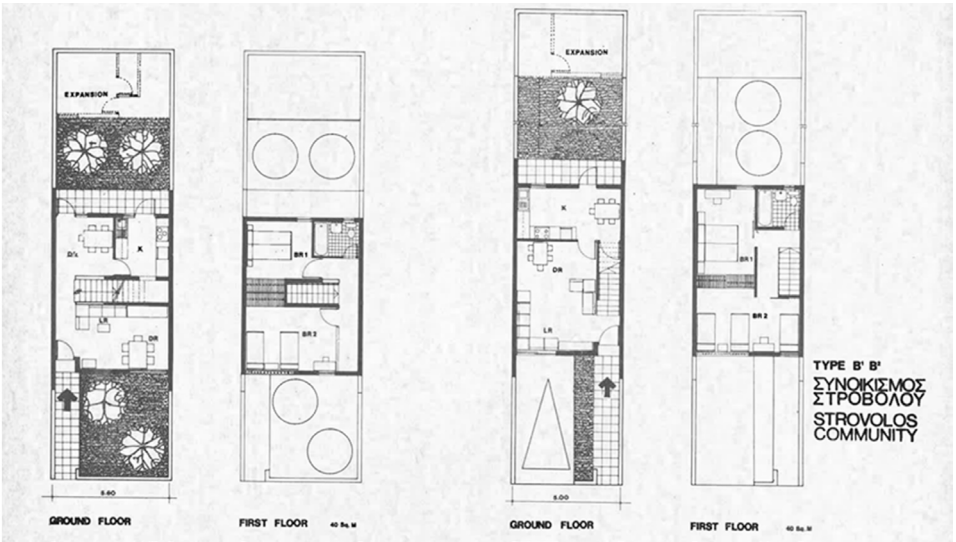

Figure 9. Architectural plans.
Source: Department of Town Planning, Ministry of Interiors, Republic of Cyprus

Housing Criteria: the making of a Refugee Identity

Policies relating to specific criteria had been established for the provision of new residences to the IDPs, a crucial element of the project as it determined the population that would gain access to the settlement. This framework combined a highly structured set of identical criteria with an applied conceptual system that determined both the selection and the order of priority of the IDPs. Economic condition and social status emerged as the principal determinants of access; as an official report published in July 1976 emphasized, those chosen to reside in Strovolos II "constitute the most economically vulnerable segment of the displaced population". [15]

Over time, this homogeneity contributed to processes of differentiation and disengagement that coalesced around a powerful identity: that of the refugee. This label not only signaled material dispossession but also carried with it an implicit set of assumed values, desires, and social characteristics, thereby consolidating the displaced as a distinct social group. Spatially segregated from the city's established networks, residents were positioned within a framework of temporariness rather than permanence - an identity tethered more to loss and dislocation than to emplacement. Yet this imposed marginality was counterbalanced by a profound sense of attachment to the abandoned homes, reinforcing the enduring tension between uprootedness and belonging.

Materiality: Utopian Aspirations and / or Emotional Detachment

The materiality, the finish, color palette, and construction detailing collectively shape a distinct set of relationships in Strovolos II. The settlement's materiality and construction methods explicitly align with the principles and morphological language of the modern movement: The structural frame of the buildings is left exposed, roofs are made of fair-faced concrete while the remaining walls are made of brick and finished with white plaster. What is surprising is that the chosen construction methods and the materiality used have no reference to the traditional materials and methods that the refugees were familiar with in their pre-war past.

This architectural stance invites critical interpretation, particularly given the collapse of the modern construction sector in Cyprus following the disruptions of the 1974 invasion. Within this context, the selective embrace of modernist principles may be read not only as a pragmatic response to economic and material scarcity but also as a deliberate act of estrangement. It might be argued that the detachment from both "conventional patterns of urban housing" and "traditional construction methods" seems to underscore the settlement's temporary status, discouraging residents from cultivating emotional attachments to their new spatial surroundings.[16] Yet, at the same time, this selective use of modernist principles introduces a utopian mentality, one that registers as a speculative possibility for the present while projecting a vision for the city's future.

Figure 10. Materiality and construction methods.
Source: CAEC

CONCLUSION

In recent scholarship nostalgia has been broadly defined as "an enchantment with distance that cannot be bridged".[17] If we accept this definition, then the policies and practices enacted by the various actors through the making of Strovolos II reveal a systematic attempt to cultivate a distanced engagement with the past which, in turn, contributed to the emergence of nostalgia. As the analysis shows this distance is manifested in three distinct ways: spatially, through the configuration and spatial position of the settlement; socially, through the social composition of the settlement and the criteria used to determine resident eligibility; temporally, as reflected in the brief, which explicitly called for housing that would offer only "temporary comfort". The imposition of this spatial, social and temporal disruption has also substantially contributed to the formation of a strong identity. As is widely acknowledged, under conditions of abrupt change, nostalgia operates as "one of the means ... we employ in the never-ending work of constructing, maintaining, and reconstructing our identities".[18]

The critical point lies here in the nature of this constructed distance, which inevitably determined different modes of nostalgia and thereby different identity formations. Conservative forms of nostalgia emerge when the distance from the past is conceived as a linear and monolithic entity. Such forms of nostalgia were cultivated through the Department's policies and its persistent efforts to underline the temporary status of the settlement while projecting an absolute return to the pre-war past. This type of longing is called "restorative nostalgia".[19] It put emphasis on the word nostos (returning home), striving to reconstruct the lost home through literal means. By contrast, progressive forms of nostalgia arise when the relationship with the past is not understood as a simple rupture but as a dynamic interplay between past, present, and future. This so-called "reflective nostalgia" operates as a mode of negotiation, weaving together multiple temporalities and enabling the selective transference of elements from one reference system to another.[20] Such practices are evident in the design team's efforts to reinterpret elements of the past within a modern urban context. In other cases, nostalgia is oriented not toward the past but toward an imagined future. The design team's decision to embrace the morphological vocabulary of modernism, alongside explicit references to utopian paradigms, suggests a counter-nostalgic stance: a yearning for an ideal city and a utopian vision of what lies ahead.

These categories of nostalgia should not be regarded as fixed typologies, but rather as indicative tendencies that reveal the layered nature of nostalgia in the wake of displacement. Besides, as this analysis demonstrates, the relationship among these modalities of nostalgia is mutually sustaining. Interwoven with a high degree of fluidity and permeability, they form a complex pattern that shaped not only the spatial configuration of Strovolos II, but also the broader processes of identity-making and home-making in the context of displacement.

NOTES

[1] Svetlana Boym, *"The Future of nostalgia"*, (New York: City Press, 2001), 7.
[2] David Conradson and Mckay, "Translocal Subjectivities: Mobility, Connection, Emotion", Mobilities 2 (2007): 167.
[3] Frederic Jameson, "Postmodernism, and consumer society" In *The Anti-Aesthetic: Essays on Post-modern Culture*, ed. Hal Foster, (Port Townsend Wash: Bay Press, 1983), 113.
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[5] Jane D. Gallamaso, "Rethinking and Reintegrating the Nostalgia of Displacement: A Literature Review", Social Science Lens: A World Journal of Human Dynamics and Social Relations, 2 (2024): 22.
[6] Layla Zibar, Abujidi Nurhan, and Meulder Bruno, "Who/What Is Doing What? Dwelling and Homing Practices in Syrian Refugee Camps" In *Making Home(s) in Displacement. Critical Reflections on a Spatial Practice*, ed. Alessandra Gola, et al. (Leuven: Leuven University Press, 2021), 100.
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[13] Department of Town Planning and Housing, "Strovolos II", 17.
[14] Department of Town Planning and Housing, "Government Activity in the Field of Housing", 5.
[15] Ministry of the Interior, Republic of Cyprus Department of Town Planning and Housing, "Cyprus a National Report", (Report presented at the UN Habitat Conference, Vancouver, 1976)
[16] Roger Zetter, "Housing Policy in Cyprus - A Review", HABITAT INTL 6 (1978): 474.
[17] Jennifer Kitson and Kevin E. McHugh, "Historic enchantments – materializing nostalgia", Cultural Geographies 22 (2015): 487.
[18] Fred Davis, *"Yearning for Yesterday: A Sociology of Nostalgia"*, (New York: Free Press, 1979), 31.
[19] Svetlana Boym, *"The Future of nostalgia"*, 41
[20] Svetlana Boym, *"The Future of nostalgia"*, 7

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(DE)(RE)HUMANIZING COMMUNITY: RESOLUTION THROUGH EMPATHY IN ARCHITECTURE

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INTRODUCTION

It is essential to recognize that Hispanics and Latinos are not the same. While they share substantial similarities, they are distinct from one another. Therefore, it is crucial not to group them together but to treat them separately, acknowledging their unique identities and needs.

Being Latino embodies resilience, adaptability, and community. The Latino community adapts and evolves in response to the different environments it encounters, with a mentality of making the most of what is available. The United States is a country that advertises itself as a space that exists as the melting pot of identities; however, the deeply rooted systemic racism that has aided in the process of building the country's existing social hierarchy allows for the placement of obstruction - whether social or institutional - limit the opportunities obtainable for individuals categorized in the bottom of the social hierarchy pyramid.

The United States is experiencing a troubling era characterized by the erasure and removal of documentation, individuals, as well as the restriction of unbiased knowledge accessibility, academic inquiry, and scientific research. Prevailing societal norms in the United States categorize individuals based on preconceived perceptions and ideologies rooted in critical racism. In this context, the Hispanic and Latinx communities are confronted with a hostile environment shaped by divisive rhetoric, which fosters exclusion and polarization. Consequently, members of the community are being describes them as "enemies from within."

This racialization system not only confines individuals to societal expectations but also undermines their sense of individuality, promoting a rhetoric that stifles cultural expression and impedes the progress of future generations. As a result, a climate of fear silences discussions about identity, compelling individuals to conform to the fabric of the community, often rendering them invisible. The hostile rhetoric employed by these entities has emboldened individuals to amplify the animosity directed at minority communities, fostering divisiveness and resulting in a continuous stream of disagreement. The lack of open, constructive dialogue among communities has banished, exacerbating the division between individuals, resulting in a significant decline in empathy toward one another, further isolating individuals from one another.

LITERATURE REVIEW

While the country promotes itself as a 'melting pot' that accepts all individuals and provides the same opportunities for all, it fails to accept the reality that the deeply rooted system in the United States has predetermined the available possibilities for individuals, especially for those in marginalized communities. The United States has always been hyperaware of the race and ethnic makeup of an individual and using the basis of the information to determine an individual's available opportunities.[1] The constant categorization of individuals has enabled the othering of communities, as well as the divisiveness that exists within society. The constant view of race as a form of social categorization and status-based organization automatically creates a hierarchy in society, resulting in seeing some as less than others.[2]

Currently, the country is facing a time where entities of power have placed the community within the perimeters of "enemies from within" through the use of hostile rhetoric. Through time the country has had a constant dialogue that differentiates the "good immigrant" from the "bad immigrant."[3] Usually, the differentiation between the two has to do with the preconceived ideologies attached to the place where the individual is from, as well as the preconceived ideologies of their skin tone; moreover, the "bad immigrant" has now been correlated to the individuals defined by the term "illegal immigrants."[4] However, while this was true in past history, and is still the backbone of the current events, the "bad immigrant" and the "good immigrant" has shifted in meaning.[5] It now largely hinges on the individual's country of origin, resulting in the demeaning rhetoric that casts all Latinos as the undesirable segment of immigrants. This shift has furthered isolated the community from society and instilled a pervasive fear, leading to efforts aimed at silencing and minimizing the community. Consequently, individuals have been forced to blend and assimilate into the broader society, stripping them of their identity. This has eradicated the empathy that once existed among communities and fostered a growing sense of hatred and division.

Historically, the word "hate" had a different meaning than it does today.[6] The shift in meaning has been aided by the growing sense of hatred that has been the consequence of the empowerment coming from the entities of power. The country is currently retreating in history to the previous hatred and division that existed during the historical events of slavery, segregation, and World War II, which have led to the creation of memorialization in the present time.

METHODOLOGY

Spaces of Memorialization

To comprehend how historical events are presented to society for memorialization and remembrance with respect, this research analyzed a series of social justice and social impact projects that have made significant statements towards society. Collectively, these projects represented and memorialized historical events that impacted minority communities through a process of social othering. For example, the Peace and Justice Memorial in Montgomery giving a memorial and awareness to those individuals that were enslaved.[7] Another example is the Berlin Memorial to the Murdered Jews of Europe, bringing about awareness and a sense of emotion and relation as the masses of the memorial embrace one.[8] Furthermore, various analyzed projects have employed controversial symbols to convey their messages effectively, such as the border wall explorations of the Migrant Picnic across the wall by JR,[9] and the documentation and honor given to those that were deceased in the process of crossing the border wall by Jason de León.[10] Although the examined projects successfully achieved their goals of expressing respect and spreading knowledge of the events, the research raises a question: how can we create a space that evolves alongside current events, fostering awareness while simultaneously catalyzing awareness, with the effort of halting the events and preventing them from becoming entrenched in history, thus leading to the creation of a memorial?

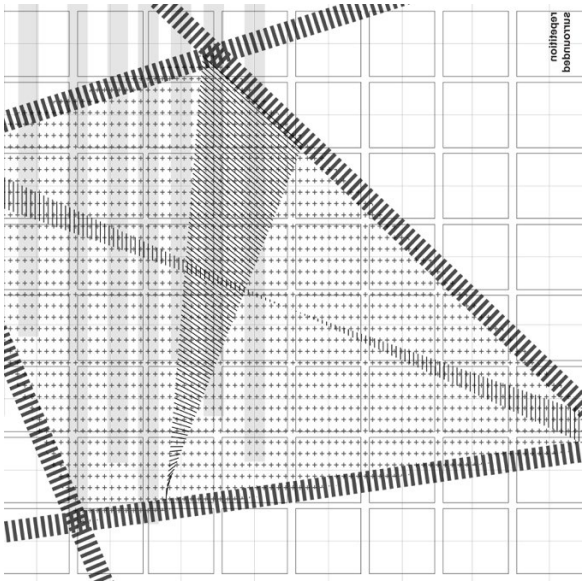

Figure 1. Berlin Memorial to the Murdered Jews of Europe, by Peter Eisenman

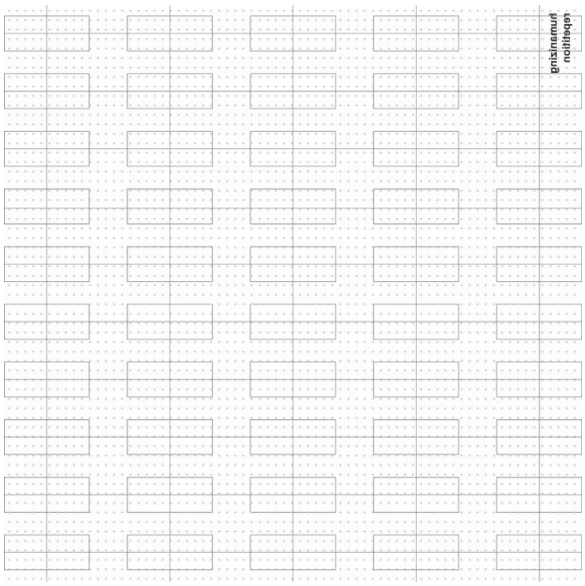

Figure 2. Peace and Justice Memorial

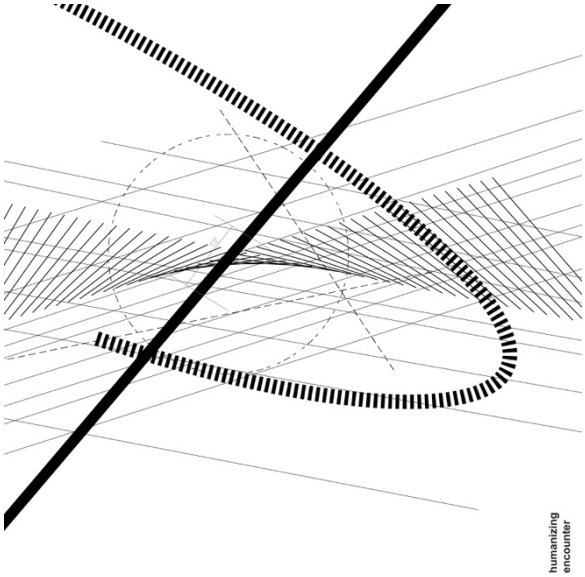

Figure 3. Migrant Picnic Across the Border Wall, by JR

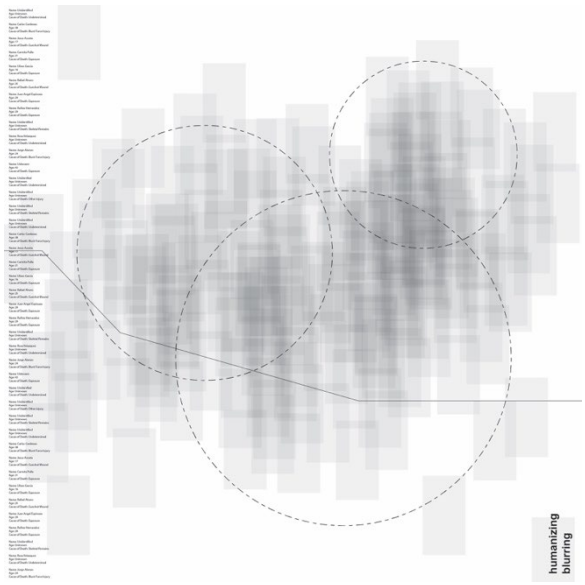

Figure 4. Hostile Terrain 94, by Jason De León

Typology: Awareness

Through the process of posing critical questions, the research identified a gap in the design of a typology that can exist and evolve in parallel to current social events, as they are now manifesting in the form of memorial spaces. Consequently, the research calls for the development of a new typology, that being a typology of awareness. These spaces aim to deepen understanding of contemporary events and to cultivate a sense of empathy among diverse communities.

Exploration

Through careful explorations and analysis, the research proposes a space dedicated to sharing the personal stories of immigrants from the Hispanic and Latinx communities, shedding light on what the immigration experience signifies for them and their roles within the United States community. The project examined the human body as the central concept of translation and interpretation. While most

humans have a total of 206 bones in their skeletal system, which are largely uniform in appearance due to their molecular composition, it is the surface of the skin that influences individuals to subconsciously and consciously create a sense of enregisterment, leading to the differentiation and categorization of people into various racial groups. Furthermore, the politicized nature of the southern border wall has significantly shaped and influenced the discourse surrounding the Hispanic and Latinx communities. Accordingly, this project aims to explore the ideologies related to the border, ownership, and division, utilizing the wall as a crucial element to foster an exploration of humanization and empathy.

With this analogy and understanding, the research developed a structural system that mimics the repetition and composition of the human skeletal system, consisting of five varying trusses that facilitate the attachment of various components. The corporal truss system is constructed from modular wooden pieces that enable easy assembly, disassembly, and transportation of the project.

Trusses labeled as Systems A, B, C, and D are each composed of nine pieces designed for assembly. In comparison, System E consists of eleven pieces that together form a seating structure, highlighting the points of interaction within the project. Each truss piece is coded to streamline the assembly process. The simple and repetitive nature of the trusses allows the project's focus to center on the skin component.

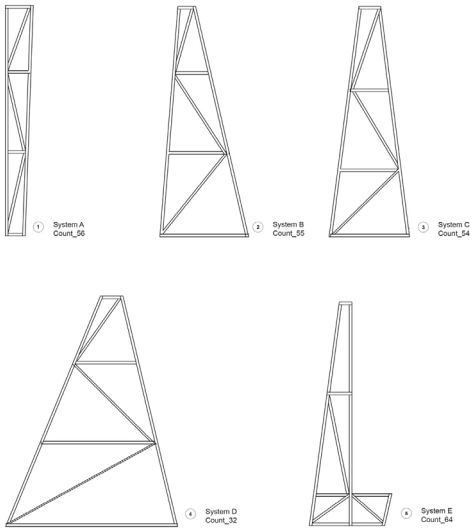

Figure 5. Truss System

The skin, which allows for the connection of the trusses, showcases the stories of the individuals are engraved onto translucent panels crafted from transparent materials, allowing visibility through the structures. This design was intentionally created to embody a metaphor: to truly connect with someone and understand who they are, one must invest the time in meaningful engagement. Each panel conveys a different story, altering the texture of the material.

The use of the translucent material is intended to create connectivity amongst individuals. When an engraved piece stands alone, it is not easily readable from a distance as it blends into the surroundings. However, as one approaches, the story becomes clearer. The structures are enveloped in the skin material on both sides, placing two engraved panels opposite each other. When one stands in front and reads the piece without someone else across it, the story is difficult to read. In contrast, when two individuals stand across from one another, the human silhouette provides a smooth background, making the engraving stand out more effectively.

This design emphasizes that in order to connect, individuals need to pause and invest time in each other. Additionally, the presence of others while reading the engravings signifies that together, we support one another and foster a sense of community. The repetition of the transparent elements ultimately leads to the creation of an opaque space, reinforcing the project's themes.
The analysis of the human body expanded into the placement and formation of the walls. The project examined the movement of immigrants from one country to another through the lens of migration itself. In examining immigrant culture and the significance of identity within ethnicity, it became evident that a significant component of this culture is the act of dancing. Dance encompasses not only the physical movement of the body but also fosters community through the interpersonal interactions. Thus, the project translates the journey of migration into the embodiment of movement, captured in the act of dancing.

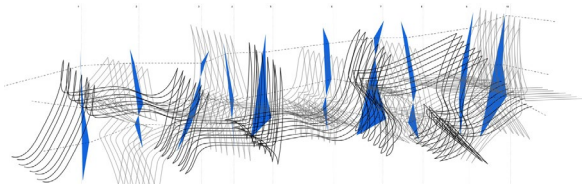

Figure 6. Mapping the Movement of the Joints

As the translation progressed, the project mapped the physical movements involved in dancing to achieve a deeper understanding of body mechanics. It delineated the various sequential steps typically performed by dance partners, identifying the position of joints along with the locations of arms and legs during these movements. This comprehensive analysis enabled connections between mapped points, facilitating an understanding of the fluidity intrinsic to dance.
The concept of fluid movement became the foundational guiding principle for designing the structural system, which included the choreographed arrangement of walls and the incorporation of angular elements within the varying truss system. Thoughtfully arranged wall systems invite individuals to wander, engage in conversation, and connect as they explore the shared narratives of immigrants within the space. Among these wall placements, numerous sharing points encourage community members to write, record, and share their own stories. Once a story is recorded and submitted, it is etched into the panel system integrated with the trusses.

Figure 7. Movement Through the Space

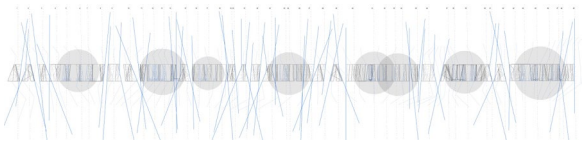

Figure 8. Extended Space

The project aims to incorporate the concept of movement not only in the placement of the wall systems but also in the physical journey that the installation will undertake as it travels across the country, making a total of 146 stops. At each of these stops, the project will collect the stories of immigrants from that location and share them with the following stop along the route. This exchange of narratives allows individuals who read and engage with them throughout the space to cultivate empathy and gain a deeper understanding of the diverse perspectives and experiences of immigrants. As the project reaches its final destination, number 146, in New York City, it will return to its starting point in Memphis, Tennessee, initiating the trajectory anew. This time, however, the project will establish a system that shares the stories of each city along the route, both to preserve the legacy of the project and acknowledge the immigrant community that resides in the city.

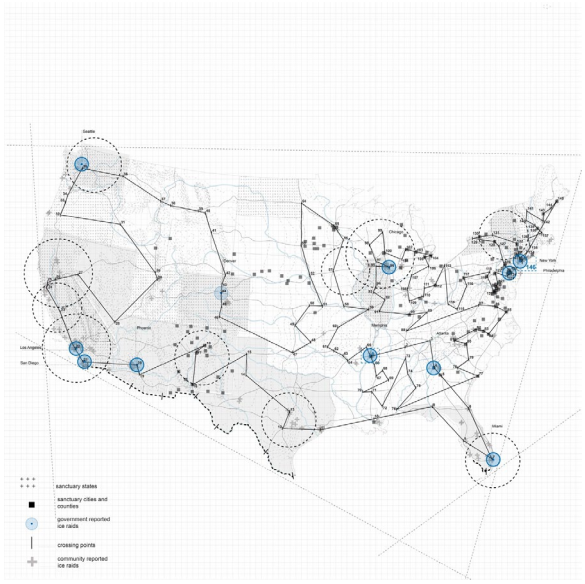

Figure 9. Installation Movement Through the United States

The wall segments are designed using a modular system that allows anyone involved in the project to easily assemble the components. Each piece is coded to indicate its placement; however, the overall configuration of the wall systems is left open-ended and not predetermined. As the project travels across the country, making 146 stops, it aims to be positioned in locations that extend beyond predominantly Hispanic and Latinx neighborhoods. Instead, it will be placed in prominent locations within the city that can serve as a "main square." This approach ensures that the installation is accessible to a diverse range of communities, not just those from the Hispanic and Latinx backgrounds. The objective is to encourage engagement from individuals outside the community, while also allowing community members to share their experiences.

As the project progresses across the country, the arrangement of the walls remains fluid and open to interpretation. Each city visited offers the local community the opportunity to determine how the walls are configured, catering to their unique needs. This adaptable approach allows for a diverse experience

of the project while preserving its fundamental principles: fostering gathering, sharing, and storytelling to create empathy and understanding through movement.

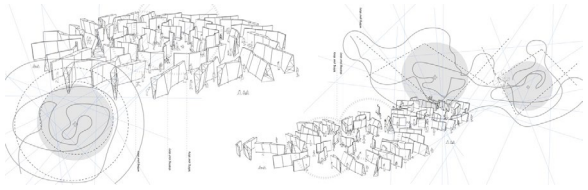

Figure 10. Different Wall Configuration

Furthermore, the systems are internally powered to create a dynamic experience. During daylight, the transparent structures can seamlessly blend into their surroundings, symbolizing how immigrants integrate into society, often remaining unnoticed while making subtle contributions. However, at night, these systems illuminate from within, casting shadows on the ground and enveloping visitors in the stories shared by immigrants as they walk through. From a distance, the panels shine like beacons of hope for immigrants, standing out and allowing immigrants to be recognized for who they are and the valuable contributions they make.

PILOT

The project conducted a pilot trial that involved interviewing various community members to gather their immigration stories and insights into what it means to belong to the Hispanic and Latinx communities in the United States. The interview questions were thoughtfully designed to gain a deep understanding of individuals' identities and their perspectives on the often discouraging discourse surrounding their community. Additionally, the interviews revealed their challenges and achievements in the country. The information collected provided valuable insights into the experiences of a community that is strong, resilient, and deeply rooted, yet frequently overlooked by the broader system. All interviews were held in a private setting that ensured the comfort of each participant and were conducted in their preferred language, whether entirely in Spanish, English, or a combination of both. During the interviews, individuals had the freedom to respond to the questions as fully as they wished. The following were the questions of the interview –

- De donde eres? (País, Ciudad) *Where are you from? (Country, City)*
- Describe tu país y ciudad de donde eres. *Describe your country and city where you are from*
- Si creciste en Estados Unidos, ¿cómo te identificas? ¿Te identificas como Americano? Has tenido algún momento en el cual batallaste para saber como te identificas? *If you grew up in the United States, how would you describe your identity? Do you identify as American? Have you ever had a moment when you struggled to figure out how you identify or where you fit in?*
- ¿Cuánto tiempo llevas en Estados Unidos? ¿Desde qué año? *How long have you been in the United States? Since what year?*
- Que fue lo que hiso que decidieras mudarte a Estados Unidos? *What was the catalyst that made you want to move to the United States?*
- ¿Te mudaste solo? *Did you move alone?*
- ¿Cuál fue tu trayecto de inmigración? (Tu viaje) ¿Tuviste la oportunidad de llegar con visa o papeles? *What was your immigration trajectory? (Your trip) Did you have the opportunity to immigrate with a visa or documentation?*
- ¿A dónde te mudaste? Por que? ¿Fue el primer lugar a donde llegaste? *Where did you move to? Why? Was it the first place you moved to?*
- ¿Qué ha sido lo más difícil de estar en Estados Unidos? *What has been the most difficult thing about being in the United States?*

- ¿Te sientes solo? *Do you feel alone/lonely?*
- ¿Cómo está tu inglés? Se te dificulta? ¿Te cansa? *How is your English? Is it difficult? Do you get tired of speaking it?*
- ¿Usas inglés en tu vida diaria? Que idioma hablas en la casa? Si tienes hijos, tus hijos como se comunican? (ej. trabajo, escuela, etc.) *Do you use English in your everyday life? What language do you speak at home? If you have kids, how do your kids communicate? (ex. work, school, etc.)*
- ¿Has tenido algún problema de racismo? (Micro-agreción cuenta) *Have you had an instance of racism? (Micro-aggression counts)*
- Con lo que está pasando actualmente en la política, ¿cómo te sientes al respecto? ¿Te trae algún sentimiento? ¿Qué piensas del caso? *In the current political climate, what are your feelings? Does it make you feel anything? What do you think about everything that is happening?*
- ¿Quieres agregar algún otro detalle de tu historia que tú pienses que sea importante? *Would you like to add any other details of your story that you think are important?*

DIGITAL COMPONENT

As the physical archive of stories expands across the country, the parallel digital space evolves in tandem with how the stories are collected. The creation of the website facilitates a digital archive that preserves this information, safeguarding it against the erasure of memory. In a time when databases are being actively deleted and individuals are being displaced, the preservation of these stories becomes increasingly vital. Furthermore, establishing a digital platform enhances access to information, ensuring that everyone can engage with the narratives, even if they are unable to attend the project in person. The website is designed to facilitate an easy submission process for individuals involved in the project, provided they have access to a digital device. The various engagement spaces for story submissions cater to the diverse individuals who may participate, promoting inclusivity for all. All the stories collected during the pilot phase of the project are available for anyone to read on the website. The site also provides background information to help everyone understand the project's objectives and position.
Digital Platform : https://kinemp.cargo.site

CONCLUSION

The immigrant Hispanic and Latinx community often faces systemic criminalization, leaving them vulnerable under societal pressures. The project aims to elevate this community by utilizing an architectural approach that encapsulates their memories, struggles, and challenges. This initiative serves as a call to action for activism, advocacy, and social movements on behalf of the community. While the project recognizes that resolution extends beyond its scope, it aspires to act as a catalyst for fostering understanding and unity between society and the immigrant community. By creating a safe space for immigrants, the project seeks to encourage ongoing awareness and recognition of the community's contributions to society.

As a society, it is essential to recognize that differences among individuals will always exist, as our intellectual decision-making and biases are shaped by our personal experiences. Our identities and the ways we communicate and engage with others can either strengthen or harm our communities. Thus, it is crucial to acknowledge that we will not always share the same perspectives. The ever-evolving nature of social acceptance raises the question of who might be targeted next. Just because your community is not currently under scrutiny does not mean it is immune to such challenges. Therefore, fostering a sense of kindness and humanity—qualities that may have been lost over time or perhaps never fully realized—has never been more important.

NOTES

[1] Michael Omi and Howard Winant, *Racial Formation in the United States*, Third ed. (New York: Routledge, 2015). (8)
[2] Winant, *Racial Formation in the United States*. (22)
[3] Silky Shah, *Unbuild Walls: Why Immigrant Needs Abolition* (Chicago, IL: Haymarket Books, 2024). (9)
[4] Shah, *Unbuild Walls: Why Immigrant Needs Abolition*. (9)
[5] Shah, *Unbuild Walls: Why Immigrant Needs Abolition*. (9)
[6] Shah, *Unbuild Walls: Why Immigrant Needs Abolition*. (145)
[7] Dana Cuff, *Architectures of Spatial Justice* (MIT Press, 2023). (71)
[8] Peter Eisenman, *Berlin Memorial to the Murdered Jews of Europe,* 2005.
[9] JR, *Picnic across the border,* Tecate, Mexico - USA, 2017.
[10] Jason De León, *Hostile Terrain 94,* 2019.

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SPATIAL EQUALITY: ASSESSING ACCESSIBILITY TO URBAN GREEN SPACES FROM RESIDENTIAL BUILDINGS IN OSAKA CITY

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INTRODUCTION

Metropolitan cities face increasing challenges of densification, among which the shrinking of green spaces is one major concern. This creates pressure on residents to access and use those limited spaces. Scholars have repeatedly emphasized the importance of green spaces for physical health, mental health, and social well-being.[1] Given limited urban resources, an equality question arises: does everyone have equal access to urban green spaces? This paper assesses the spatial equality in access to green spaces in Osaka City, Japan. Specifically, it targets residential buildings and urban parks and investigates the relationship between accessibility and income levels. The ultimate aim is to provide insights for urban planners and decision-makers.

Spatial Justice and Environmental Equity

Environmental equity extends beyond the distribution of green resources. It also entails equitable accessibility to those resources across different social groups.[2] This principle lies at the heart of the debate on environmental justice and sustainable development. In particular, Sustainable Development Goal (SDG) 11, "Sustainable Cities and Societies" emphasizes the need for inclusive cities and providing safe and accessible green and public spaces, with emphasis on vulnerable groups.[3] While access to green areas was proven to improve mental health,[4] Physical health,[5] and social cohesion,[6] failing to provide equal access risks deepening disparities across broader social aspects.

These concerns are not new. Urban geographers have long analyzed the interconnectedness between geography and patterns of inequality. Harvey argues that income inequality driven by capitalism tend to produce geographical disparity.[7] Consequently, affluent people will enjoy the choice of where to live, and the poor will be underprivileged and marginalized.[8] These spatial arrangements reproduce disparity, embedding advantages and disadvantages into the fabric of the city.[9] Within this framework, accessibility to greenery becomes more than an environmental concern; it extends to broader social and economic structures.

Building on these theoretical debates, empirical studies conducted in diverse geographical and cultural contexts demonstrate the manifestation of these dynamics between residents and urban greenery. For instance, in a study on five major cities in Europe, Buckland and Pojani found that in most cities, higher-income residents enjoyed higher accessibility to green spaces, and only in Birmingham did lower-

income residents have more access.[10] In Aleppo, Syria, Almohamad et al. assessed the distribution of urban parks. They found that public parks are concentrated in wealthier neighborhoods. Particularly, the neighborhoods located in the central and western parts of the city had higher accessibility than the eastern neighborhoods.[11] In Nanjing, China, Huang et al.'s findings reveal a similar spatial pattern of high accessibility areas concentrating in central areas, while the peripheries were characterized by low accessibility.[12] Such findings raise concerns about the underlying reasons for this trend. Furthermore, in terms of geographical distribution, Xie and Lu's study in Harbin, China, revealed that suburban residents enjoy better access to UGS than central populations. This illustrates how unique urban and geographic development can lead to distinct patterns of accessibility inequities.[13] Taken together, these studies collectively highlight that unequal access to green spaces is a socio-spatial problem, underpinning the critical role planning plays in reducing disparities. Scholars repeatedly emphasized that equitable planning requires tailored strategies to solve unique socio-spatial issues.

These debates align with the principles of spatial justice and environmental equity embedded in the SDGs. Ensuring access to green spaces entails more than increasing their amount. It requires attention to who can access and how easily. This shifts the conversation from measuring provisions alone to assessing inclusivity and justice through accessibility. Based on these debates, this study pursues the following objectives:

1. Evaluate the accessibility of green spaces from residential buildings in Osaka.
2. Measure the spatial equality of accessibility.
3. Provide recommendations for more inclusive urban planning.

Urban Greenery in Osaka City

Osaka is the second metropolitan city in Japan after Tokyo. Osaka City stands as the economic and cultural hub of the Kansai region. It is home to approximately 2,800,000 people, creating around 1,600,000 households, and spreads over an area of 225.34 km² [14] (Osaka City Municipality) and presents a diverse landscape that overlooks the Osaka Bay to the west and is crossed by the Yodo River. The city is characterized by a mixed land-use structure, with commercial and business areas in the center, industrial areas to the west, and predominantly residential areas on the south, east, and north sides.

The Meiji period (1868–1912) marked the beginning of modernization (Saga, 2008).[15] Before that, Osaka city was known as an Aquaopolis, where the rivers and water channels characterized the city's urban structure.[16] After the modernization period and post-World War II, the Osaka restructure plan post-envisioned transforming the rivers into a green network with 7.33 Ha designated as parkland on the Higashi Yokobori river[17]. However, this plan was not realized due to post-war constraints, and with the high economic-growth era (1955–1965) and rapid industrialization, the city faced environmental degradation.[18] However, the Higashi Yokobori park project was created, but only as fragments of the original plan.[19] As a result, the urban form of Osaka today resembles a patchwork of scarce greenery, shaped by the declining waterways and infrastructure pressure.[20] With an average green space per capita (in 2015) of 3.6 m², compared to 12.5 m² in Sapporo,12.0 m^2 in Kitakyushu and 9.0 m² in Nagano.[21] However, despite the shortage, Osaka features iconic parks and green landmarks, such as the Osaka Castle Park in the city center. At the community level, smaller parks exist but are limited in size. Within this context, Osaka City becomes an interesting case for investigating the spatial equality in access to urban green spaces.

METHODOLOGY

This study employs a quantitative spatial analysis approach to measure accessibility to urban green spaces (UGS) in Osaka City and examines the association with household income levels. The methodological framework consists of three steps: 1) measuring the accessibility from each residential

and welfare building to UGS within a given threshold, 2) identifying the clusters of low and high accessibility through local spatial autocorrelation analysis, and 3) detecting the associations of the identified accessibility clusters with the income levels to examine the socio-economic disparities.

Data Source

This study utilized multiple spatial and statistical data, including residential and welfare buildings (Osaka-shi office), parks (MILT), and road centerlines (CGZS JAPAN), along with statistical data on household income (Zenrin database), with spatial references for the statistical data being a 500 m mesh grid, a standard unit for small-area statistics in Japan. For this study, UGS space in this research is confined to Urban Parks and some green graveyards as defined by the Ministry of Environment, Land, and Infrastructure (see Figure 1).

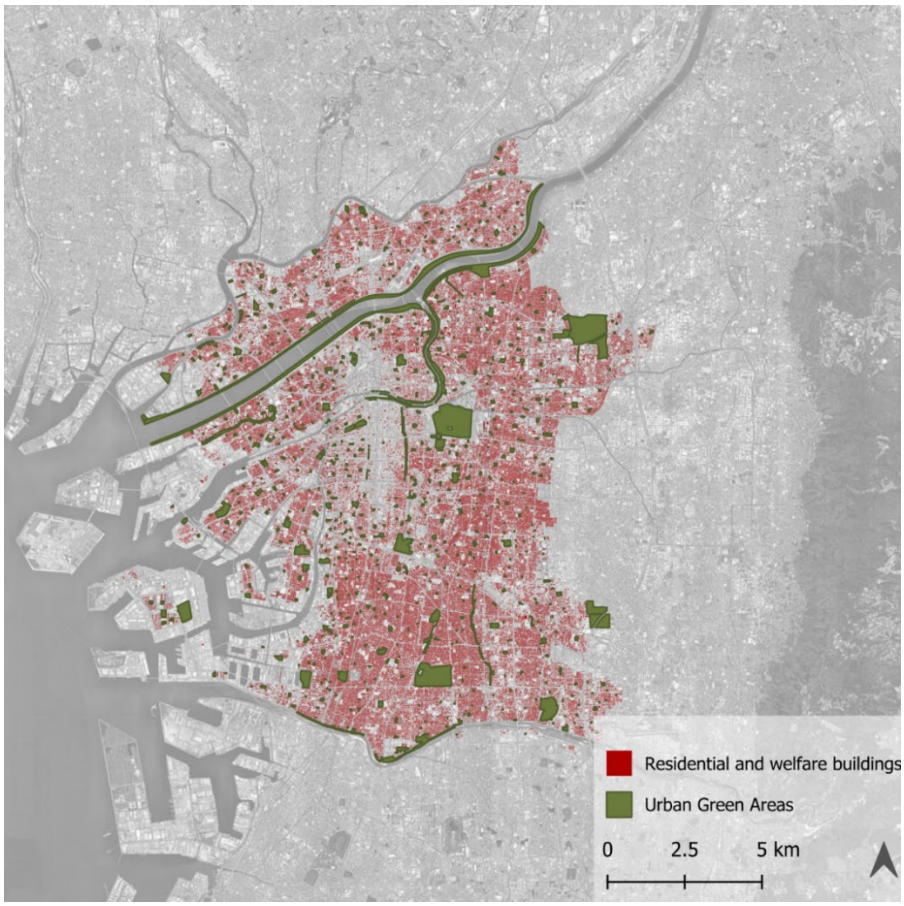

Figure 1. Map of Osaka city showing Urban Green areas and residential and welfare buildings

Measuring Accessibility

Accessibility was quantified using the attraction reach measure within the Place Syntax Tool (PST), developed by the KTH School of Architecture and the Chalmers School of Architecture (SMoG).[22] The analysis was built on the street network to calculate actual walking distances, rather than Euclidean distances, providing a more realistic representation in an urban context. The origin points were set to the building whereas parks served as the attractors. Furthermore, weight was given to both the walking distance and the size of the park. The distance thresholds were set to (400, 800, 1200, 1600) meters based on the walking time of 5, 10, 15, and 20 minutes. The PST tool in QGIS measures attraction reach as follows:[23]

$AR(o) = \sum_{a \in A}(f(a)w(D(o.a)))$ (1)

Where:

A = The set of reachable parks within the catchment area

(a) = Attraction Values associated with attraction a (parks 'area).

D (o.a) = The shortest distance from Origin (buildings) to attraction (parks)

W(x) = Attenuation function (gives weight for the distance between each attraction and the origin)

Local Moran's I statistic

Local indicator of spatial correlation (LISA) defined by Anselin (1995) and following the approach of Xiao et al. and Iraegui et al. was used to identify local clusters of high and low accessibility across the city.[24] This spatial analysis evaluates whether the value (Accessibility) at a location (Mesh) is significantly different from its neighbours'. Thereby, it identifies four types of meshes: 1) High-High (HH) for a mesh with high accessibility surrounded by high-accessibility neighbors. 2) Low-Low (LL) for meshes with low accessibility surrounded by low-accessibility neighbors. 3) High-Low (HL) and 4) Low-High (LH): Spatial outliers where accessibility values contrast with their surroundings.[25] This test was done using GeoDa software 1.22.0.14. [26]

Mann-Whitney U-Test

To further examine the socio-economic dimension of the detected clusters, we utilize the Mann-Whitney U test. For this test, we specifically targeted the (HH) high-high accessibility and (LL) low-low accessibility clusters. This is a non-parametric test that assesses the relationship between accessibility and income levels. To assess the relationship, the test compares the distributions of income levels of lower and higher accessibility clusters. The null hypothesis in this test (p-value > 0.05) is that there is no statistical difference between the two populations (In HH clusters and LL clusters). Conversely, if the test yielded (P-value <0.05), it means that there is a statistically significant difference between the two aforementioned groups.

RESULTS

This section of the paper illustrates the local clusters of accessibility to urban green spaces using the attraction reach as a proxy for accessibility. Attraction reach is calculated for each residential or welfare building to the parks at four thresholds: 400 m, 800 m, 1200 m, and 1600 m, using the formula presented in the methodology section. For the LISA test, aggregation using the median was done to get the average accessibility for each Mesh.

Accessibility to Green Spaces

Fig. 2 illustrates the spatial distribution of high-accessibility (HH) and low-accessibility (LL) clusters as identified by the Univariate Local Moran's test. At the 400m threshold, (HH) clusters are scattered across the city, with notable concentration around major parks, such as Osaka Castle Park in the center, Tsurumi Park to the northeast, and Nagai Park to the south. As the walking distance threshold increases, the clusters expand in size and extend around the Ogawa River, and to the west near the mouth of the Yodo River. On the other hand, (LL) clusters emerge around the city center and eastern areas at shorter walking distances. However, with increasing walking distances, they concentrate on the north and east sides of the city, and gradually spread into the lower central area.

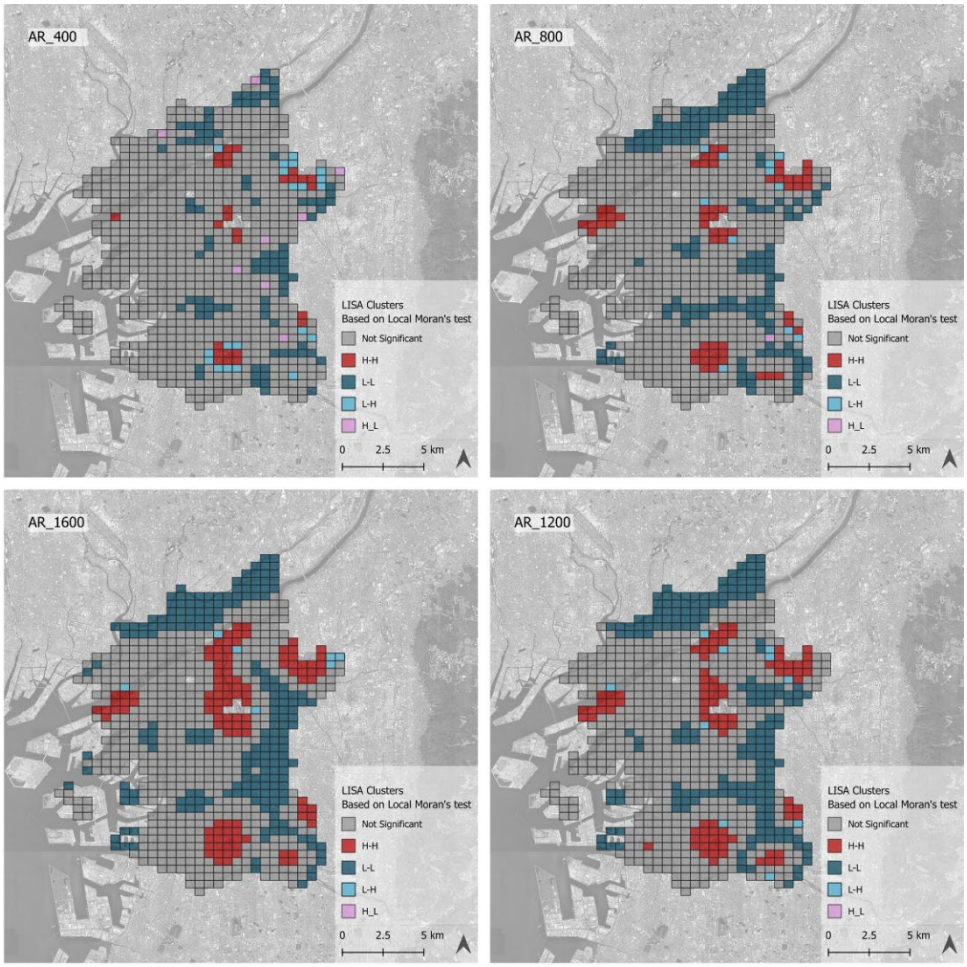

Figure 2. LISA Results of Osaka City

Disparity in Access to Green Spaces

Table 1 presents the results of the Mann–Whitney U test, which compared the proportion of households in each income group between high-accessibility (HH) and low-accessibility (LL) clusters – as identified by the Local Moran's test – across four walking distance thresholds (400 m, 800 m, 1200 m, and 1600 m).

At the 400 m threshold, no statistically significant differences were observed between high-accessibility (HH) and low-accessibility (LL) clusters across all income groups ($p > 0.05$).

From the 800 m threshold onward, disparities emerged. The proportion of households earning under 3 million yen had a higher representation in the (LL) clusters (Median = 46.59) than the (HH) cluster (Median = 44.13). Meanwhile, this pattern is reversed for the (3–5 million yen) group (HH Median = 27.82; LL Median = 26.45), (7–10 million yen) group (HH Median = 9.22; LL Median = 7.97), (10–15 million yen) group (HH Median = 3.05; LL Median = 2.79), and the (over 15 million yen) group (HH Median = 1.26; LL Median = 0.94). This means that households in middle- and high-income brackets were more represented in the (HH) clusters. At the 1200 m threshold, the inequality pattern persists and excludes the (3-5 million yen) group, where there is no statistically significant difference. By the 1600 m threshold, the income-related inequities were most evident. Significant results were recorded across nearly all income brackets except the (5–7 million yen) group.

Walking Distance 400 m								
Variable	**High-High Cluster (N=27)**			**Low-Low Cluster (N=92)**			**Mann-Whitney U test**	
Income group Proportion(%)	Mean	Std. Dev	Median	Mean	Std. Dev	Median	Z	Sig.
under 3 M	45.18	8.58	46.50	47.63	10.06	45.72	-0.857	0.392
3-5 M	26.87	2.98	26.71	26.52	3.30	26.29	0.279	0.780
5-7 M	13.11	2.04	13.02	12.53	2.94	13.01	0.780	0.435
7-10 M	8.83	2.16	9.06	8.28	3.23	8.17	1.415	0.157
10-15 M	4.05	2.55	2.99	3.56	2.91	2.92	1.136	0.256
Over 15 M	1.96	1.66	1.33	1.48	1.18	0.99	1.453	0.146
Walking Distance 800 m								
Variable	**High-High Cluster (N=59)**			**Low-Low Cluster (N=152)**			**Mann-Whitney U test**	
Income group Proportion(%)	Mean	Std. Dev	Median	Mean	Std. Dev	Median	Z	Sig.
under 3 M	43.99	9.36	44.13	48.43	9.59	46.59	-2.570	**0.010**
3-5 M	27.50	2.55	27.82	26.46	3.48	26.45	2.236	**0.025**
5-7 M	13.47	2.59	13.04	12.51	2.72	12.81	1.847	0.065
7-10 M	8.94	1.95	9.22	7.99	2.94	7.97	2.992	**0.003**
10-15 M	4.23	3.69	3.05	3.35	2.54	2.79	2.030	**0.042**
Over 15 M	1.87	2.23	1.26	1.27	1.01	0.94	2.231	**0.026**
Walking Distance 1200 m								
Variable	**High-High Cluster (N=88)**			**Low-Low Cluster (N=190)**			**Mann-Whitney U test**	
Income group Proportion(%)	Mean	Std. Dev	Median	Mean	Std. Dev	Median	Z	Sig.
under 3 M	44.65	8.92	44.98	48.04	9.47	46.45	-2.334	**0.020**
3-5 M	27.34	2.57	27.44	26.70	3.56	26.98	1.413	0.158
5-7 M	13.11	2.52	12.78	12.65	2.66	13.17	0.439	0.660
7-10 M	8.93	2.14	9.17	8.08	2.82	8.23	3.107	**0.002**
10-15 M	4.10	3.21	3.30	3.31	2.41	2.84	2.412	**0.016**
Over 15 M	1.87	1.99	1.36	1.22	0.94	0.93	3.326	**0.001**
Walking Distance 1600 m								
Variable	**High-High Cluster (N=108)**			**Low-Low Cluster (N=199)**			**Mann-Whitney U test**	
Income group Proportion(%)	Mean	Std. Dev	Median	Mean	Std. Dev	Median	Z	Sig.
under 3 M	43.94	8.62	44.14	48.44	9.38	46.88	-3.600	**0.000**
3-5 M	27.57	2.66	27.59	26.66	3.83	26.97	2.222	**0.026**
5-7 M	13.05	2.29	12.81	12.69	2.91	12.94	0.644	0.520
7-10 M	9.09	2.04	9.28	7.90	2.71	8.06	4.532	**0.000**
10-15 M	4.38	3.16	3.40	3.17	2.32	2.78	4.337	**0.000**
Over 15 M	1.98	1.85	1.43	1.14	0.84	0.92	5.495	**0.000**

Table 1. Mann–Whitney U test results comparing the proportion of households in each income group between HH and LL clusters at different walking distance thresholds

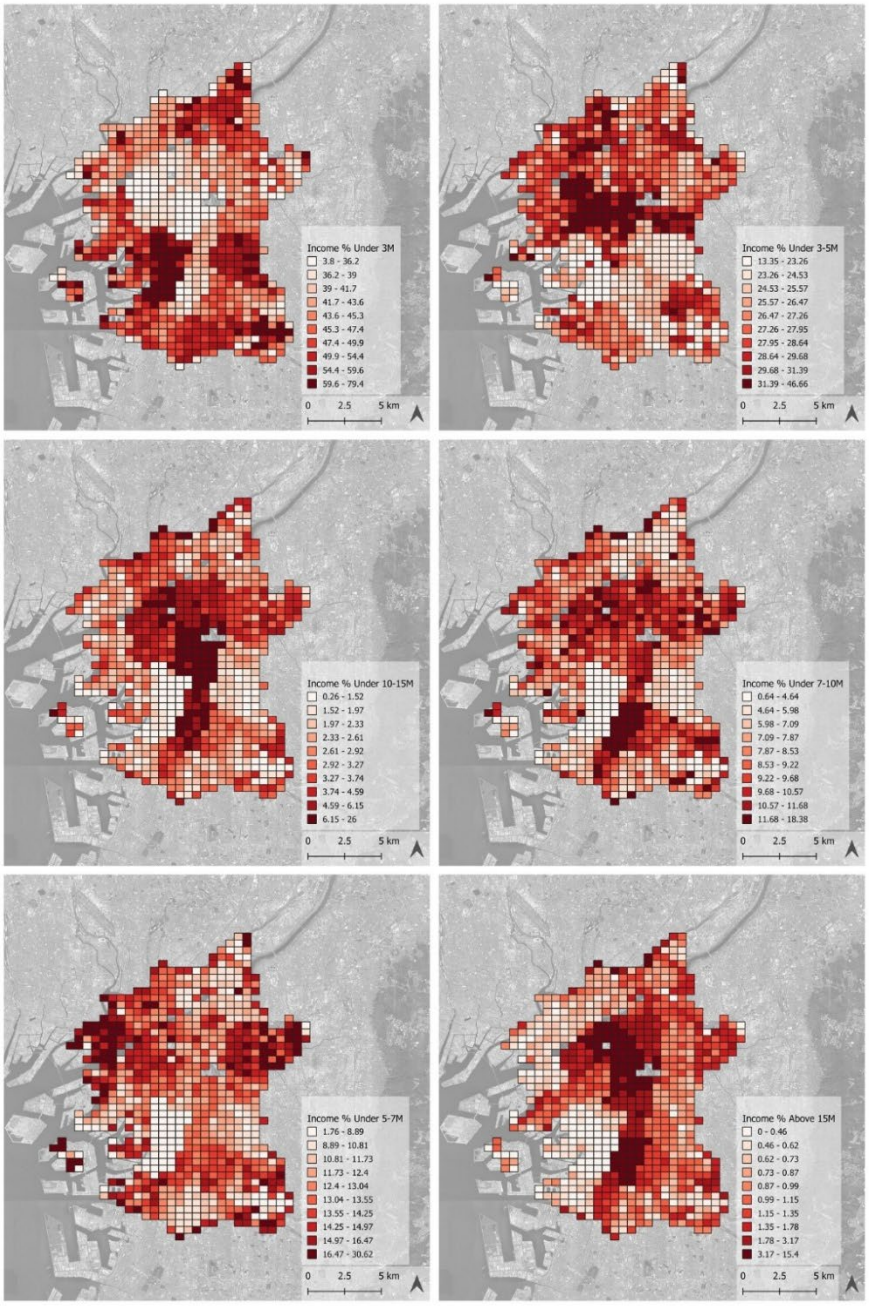

Figure 3. Spatial Distribution of Household Income Groups in Osaka City (percentage of households per Mesh)

DISCUSSION AND CONCLUSION

The rapid urbanization and densification of cities place heavy pressure on urban green spaces in many metropolitan areas. In Osaka City, this pressure resulted in a patchwork of limited green spaces shaped by the historical legacy of planning and economic development. This study evaluated the accessibility of residential and welfare buildings to green spaces in Osaka City and detected clusters of high and low accessibility. It further examines the disparities in the socioeconomic composition of those areas identified as clusters. The study highlights inequalities in access to green spaces in terms of spatial distribution and across different income groups. This study is useful for planning a more equitable and case-sensitive policy.

Although accessibility increases with longer walking distances, its pattern becomes more segregated. At the 400 thresholds, the number of HH and LL clusters was smaller than at the longer distances. This suggests there are fewer areas with pockets of advantages and disadvantages, suggesting disparity in access is less pronounced at the local scale. The clusters steadily increase in size with longer walking distances. These patterns suggest that while access to local parks may be relatively equal, farther and potentially larger and more major parks, which usually offer broader recreational benefits, are disproportionately accessible to residents.

With longer walking distances of (800 – 1600) Meters, High-High accessibility clusters were consistently associated with a higher representation of higher-income households. Meanwhile, low-income households are overrepresented in low-low accessibility clusters. Despite the difference being modest, it is systematic and statistically significant. These findings resonate with the socio-spatial process described by Harvey (2003) and Soja (2010), where socio-economic disparities are reproduced spatially. It also echoes the empirical findings in Nanjing, Aleppo, and other European cities. In a geographically similar case, the inequity observed in Osaka resonates with broader trends observed in Japan. A longitudinal study of Yokohama by Yasumoto et al. (2014) revealed that inequity in park provision persisted over time, while higher park provision was associated with higher house and land prices. They further attribute it to the trend of building new parks in affluent neighbourhoods, which in turn attracted wealthy households.[27] While our study does not test for such a mechanism directly, these findings suggest that the pattern observed in Osaka may be similarly influenced by a green gentrification process, where major parks attract wealthy households and push low-income ones.

This study exerts two policy implications. First, ensuring accessibility to these parks for all residents is essential, with particular emphasis on the disadvantaged and vulnerable population. This could be achieved by offering incentives for the lower-income population in identified low-accessibility areas to use alternative modes of transportation. Second, in the longer term, policymakers and urban planners are urged to prioritize these low-accessibility clusters for urban greening intervention.

Overall, this study shows that at shorter walking distances, the city had more homogenous accessibility to UGS when compared to longer walking distances. Lower-income households were more represented in lower accessibility clusters, while higher-income households were more represented in higher accessibility clusters. While this study accounts for the proximity to and size of the urban green areas, it remains limited in assessing the quality of these areas. Therefore, future studies aim to focus on smaller-scale analysis to capture the qualitative characteristics of urban greenery in Osaka and further include the perception of the residents.

ACKNOWLEDGEMENT

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IS INCLUSION POSSIBLE? EXPLORING THE FORMS OF FOREIGN MIGRANT WORKERS IN URBAN THIRD SPACES

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INTRODUCTION

As Taiwan continues its transition toward a fully developed nation, its social structure is undergoing significant transformation. Driven by low birth rates, population aging, and rising labor costs, the size of the local labor force is gradually shrinking. Due to the relatively lower wages in Southeast Asia, this region has become the primary source of foreign migrant workers in Taiwan. Since the 1989 policy of "restricted quotas" to the 1992 liberalization that allowed migrant workers in households and caregiving institutions—lifting quantitative restrictions and setting only qualification requirements—Taiwan's policy framework has become increasingly relaxed.[1] Beginning in 1993, the government further expanded access by allowing foreign workers to enter Taiwan's industrial sectors. These policy changes reflect the growing indispensability of migrant labor in Taiwan's industrial development.

In Taichung City, the number of migrant workers has reached over 100,000, ranking second among Taiwan's six major metropolitan areas.[2] On Sundays and holidays, migrant workers often move in groups, particularly in areas around the train station and the historic city center,[3] which have emerged as major nodes of congregation. At this urban scale, the surrounding areas organically foster a proliferation of ethnic signifiers that appear across building facades, public spaces, alleys, arcades, and corners—some of the city's smallest spatial units. Yet these corner spaces are far more than peripheral or transitional zones; they have increasingly become critical venues for migrant workers' social interactions, gatherings, and everyday economic activities.

While these changes actively reshape the urban landscape, they also intensify the perception of cultural differences among local residents.[4] These urban nodes—originally intended to support continuity and connectivity in the city—are gradually transformed into highly territorialized spaces due to the large influx of foreign workers. This process leads to spatial segmentation and ethnicization of the urban environment, indirectly altering the way Taiwanese people perceive and define these bnpublic spaces. As migrant workers utilize these areas for cultural reproduction, the spaces transcend their original purposes, becoming public zones marked by strong territoriality. However, the way these spaces are used often conflicts with the expectations of local residents, sometimes leading to social tensions. To accommodate such differences and mitigate conflict, there is a need for responsive design and institutional strategies that can reshape the identity and function of these urban spaces. Yet, to date, there are no established governance models that specifically address the regulation of such urban corners.

MOTIVATION AND PURPOSE

In certain blocks within the old urban district, spatial configurations possess qualities of flexibility and seclusion. Over time, the accumulation of different lifestyle practices and cultural differences has led to the gradual ethnicization of living spaces, transforming parts of the city into distinct immigrant community spaces.[5] While these areas evolve into cultural enclaves for migrant workers, they simultaneously develop a strong sense of territoriality, which often excludes other groups and deepens the social divide between foreign workers and local residents. This transformation is largely unintended and emerges organically rather than by design.

From the perspective of cultural inclusion and interethnic coexistence, Taiwan's earlier urban planning strategies—especially in older city centers—often failed to anticipate the influx of culturally distinct populations and the associated social issues. Many existing neighborhoods and street blocks lack the types of spaces that could facilitate intergroup interaction. Street space should embody inclusivity!

1. Understand perspectives on the spatial quality and daily life patterns within the neighborhood scale;
2. Investigate the coexistence and usage dynamics of formal and informal spaces.
3. Examine the potential for creating inclusive public spaces among different ethnic groups within the neighborhood.

LITERATURE REVIEW

Definition of Terms

Inclusive Design

The British Standards Institution (BSI) defines inclusive design as: "The design of mainstream products and services that are accessible to, and usable by, as many people as reasonably possible."Inclusive space refers to an environment of inclusivity, in which individuals of different backgrounds, identities, experiences, and ethnicities can feel equal and respected.[6] Such spaces aim to eliminate discrimination, prejudice, and exclusion, while promoting diversity and mutual understanding.

Loose Space

The concept of loose space was elaborated in Loose Space: Possibility and Diversity in Urban Life.[7] It refers to urban spaces that are not entirely regulated by institutional frameworks nor strictly defined by design. Such spaces may include vacant lots, street corners, edges of parking lots, arcades, or transitional zones, characterized by their high degree of flexibility and openness. They allow for unanticipated uses, such as street performances, flea markets, and picnics. These spaces enable users from different cultural backgrounds to co-construct spatial functions and social ties, revealing the interaction between humans and space.

Ethnicization

In multi-ethnic urban environments, residents from diverse cultural backgrounds bring their languages, cuisines, beliefs, and daily customs into the space, leaving behind specific cultural visual markers and behavioral patterns.

Through residential settlement, everyday practices, or the emplacement of ethnic symbols, specific groups actively "ethnicize" a place. This notion underscores the dynamic process of social and spatial construction, culminating in its inscription within the landscape.[8] This results in the phenomenon of ethnicization.

Theory

The Social Life of Small Urban Spaces

Based on field observation and detailed documentation, this work emphasizes human-centered urban design by analyzing elements of small to medium-sized public spaces and revealing their impact on human behavior. Whyte argues that a good public space should foster social interaction, provide a comfortable environment, and maintain flexibility to accommodate diverse needs.[9]

1. *Food:* A vital element that animates public space. Food stalls attract foot traffic and stimulate social interaction.
2. *Seating:* The availability and flexibility of seating directly influence whether people stay. Steps, edges, or low walls can serve as informal yet effective seats.
3. *Sunlight:* Sunlit areas are more inviting than shaded ones. Whyte emphasized sunlight as a key quality of public spaces.
4. *Street:* Streets function beyond circulation—they are spaces for everyday life. Their vibrancy depends on the density and diversity of human activity.
5. *Triangulation:* Refers to spontaneous interaction between strangers triggered by events, objects, or performances (e.g., street art, musicians).

Eight Qualities of Pedestrian- and Transit-Oriented Design

This framework identifies eight physical characteristics of pedestrian-friendly and transit-oriented environments.[10] These elements help assess the perception and use of walkable spaces, urban quality, and spatial engagement, and are applied as a reference framework for evaluating city and neighborhood design.

1. *Human Scale:* Spatial dimensions should relate to the human body. Design details that align with eye level and walking pace increase comfort and a sense of safety.
2. *Enclosure:* The feeling of being surrounded by buildings, trees, or canopies. Moderate enclosure increases comfort and focus; too much creates pressure.
3. *Continuity:* Visual and functional consistency in the space—such as uninterrupted walking paths and coherent street interfaces—enhances legibility and walkability.

The various urban pattern languages are synthesized, with clearly defined expected effects and spatial phenomena. These serve as references for evaluating the quality, comfort, and vibrancy of small public spaces in the city, forming the basis for optimization strategies in pedestrian-friendly and public space design.

SITE INTRODUCTION

Herb Alley, located in Central Taichung's historic district, is a cross-shaped alley formed by Lane 90, Chenggong Road and Lane 175, Lüchuan West Street, surrounding the Lüchuan River. During the Japanese colonial period, the river was improved and praised as the "Kamo River of Kyoto," giving Taichung the title "Kyoto of Taiwan."[11] The area was originally Hydraulic Bureau staff housing, later converted into residential use.

Before modern medicine was widespread, urban residents sought herbs just as rural people did, naturally attracting herbalists and forming what is now Herb Alley.[12]

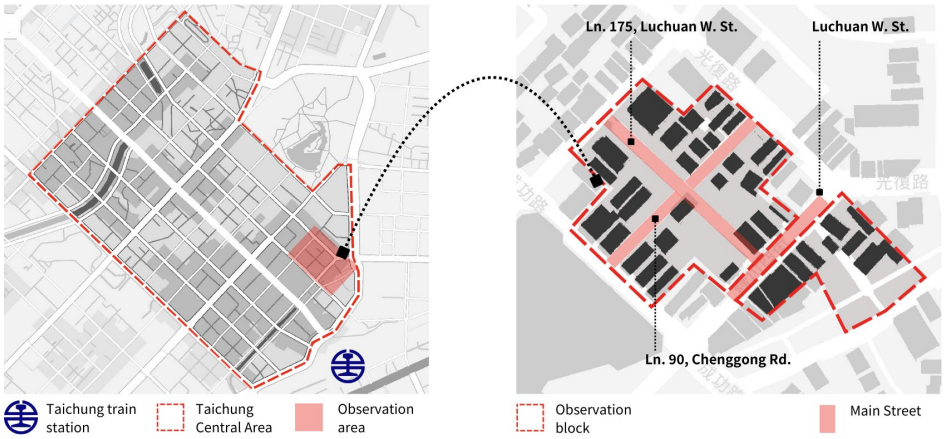

Figure 2. Site Location Map of the Observation District

"Drink for health? Herb Alley." – Yi-You Chan, describing daily life in 1980s Taichung.[13]
However, with the rise of Western medicine, the decline of folk healing, the construction of Taichung Station, and the arrival of migrant workers, both commerce and clientele changed. Today, only four herbal shops remain. The alley is marked by clutter, messy awnings, and commercial spillover, making the space crowded and dim, contrasting sharply with Taichung's modern image—an urban boundary within the city center.
Despite being close to landmarks like ASEAN Plaza, Jiguang Street, and Taichung Park, Herb Alley appears relatively neglected. Yet its loose spatial use and distinct pattern language create a unique lived landscape.

RESEARCH PROCESS

Through **participant observation**, researchers interact with the environment and collect data in a gradual and systematic manner. Based on the analyzed findings, **semi-structured questionnaires** are then used to further explore the perspectives and opinions of the target group.

Figure 3. Street Space Distribution of Informal Attractive Factor

After analyzing the **pattern language** present in the alley, the spatial distribution of **ethnicization** within **Herb Alley** can be identified. Based on this, selected areas are further examined through object-level spatial analysis to better understand and categorize the ethnic **pattern** embedded in the space.

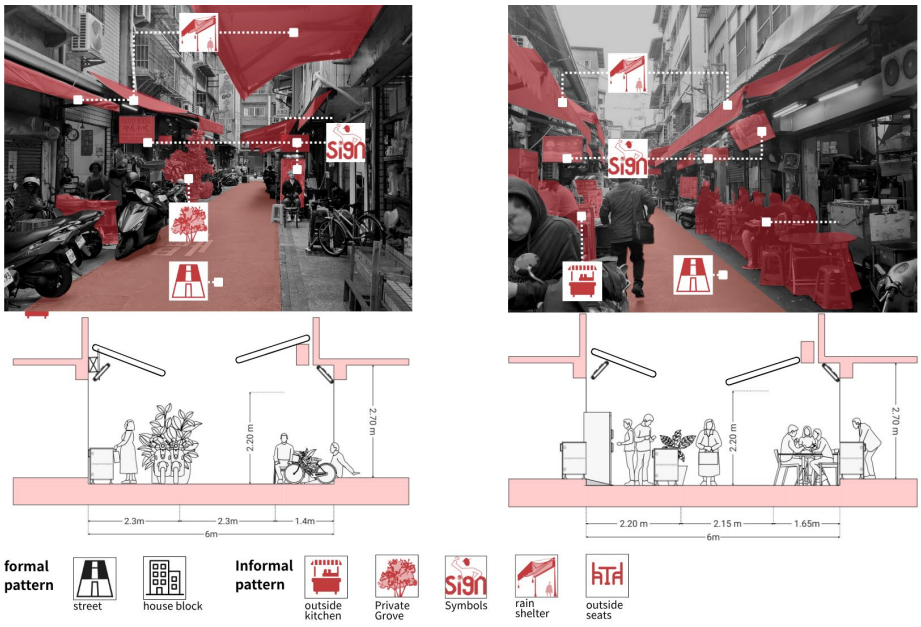

Figure 4. Street Space Distribution of Informal Objects

Pattern re-organizing

Spatial experience	Pattern Language from theory	explanation
Territoriality & Boundaries *Focus on spatiality, enclosure, and occupancy within the street block*	**Street**	A street is a space for interaction and everyday life.
	Human Scale	Scale Relationship between Objects and People
	Enclosure(Shelter&Objects)	Boundaries create a sense of space
Social Use & Resting Areas: *Focusing on the spatial feeling and usage preference of social space in the street block*	**food**	Food invites people to stay and connect.
	Human Scale	Scale Relationship between Objects and People
	Seating	Seating encourages lingering and interaction.
Symbols & Implications: *Focus on cultural recognition and psychological familiarity in the street block*	**food**	Food invites people to stay and connect.
	Triangulation(Sign&Symbols)	The third element (symbol, activity, or display) sparks interaction between strangers.

Table 2. street-block of Informal Pattern Language Applied Categorisation

Based on the synthesized spatial experiences, a set of pattern languages was developed. A semi-structured questionnaire was then conducted to gather opinions from various ethnic groups in Herb Alley regarding each pattern language. This approach helps to more accurately understand users' actual needs and to inform future spatial improvement strategies and design recommendations.

CONCLUSION AND DISCUSSION

The Role of Informal Space

In an era of constant urban transformation and increasing ethnic diversity, formal design and planning often fail to accommodate the full spectrum of public life. This is especially true in certain historic districts and areas of multiethnic interaction, where spatial use and transformation frequently exceed the original intentions of designers. In such contexts, a unique typology emerges—flexible, ambiguous, yet full of vitality—known as informal space.

The term informal space refers to areas shaped and continuously redefined by spontaneous human activity. These are spaces that develop progressively and organically, structured around everyday needs and cultural routines.[14] Through participatory observation, it is evident that these spaces disrupt the visual and behavioral order originally envisioned by planners, filling the streets and transforming the urban landscape into one markedly different from blocks not shaped by ethnicization. This quality closely aligns with the concept of loose space as described in Loose Space: *Possibility and Diversity in Urban Life*. Such spaces exhibit a high degree of flexibility and inclusivity, accommodating diverse behaviors and uses. This inherent openness allows them to generate possibility and creativity in urban life.[15]

Phenomena in herb alley

Originally developed during the Japanese colonial era as dormitories for public workers, **Herb Alley** has become outdated in meeting contemporary needs. Due to its position off major traffic arteries and the small scale of its urban blocks, the area lacks strong external spatial regulation. As **migrant workers** gradually settled in, a proliferation of **informal spaces** emerged in response to their everyday needs. These spaces encroached upon previously open areas and were often described by outsiders as "narrow and chaotic," potentially impacting the appeal to traditional tourist demographics.

The street—once used as a market corridor—is approximately 4.5 meters wide. Despite this compactness, most buildings in the area are 3–5 stories high, and many have added canopies and **makeshift shelters**, leading to high enclosure and limited sunlight. These coverings create a foundation for the growth of **informal space**, transforming the semi-open zones beneath them. Activities such as setting up temporary dining areas, placing refrigerators and kitchen facilities, parking scooters, and storing personal items have become part of an **unspoken spatial order**. These spaces lack clearly defined boundaries yet are recognized and accepted by the local community.

Furthermore, William H. Whyte, in *The Social Life of Small Urban Spaces*, emphasized that the presence of seating and food is essential for drawing people into public spaces.[16] Although the activity spaces in Herb Alley are informally generated, the abundance of street vendors, outdoor seating, and food stalls—combined with the narrowness of the street—creates a compressed social distance. During mealtimes, the street transforms into a lively, almost market-like environment. Despite suboptimal physical conditions, these urban elements combine to form a vibrant social realm, extending beyond commercial relationships into a more intimate social space.

Groups' Lived Opinions

To understand the impact of this spontaneous, informal spatial expansion, this study focuses on spatial perception and user preferences. Survey results from multiple ethnic groups within the neighborhood revealed predominantly negative perceptions of the enclosure and disorder caused by canopy structures and outdoor seating. Most participants reported feelings of oppression and discomfort. While some acknowledged the rest value of "seating + canopy," this did not necessarily translate to a desire to linger or socialize. The majority still maintained a sense of distance from these spaces.

During interviews, local residents expressed that although they had grown accustomed to the chaotic and crowded nature of Herb Alley, they remained concerned and powerless in the face of increasing spatial encroachment by informal uses. Key sources of spatial tension include extended vendor tables, irregularly built canopies, and seating areas. These not only disrupt the visual spatial order but also obstruct pedestrian movement, resulting in conflict and friction between local residents and migrant users.

Residents also pointed out that the extensive coverage of building façades by temporary structures has obscured the historical identity and local character of the district. This evokes regret over the loss of Old Taichung's visibility, indicating a remaining attachment to a sense of place identity. Many believe that any future street regulation should not aim solely at "tidying up," but rather propose holistic design interventions that integrate architectural history, vendor needs, and long-term management strategies.

The Potential of Inclusive Space

Although Herb Alley is currently perceived by many as a negative example of "clutter" and "congestion" due to the uncontrolled expansion of informal space, a deeper analysis from the perspectives of urban sociology and user behavior reveals its potential transformation from informal space into inclusive space.

The prevalence of informal space stems from its ability to respond to the real, everyday needs of multiple ethnic groups—especially foreign migrant workers and local residents. shaped by use, forming authentic lived spaces. As described as *Loose Space*, such spaces—though undefined in formal plans—are the most capable of accommodating difference and producing diverse urban activities. In Herb Alley, these spaces generate spatial tension, yet they also reflect the coexistence of multiple cultures and temporalities within a single urban area.[17]

CONCLUSION AND DISCUSSINON

Suggestion

Enhancing Visual Permeability and Perceived Order on the Street

Based on *Eight Qualities of Pedestrian- and Transit-Oriented Design*, street elements such as canopies and signage significantly affect the visual order of a street block. When these elements become overly complex, they contribute to visual confusion and create a sense of spatial enclosure within the block.[18] within the block. Interviewees also expressed discomfort with the canopies, arcades, and outdoor seating areas, which they perceived as contributing to a sense of closure.

Therefore, it is recommended that the façade language within the street block be systematically organized and regulated to reduce visual complexity and enhance transparency. The use of translucent materials for canopies could be considered, allowing for visual permeability while still providing protection from the elements.

The Need for More Informal Space

For different cultural groups to coexist more harmoniously, rigid planning regulations and overly fixed spatial designs may not be effective at the governmental level. Instead, planning should reserve sufficient flexible space to allow diverse user groups within the block to organically develop various usage modes.

This would allow informal spaces to naturally emerge—co-shaped by residents and migrant workers—through shared seating areas, market platforms, or public shelter spaces. Over time, through lived experience and collective negotiation, such spaces may gradually be transformed into cultural inclusive spaces imbued with local identity and a sense of belonging.[19]

Lightweight Rules and Micro-Interventions for Spatial Governance

The focus should be on supporting the growth of informal spaces while managing spatial order through micro-interventions. These may include:

1. Using surface material distinctions to subtly hint the boundaries.
2. Imposing transparency guidelines to prevent over-enclosure of the block.
3. Installing public shelter space.
4. Providing shared-use platform for activities Simultaneously avoid occupation

Light-touch interventions and community participation should be employed to guide and shape behavior within the block, with the primary aim of preserving the public nature of the street.[20] This approach neither stifles spatial flexibility nor undermines fairness and a sense of order in spatial use.

Conclusion

The spatial characteristics of Herb Alley challenge the modern obsession with uniformity and order, turning instead toward a more chaotic and diversified model of urbanization. It is this very form that reflects cultural diversity and embodies the traits of inclusive space. Informal space serves as a human-centered buffer in the city, already demonstrating the reality of multiple cultures coexisting within the same street block.

By adopting strategies of small-scale design, multi-nodal planning, light-touch intervention, and community engagement, the use of informal space can be effectively guided and optimized to evolve into genuinely inclusive urban environments. If future efforts can integrate historical continuity, local involvement, and adaptive planning, Herb Alley will ultimately find its balance—becoming a key example of how cities can practice multicultural inclusion[21] and demonstrate urban resilience.[22]

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INCLUSIVE AND ACCESSIBLE CITIES: MAPPING INEQUALITIES & POTENTIALS FOR URBAN LIFE

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INTRODUCTION

Urban living conditions vary significantly across cities. Unequal access, it is argued, risks reproducing or even increasing levels of segregation and social exclusion. According to Wilkinson and Pickett, equal societies have the capacity to foster social development, well-being, health, and social cohesion.[1] Because living conditions are directly dependent on what is provided in urban space, they are affected by architecture and by how we plan and design cities. Fainstein highlights the role of cities and urban environments in her theory of *urban justice*.[2] She underscores the imperative need to create equal living conditions and highlights the importance of accessibility to shared resources. The facilitation of access to a heterogeneous urban life that enables encounters across different social groups and cultural backgrounds is also of decisive importance to the tasks of ending segregation and alleviating social exclusion,[3] as well as advancing socially sustainable and inclusive cities. Hence, the city constitutes the physical space as well as the symbolic arena for social processes and an inclusive urbanity, including negotiations, recognition, and a sense of belonging.

This paper foregrounds the role of architecture and urban planning, considering how such practices shape the living conditions by mediating who can access urban amenities and who has access to participate in a heterogeneous and diversified urban life. The study draws from spatial theories by Hillier and Hanson that explain how both cities are structured and arranged and the inherent social logic of such processes.[4] The configuration of space results in spatial relations arising between not only different streets, squares, and parks, but more importantly between activities and people. Spatial configuration creates different potentials for functions and land uses, defining accessibility to resources, and to the urban opportunities provided by public space.[5]

Using Stockholm as a case study, a spatial mapping method is proposed here that aims to detect unequal living conditions in cities in a way that takes urban form into account. The mapping uncovers the socio-spatial inequalities inherent in the urban landscape and across the city. The mapping operates as a critical instrument for informing evidence-based measures and opens up for strategically targeted interventions. It provides a foundation for design interventions in physical space and through urban governance. The insights advance the pursuit of spatial justice through architectural interventions that address both structural inequalities and everyday lived experiences. Such urban planning and design philosophy is firmly anchored in principles of social sustainability and underpinned by analytical theories with the aim to advance a less segregated and more inclusive urban environment.

Increased polarization among residents in Stockholm

Problems related to segregation, exclusion, criminality, and increased social polarisation remain at the centre of an intense societal debate in Sweden. Their detrimental consequences are progressively affecting broader segments of society. For a considerable period, such social problems were thought to be confined to specific districts or neighbourhoods. Yet segregation needs to be understood as a relational concept, and as societal differences increase, they produce greater inequalities that fragment society in many different ways. In May 2025, one of the country's leading newspapers reported that disparities between social groups are widening.[6] A national survey confirms that residential segregation has increased since 1990.[7] During this period of overall positive development, it has thus become evident that not all groups have benefited equally – rather, Swedish society has been subject to processes of disintegration and fragmentation. The area-based analysis below, which compares different administrative districts, illustrates the way in which while income has generally increased since 1990, the income levels of the population of affluent areas have increased more than those of people in poorer areas. The same development is seen in higher education attainment rates. Further, populations dependent on economic assistance are disproportionately concentrated within approximately ten neighbourhoods located in the outer parts of the city. If the living conditions are poorer in areas where marginalized people live, there is an obvious risk of escalating the inequalities and segregation, since marginalized groups, like minority groups, the newly arrived, or the weakly established in society are more sensitive to poor living conditions than others.[8] A thorough mapping of accessibility to urban resources is pivotal for assessing the degree to which structural inequalities may be mitigated through the instruments of architecture and urban planning.

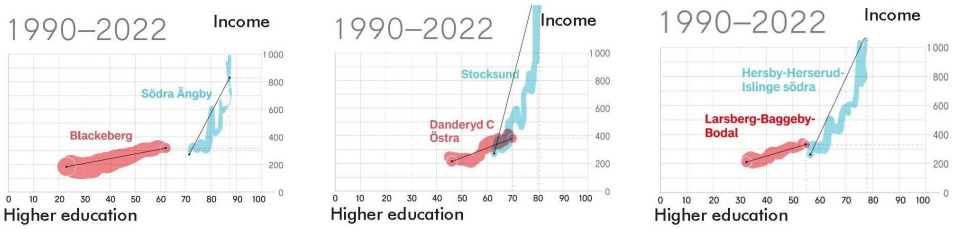

Figure 1. Development of higher education rates and income levels in different neighbourhoods. Source: Dagens Nyheter (22 May 2025).

Key urban opportunities to include when mapping living conditions

Urban design influences the performative properties of urban space, and depending on the street structure, density, land use, etc., a pattern of different locations will emerge. Some locations are favourable for economic activities, while other places afford other qualities, for example, seclusion or a place to recover from stress that is important from a public health perspective.[9] The degree of access to services, healthcare, education, public transportation, etc., impacts on life chances but also on the emergence of different social networks. A number of previous studies have contributed to defining the urban opportunities that are of importance for dismantling segregation and inequalities[10] and, in addition, those that have significance from a health perspective (for example being promoted through concepts as *healthy cities*).[11] Klinenberg[12] uses the concept of *social infrastructure* and argues that certain places and institutions are key for supporting solidarity and fostering public life and public culture, such as libraries, schools, parks, and sports facilities. Lathman and Layton argue that the social infrastructure a neighbourhood affords supports the building of social networks and is especially important in times of stress.[13] However, it is found that what is included in a social infrastructure has a cultural and contextual component – for this reason, it is important for research to determine which

urban opportunities are relevant to a specific context.[14] Recognizing that the salience of resources is context-dependent, the Stockholm study draws from previous research and is complemented by interviews with officials, with the aim of circumscribing the amenities most pertinent to an analysis of living conditions addressing socio-spatial segregation. The accessibility to urban opportunities includes – for example, population density, workplaces, libraries and cultural facilities, health care, schools, parks and open green spaces, and public transportation.

The importance of co-presence and the social logic of urban space

Since everyday life and practices are not restricted to where we live, it is argued that segregation studies need to acknowledge how the city may foster the emergence of social solidarities and cohesion both at the local level and at the city level.[15] Giddens describes the routines of day-to-day life as the foundation for the most elaborate forms of societal organization,[16] and similar ideas are found in Goffman's theory of interaction rituals.[17] Co-presence and the sharing of space impact on social processes. Anchored in the spatiality of the body, and in the orientation to others and to the experiencing self, co-presence enables an exchange – passively or as interaction – whereby people are both receivers and givers. This, it is argued, is relevant to discussions of urban inclusion and exclusion, as it relates physical space with social consequences. Jacobs highlighted the importance of urban life, and of the sidewalks and streets that invite people to take part in public culture, exposing them to diversity and training them to deal with it.[18] Zukin argues that public space is central for negotiating public culture, including attitudes and norms.[19] Conflicts in urban space do occur, but to a certain extent, these may be seen as part of an ongoing negotiation and a process of understanding "the other": other people's living conditions or identification processes that produce an "us". As Franzén suggests: "First, when different worlds meet, they may come to terms with each other in creative and productive ways. Second, even if conflicts unfold, conflicts may eventually bind the different parts together."[20]

Turning to urban space and increasing the understanding of how spatial arrangements play a role in social processes, we may turn to architectural theories. Hillier and Hanson have provided empirical evidence that the material world, created by architecture, structures the system of space in which people live and move. This gives urban space a direct relation to social life. The preconditions for how we use cities are inherent in the spatial order and configuration; materialised space provides the conditions for movement, encounter, and co-presence. At the same time, it provides the conditions for the avoidance and separation of people in space. Therefore, Hillier and Hanson argue that architecture may be seen as the material realisation, or even the generator, of social relations.[21]

Earlier studies of Stockholm have delineated a set of parameters and spatial characteristics within the built environment that are of critical importance when examined in relation to processes of segregation, including urban form, spatial configuration, and accessible building and population density.[22] Such conditions shape patterns of accessibility and co-presence, and potentials for interaction and exclusion, thereby influencing the reproduction of inequalities in the urban landscape. To be meaningful and relevant from an architectural and urban planning perspective, methods for mapping urban living conditions must acknowledge urban form and capture lived space; *area-based analyses* need thus to be complemented with *place-based analyses* that are able to capture what is actually within reach, what moves, and what stays, in and through streets and open public spaces.[23] Beyond this, by examining the configurative properties of public space, the distribution of the street network can be captured. This reveals the locations where central, highly accessible routes emerge (the so-called "foreground network") and those where more segregated and peripheral routes take shape. To be relevant from an architectural and urban planning perspective, the methods used to map living conditions therefore need to account for (place-based) urban form.

Taking into account the above, the present study addresses the relationship between, on the one hand, the built environment, and on the other hand, urban segregation, social inclusion and exclusion, as well as the living conditions of a city. It acknowledges the importance of urban form in developing approaches for mapping and describing the living conditions in a city, aiming to increase existing understanding about how to give shape and form to cities through practices of urban planning and architecture, and to contribute to shaping cities that are socially sustainable and healthy.

MAPPING URBAN LIVING CONDITIONS

After identifying relevant variables, a comprehensive accessibility analysis was conducted, based on data covering the Stockholm municipality and Stockholm Region (maps representing Stockholm are based on data within and outside of the municipal border to avoid edge effects).[24] Key variables included building density and population density (during both day and night periods, since both are important for capturing the potential for a mixed urban life), workplaces and job opportunities, public transportation, libraries, culture facilities, schools, health care, sports, recreation, parks, and green open space. The key properties in urban space addressed by the analysis included spatial integration, centrality, and connectivity.

Since the built environment lays the ground for urban processes through how urban spaces are formed and structured, analyses of that environment can reveal potentials for both urban life and for where amenities can be expected to locate. Firstly, because configurative properties correspond to movement flows and their distribution, they influence *co-presence* – as such, an analysis of such properties is able to capture socio-spatial relations, thereby increasing our understanding of the emergence of different forms of social solidarity. This in turn holds direct implications for inclusion and exclusion. Second, configurative properties structure the location and the distribution of urban opportunities, which in turn determine access to resources and condition the living environments across the city.

Configurative analysis reveals segregation in urban space

Movement flows and co-presence correspond with high centrality. So-called “pervasive centrality” – i.e., when streets afford high centrality values through several scales – further fosters the mixing of residents and non-residents.[25] Finally, the intensity of urban life is analysed through measures of population density (including both residents and working population).

The results of our angular integration analysis show that centrality unfolds in the central part of Stockholm and along two distinct corridors to the south, leaving rather large areas in-between in a segregated position and weakly integrated with its surroundings. To the city’s north, centrality extends northwest toward the municipal boundary, where it abruptly dissipates. To the east, there is a sharp line that matches the municipal border. An analysis of shortest routes through the street system shows that betweenness centrality unfolds in a grid-like pattern, and the routes that most efficiently connect the city become apparent. Strong and long axis cuts across the city at a few places. The width of the grid varies, leaving some areas as segregated “enclaves” in the urban fabric. Areas characterized by few strong axes and a lack of high centrality routes are likely to afford lower access to services and shared resources. By superimposing data on low-income and high-income areas, the angular integration analysis is shown to reveal several of the neighbourhoods where residents’ income levels are low. Such an overlap is unfortunate from a social perspective and illustrates that architecture and urban planning spatially segregate these districts from their surroundings, negatively impacting on accessibility as a result.

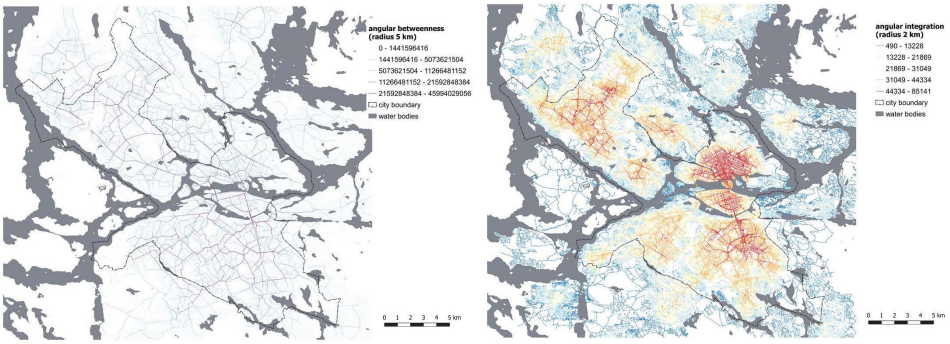

Figure 2. Configurative analysis; betweenness centrality (radius 5 km) to the left, and angular integration (2 km) to the right.

Accessibility to urban opportunities

Urban living conditions were mapped through a set of accessibility analyses, which together formed an *Accessibility Atlas for Stockholm*.[26] An urban form model was used in order to reflect how urban space is connected and related as a system. The streets and paths where people can walk and cycle were included in the model, since an important aim of the study was to capture the conditions for urban life as well as accessibility when walking, cycling, or using public transportation, since this has positive effects on climate and health. The analyses took urban form into account, as proximity is measured through the street network (i.e., a location-based analysis), reflecting how we perceive environments more accurately than area-based methods that ignore the built form and define public space based on abstract administrative areas. Access to opportunities may differ significantly depending on what function or amenity is studied. For example, libraries are institutions that are rather evenly accessible across the city, even on the regional level (see Figure 2a, which illustrates the minimum distance). On the other hand, when it comes to culture facilities or hospitals, accessibility varies significantly (see Figures 2b and 2c). Proximity to culture lowers barriers to access and thus enhances chances for people to visit, engage with, participate in activities, and use such spaces. Not least, this has importance from a democratic perspective. Access to hospitals is important from a health perspective, and it is especially important that such facilities are possible to reach using public transportation, besides walking and cycling.

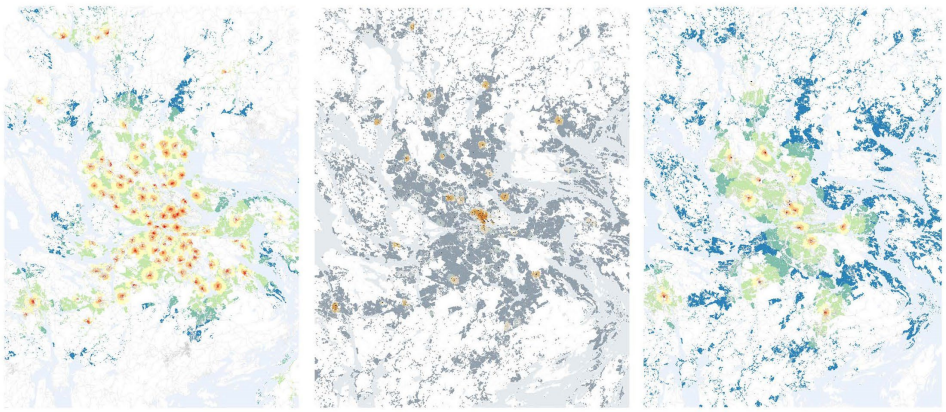

Figure 3. Accessibility to a) libraries, b) cultural facilities, and c) hospitals from each residential unit in the region of Stockholm.

From the mid-twentieth century onwards, Stockholm has simultaneously extended its geographical footprint and reduced its densities – morphologically, through building density, and in terms of population density. Accessibility to others, including residents and the working population, combined with building density, signals the potential carrying capacity of a city for supporting public and commercial services. The maps illustrating accessible density reveal large variations in the carrying capacity of services and urban amenities.

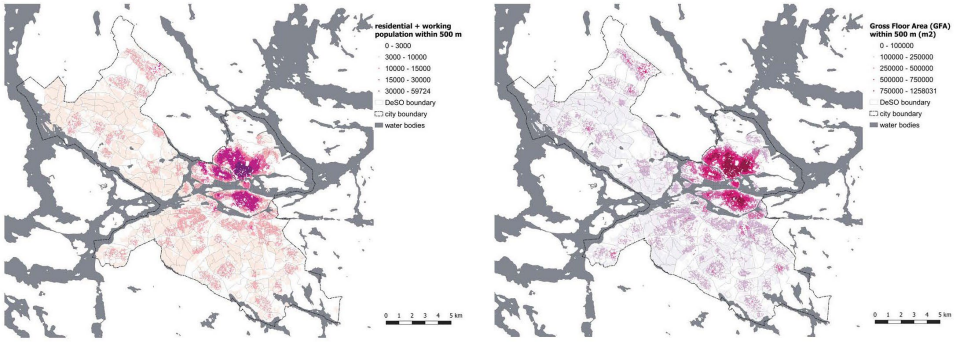

Figure 4. Accessible density to residents and workplaces within a walking distance of 500 metres (left), and accessible building density within 500 metres (right).

Access to parks, green open space, and sports facilities is of high significance from a health and well-being perspective.[27] A large share of residents in Stockholm lack a park in proximity to their homes (see Figure 5). However, some have access to green open spaces that, to some extent, may compensate for poor access to parks. Interventions could preferably be directed to those parts of the city that afford poor access to both parks and green spaces, especially if this appears in neighbourhoods with lower income levels.

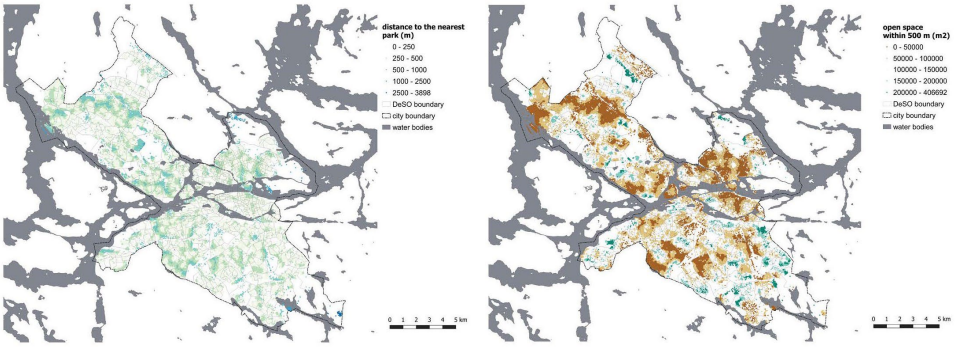

Figure 5. Accessibility to parks (left), and to green open space (right).

CONCLUSIONS

The mapping of urban living conditions, as they come about through physical space in cities, is an essential activity for informing architecture and urban planning. Because interventions in the built environment will influence accessibility and thereby living conditions as well as the character of urban life, it is crucial that mapping methods acknowledge the role played by urban form. In this study, several low-income areas were found to be located in non-central locations that were spatially isolated from their surroundings; this condition limits access to urban amenities and excludes individuals and social groups from a heterogeneous urban life. As such, it is clearly possible to identify where and how urban

design interventions can improve the preconditions for social processes and foster social inclusion. Similarly, it is also possible to see where the physical preconditions do not hinder social solidarities from emerging, and other types of interventions may be considered instead.

The *Accessibility Atlas of Stockholm* is a comprehensive and detailed mapping of living conditions in Sweden's capital. Because the atlas analyses conditions at a detailed level, and in a way that reveals inequalities and the parts of the city affected by poor conditions, it can also provide support for the development of policy and programs. It not only describes the current situation but can be used to guide the urban design process in shaping a just and equal city and inform the decision-making process regarding urban investment.

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IS GAZA STRIP RESILIENT ENOUGH? ARCHITECTURE OF ABSENCE AND COMMUNITY SURVIVAL UNDER SIEGE

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INTRODUCTION

This is a perpetual crisis. Gaza exists in a state of perpetual crisis, an enduring condition of ongoing and definite tension where crisis becomes the normalised rather than exceptional state of urban life.[1] Such crisis transforms the urban space itself. Streets, schools, hospitals, and homes lose their civilian character and become spaces of permanent vulnerability.[2] In Gaza Strip, all urban residents become perpetual targets, stripping away the protected status of civilian innocence that international humanitarian law presumes. Under these conditions, everyone is rendered a potential threat.[3]

The built environment, with all that it entails, creates liveable cities and communities. But when it becomes weakened and vulnerable, the city loses its substance and becomes a place of horror where there are no safe corridors, no secured shelters, and no guaranteed access to water and food. During conflicts, each aspect of urban life, housing, infrastructure, and social systems, operates under siege conditions that fundamentally challenge conventional understanding of urban resilience. Gaza Strip, with its population density of approximately 13,000 people per km² and ongoing blockade since 2007, presents a unique case study where survival becomes the primary urban function.[4]

Urban communities are torn apart and traumatised by violent conflicts, which remain in the memory of the city and hinder development. This article attempts to construct a conceptual landscape that can better assist planning authorities and policy makers in understanding the case of Gaza Strip for the post-conflict urbanism phase. This phase faces complex challenges, particularly the need to understand how communities survive, adapt, and maintain social cohesion when formal reconstruction becomes impossible.[5]

This paper explores the apparently contradictory nature of resilience under siege. It draws on forensic architectural analysis, comparative urban studies, and extensive documentation of spatial and everyday adaptations to argue that Gaza demonstrates a unique form of "fragile resilience", extraordinary community adaptation that maintains human dignity while operating at survival margins.[6] In so doing, this paper scans the “Archtiecture of Absence” where nothing is left to be typogically indentified.[7] This research examines whether Gaza's community-driven survival mechanisms constitute genuine urban resilience or represent the limits of what communities can achieve under impossible conditions.[8]

SCANNING THE NOTHING.

Gaza Strip's spatial context defies conventional measurement or categorisation, as the continuous reproduction of crisis constitutes the organising principle of urban existence. The strip holds 2.2 million people in 365 square kilometres, making it one of the most densely populated areas in the world. Unlike

other high-density urban environments, Gaza operates under permanent siege conditions that prevent territorial expansion and severely limit vertical development through material restrictions.[9] The demographic structure reveals the human dimension of this spatial crisis. With 44.1% of the population under 14 years old, 21.3% between 15-24 years, and 28.5% between 25-54 years, Gaza faces unprecedented pressure on spatial resources.[10] The UN predicted in 2015 that Gaza would be uninhabitable by 2020, a prediction that proved conservative given the escalations since October 2023.[11]

Architecture of Absence - Post Wipe Out

Gaza's "Architecture of Absence" manifests through systematic repurposing of institutional spaces when formal housing becomes impossible. With the continuous attacks since 7 October 2023, the heritage and history of the strip has witnessed an unprecedented major wipe out. The only remainders of Al-Omari Mosque, Gaza's first mosque built in the 7th century, are a few sections of wall and the minaret. The building, constructed on the foundations of a Philistine temple, then a Byzantine church, was largely destroyed,[12] see Figure 1.

Figure 1. Inner Urban Destruction and living on the rubble, Gaza City's Al-Omari Mosque, Gaza's oldest mosque damaged on 5 January 2024 (source: www.lemonde.fr)

By December 2023, after eight weeks of the current war, satellite images commissioned by the BBC revealed the extent of destruction across the strip, showing that nearly 98,000 buildings may have suffered damage. Northern Gaza, particularly the cities of Beit Lahia and Beit Hanoun, became the focus of the Israeli offensive, referred to as the "Centre of Gravity of Hamas." The rationale was to force the group to embed themselves into civilian areas,[13] see figture 2.

Figure 2. BBC footage verifying the destruction in Beit Lahia by November 2023 compared to May 2023

Internally Displaced Persons (IDPS) and Circular Displacement

Gaza's Internally Displaced Persons-IDP crisis must be understood within the global context of forced displacement. Unlike other major displacement crises, Gaza's IDPs face unique constraints due to the impossibility of crossing borders or accessing external assistance at scale. According to the Guiding Principles on Internal Displacement in 1998, Internally Displaced Persons are

"persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalised violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognised border." [14]

Gaza's internally displaced persons face a unique form of "circular displacement" characterised by repeated forced migration patterns within the same besieged territory. It started in October 2023, when Israeli forces issued evacuation orders directing over one million Palestinians to flee from northern Gaza to the south within 24 hours.[15] Families packed whatever belongings they could carry and made the treacherous journey southward, believing they were moving to safety. However, the designated "safe corridor" - Salah al-Din Road (also known as Al-Rashid Street) - came under attack, resulting in civilian casualties amongst those attempting to evacuate.[16]

By late 2023 and early 2024, as military operations shifted southward, many IDPs found themselves caught in combat zones they had fled to for safety and were forced to move again, with some attempting to return northward.[17] Those who managed to return along evacuation routes encountered the devastating aftermath of previous attacks, including the remains of those killed during earlier evacuation attempts.[18] The cycle continued throughout 2024, with families enduring multiple displacements as "safe zones" repeatedly became battlegrounds.[19] Most recently, in August 2025, fresh evacuation orders have again forced Palestinians to flee southward towards Rafah, marking yet another chapter in this exhausting pattern of forced movement.[20] The human cost of this perpetual movement extends beyond physical displacement to encompass severe economic hardship. Transport costs have become prohibitive for the majority of Gaza's population, with soaring prices making evacuation financially impossible for an estimated 70% of families.[21] What was previously a one-hour journey from north to south now requires 8-9 hours due to destroyed infrastructure, military checkpoints, and the need to navigate around areas of active conflict.[22] The evacuation routes themselves have become scenes of humanitarian catastrophe. Severe congestion and bottlenecks force thousands of pedestrians, including children, elderly persons, and individuals in wheelchairs, into dangerous overcrowding along damaged roadways.[23] Families must traverse these congested corridors on foot, carrying whatever possessions they can manage whilst seeking transport that many cannot afford. The elderly and disabled face particular hardships, with wheelchairs struggling over rubble-strewn paths and inadequate medical support for those requiring assistance.[24] These conditions transform what should be life-saving evacuations into additional sources of trauma and physical danger for Gaza's most vulnerable populations.

Comparative Global IDP Contexts:

Major displacement crises worldwide demonstrate possibilities unavailable to Gaza's IDPs. Syria's 6.2 million IDPs can move across governorates and cross borders to seek refuge.[25] Colombia addressed 5.7 million IDPs through comprehensive state policies and legal frameworks whilst maintaining freedom of movement.[26] In the Democratic Republic of Congo, 5 million IDPs can move between provinces and access humanitarian aid through multiple border crossings.[27] Ukrainian IDPs benefit from government protection systems and European Union support.[28] In contrast, Gaza's 1.9 million IDPs face unprecedented restrictions and complete territorial confinement within 365 square kilometres, border crossing prohibition, and severely restricted humanitarian access. This captures Gaza's position within

global IDP contexts and highlights the inadequacy of existing international frameworks, policies, and laws where IDPs can access external protection or support.[29] The spatial entrapment creates what we call "displacement without escape." As Lubkemann argues, those who are "forcibly immobilised" in conflict zones often suffer more than refugees who successfully flee, experiencing a form of "displacement in place" where local survival strategies are disrupted whilst escape remains impossible.[30]

Post War Zones

Post-war zones represent complex urban environments where restoration of normal urban function is ineveidnet. These zones are characterised by damaged infrastructure, disrupted social networks, and the lingering effects of trauma on both built environments and communities.[31] Unlike zones of active conflict, post-war areas face the challenge of reconstruction whilst managing ongoing instability, economic collapse, and the psychological aftermath of violence.[32] Gaza, however, challenges the very concept of a "post-war zone" due to the uncertainty of reaching such a state. With ongoing conflict since 2007 and repeated escalations, Gaza exists in a perpetual state of pre-war, war, and attempted post-war recovery without ever achieving stable peace.[33] The strip cannot transition to genuine post-war reconstruction because siege preventions. Instead, Gaza experiences brief interludes, temporary ceasefires and periods of reduced violence, during which communities attempt to address immediate needs with whatever resources remain available. It is precisely during these uncertain intermissions that innovation emerges from necessity. Gazans develop adaptive solutions using available materials and social networks.[34] These innovations, from solar water purification systems to hybrid architectural configurations, represent a form of resilience that operates independently of external reconstruction frameworks.

Resilience: Redefining the notion of "resilience" and survival

Traditional resilience frameworks assume infrastructure stability and formal institutional capacity.[35] Nevertheless, Gaza's experience challenges these assumptions by demonstrating alternative forms of resilience based on community capacity rather than institutional metrics.[36] Norman Garmezy defines resilience as "the capacity to recover and maintain adaptive functioning following adversity." In Gaza's context, "recovery" becomes continuous adaptation, whilst "adaptive functioning" means preserving human dignity under siege conditions.[37] Community networks enabling resource sharing, educational continuity, and cultural preservation represent profound resilience despite formal system collapse.[38]

Gaza's communities demonstrate organisational capacity and spatial reoccupation that rivals formal systems; transforming schools into shelters whilst maintaining educational activities and coordinating community kitchens serving hundreds. Schools transform into collective shelters, with UNRWA facilities housing multiple families in classrooms while corridors serve as cooking and washing zones. Residential spaces undergo radical transformation. Families occupy skeletal concrete ruins, extending them with salvaged materials, tarps, plastic sheets, and wood for insulation, see Figure 3. Stairwells become private sleeping spaces, rooftops house solar panels and water storage, and basements serve as schools and shelters. This hybrid architecture combines concrete permanence with fabric improvisation, creating what might be termed "survival architecture." [39] These adaptations suggest that resilience assessment should prioritise social infrastructure and community solidarity over traditional infrastructure functionality.[40] Families reoccupy ruined homes, transforming damaged structures into functional living spaces through creative spatial arrangements.[41]

Figure 3. Gazans occuoping dyestroed buildings, Gazans are sheltering themselves in UN-run schools (source: https://www.newarab.com) AND HI volunteers conduct recreational activities for displaced children in a collective shelter in Southern Gaza (source: https://www.hi.org/en/news/hi-provides-aid-in-94-shelters-in-gaza)

Community kitchens coordinate food distribution for hundreds of families, demonstrating sophisticated logistical capacity under resource constraints, see Figure 4.[42] Water-sharing arrangements ensure equitable distribution of scarce clean water, whilst solar panel installations create decentralised energy networks. These systems operate through informal governance structures that rival formal municipal services in their organisational complexity. In May 2025, it has been reported by community kitchens that for over seventy days, most essential goods have disappeared from the markets. Chicken and meat have become mere memories, and prices hurn like fire for those with nothing.

"Hunger in Gaza is not just a apain in the stomach, it is a wound to our dignity"

Aya Zaid,2025

Figure 4. Community Kitchen and Oven helping with Starvation (source: Aya Zaid's social media 43)

History is repeating itself. In 1941, London children attended classes in bomb shelters during the Blitz; in 2022, Yemeni children conducted lessons in tents due to ongoing conflict.[44] Today, amid the conflict in Gaza, children attend makeshift schools in tents and courtyards.[45] Cultural preservation occurs through spiritual gatherings, storytelling sessions, and activities like the Gaza Circus, which sustain collective identity and provide psychological support during crisis conditions, see Figure 5.[46] As the new school year begins, education has been reduced to tent-based classrooms after devastating infrastructure damage. According to the UN Education Cluster, 91% of Gaza's school buildings are either destroyed or badly damaged, leaving nearly half a million students facing an uncertain future.[47]

Figure 5. A teacher checks assignments during a lesson in a bomb shelter of a school in London, 1941 (source: Serhii PyvovarovEditor:Yevhen SpirinDate:6:58 PM EEST, October 12, 2022), Displaced 19-year-old student Yasmine Al-Za'aneen sits inside a tent sorting her notes and books at a school shelter in Gaza City. [Dawoud Abu Alkas/Reuters], AND Students study inside a tent classroom in Hajjah province, northern Yemen, on Oct. 23, 2022.(Photo: Xinhua)

RESILENT BY RESIDENTS

Due to the continuous horrible water crisis of clean water, access to clean drinking water for consumption, cooking, and daily use increasingly difficult. In October 2024, a displased man from Jabalia camp to the west of the central area in Gaza, has incented a primitive way for purifying the sea water to become acceptable for drinking. Another innovation to purify rainwater to be drinkable, was to used a piece of cloth, and connect through the fabric, 3 different containers.[48] In August 2024, at a wider scale and with more equipment, another innovation arose by Enas ElGoul, from Khan Yunis, has developed a solar system to make seawater drinkable, a solar still device that purifies and desalts water, see Figure 6.[49] The solar still operates on the principle of evaporating water and then condensing it while it is being conntected to activated carbon. Water intended for purification flows through a channel that is connected to charcoal, which removes impurities, calcium, salts, and other contaminants. Using recyclable material (i.e. wood, broen glass, and leather) to construct the water still. This project is portable and can be implemented in different areas of the Strip. [50]

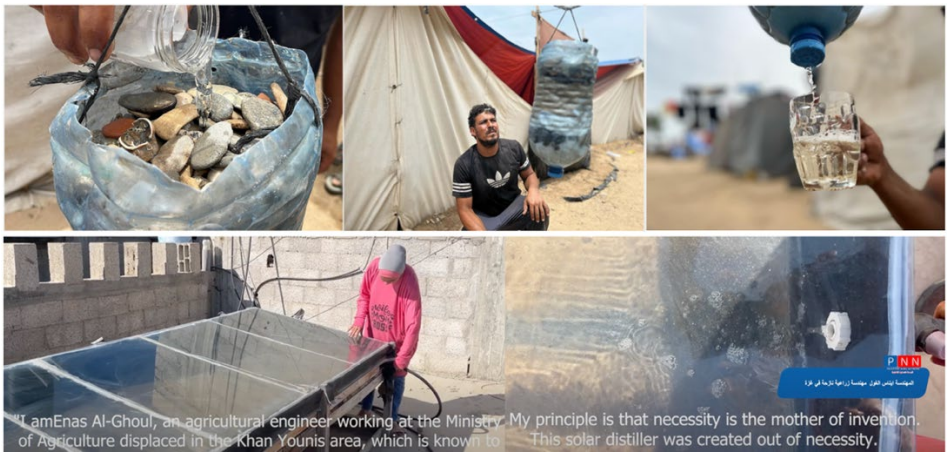

Figure 6. Resident's Innovation to Clean Water reported in 2024

Driven by the age-old adage, "Necessity is the mother of invention.", innovation in Gaza continues in a way that amzes everyone. By November 2023, which was one month after the war started, Gazans manifested creativity and innovation in three major examples that helped the community to deal with the sacricity of all basics of living.[51] In figure 7 below, the first internvetion is an Electrical Generator, repurpose fuel to run on less voracious gas. The second intervention is UPS (inverter) where the device is connected to car batteries, enabling them to harness precious electricity for essential needs. However, these innovations are tested to their limits with scarcer power and longer blockade. The last innovation is a Coal Pot.[52] Gazans had no other way out but to adapt their cooking methods, at the end they need to feed their families, otherwise if they are not dead by a shot, they will die out of hunger. With fuel and gas in short supply, residents have transformed everyday cooking pots to work with coal, enabling them to bake their bread and nourish their families.

Figure 7. Resident's Innovation to survice the lack of electricity and hardship getting fuel and food

Everyday living has become impossible, with all basic amenities and survival resources virtually absent. This represents a major absence of architecture and built environment being verified by various sources.[53] Eventually, this manifests the finest examples of social resilience as residents improvise by reusing available spaces.

Another fascinating sign of robust social resilience was presented when the Orthodox priest Father Antonius Hanana vowed he will call the Adhan if there are no “muadhins”, the person who calls for prayers, left in Gaza, saying:

“If muslim muezzins are martyred, Adhan will be heard from the churches.”

This exemplifies both spatial adaptation and inter-religious solidarity.Amid the ruins, the Muslims continue to perform Jamaa (group) prayers on the ruins as demonstrated in Figure 8.

Figure 8. Palestinians perform Friday prayers at the Al-Farouq Mosque, which was destroyed by Israeli bombardment, in Rafah, in southern Gaza, on March 8, 2024, Palestinians offer Eid al-Adha prayers beside the ruins of a mosque destroyed by Israeli bombardment in Deir al-Balah, Gaza, on June 6, 2025, and one of the shortest Jumaa’s prayers in Gaza (source: https://www.france24.com)

CREATIVE ADAPTIVE-REUSE AND RECYCLING OF SPACES AND MATERIAL

Not only after October 7th, 2023, Gazan workers recycled the debris and rubble left behind by Israeli attacks. This started in 2009, after the Operation Cast Lead, first Gaza War where over 46,000 homes were detrocyed making over than 100,000 people homeless. There are numeros living examples of survival reuse of space. Mosques and churches become emergency hubs, serving simultaneously as hospitals, kitchens, and refugee centers, see Figure 9.

Figure 9 Palestinian children receive treatment at Al-Awda health centre, in Rafah, in the southern Gaza Strip March 2024 AND With no beds available, corridors and outdoor areas at Nasser Hospital are filled with patients September 2025 AND Palestinians patients lie on beds at the Baptist Church which was turned into a clinic as the wounded crowd the hospitals, amid Israel-Hamas conflict, in Gaza City, July 2, 2024 (source: https://www.reuters.com/)

COMPARATIVE ANALYSIS: GAZA IN GLOBAL CONTEXT

Gaza's uniqueness becomes apparent when compared to other post-conflict urban contexts. Aleppo's UNESCO Heritage Urban Landscape approach enabled partial rehabilitation through centralized state planning, whilst Mosul benefited from government cooperation with UNESCO and UN-Habitat for heritage rebuilding with international funding.[54] Kobani demonstrated community-led approaches with

NGO support that restored infrastructure within two years, and Ukraine's reconstruction model shows what becomes possible with state capacity, immediate mobilisation, crowdfunding, and "build back better" approaches.[55] These cases share common features absent in Gaza: territorial mobility beyond conflict zones, access to state protection mechanisms, international humanitarian access, and possibilities for legal remedy or resettlement. Gaza alone operates under complete siege conditions where no formal reconstruction is possible, making community adaptation the only available response and creating unique innovations in survival urbanism without material support or reconstruction possibilities.[56]

CONCLUSION

Gaza represents perhaps the most extreme example of siege urbanism in contemporary history, where communities survive under impossible urban conditions that strip life of all stability and unleash chaos. Since 2007, siege conditions have created survival challenges that test the limits of community capacity whilst forcing perpetual adaptation.[57] This research reveals three key concepts challenging conventional urban theory: "fragile resilience", extraordinary adaptive capacity maintaining human dignity at survival margins; "displacement without escape", continuous forced movement within confined territory that increases vulnerability; and "Architecture of Absence", spatial configurations emerging when formal typologies disappear.[58]

Unlike other displacement contexts offering territorial mobility and state protection, Gaza creates "entrapment mobility" where families move within the same conflict area, returning to previously fled locations only to face renewed displacement orders.[59] This produces "ongoing-conflict resilience" through continuous adaptation rather than post-war recovery.[60] Conventional post-conflict approaches become meaningless when reconstruction requires 80 years under realistic scenarios.[61] Communities maintain essential urban functions—from solar water purification to community-led education—through social organisation rather than physical infrastructure. As Mies van der Rohe observed, "Less is more," yet Gaza reveals communities can do more with less when social infrastructure compensates for material scarcity, though within severe limits requiring structural transformation.[62]

Research Trajectory

This analysis forms preparatory work for a PhD project on "Spatial Justice After Catastrophe: Speculative Forensic Architecture and Smart Urbanism in Post-War Contexts" commencing October 2025. Given restricted access to Gaza, this study relies on remote sensing, digital documentation, and secondary source analysis, methodological constraints that highlight the urgent need for direct community engagement in future research phases.

Gaza embodies collective resilience maintaining human dignity at survival margins. The true measure of this resilience will be whether community innovations can serve as foundation for reconstruction honouring both survival adaptations and fundamental human rights. Gaza Strip is resilient, but not resilient enough.

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URBAN GRID RESILIENCE THROUGH PROTECTED INNOVATION SPACES: RENEWABLE ENERGY TECHNOLOGIES SUPPORT MECHANISMS

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INTRODUCTION

Globally countries are being impacted due to climate change. The impact of climate change has made more houses impoverished, exacerbated public health, extended the gender equality gaps, displaced millions and further delayed the achievement of the Sustainable Development Goals.[1] Global tripling of renewable energy by 2030 is necessary to address this issue but requires large-scale renewable energy deployment in developed and developing countries,[2] especially as some countries adopt clean electrification as pathways to decarbonising their existing fossil fuel-based electricity system, which has been identified as a primary cause of global warming and climate change. As countries move to greater adoption of renewable energy, developing countries like Nigeria are also pressured to align with the trend. This is particularly necessary as they are affected by climate change in form of flooding, heat wave, drought etc.[3] Alongside addressing the impact, they are to make progress to achieve the nationally determined contribution committed to during the signing of the Paris agreement in 2015.[4]

Developing countries like Nigeria have adopted large-scale deployment of renewable energy specifically solar and wind on the gas-dominated national power grid system necessitating policy support mechanism; penetration remains an issue therefore impeding urban resilience. Hence, the achievement of 30% of on-grid electricity from renewables remains unattained and government policies and mechanism to foster development have not been successful.[5] Therefore, it is essential to understand how policy support mechanisms could facilitate this deployment. Previous studies have explored these issues from various lenses; however, the support mechanism remains underexplored. This study focusses on assessing the effectiveness of the support mechanisms deployed in a developing country's context using Nigeria as a case-study through a semi-structured interview with 31 key players in the Nigerian power sector.

While there is extant of studies investigating renewable energy development from various lenses,[6] however, the support mechanism remains underexplored. Furthermore, there is gap in investigating the protected spaces for niche development empirically as it relates to policy mechanism on the grid system from a developing country's perspective which remains underexplored especially from a sustainability transition domain. Therefore, this study closes this gap and make contribution to the sustainability literature by assessing the effectiveness of the support mechanisms deployed in a developing country's context using Nigeria.

LITERATURE REVIEW

Climate change is no longer considered as a forecasted event; as it has become a phenomenon that is well discussed by experts and obvious to the public due to the key issues including extreme weather events (hurricanes, floods, droughts and wildfires), rising sea levels and loss of biodiversity.[7] Generally, greenhouse gas (GHG) emissions has been ascertained to be a major contributor to these events. Therefore, it is pertinent to resolve the emissions concern to prevent/reduce the harmful effects of climate change.[8] Renewable energy development is considered by many experts as an important avenue to tackle climate change and reduce global greenhouse gas emissions. The world is becoming more dependent on energy, therefore, to ensure the effects of climate change is minimise, energy sources need to be sustainable and cleaner.[9] Hence, the discussions around transitioning from high-carbon fossil-fuel-dominated energy sources to those which are lower carbon and cleaner. Statistically, 75% of global GHG emissions and approximately 90% of CO_2 emissions result from fossil fuels, which implies that reducing fossil fuel usage by developing renewable energy such as solar, wind, hydro and biomass will inevitably reduce the emissions and climate change impacts.[10]

To generate sufficient energy and replace fossil fuels such as coal power plants, gas turbines and other hydrocarbons, the global economy require large-scale grid-connected renewable energy systems.[11] To drastically reduce the volumes of GHG emissions and achieve the UN's target for net zero, the global economy has turned to utility-scale solar farms, offshore wind parks and large-scale hydroelectric dams which is the only way to produce vast amount of energy required and cleaner. This is because of the scalability of large-scale renewable energy systems which can be incorporated with smart grid technologies and ensure energy security for countries. It is forecasted that renewable energy would account for up to 70% of global energy by 2040, if sufficient investments are achieved.[12] Nonetheless, connecting and integrating renewable energy to the grid is not without its challenges; as with any new technology and systems, these challenges need to be addressed. Some of these challenges include intermittency and variability, grid instability, lack or limited storage, infrastructural challenges, load management, regulatory and market barriers, stakeholder alignment issues, and so on. Hence, it is important to ensure the diversification of the energy mix and investments in technologies such as for storage and infrastructure upgrades and improved regulatory policies to inhibit the effects of these challenges.[13]

In developing countries, however, the challenges are similar but at the same time very unique compared to the developed economies. For example, the infrastructure are usually obsolete, hence would not require just an upgrade but a complete overhaul of the system, which is costly. In terms of costs, the countries are usually more concern with providing the basic needs such as food, clothing and housing, so do not have enough for infrastructure development.[14] Furthermore, because of insufficient energy access in developing countries, renewable energy integration is usually supplementary to the existing system and not to replace the old one. Other specific concerns of developing countries include inadequate technical skills, government/political interference and poor policy implementations.[15]

In Nigeria, just like other developing countries, integrating renewable energy into the grid system is necessary to resolve the energy poverty and access issues.[16] However, this is a challenging endeavour because of the weak and aging grid system, which suffers several collapses on an annual basis; over 100 collapses have occurred between 2015 and 2023.[17] The grid system is unable to handle the about 13 GW of installed electricity capacity and only able to generate about 4 GW, therefore, including additional renewable energy sources will require a total overhaul of the grid infrastructure.[18] Other challenges include lack of regulatory and policy frameworks to ensure the integration, too much bureaucracy and political interference, financial challenges, limited technical expertise and low awareness in the communities.

Policy plays a fundamental role to ensure the actualisation of renewable energy integration on the grid, as it provides the framework. In Nigeria, the Renewable Energy Master Plan (REMP) and National Renewable Energy and Energy Efficiency Policy (NREEEP) are geared to create a favourable avenue in terms of regulation to implement renewable energy especially on the grid system. Policy also provides a framework for financing, prioritise infrastructural development, define roles and responsibilities for institutions to create accountability and training for capacity development.[19] In spite of the numerous policies formulated in Nigeria over the years to develop renewable energy, and the policy support mechanisms they contain to actualise the integration of renewable energy on the grid system, there has still not been new sources developed so far. Several issues have been identified as responsible for this lack of success. For instance, there is no specific agency responsible for grid implementation, therefore different agencies, such as REA, NBET, NERC and the Ministry of power, fulfil these roles leading to overlap and inefficiencies. Others include slow implementation of polices due to lack of political support resulting from changes in government, unrealistic policies and lack of incentives (feed-in tariffs, tax holidays, partial risk guarantees, subsidies etc.) to encourage investments.[20]

Like the challenges of the Nigerian polices, the support mechanisms have their unique challenges. Chief among these is the constant changes that occur with every new administration which changes every four (4) to eight (8) years, thereby leading to continuous rework and reducing trust of investors in the policy mechanisms' veracity. Another is the lack of agreement on the implementation scopes of such mechanisms especially between the government and investors which results to a lot of back and forth, until it is too late to achieve milestones. Finally, there is a lack of performance-based incentives, which means that the selected developers are neither cautioned or encouraged after the contracts are awarded, therefore resulting to slow or lack of progress.[21]

THEORETICAL PERSPECTIVE

Sustainability transitions field have been useful in analysing innovations at the developmental phase which are not yet technically matured, economically feasible and socially embedded in the system and termed niches in the "literature".[22] Specifically, niche concept is prominent in multi-level perspective and strategic niche management and defined as a space that allows for the testing and trial of niche technology innovation with consideration of the technology development, societal demand and implications aimed at sustainable development.[23] Such niche technology innovation requires government support and protection for them to develop to mainstream technologies.[24] But also, demonstration projects, research and development activities and technology enthusiast are keen to support such promising technology.[25] This has gained wide attention and application in the renewable energy space, used to understand niche innovations processes like wind and solar technologies. For instance, Mirzania et al.[26] investigated the concentrated solar power plants in the United States and South Africa and concluded that consistent policy support is crucial for niche development. Boucher et al.[27] aver that government-support policies are integral for niche scale-up in their examination of renewable energy innovation process in Australia specially within the context of renewable energy cooperatives. O'Connell[28] posits that niche innovation in relations to finance and actors influence remains underexplored and concluded that there is need for more transition contextualisation across different spatial settings. Similarly, Raven et al.[29] averred that protected space are underdeveloped in transition theory.

Many literature have enunciated that niche innovation needs protected spaces. Protected spaces constitute Shielding, Nurturing and Empowerment activities as catalyst to encourage transitions.[30] These are valuable in ensuring transformative pressure for niche development.[31] We adopted Smith and Raven,[32] Verhees et al.[33] and Raven[34]'s definition of the three catalysts of change to reflect Shielding

as the strategies that restrain niches from the selection pressures from mainstream selection environment. While nurturing is aimed at improvement of performance and expansions of niche innovations. Empowerment focusses on scaling up niche to be competitive within existing selection environments or niche influences transformations within incumbent regime selection environments in ways favourable to the niche-innovation. Learning process, social networks and expectations are key factors in nurturing of niche innovation.[35]

Niche protected spaces for renewable energy development have proven popular in sustainability transition research. For instance, Verhees et al.[36] in a paper analysed the Dutch solar PV industry by adopting an insider approach to analyse actor's role in creating and maintaining and removal of protected spaces. Raven et al.[37] conducted a meta-analysis of low carbon technologies in the UK and Netherland with focus on the socio-political empowering of niche advocates. Al-Sarihi and Cherni[38] discussed the strength and weaknesses for renewable energy initiatives in Oman, considering the learning process, articulation of vision and network actors with highlight on the limited context of learning process present. Also, Aguilar et al.[39] analysed the learning and empowerment of green hydrogen niches in Canada with conclusion that learning promotes green hydrogen niche development. None have considered the aspect of policy support mechanism from a developing country's perspective and how this relates to the process of renewable energy development. The literature suggests a need for more developing country context[40]. Hence, this study addresses this gap.

METHODOLOGY

A qualitative case study methodology was adopted to achieve the research aim.[41] This provided an opportunity to obtain nuanced insights and comprehensive understanding of the real-life context of renewable energy technology implementation in Nigeria. Furthermore, an in-depth interview with key players was carried out. The key players in the electricity sector for renewable are captured in Table 1 below. It allowed for a rich understanding of the interviewees' experiences, opinions and views, as they relate to the research aim.[42] Questions were asked in a semi-structured format ensuing in a structured and unstructured elicitation of information.[43] This flexible approach is specifically beneficial for the nature of inquiry as the data challenged in Nigeria.[44] This was avoided as the unstructured form allowed for respondents to provide information and for the research to explore emerging themes.

Categorisation of Interviewees	Number of Interviewees
Public Authorities	12
Non- Public Authorities	19

Table 1. Interview participants

The interviews were analysed using thematic content analysis to understand which support mechanisms were more prominent and understand their effectiveness. Thematic content analysis allowed for common themes in all the transcripts to be extracted and extrapolated[45]. Anderson's[46] prescribed step for thematic content analysis was applied and supported with NVivo software which was useful in arranging and sorting out the text data. Keen attention was paid to ensure words used by interviewees were retained through the process of data analysis is captured in Table 2 below:

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Public and Non- Public Authorities recordings are transcribed to text form.	Transcripts are uploaded to Nvivo software.	Transcripts are thematically analysed based on interview and research questions.	All statements that are relevant to the research aim of this paper are extracted.	Key words used by interviewees are used to label emerging theme and categorisation.	An iterative process of grouping and re-grouping of the themes/categories was carried out.	Re-reading of the transcript and finalisation of the categories.

Table 2. Anderson's steps for thematic content analysis

FINDINGS AND DISCUSSION

The findings suggest that mainly shielding activities are present, which are emerging and not yet matured. Shielding for solar and wind technologies exists in the electricity space in form of government policy instruments and advocates protecting these technologies from the majority incumbent gas-selective environment which the electricity system is configured to re-enforce.[47]

Government plan to reduce national greenhouse gas emissions and being a signatory to the Paris agreement with a nationally determined contribution set to be achieved by 2030, have resulted in renewable energy being protected for development.[48] Key policy documents articulate protected spaces for niche development by providing specific support aimed at shielding wind and solar technologies from the selective pressure of the gas dominated regime. These supports include: Feed-in tariff aims to address investment risk by hedging investors and developers through a Levelized Cost of Energy (LCOE) against capital risk, market volatility and uncertainty, especially for the solar niche development in Nigeria.[49] Active shielding such as feed-in tariffs address the issue of price discrimination of renewable energy compared to conventional sources.[50] However, though the support mechanism was introduced in place of the electricity pricing mechanism called "MYTO", it has failed to achieve its goal of attracting investors, as it is considered too low to protect developers who are independent producers and coupled with lack of the pull-call option agreement guarantee which ought to be initiatives aimed at promoting a protected space for niche innovations.

Furthermore, there exists active shielding through government's adoption of close bidding for renewable energy projects of which 14 companies emerged and 2 companies are currently in the process.[51] However, the process has been slow and competitive bidding is being advocated to foster transparency and encourage lower bidding prices which has been a key issue stalling development of renewable energy that connects to the grid in Nigeria.

Also, the NREEEP stated that funds in form of Capital subsidy or rebate would be provided for renewable energy development.[52] Furthermore, a five-year tax break for manufacturing, dividend incomes and exclusion of excise tax are measures to protect niche. However, respondents indicated that the lack of financial decision and the delay in pull-call option agreement guarantee remains a key hinderance in the assessment of its effectiveness. Likewise, though there are plans for loans and grants for renewable energy development, the decentralised systems have recorded more niche innovation support than the grid space. These findings are similar to Farrelly and Tawfik.[53]

Not all the shielding activities identified are captured in the policy domain such as emergence of new actors advocating for grid renewable energy in form of associations. For example, the Renewable Energy Association of Nigeria (REAN) and enthusiast. These have fostered nurturing of niches especially solar development in Nigeria.

Nurturing aims to strengthen niche innovations through performance improvement and expansions[54]. Expectations were evident as respondent indicated the lack of 100% energy access and the insufficient

and poor electricity supply resulted in optimism for renewable niche. The government and Nigerian citizens anticipated that renewable energy technology could address the electricity gap in the country and boost sustainable development. These was further enhanced by Nigeria's signatory to the Paris agreement and the birth of the NREEEP; these fostered societal acceptance for renewable energy and actor network development with the mobilisation of associations like REAN. Though there was establishment of the Kano wind project as an experiment for on-grid niche projects due to potential of the location, however, the expectation has slowly waned due to lack of actualisation of the set achievement with respondents sharing mixed views on the state of the project. Furthermore, the learning from the project has limited documentation. One reason provided is due to the lack of local expertise on wind technology. Though the NREEEP document discuss how learning is captured, there was limited information of how the learning is captured in practise.

Empowerment focusses on scaling up Niche to be competitive within existing selection environments or niche influences transformations within incumbent regime selection environments in ways favourable to the niche-innovation.[55] Evidence suggests that renewable energy niche innovation in relation to connections to the grid system is still at the early stages of fit and conform to the incumbent gas regime. As the regulatory and institutional configurations are well aligned to the gas power plants this could be explained as no new renewable energy sources have been introduced on the grid despite the NREEEP. Infrastructural issues and the old state of the grid further re-enforces the dominance of gas over wind or solar niches. There is also evidence of a stretch and transform measure[56] as government policy mechanism; the renewable energy portfolio standard requires the purchase of 50% renewable by off-takers where these are available.

CONCLUSION

Overall, we conclude that shielding is necessary and essential for the achievement of the 6.5 GW Solar PV and 3.2 GW wind targets. Findings suggest that mainly shielding activities are present, which are emerging and not yet matured. However, there are shielding, nurturing and empowering processes present but ineffective support measures. Also, we agree with Smith and Raven[57] that an activity could shield, nurture and empower, which was the case of the provision of the renewable energy portfolio standard.

Discussions on protected spaces have mostly been based on a clear distinction of shielding, nurturing and empowerment activities with a progressive pattern which support niche innovations.[58] But keen attention has not focused on the non-linear pattern of these activities especially within the context of the policy support mechanisms in developing country's context. This study confirmed and expanded on the context where these activities could be non-linear and concur that protected spaces for niche development are socially constructed but operate within the political context through policy mechanism. Crucially, it highlights the lack of effectiveness of support mechanism which are part of the shielding activities and could deter other activities in the nurturing and empowerment process. Also, it posits that the key deterrent for niche project deployment in the Nigerian grid as the absence of sufficient financial and economic shielding, nurturing and empowerment activities, which are present and argued by Farrelly and Tawfik[59] and Soshinskaya[60] as one of the critical success factors. This could be elevated through public-private partnerships and the implementation of the initiatives that foster it. Also, there is a need for policymakers and planners to prioritise shielding activities like the implementation of feed-in-tariff and capital subsidy, measures and also embrace new support mechanisms not yet operational. Niche innovation needs a protected space, and this could be through reducing the number of RE projects being advanced on the grid and encouraging joint partnerships, which would enable developers to harness their strengths and understand business models that works. This study can serve as a foundation for countries with similar and not fully liberalised national grid structure as Nigeria.

We note a key limitation of the study; it would have been preferred to have made distinction between the niches being studied. As these would bring to fore the nuanced context of protected space for solar and wind. Future research could explore these and apply this approach to the broader renewable energy sector considering other renewable energy sources. There is also scope for more research in other developing context with similar characteristics. In addition, the nature of niche development from this study should not be taken as a prescription for the transition, but rather as an informative avenue that could be further developed through a more robust empirical, longitudinal, and multiple-case-study approach. This aligns with Smith et al.'s[61] study.

NOTES

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REFSHALEØEN AT A CROSSROADS: HARNESSING DENMARK'S COOPERATIVE TRADITION FOR SOCIALLY SUSTAINABLE URBAN REGENERATION

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INTRODUCTION

Refshaleøen, a former ship-building and industrial area in the central Copenhagen harbour, stands on the verge of large-scale redevelopment. The area has undergone a remarkable transformation since the final closure of its shipyards in 1996 and has evolved into a vibrant hub for creativity, alternative urban development, festivals, markets, small business enterprises, and diverse cultural experiences.[1] Refshaleøen is moreover, at the present time of writing, at one and the same time an industrial relic, a creative laboratory, and one of Copenhagen's last major developable waterfronts.

After nearly 30 years of temporary uses, the current landowners, *Refshaleøens Ejendomsselskab* (RE) and *By & Havn* (BH)[2] have launched a multi-year public process, which will culminate in a structure and master-plan competition in 2025/6 and in which they pose the question of how the district can be further developed in a way that respects its special character, while at the same time creating an attractive and sustainable urban environment for the Copenhageners of the future: "… to learn from the best of Copenhagen, take responsibility for the climate, give urban nature space and create space for people's well-being, so that Refshaleøen continues to contribute to making Copenhagen better".[3]

However, given recent examples of urban regeneration in Copenhagen, the area's unique cultural biomes remain highly vulnerable to conventional market-led gentrification, and the corresponding decline in affordable housing and land.[4] Purchase price per square metre of owner-occupied residential dwellings in the Copenhagen municipality has increased from the lowest price of 5,252 kr./m² in 1994 to the highest price of 57,029 kr./m² in 2025.[5] By comparison, cooperative housing prices have increased far less: by approximately 26% from 2015 to the second quarter of 2023, while owner-occupied flats have in the same period increased by 41%.[6]

The challenge is therefore of how the stated aims for retaining the urban, historical and cultural capital of Refshaleøen can be realistically achieved without excluding those residents, initiatives and businesses who have done much to create its present attraction and value.[7] This paper argues that Danish cooperative associations, rooted in the 19th-century cooperative movement (*andelsbevægelse)*, offer governance and investment models capable of balancing community benefits with social equity and economic viability.[8] The key principles of cooperative associations, i.e., open membership, democratic control (one member, one vote), limits to speculation, and reinvestment in the community, are effective in creating structural safeguards against pressures of gentrification.

The paper explores the theoretical linkages between cooperatives and urban regeneration; examines the growth potential for cooperative associations, compares lessons from Danish cooperative-based regeneration precedents; presents strategy and lastly, policy frameworks for deploying cooperative mechanisms across housing, workspace, workplaces, energy, finance, and governance on Refshaleøen. The goal is to demonstrate how contemporary cooperative associations can support inclusive urban regeneration, achieve the stated objectives of the landowners, and align with the context of Copenhagen's carbon-neutral and social-mix policy ambitions.[9]

THEORETICAL FOUNDATIONS

The Danish Cooperative Movement

The Danish cooperative movement emerged in rural farming communities during the 1850s and rapidly diversified into consumer, housing, energy, and worker co-operatives.[10] Today, cooperative housing accounts for approximately 8% of all housing in Denmark and there are over 210,000 cooperative housing units nationwide. Most of these units are concentrated in Copenhagen, where more than a third of multi-storey homes comprise cooperative housing, a larger share than owner-occupied apartments.[11] Denmark has moreover a long history of community owned energy supply where electrical power production is owned by consumer cooperatives, and where community-owned wind power accounts for about 80% of national capacity.[12]

Growth in cooperative associations, however, has decreased since state support for new cooperatives was terminated in 2005 and which has slowed the establishment of new cooperative projects. Nevertheless, municipal strategies for cooperative associations do persist; demand by purchasers is high, particularly in urban areas where housing affordability is under pressure and mortgage and banking systems also broadly continue to support cooperative homeownership.[13]

Urban Regeneration and Cooperative Strategies

Urban regeneration policies in Denmark have evolved through programmes such as the 'Neighbourhood Boost' (*Kvarterløft*, 1997-2007) and subsequent initiatives that emphasised resident participation, multi-stakeholder partnerships, and area-based financing.[14] Cooperatives align with these strategies by: Providing long-term, user-controlled ownership that resists displacement; mobilising pooled capital for collective assets (e.g., district energy, shared facilities, cultural venues); and embedding social criteria into investment decisions via cooperatives' articles of association.

REFSHALEØEN: SITE ANALYSIS

Attribute	Current Status	Implication for Cooperative Intervention
Land Ownership	Split between RE (50ha) and BH (4ha). Ownership companies are owned partly by private pension funds and partly by Copenhagen Municipality	Public–private alignment facilitates land-lease or joint venture cooperatives.
Planning	Structure- and master-plan competition 2025; first local plan after 2026	Window to embed cooperative clauses in planning conditions.
Infrastructure	Metro M5 to Refshaleøen delayed until 2045 and Eastern Ring Road (*Østlig Ringvej*) until 2037[15]	Energy/transport cooperatives can co-invest, sharing risk and earning user fees.
Cultural Ecosystem	Festivals, food halls, studios, and maritime heritage	Worker/cultural cooperatives can formalise existing creative economies.
Environmental Goals	"Green and wild" dogma; climate-positive playbook proposed	Cooperative stewardship of biodiversity and circular resource loops.

Table 3. Site analysis and potential for cooperative intervention on Refshaleøen

GROWTH POTENTIAL FOR COOPERATIVE MODELS

Cooperative Housing (*Andelsboliger*)

Andelsboliger currently house 8% of Danes and one-third of Copenhageners.[16] Each resident has rights of use to a private apartment and shared spaces, residents share responsibility for mortgage and maintenance, the value of any improvements is recouped on resale, while price-cap rules written into statutes keep prices below speculative market levels.

Application: Allocate a significant share of Refshaleøen's future dwellings as new housing cooperatives, using ground leases and land sales to lower entry costs.

Cooperative Workspaces and Production

Cooperatives jointly owned and democratically managed by the company's members have historic roots in Danish industrial action and remain supported by *Kooperationen's* legal advisory network.[17] On Refshaleøen, maritime, industrial and workshop environments can be transferred into multi-stakeholder producer cooperatives hosting crafts, food production, and green tech labs.[18] This approach preserves industrial and maritime identity while avoiding eviction of lower-income age groups and creatives.[19]

Application: With backing of existing legal advisory networks, organizations can experiment with a wide variety of new organizational forms to access critical knowledge, experience, skills, and resources.[20]

Small and Medium Enterprises (SMEs)

Refshaleøen serves as a hub for startups, workshops, independent food and beverage ventures, and other SME activities, many of which occupy both temporary and permanent spaces within the area's former industrial buildings.

Application: SMEs can share ownership or collective lease holding of workspaces, joint marketing initiatives, and the creation of co-managed infrastructure, allowing diverse businesses to pool resources, spread costs and risks, retain local character, and resist displacement resulting from gentrification or large-scale redevelopment.[21]

Energy and Circular Economy Cooperatives

Community energy co-ops dominate Denmark's wind sector and extend to district and solar heating. Refshaleøen's relatively isolated geography offers a testbed for Positive Energy District (PED) models that integrate renewable generation, storage, and demand response.[22] Precedent from Hedebygade's eco-renewal shows cooperative residents can achieve 20% energy and water savings relative to conventional renovations.[23]

Application: A resident-user energy cooperative can capture incoming revenues, reinvesting any surplus into communal facilities or social programs.

Social and Cultural Cooperatives

Cultural festivals, public art (e.g., "*bykoraller*" installations[24]), and urban agriculture (e.g., *Øens Have*) already enliven the area.

Application: Incorporating already established initiatives into cultural cooperatives will ensure their joint bargaining power for leases and or ownership and enabling participation in development negotiations.

GOVERNANCE AND FINANCING MECHANISMS

Land Value Capture using Cooperative Development Corporations

Land value capture is a finance mechanism available to public organizations that own and/or control public land, possess rezoning authority, and have the financial resources to invest in large-scale infrastructure projects.[25] Many of these factors are covered by the current (partial) landowners, viz., the Copenhagen City And Port Development Corporation (By&Havn), in which the Copenhagen municipality has a 95% stake.

A "Refshaleøen Cooperative Development Trust" could merge public landowners with resident, SME owners, worker, and investor cooperative associations, for example by issuing project loans backed by long leases. This integrated approach to recovering investment costs aligns with Danish precedents in Aarhus (*Brabrand Boligforening*) and Høje-Taastrup (*Nærheden*), which have leveraged cooperative governance to recycle land value into community facilities.[26]

Inclusive Financing Instruments

Low-interest loans: Cooperative banks (e.g., *Andelskassen*) offer low-interest loans to cooperative members, reducing capital barriers for housing and SMEs.

Fund micro-infrastructure: Community shares can be issued under Danish company law, within the framework of cooperative bylaws, to fund micro-infrastructure.[27]

Grant leverage: EU programmes (e.g., New European Bauhaus) support local communities and urban developers that make green transition fair, enjoyable and beneficial, including energy-positive renovations via social housing cooperatives that can provide grant leverage.[28]

COMPARATIVE CASE STUDIES

Case	Type	Scale	Key Cooperative Features	Lessons for Refshaleøen
Hedebygade, Vesterbro[29]	Eco-renewal	281 flats	Mixed-tenure block retrofit; communal waste, solar, green facades	Demonstrates cooperative governance enabling 20% energy savings.
Gellerup/Toveshøj, Aarhus[30]	Area regeneration	7,000 residents	Municipal-housing association partnership; gradual mix of tenures	Shows phased integration of private and coop housing to avoid mass displacement.
Coop Byen, Albertslund[31]	Greenfield district	1,700 flats	Retail cooperative (Coop) partners with pension fund; DGNB Gold	Illustrates cooperative branding and ESG finance in large-scale housing.
Stigsborg Havnefront, Aalborg[32]	Development corporation	54ha	City-owned corporation reinvests land profits	Provides model for land value capture reinvested via public–civic entity.
Kvarterløft Holmbladsgade, Copenhagen[33]	Inner-city uplift	12,000 residents	Resident co-design committees; public-private funding	Highlights success of cooperative participation in physical and social projects.
Halvtolv, Holmen Copenhagen[34]	Area regeneration with maritime character	250 residents	Cooperative housing subsidised by State and the City of Copenhagen	Demonstrates value of retaining existing buildings

Baugemeinschaft Flickwerk, Hamburg[35]	Rental based cooperative housing	20 households	Homes for families with diverse social and cultural backgrounds	Newly developed areas need to reserve a share of up to 20% of the available land for co-housing
Co-Living, DrottningH, Helsingborg[36]	Housing for singles	12 rooms of 15 sq. m. with 200sq.m. of shared common facilities	Alternative living patterns	Clear demand from the municipality to prevent segregation and promote an integration process
FUCVAM, Uruguay[37]	Mutual aid cooperative	25,000+ homes built	Mutual-aid construction, national federation enables large-scale, low-income access	Offers a powerful model for self-build, state-supported urban housing for low-income groups

Table 4. Comparative case studies of Danish and international housing cooperatives

PROPOSED INTEGRATED STRATEGY FOR REFSHALEØEN

Vision and Objectives

Identity: Protect and amplify Refshaleøen's cultural / industrial / maritime identity through cooperative ownership of heritage structures.
Energy balance: Achieve climate-positive energy balance by 2035 via user-owned renewable systems.
Social Equity: Deliver 35% of new dwellings as *andelsboliger* and 25% as non-profit *almen* rental housing to sustain social and demographic mix.[38]
Cooperative governance: Embed cooperative local governance in all major site decisions, ensuring one-member one-vote representation across stakeholder classes.

Spatial Planning Approach

Cooperative Clusters: Map heritage buildings into clusters (e.g., Food Lab Co-op, Maritime Maker Co-op) linked by publicly accessible corridors and waterfronts.
Housing: Distribute cooperative housing along waterfronts in low and mid-rise density to share views and reduce land cost per unit.
Energy Spine: Install a seawater heat pump plant financed by an energy cooperative, distributing low-temperature district heating.
Green and Blue Areas: Establish a cooperative land stewardship body to manage wild shoreline zones, integrating biodiversity installations.[39]

Phased Implementation

Phase (Year)	Action	Cooperative Role
2025-27	Pilot projects in existing buildings; *bykoraller* (Urban Coral) installations	Worker and cultural co-ops formalised as leaseholders.
2028-31	Housing tranche 1 (400 units in neighbourhoods of 25 – 100 units.)	Formation of first housing cooperatives; ground lease agreements.
2032-35	Energy spine build-out; Metro integration decision	Energy co-op raises capital; negotiates infrastructure co-ownership.
2036-40	Housing tranche 2; public amenities	Cooperative Development Trust allocates land value surplus to school and elder-care facilities.

Table 5. A proposed phased implementation showing integration of cooperatives

Reducing Risks of Gentrification

To effectively mitigate the risks of gentrification in urban redevelopment, a combination of proven cooperative housing strategies and progressive planning policies should be employed.

Price-capping

In the first place, price-capping is crucial: by maintaining the established cooperative housing practice of capping the transfer and sale values of cooperative shares, typically calculated as the indexed construction cost plus the value of user-paid improvements, housing affordability is preserved. This mechanism serves as a direct curb on speculative price increases and prevents rising demand from translating into unaffordable housing costs for future residents, thereby stabilizing neighbourhoods against rapid socio-economic change.

Social housing

Secondly, social inclusion must be institutionalized. Implementing a mandatory inclusionary quota requiring that a proportion of all new cooperative housing blocks dedicate units to non-profit social housing (*almene bolig*) ensures continued access for lower-income households. Administrative and legal assistance by established non-profit housing associations will go a long way to ensure that long-term affordability, social mix, and tenure security can be maintained, bring into line cooperative expansion with broader social justice goals.

Zoning

Furthermore, zoning and planning processes should prioritise participation by local communities. By adopting, for example, public design workshops that include residents, municipal officials, and expert consultants, development decisions are more transparent and sensitive to the community's needs and concerns. Necessary resolutions, such as long-term cooperative land purchase agreements and / or leases, should help secure use by the established local community and cultural activities, thereby offsetting displacement and preserving local identities.

Monitoring and Evaluation

Key Performance Indicators (KPIs) to include cooperative membership numbers, housing affordability ratio, energy-generation surplus, biodiversity indices, and cultural event attendance. Annual cooperative reports feed into municipal monitoring dashboards, ensuring transparency and adaptive management.[40]

POLICY RECOMMENDATIONS

To strengthen the role of housing and workplace cooperatives in Copenhagen's ongoing urban development, a set of integrated policy interventions is recommended in this section.

Statutory Planning

In the first place, statutory planning mechanisms should clearly include cooperatives in the future amendments to the municipal local plan for Refshaleøen,[41] to ensure that any new developments formally reserve space or opportunities for cooperative initiatives.

Financial Incentives

Additionally, economic incentives backed by the state can play a decisive role in stimulating cooperative growth. Reintroduce the successful pre-2005 Danish model will also reinstate tax deductions for first-time buyers. This approach both provides incentives to new home buyers while supporting the growth of cooperative housing, reinforcing its proven track record of affordability.

Land grants

Assigning municipality owned land under favourable terms is essential. By granting long-term leases or enabling the acquisition of land at reduced rates to those cooperatives committed to specific environmental and social KPIs, municipalities can align urban development with sustainability goals. Such land policies have precedent in successful urban regeneration projects in Denmark and across Europe.

Regulatory Clarity

Clarity in regulation represents another critical pillar of support. The introduction of a dedicated Danish Cooperative Law would grant legal identity to cooperatives, simplifying their registration and governance processes. Advocacy from organizations like Kooperationen confirms both the demand and feasibility for such legislative clarity, which would reduce administrative barriers and foster sectoral innovation.

Capacity building

Finally, capacity building is crucial for the continuity and success of these initiatives. To this end, the establishment of a Refshaleøen Cooperative Academy, supported by private grants and possibly municipal funding will deliver education and training in cooperative governance, financing, and project management, targeted at local residents and emerging entrepreneurs. This investment in social capital is essential for cultivating sustainable, community-based enterprises capable of focussing inclusive urban development now and in the future.

CONCLUSION

The future of Refshaleøen should be one that balances development with preservation, innovation with tradition, and economic growth with social inclusion. The area has the potential to become a model for sustainable urban development, highlighting how repurposed industrial spaces can be transformed into vibrant and liveable communities. By embracing the principles of Danish cooperatives and involving

the community in the planning process, Refshaleøen can achieve a future that is both prosperous and inclusive.

Danish cooperative associations provide proven, robust, democratically controlled institutions, which can secure affordability, sustain cultural vibrancy, and deliver climate goals on Refshaleøen. By integrating cooperative housing, SME and worker ownership, energy cooperatives, and development trusts into the regeneration process, Copenhagen can create an innovative urban district that honours Refshaleøen's industrial and maritime heritage, while embodying 21st century values of inclusivity and sustainability. Embedding cooperative mechanisms early, through planning conditions, fiscal tools, and capacity-building, will not only safeguard against displacement and speculation but also demonstrate a scalable model of cooperative urbanism for waterfront cities both in Denmark and internationally.

NOTES

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PARTICIPATORY APPROACH TO CONFLICT RESOLUTION IN THE CONTEXT OF NATURE CONSERVATION AND INFRASTRUCTURE CORRIDOR PLANNING IN PROTECTED AREAS

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INTRODUCTION

Infrastructure corridors that intersect with protected areas of endangered species in Europe often trigger conflicts between development priorities and nature conservation. These tensions are not only ecological, such as habitat fragmentation and wildlife mortality, but also institutional, as planners, engineers, and nature conservation experts frequently operate with limited collaboration or shared vision.

To address these challenges, participatory planning has emerged as a necessary approach. Involving local communities, protected area managers, public authorities, and developers in early planning stages can help identify conflicts, build trust, and co-create solutions that reflect both ecological and social needs.[1] Tools such as stakeholder workshops, participatory mapping, and scenario-building have proven effective in aligning diverse perspectives.[2]

This is particularly important in environmentally sensitive contexts, where planning decisions must account for long-term ecological resilience and community values. Inclusive processes also support environmental justice and ensure broader legitimacy, especially when youth and underrepresented groups are involved.[3]

The INTERREG DTP2 (Danube Transnational Programme Second call) ConnectGREEN project "Restoring and managing ecological corridors in mountains as the green infrastructure in the Danube basin"[4] exemplifies how participatory and transnational cooperation can improve spatial planning outcomes.[5] Institutions from five Carpathian countries worked together to identify ecological corridors for large carnivores in the Carpathian region and integrate them into planning systems, demonstrating that resolving conservation–infrastructure conflicts require inclusive governance built on shared knowledge and collective responsibility.

CONTEXT - DESIGNING CONTEXT-SENSITIVE PARTICIPATORY PROCESSES IN PLANNING OF PROTECTED AREAS

In contemporary spatial, urban and environmental planning – both in research and in practice, stakeholder participation has evolved from a supplementary element to a core methodological and ethical principle. In Serbia, as in much of Central and Eastern Europe, international scientific projects-

particularly those under the INTERREG and Horizon programmes- have become important platforms for experimenting with and institutionalizing participatory approaches. Within these projects, participation is often conceptualized not only as a tool for information exchange, but as a mechanism for co-creating knowledge, aligning institutional objectives, legislative obligations, and fostering procedural legitimacy across diverse governance contexts.

In Serbia, as well as in many Eastern European countries - public participation in spatial and urban planning is often more informal and consultative in character than firmly embedded in legally binding frameworks. Although planning legislation formally requires public participation (e.g., through public hearings or consultations during strategic environmental assessments), these procedures are frequently treated as procedural obligations rather than genuine opportunities for stakeholder influence on decision-making.

The lack of clearly defined stages, responsibilities, and mechanisms for participation limits its effectiveness in Serbia, particularly in the early phases of planning where stakeholder input could meaningfully shape visions and priorities. Instead, engagement typically occurs through ad hoc, non-mandatory formats, such as workshops, roundtables, surveys, and public campaigns - often led by external projects, donor initiatives, or academic institutions rather than being systemically incorporated into domestic planning procedures.[6]

This results in a participation model that is often instrumental rather than substantive, serving more to fulfill legal or project-related requirements than to genuinely co-create planning outcomes with affected communities and expert stakeholders. Consequently, the institutional culture of participation in these contexts tends to be fragmented, lacking continuity and long-term integration into formal planning systems.

On the contrary, participatory process in European projects is always trying to meet the needs and expectations of specific stakeholder groups (governance, citizens, experts, NGOs, vulnerable groups, children in pre- school and elementary school, universities). Common formats include educational workshops, facilitated roundtables, focus groups, and Delphi-style expert consultations. These are designed to enable not only the sharing of information, but also deliberation, negotiation, and potential co-working on different scenarios created together on the white board (Figure 1) -particularly when environmental and infrastructural interests intersect.

Figure 1. White-board participatory process within ConnectGREEN project, Authors, 2020.

The ConnectGREEN project, implemented within the INTERREG DTP Programme offered a compelling example of how ecological connectivity planning can be enhanced through transnational, interdisciplinary, and participatory collaboration. It brought together institutions from Serbia, Romania, Slovakia, Hungary, and the Czech Republic (led by WWF Romania) with the shared objective of restoring and managing ecological corridors of the large carnivores (lynx, bears and wolves) in the Carpathian Mountain areas of the Danube Basin.

The objective of the project was to provide a sustainable platform for aligning nature conservation practices and spatial planning in the Carpathian region, through the development of approaches for the revitalization and management of migration corridors for large carnivores. Main goal was to enhance ecological connectivity by establishing new policies, strategies, tools, and methodologies that reduce threats to the linkage of key biodiversity areas within the European ecological network.

Bringing together experts in nature conservation, spatial planners, and representatives of various levels of governance, the project aimed to improve regional capacities for the restoration, conservation, and management of wildlife corridors in the Carpathian eco-region and to identify long-term solutions for harmonizing nature protection with sustainable spatial development practices.

Having that in mind, the ConnectGREEN project represents adequate example of participatory approach with all relevant stakeholders. From the outset, the Serbian project team—led by the Institute of Architecture and Urban & Spatial Planning of Serbia—prioritized structured, inclusive engagement with actors from Serbian ministries, NGOs, academia, pre-schools, elementary and high schools and public enterprises. A multi-stage participatory process was designed, beginning with the identification and recruitment of stakeholders through institutional networks and public channels.

FROM DIALOGUE TO POLICY: STAKEHOLDER INVOLVEMENT METHODOLOGY IN THE CARPATHIAN CORRIDOR PLANNING

The participatory process within the ConnectGREEN project in Serbia required continuous and direct communication with a wide range of stakeholders, which proved particularly challenging within the fragmented institutional landscape of Serbia. Given the differing mandates, operational cultures, and administrative hierarchies of involved actors, ranging from ministries and local governments to public enterprises, educational institutions, and NGOs- the coordination process necessitated sustained effort and adaptive facilitation

The project team adopted a phased approach, starting with stakeholder mapping and institutional analysis to identify relevant actors and their potential roles in ecological corridor planning. This was followed by targeted outreach through formal letters, bilateral consultations, and informal channels, which helped initiate dialogue and build trust.

Once contact was established, workshops and thematic discussions were organized to enable joint reflection on ecological connectivity and to ensure that both expert knowledge and local perspectives were taken into account. The process demanded high levels of institutional sensitivity, as communication pathways had to be carefully calibrated to match the working dynamics and decision-making protocols of each participating body. Rather than relying on generic formats, the team narrowed participation mechanisms to the capacities and expectations of different groups—ensuring inclusivity while navigating administrative complexity. This improved engagement not only facilitated cross-sectoral learning but also contributed to the gradual institutional recognition of ecological connectivity as a planning priority in the Serbian Carpathians.[7] (Figure 2).

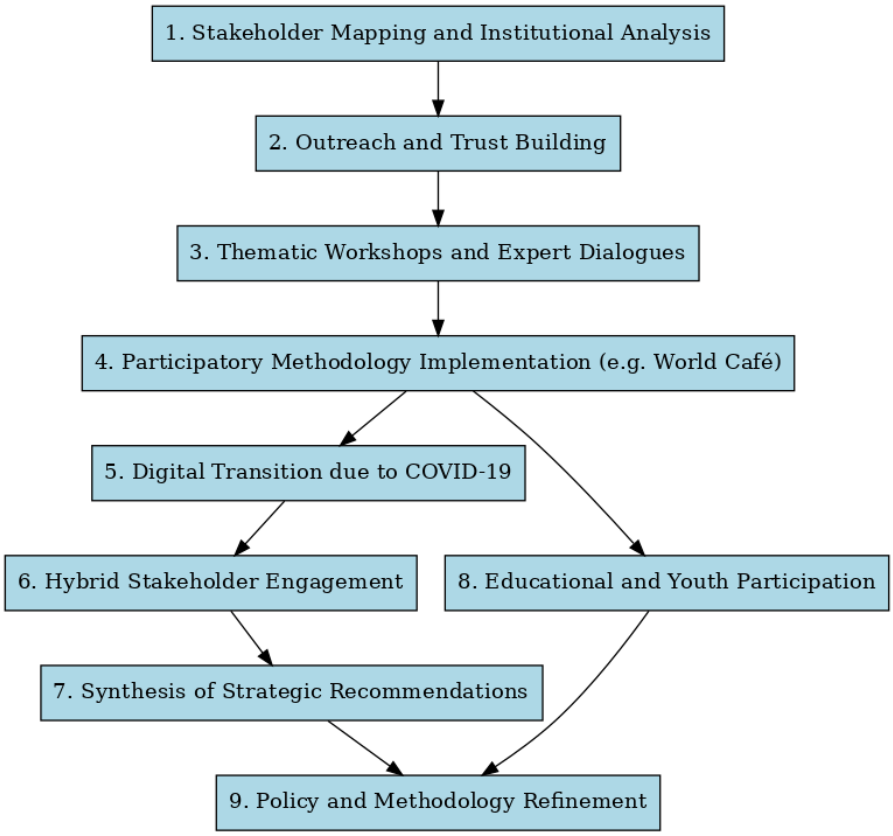

Figure 2. Participation phases within ConnectGREEN project, Authors, 2025.

The participatory framework within the ConnectGREEN project initially relied on structured in-person engagement formats, notably the world-café method, which was employed offline during the first national stakeholder workshop in Serbia. Organized around thematic tables focused on ecological corridor methodology, spatial data harmonization, and infrastructure impact mitigation, the session involved 36 participants representing key institutions- including four national ministries, public enterprises, academic institutions, NGOs, and educational organizations. Each discussion table was moderated by facilitators from the Institute of Architecture and Urban & Spatial Planning of Serbia (IAUS), with an intentional mix of professional backgrounds to promote cross-sectoral dialogue and deliberative exchange. These initial workshops enabled direct interaction, immediate feedback, and trust-building, forming a strong foundation for future collaboration.

The central aim of these workshops was to identify, document, and analyze the positions and experiences of key stakeholders in the fields of nature conservation, spatial planning, and infrastructure corridor development- domains that often exhibit divergent priorities and value systems in planning practice. By creating a structured and open space for debate, the project team managed to move beyond lack of cross-sectoral integration and encourage meaningful dialogue among actors who may not typically interact within the same planning processes.

Special attention was given to the facilitation of balanced discussions, where experts from each domain were encouraged to express their professional concerns, suggest alternative solutions, and respond to the challenges posed by competing land uses and sectoral mandates.

The methodology followed a moderated round-table and world café format, which allowed for both focused thematic discussions and broader plenary synthesis.

The ultimate goal of these participatory sessions was not only to gather technical input, but also to explore possibilities for aligning conflicting interests and building a foundation for collaborative

decision-making. In particular, the project team aimed to prevent the further escalation of tensions between sectors, especially between nature conservation authorities and infrastructure developers, by fostering mutual understanding and identifying shared objectives that could guide future spatial interventions. This approach proved particularly valuable in areas of high ecological sensitivity, where the planning and development of transport or energy infrastructure pose direct threats to habitat connectivity and biodiversity values.

A particularly notable dimension of the participatory process was the inclusion of children and youth, highlighting the project's commitment to intergenerational awareness and engagement. Over a three-year period, a series of educational and creative activities were organized for preschool and school-aged children, aimed at fostering early understanding of nature protection and ecological connectivity.[8] These included thematic presentations and age-appropriate lectures held in schools and kindergartens, followed by public competitions for the best literary and video works related to the presented environmental topics (Figure 3, Figure 4).

Figure 3. Creative workshop with preschool children within the ConnectGREEN dissemination, Authors, 2019.

Figure 4. Participatory and educational activities with elementary school pupils on ecological connectivity, Authors, 2020.

In parallel, university students were also actively involved through formal collaborations with the Faculty of Architecture, University of Belgrade, and the Faculty of Applied Ecology – Futura, where dedicated lectures, guided discussions, and student projects contributed to both educational outcomes and project dissemination (Figure 5). This sustained engagement not only broadened the project's participatory base, but also promoted environmental literacy and creative expression as integral components of spatial and ecological planning processes.

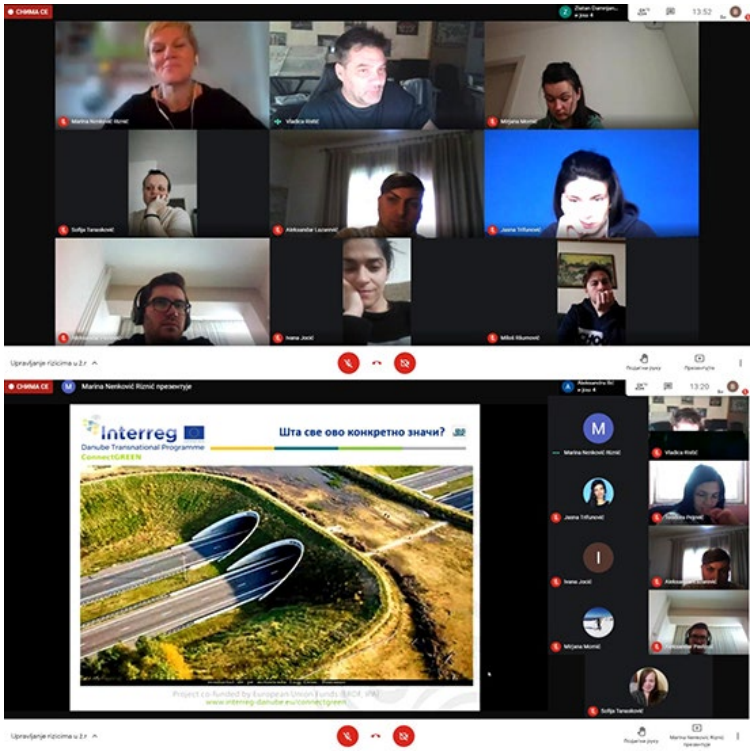

Figure 5. Student projects and academic collaboration on spatial and ecological planning, Authors, 2021.

OBSTACLES IN THE PARTICIPATORY PROCESS

The ConnectGREEN project, implemented between 2018 and 2022, was partially conducted under the constraints imposed by the COVID-19 pandemic, which significantly influenced the participatory process and required adjustments to its methodology and implementation.

With the outbreak of the pandemic, the project team was compelled to fundamentally redesign its participatory strategy. To ensure the sustained involvement of stakeholders in planning and decision-making processes, it became essential to redefine participation modalities. The emergence of new circumstances within standard participatory planning practices required a paradigmatic shift and a fundamental reconfiguration of engagement processes, shifting from traditional face-to-face interactions toward virtual spheres. Nevertheless, the newly adopted participatory approaches were expected to adhere to the established principles of stakeholder involvement, while being appropriately adapted to the constraints and possibilities of the digital environment.

At the same time, it was imperative to emphasize that the constraints imposed by the COVID-19 pandemic must not diminish the depth or quality of stakeholder engagement. The project team was therefore committed to ensuring that the established principles of participatory governance remained intact. Central to this effort was the consistent application of Arnstein's "ladder of citizen participation,"

which emphasizes the active involvement of all relevant actors in decision-making processes and the co-management of spatial and environmental policies.[9]

To achieve this, various digital strategies were employed that corresponded to different levels of engagement. Informative activities were carried out using social media, newsletters, webinars, blog posts, and visual tools such as 3D visualizations. Consultative input was gathered through online surveys, structured questionnaires, thematic focus groups, and telephone interviews. To promote active inclusion, stakeholders were invited to participate in video conferences, online voting sessions, and frequent email-based exchanges. Collaborative mechanisms were fostered through shared document platforms, moderated group discussions, one-on-one consultations, virtual whiteboards, and tools for participatory mapping. Ultimately, the process aimed to empower participants by encouraging collective reflection and the formation of informed opinions- supported, where possible, through the use of interactive and immersive technologies, including elements of virtual reality.[10]

Public health restrictions and institutional protective measures made traditional engagement formats, such as face-to-face workshops, field meetings, and roundtables - logistically unfeasible. Rather than halting interaction, the project transitioned into a hybrid model of stakeholder engagement, reflecting a broader transformation in planning and research practice across Europe. This transition aligns with emerging scholarly debates on the resilience of participatory governance, particularly under conditions of systemic uncertainty and spatial separation.[11]

Importantly, this methodological shift was not only reactive but also fundamentally aligned with the core goals of the ConnectGREEN project itself. As a project dedicated to integrating ecological connectivity into spatial planning systems across the Carpathian region, ConnectGREEN explicitly required sustained interaction between diverse sectors - ecologists/experts in nature protection, spatial planners, infrastructure engineers, and policy-makers, whose collaboration was essential for co-developing functional ecological corridor solutions.

The move to online formats thus represented not a disruption, but a strategic adjustment that preserved and even extended participation. Virtual consultations, online focus groups, email-based feedback cycles, and interactive online workshops proved vital for sustaining project activities in cross-border dialogue, facilitating knowledge exchange, and ensuring that participatory mapping, methodological validation, and policy recommendations remained genuinely co-produced across institutional and national boundaries. In this sense, the project provided a pilot platform for exploring how participatory planning models could evolve under new constraints while continuing to deliver complex, integrated spatial-environmental outcomes.[12]

As Fischer notes, crises such as the COVID-19 pandemic do not negate the importance of participatory processes, but rather underscore the need for adaptive, reflexive, and inclusive models of engagement that extend beyond the physical meeting space.[13]

The ConnectGREEN experience exemplifies such a shift: by maintaining its participatory integrity despite external constraints, the project not only preserved continuity, but also pioneered new methods of hybrid stakeholder involvement. This model continues to inform participatory practices in spatial planning, education, and cross-border environmental governance across the Danube region.

Within the framework of the ConnectGREEN project, a total of four participatory workshops were organized during the COVID-19 pandemic, gathering more than 120 expert participants across various disciplines. Despite the challenging circumstances, the online format unexpectedly fostered a psychologically safer space for open dialogue. The partial anonymity afforded by the screen allowed participants to articulate their views more clearly and confidently, free from the social pressures and potential criticism that might accompany face-to-face exchanges. This sense of psychological protection enabled a deeper level of reflection, active listening, and more precise articulation of sectoral demands.[14]

As a result, the outcomes of these discussions, expressed through consolidated conclusions and strategic recommendations, served not only as key inputs for the refinement of the project methodology for the identification of migratory corridors of large carnivores, but also as foundational elements for broader strategic frameworks regarding the aim and goals of the project. These results have contributed to the development of national-level policy recommendations, underscoring the value of structured, yet psychologically adaptive participatory models, particularly in sensitive and potentially contentious planning contexts such as the alignment of nature conservation objectives with spatial and infrastructure development.

Despite the overall constraints posed by the COVID-19 pandemic, educational activities related to the ConnectGREEN project continued at both the Faculty of Architecture in Belgrade and the Faculty for Applied Ecology "Futura." However, the dynamics of student participation underwent notable changes. In the new online format, students demonstrated lower levels of active engagement, particularly when it came to asking questions or initiating discussion during lectures. Only a small number were proactively involved in the sessions, while the majority assumed a passive role, listening and observing without interaction. Nevertheless, the online mode significantly improved accessibility, resulting in a marked increase in the overall number of attendees compared to the pre-pandemic, in-person format. This shift suggests that although digital delivery may dilute active participation, it simultaneously broadens outreach, offering a more inclusive platform for engagement, especially for those who might otherwise be unable or unwilling to attend in traditional classroom settings.

The participatory component of the ConnectGREEN project revealed significant differences in the levels of engagement between expert stakeholders and students during the pandemic-induced transition to online formats. While expert participants, comprising professionals from spatial planning, infrastructure development, and nature conservation sectors, responded positively to digital interaction formats, demonstrating high levels of involvement, critical reflection, and open dialogue, student engagement followed a more passive trajectory.

Experts appeared to benefit from the relative anonymity and psychological safety offered by the online environment. The absence of face-to-face confrontation seemingly encouraged more candid contributions, particularly in a multidisciplinary setting where institutional or professional hierarchies often inhibit open discussion.[15] The screen, as a symbolic barrier, lowered communication thresholds and facilitated a more democratic exchange of ideas, often resulting in more nuanced and honest feedback.[16]

In contrast, students, particularly those participating in project-related lectures at the Faculty of Architecture and the Faculty for Applied Ecology “Futura,” were noticeably less active. Although online lectures attracted a higher number of attendees compared to traditional in-person sessions, this increase in reach was not matched by a rise in interaction or dialogue.[17] The absence of in-person academic rituals, such as spontaneous Q&A, body language cues, and peer interaction, likely contributed to reduced motivation for active involvement. Moreover, the passive consumption of information, characteristic of webinar-style learning, did not provide sufficient stimuli for critical questioning or discussion.[18]

These contrasting dynamics suggest that while digital platforms may offer effective tools for professional collaboration and expert engagement, they present notable limitations when applied to educational settings that rely heavily on interpersonal feedback, mentoring, and active dialogue. Future participatory planning processes must therefore adopt differentiated approaches, tailoring tools and formats to the specific needs and behavioral patterns of various stakeholder groups.

CONCLUSION

The ConnectGREEN project demonstrates the potential of participatory planning to reconcile nature conservation goals with spatial and infrastructure development through inclusive, adaptive, and context-sensitive engagement strategies. By employing a phased and cross-sectoral participatory process, ranging from expert workshops and institutional consultations to educational activities targeting youth and students - the project succeeded in promoting ecological connectivity as a legitimate planning priority within the fragmented institutional landscape of Serbia. The transition to hybrid and online formats during the COVID-19 pandemic further revealed both opportunities and limitations of digital participation. While experts responded positively to the increased psychological safety and flexibility of online engagement, students exhibited lower levels of active involvement, highlighting the differentiated impacts of digitalization on various stakeholder groups.

The strategic integration of both professional and educational perspectives enriched the participatory framework, providing critical input for the development of methodologies, policy recommendations, and planning tools. Ultimately, the project illustrates that meaningful stakeholder engagement, when carefully tailored to institutional, psychological, and generational contexts, can not only sustain dialogue in times of crisis but also lay the groundwork for long-term, cross-border ecological planning initiatives. These insights offer valuable guidance for future participatory processes across the Danube-Carpathian region and beyond.

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COLLAGE AS A PARTICIPATORY TOOL IN PUBLIC SPACE DESIGN: VISUALIZING CULTURAL VALUE

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INTRODUCTION

Public parks and public spaces play a crucial role in fostering a sense of community and social connection. These spaces are meant to be shared and accessible to all individuals, regardless of age, gender, ethnicity, religion, or socioeconomic status. However, park design, upkeep, and programming often do not fully support inclusivity. Due to limited budgets and competing priorities, many cities and municipalities neglect the development and maintenance of these vital spaces or fail to adapt them as their communities grow and change.

This study explores how cultural values can be included into both the design and visual representation of public spaces. When these values are acknowledged and integrated, public spaces can be redesigned or upgraded in more meaningful, affordable ways, ways that better reflect the identity and needs of the community. The recognition and valuation of landscapes are closely tied to aesthetic sensitivity, making visual representation a powerful tool, not only for planning but also for visualizing and expressing shared histories.[1] Similarly, James Corner argues that if landscape architecture is less about showing static images of use and more about supporting and expanding how activities unfold over time, then new, more active forms of visual representation are needed. In this view, collage can become a tool shaping collaboration, process, and design.[2]

Furthermore, this research explores how collage, used within a hands-on community workshop, may support inclusive design by helping to surface cultural values and invite community perspectives into the design process. While collage is commonly used in landscape architecture for idea generation or design communication, it may also serve as a tool for encouraging community engagement. Involving people in shaping the spaces they use can contribute to a stronger connection to place and a sense of belonging. Collage, as a participatory tool, allows people to express ideas through imagery, making the consultation process more inclusive and responsive, without one having an artistic skillset. By prioritizing this form of public engagement, designers and municipalities can help shape public spaces that are practical and culturally significant.

Problem Definition

While public spaces should reflect the communities they serve, engagement efforts often miss capturing diverse cultural values and lived experiences. Confederation Park in Centre Wellington is a key example, as it faces pressure to preserve cultural significance while meeting the needs of a growing, diverse population. Proposed upgrades including interpretive signage, seating improvements, and safety

enhancements, highlight the need to balance functionality, accessibility, and cultural value.[3] This context offered an opportunity to explore collage as a participatory tool. Regular visits to the park provided firsthand insights into usage patterns, highlighting areas of high activity and neglect. Notes and photographs documented conditions and community behaviour, revealing a preference for informal seating and suggesting gaps in current design. These observations highlighted the importance of integrating both tangible and intangible cultural values into park planning through creative engagement methods.

Background & Context

Confederation Park is located at 295 Queen St. E. Fergus, Ontario. It is situated along the south banks of the Grand River and is accessible from major roads like Scotland Street, St. Andrew Street East, and St. David Street. More than a riverside green space, it functions as a living archive shaped by the surrounding community's social and cultural dynamics. Confederation Park serves a diverse range of nearby housing, including retirement apartments, condominiums, nursing homes, standard apartments, and single-family homes. Confederation Park is also rich in historical significance, reflecting the past settlement of Fergus and serving as a key place in the community's identity and memory. The park not only contains historical landmarks but also serves as a venue for local gatherings, further reinforcing its role as a cultural and social hub in the heart of Fergus.

RESEARCH APPROACH

This study conducts a collage-making workshop to explore how collage can serve as a participatory tool in public space design. The outcomes are interpreted both qualitatively and quantitatively to uncover cultural values associated with Confederation Park in Centre Wellington. The research is guided by the following question: *Can cultural values be identified and integrated into the visual representation of Confederation Park in Centre Wellington, Ontario, through collage?*

Goals & Objectives

This study aims to explore the value of a collage-making workshop as a participatory tool in public space design, while also identifying and summarizing cultural value trends and anomalies associated with Confederation Park in Centre Wellington.

To achieve these research goals, the following three objectives were established:

1. Explore community perceptions and visual representations of cultural value through a collage-making workshop.
2. Analyze the collages using a two-step comparative matrix process to identify cultural trends and anomalies, and
3. Assess questionnaire feedback data to evaluate the effectiveness of collage-making as a community participation tool.

LITERATURE REVIEW

This chapter provides the research framework through a review of academic and grey literature, guided by three aims: 1) understanding cultural heritage and public spaces as cultural landscapes, 2) examining the role of public participation in public space design, and 3) exploring visual methods in qualitative research to represent cultural values and support participation.

Cultural Identity and the Role of Public Spaces

Culture is commonly defined as a way of life shaped by shared beliefs, practices, and material traits. In landscape architecture, it serves as a dynamic lens through which people shape and experience outdoor spaces.[4] Cultural heritage, including tangible (e.g., buildings, monuments) and intangible (e.g., music, rituals), represents the legacies societies preserve and pass down. Tangible heritage includes iconic landmarks like the Taj Mahal and the Statue of Liberty, which serve as shared cultural symbols and sites of memory. However, smaller community spaces like parks and plazas also hold deep local significance. These public spaces support everyday cultural expression, from festivals to storytelling, despite such intangible forms often being overlooked in heritage definitions.[5]

Cultural Values

In historic preservation practice, “values” function like ethics, guiding the actions of a particular group or individual.[6] On the other hand, “cultural values," are rooted in people's lived experiences, social identities, and cultural practices, shaping the ways communities connect to their environments and to one another.[7] Cultural values are not fixed. They are connected to objects, actions, and landscapes, but also shaped by the context, including the place, time, and people making the judgment.[8] These people might include landscape architects, planners, government agencies, or other groups who design and manage public spaces, each bringing their own perspectives that may or may not reflect the values of the communities they serve.

Cultural values are often communicated indirectly and are expressed through visual, symbolic, and material forms that convey deeper layers of meaning related to everyday life, collective memory, and identity. Further, interpretation plays a critical role.[9] Practitioners identify cultural values by paying attention to the symbols, practices and narratives that communities associate with particular places. Careful observation, dialogue with community members, and analysis of physical and social patterns help reveal the values embedded in the environment. The ways cultural values are read, understood, and represented can either reinforce or obscure the cultural narratives that shape people's experiences of space.

Cultural Landscapes

Cultural landscapes reflect the intersection of natural geography and human influence. Defined by Parks Canada as areas given meaning through human activity, they vary in significance depending on perspective, community, governmental, or global.[10] UNESCO identifies three types: designed, evolved, and associative.[11] Over time, cultural landscapes have shifted from traditional to post-modern forms,[12] influenced by globalization, urban growth, and climate change. These transformations call for adaptable designs that respect both historical and present needs. Geography also shapes landscape identity, rural, coastal, or industrial settings foster distinct cultural expressions. In places like Centre Wellington, for example, agriculture and hydroelectric industries have defined the cultural landscape and strengthened local identity.

Public Parks as Cultural Landscapes

Focusing specifically on public parks, these designed spaces are more than just green areas, they represent intentional human intervention and serve as vital cultural centers where community identity, heritage, and values are both expressed and preserved. Like many cultural landscapes, public parks evolve over time, continually shaped by the presence and activities of people.[13] In fact, rather than diminishing their significance, human interaction enhances the natural and cultural value of these spaces, making them dynamic environments that reflect the collective memory and traditions of a community.[14]

Public parks are not passive landscapes. They are active, living spaces where social interactions, events, and everyday activities breathe life into the environment. Parks often host events and festivals that strengthen a community's culture and sense of identity. Despite this, research gaps remain in understanding how public parks can be designed to evolve alongside the changing cultural identities of communities over time. By accommodating the dynamic physical and cultural elements, public parks can become key sites for preserving heritage and encouraging social cohesion.

Since cultural landscapes are defined by both geographical context and human activity, it is crucial that public space design reflects the unique culture of the surrounding community and its users.[15] Fostering cultural diversity should be a key objective in the design and maintenance of urban parks, as diverse spaces offer opportunities for various groups to connect, share experiences, and participate in cultural activities and practices.[16] There is also a need for further research into how specific design elements influence cultural engagement and interaction in public parks across various demographic groups. Well-designed public parks can bring people together and strengthen communities by welcoming and celebrating the different cultures and identities of the people who live there.

Community Participation and Public Space Design

Inclusive design depends on active community participation, particularly in shaping the cultural and historical narratives represented in public spaces. Promoting cultural diversity is widely recognized as a central objective in urban park design, while landscapes themselves emerge through the shared experiences and expressions of their users.[17] Community members offer valuable insights into a site's history, function, and challenges, making them essential contributors to meaningful and inclusive public spaces.

Traditional participation methods, as such meetings, workshops, surveys, and focus groups, facilitate direct engagement, but can be limited by barriers to access and representation. Digital tools like virtual meetings, social media, and online platforms have expanded participation opportunities but also risk excluding those without access or digital literacy. Despite these challenges, digital engagement has successfully shaped public space projects, such as University Park in Toronto, where public input from residents, Indigenous communities, and heritage groups has guided a culturally sensitive and accessible design.[18]

Smaller municipalities like Centre Wellington also use digital platforms (e.g., CW Connect) to involve residents in local decision-making. These tools reflect a growing recognition that community input influences the design and function of public spaces and also helps preserve and express cultural identity. A strong example is Millennium Park in Chicago, where community consultations shaped the park's features like the Crown Fountain, an installation showcasing videos of local residents, which has transformed the park into a cultural gathering space that reflects the city's diversity and fosters a sense of belonging.[19]

Understanding Community Participation

Inclusive public space design has the power to create welcoming environments where diverse communities can connect and feel represented. Rather than neutral visuals, landscapes are shaped by social contexts and power dynamics.[20] This means that the priorities of municipal planners may not always align with those of the communities they serve, potentially sidelining local cultural values. To counter this, a shift from top-down planning to inclusive, community-driven models is essential.[21]

Arnstein's Ladder of Citizen Participation outlines levels of public involvement, from nonparticipation to full citizen control.[22] It emphasizes the need to move beyond tokenism and empower communities to meaningfully influence decisions. Similarly, the IAP2 Public Participation Spectrum categorizes engagement into five levels including inform, consult, involve, collaborate, and empower, offering

planners and designers a framework to design context-sensitive and transparent participatory processes.[23] These tools highlight that not all participation is equal. Effective engagement must go beyond surface consultation to involve and empower communities. When people help shape the spaces they use, those spaces are more reflective of their needs, more meaningful, and more sustainable. Inclusive design, grounded in real participation, promotes equity, community identity, and long-term success.

Community Driven Approaches

Inclusive public space design begins with meaningful community participation. Placemaking, a community-driven method, supports this by encouraging collaboration and direct involvement.[24] Stemming from people-centered planning, it connects physical, social, ecological, cultural, and spiritual aspects of place.[25] For placemaking to be effective, it must prioritize community needs and sustained engagement, aligning with the collaborative level of the IAP2 Spectrum.[26] A values-based, place-led approach can help planners and designers create inclusive public spaces by elevating community voices and reinforcing a shared sense of place.

Visual Methods in Qualitative Inquiry

Visual methods like photovoice, concept mapping, and collage offer creative, inclusive ways to engage participants by illustrating lived experiences, especially with underrepresented groups. These approaches support participatory research by enabling expression beyond words and fostering deeper emotional and reflective engagement.

Photovoice

Photovoice is a participatory, community-based research methodology that allows individuals to capture and share experiences through self-taken photographs.[27] It has been identified as a valuable, though underused, method for addressing environmental issues and promoting social justice.[28] Challenges included risks to participants and limited resources for data collection/analysis. These are important because photovoice often involves vulnerable individuals, and possibly exposing them to further risks. Insufficient funding can affect study accuracy. Addressing these issues is important for fostering safe, equitable research relationships built on trust, respect, and collaboration, essential for meaningful and inclusive outcomes.

Photovoice is a qualitative, community-based method that can be effective for identifying trends and capturing personal experiences of a phenomenon. It can also be used to explore how greenspaces were sought out as places of relief during the phenomenon under study.[29] The study focusing on racialized people in public urban greenspaces in Toronto, highlighted the often-overlooked systemic inequalities that urban greenspaces reinforce. The study primarily engaged participants who regularly sought out urban greenspaces, potentially neglecting those who were unable to participate due to barriers. This may have impacted the overall accuracy and inclusivity of the findings.

Photovoice can be an effective approach for engaging participants, particularly engaging youth in important social matters. It was an effective tool in exploring youth's perspectives on COVID-19 vaccinations.[30] Participants reported that photovoice provided a meaningful way to deepen their understanding and views on the topic. Four key themes emerged from the study: 1) participating in a photovoice project was an enjoyable and positively impactful experience, 2) shared group activities fostered a safe and supportive environment for participants, 3) the use of photography and the photovoice process encouraged reflection and introspection, and 4) photovoice shifted participants' perspectives.[31] This study highlights how photographs can be used to encourage engagement, reflection, and introspection among research participants.

Concept Mapping

Concept mapping uses visual representations (hand-drawn or digital) to show connections between ideas or concepts, simplifying complex processes or systems. Developed at Cornell University in the 1970s, it emerged as psychologists sought ways to depict children's evolving science understanding. In qualitative research, concept maps frame projects, reduce data, analyze themes, and present findings. Concept maps excel at showing overlapping or related ideas, useful for researchers and designers. A study on concept mapping found it to be valuable for relational data, allowing transition between written text and visual representation.[32] Like design, it can be cyclical and iterative, allowing continuous idea adjustment.

Concept maps are valuable as they involve participants in reviewing and categorizing their data, ensuring accuracy and inclusivity, especially helpful for coding interview responses. Complexity can challenge participants not familiar with this format. Despite disadvantages, concept maps remain a great tool for data reduction, display, and conclusion drawing. Their ability to organize complex relational data visually makes them helpful throughout the research process.

Collage

Collage is a visual method of expression and communication that develops meaning through collecting, selecting, analyzing, and arranging materials. The term originates from the French word *colle*, meaning "glue," and refers to a composition made of various materials—such as paper, cloth, or photographs—assembled on a surface. Collage can take many forms, including mixed-media, photo collage, and photomontage.

Collage emerged as an important artistic strategy in early twentieth-century modern art, particularly through the work of Pablo Picasso. In works such as *Guitar, Glass, Bottle of Vieux Marc* (1913), Picasso used layered materials, fragmented imagery, and text to challenge traditional modes of representation and to convey multiple perspectives within a single composition.[33] This approach disrupted conventional notions of realism by emphasizing construction, materiality, and the active role of perception. Picasso's use of collage demonstrates how visual layering can communicate complex spatial and conceptual relationships, a principle that has influenced later design and representational practices. Collage may be an effective visual medium for expression and communication, facilitating both through visual means. A study using this type of collage in social work research revealed four themes: Collage is a vibrant visual language for artistic expression/communication; it serves as a tool for reflection, sharing, and connection; it involves ethical considerations in associative creation; it requires attention to time, space, and place for meaningful creation.[34] Unlike other visual methods, collage fosters researcher-participant collaboration, integral to inclusive engagement. The same study suggested translating complex collage language into written words, raising the question of whether the goal is translation or recognizing collages as a unique understanding form surpassing traditional methods.[35] This perspective benefits communities facing language barriers, offering expression not relying solely on verbal/written communication.

Comparison of Visual Methods

Visual approaches offer unique strengths for data capture and analysis. **Figure 1** highlights similarities and differences. Photovoice emphasizes participant-driven photography to document lived experiences. Concept mapping organizes ideas hierarchically to reveal relationships. Collage fosters creative expression by compiling images to communicate complex narratives, including cultural values.

Photovoice	Concept Mapping	Collage
· Visual form of inquiry · Film or digital · Imagery based · Guided by themes · Incorporates participant perspectives into research · Encourages participants to share stores through photographs and dialogue	· Visual form of inquiry · Traditional or digital · Text and imagery based · Highly structured and logical · Incorporates participant perspectives into research · Connects information for influencing knowledge	· Visual form of inquiry · Traditional or digital · Imagery based · Relatively unstructured and open-ended · Incorporates participant perspectives into research · Encourages participants to express complex ideas · Represents layered and multidimensional narratives

Table 1. Similarities and differences between visual qualitative methods.

Collage for Qualitative Inquiry and Community Participation

In this study, "collage" refers to a physical, cut-and-paste, mixed-media approach. Landscape visualizations can preserve and communicate community histories and values[36]—something collage supports by allowing participants to layer visual elements that reflect cultural and historical meanings. It acts as a reflective and conceptual tool.[37]

Defined as a participatory tool, collage encourages active engagement, creative expression, and cultural reflection in research. In public space design, it helps create inclusive and meaningful places by involving communities in the process. Unlike digital methods, physical collage uses simple materials, making it accessible to all skill levels. Workshops based on collage can support dialogue and evaluation, enriching design outcomes.[38]

Collage also aids data collection and analysis by enabling collaborative exploration of complex ideas such as cultural values. Innovative visuals are needed to raise awareness of landscape values and transformation.[39] A place-based approach using collage may support participation and value identification. Further research is needed to explore how to translate collage's layered nature into written form.[40]

METHODOLOGY

This study employs a data gathering method that is designed to be flexible, allowing qualitative data to generate creative and insightful results. **Figure 1** illustrates the research process.

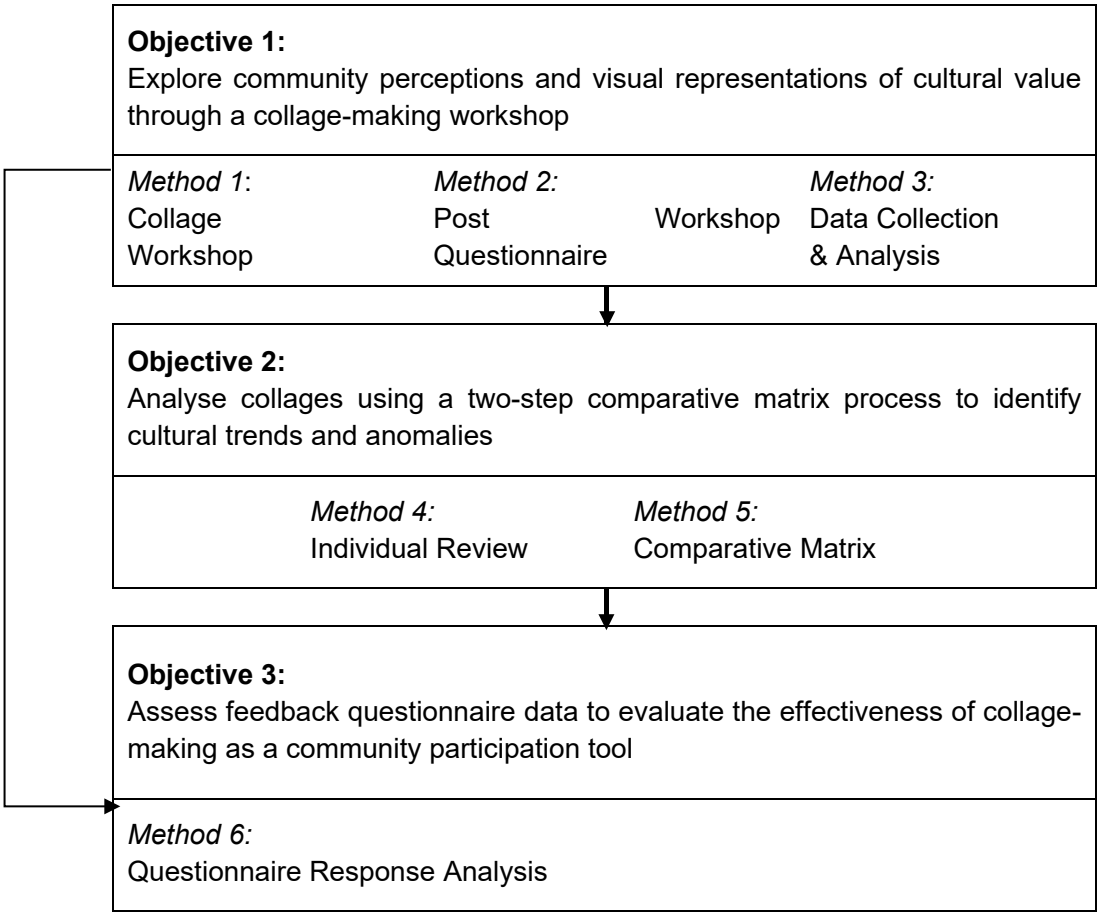


Figure 1. Research design flowchart.

Collage Workshop

A collage-making workshop was planned and hosted. Its success depended on three phases: collection and organization of visual materials, recruiting participants, and hosting the event. The researcher personally curated and provided the visual materials and supplies, carefully chosen to allow meaningful engagement with visual representation of Confederation Park.

Criteria for Selecting Visual Materials

Visual materials were curated based on criteria to ensure relevance, diversity, quality, and engagement. Materials were chosen to inspire participants and encourage meaningful engagement with park design and cultural activities and themes, catalogued to reflect park context and programming. Historical and cultural relevance was key, requiring materials to reflect significant historical events, cultural milestones, or community narratives related to the park, including archival images, maps, and newspaper articles highlighting landmarks, past uses, and transformations. Visual quality demanded high-resolution photographs and legible text-based materials. Engagement and creative potential were addressed by including decorative textures and finishes aimed at sparking conversation and storytelling, as well as connecting personal experiences with the park's visual history. Photographs, maps, newspapers, and magazines were selected to showcase diverse cultural activities and elements related to current park programming.

Collection of Visual Materials

To ensure comprehensive visual representation, materials were grouped into four categories: 1) **Historical & Archival Research** involved visiting the Wellington County Museum and Archives (WCMA) to source photographs, maps, and documents related to the park, Monkland Mill, and A.D. Ferrier. Relevant materials were duplicated, and insights from a local historian on the park's evolution and events were noted. 2) **Newspapers & Publications** involved analyzing past and present digital and physical newspapers (The Wellington Advertiser, EloraFergusToday, The Grand 101) for articles highlighting historical milestones and cultural celebrations, including recent editions. Park 3) **Observations & Photographing** involved regular site visits between August 2024 and January 2025 to document park features, layout, and relationship with the community. 103 photographs were captured of structures, statues, plaques, and installations reflecting cultural and social significance, observing how different groups interacted with the space, including use and repositioning of benches and picnic tables. Regular visits captured seasonal changes (vegetation, weather, usage patterns), with about 60% of photos from late summer and 40% from winter. 4) **Social Media Exploration** collected publicly shared images, maps, and posts from Instagram and Facebook using hashtags/geotags to understand activities and locations of personal significance, including local photographers using the park. Relevant visuals shared by CW community groups on their websites and social media were also reviewed. These categories provided a well-rounded understanding by combining historical records, media coverage, direct observations, and social media insights. Archival research documented history and landmarks, newspapers highlighted events/discussions, observations captured usage/seasonal changes, and social media added a modern perspective. The careful selection of specific materials ensured focused and meaningful engagement.

Preparation of Visual Materials

Selected materials were printed, organized, and assembled into packages for the workshop. Participants received a 6”x9” cardstock base. This size was chosen as a middle ground between limiting postcard sizes (4”x6” or 5”x7”) and overwhelming US letter pages (8.5”x11”), providing enough space for creativity while remaining approachable. An assortment of cut-and-paste materials (tape, glue sticks, glue rollers, liquid glue, scissors, pens, pencils, pencil crayons, markers) were provided to encourage various creative approaches.

Participant Recruitment

Recruitment involved marketing materials and an online reservation system. Outreach aimed for diverse backgrounds (young adults, seniors, newcomers, long-time residents, visitors) to gather a broad range of perspectives. Promotion included physical flyers on community bulletin boards (CW Community Sportsplex, Wellington County Library, Groves Memorial Hospital, apartment/retirement buildings near the park). Digital outreach via email targeted local organizations (Fergus BIA, CW Chamber of Commerce, CW Community Foundation, Rotary Club, Elora Fergus Tourism) to encourage participation. Outreach began March 1, 2025, after conditional ethics approval from the University of Guelph. Interested individuals reserved spots online, limited to 10 participants with a waitlist (two people signed up).

Hosting the Collage Workshop

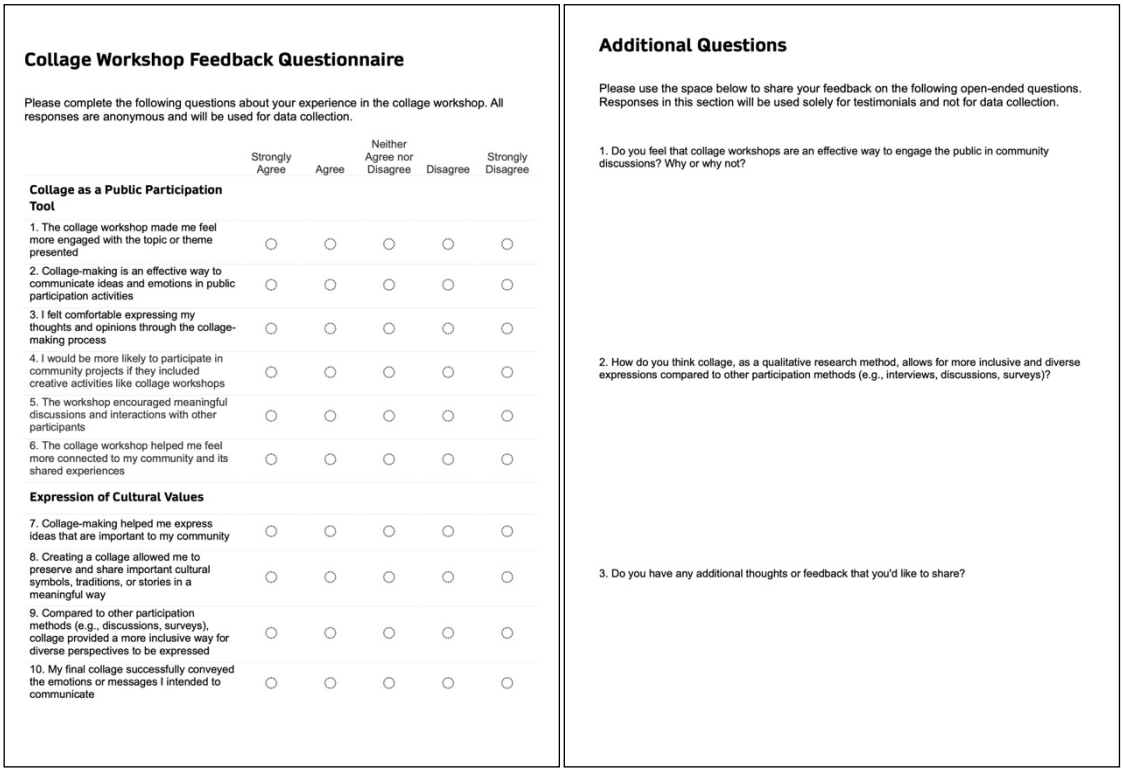
The workshop was held on March 8, 2025, from 1:00 to 4:00 p.m. in Board Room A at the CW Community Sportsplex, with nine participants representing a range of ages, backgrounds, and experiences. One participant was unable to attend due to illness, and there was insufficient time to offer

the spot to either of the two waitlisted attendees. Although scheduled for three hours, all collages and questionnaires were completed within one to two hours.

At the start, participants received both verbal and written information about the project and its ethical considerations. Formal ethical approval was obtained from the University of Guelph Research Ethics Board (REB #1560). Participants provided consent for their collages to be analyzed, included in the report, presented at the thesis defense, and for photographs of the workshop to be published.

Photographs taken during the session documented participant engagement, the materials used, and completed pieces, capturing moments of idea exploration and collaboration. Participants worked around a boardroom table stocked with collage materials, while the researcher delivered opening remarks, provided guidance, answered questions, and circulated the room three times to encourage discussion.

Upon completing the collages, a post-workshop questionnaire was distributed to gain insight on the validity of collage-making as a participatory tool as well as collage as an effective way to represent cultural values **(Figure 2)**. Participants were encouraged to complete the questionnaire within the allotted time. In addition, three open-ended questions were included to gather candid feedback and personal testimonials. However, data from the open-ended responses were not used for analysis.



Collage Workshop Feedback Questionnaire

Please complete the following questions about your experience in the collage workshop. All responses are anonymous and will be used for data collection.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Collage as a Public Participation Tool					
1. The collage workshop made me feel more engaged with the topic or theme presented	○	○	○	○	○
2. Collage-making is an effective way to communicate ideas and emotions in public participation activities	○	○	○	○	○
3. I felt comfortable expressing my thoughts and opinions through the collage-making process	○	○	○	○	○
4. I would be more likely to participate in community projects if they included creative activities like collage workshops	○	○	○	○	○
5. The workshop encouraged meaningful discussions and interactions with other participants	○	○	○	○	○
6. The collage workshop helped me feel more connected to my community and its shared experiences	○	○	○	○	○
Expression of Cultural Values					
7. Collage-making helped me express ideas that are important to my community	○	○	○	○	○
8. Creating a collage allowed me to preserve and share important cultural symbols, traditions, or stories in a meaningful way	○	○	○	○	○
9. Compared to other participation methods (e.g., discussions, surveys), collage provided a more inclusive way for diverse perspectives to be expressed	○	○	○	○	○
10. My final collage successfully conveyed the emotions or messages I intended to communicate	○	○	○	○	○

Additional Questions

Please use the space below to share your feedback on the following open-ended questions. Responses in this section will be used solely for testimonials and not for data collection.

1. Do you feel that collage workshops are an effective way to engage the public in community discussions? Why or why not?

2. How do you think collage, as a qualitative research method, allows for more inclusive and diverse expressions compared to other participation methods (e.g., interviews, discussions, surveys)?

3. Do you have any additional thoughts or feedback that you'd like to share?

Figure 2. Post workshop questionnaire.

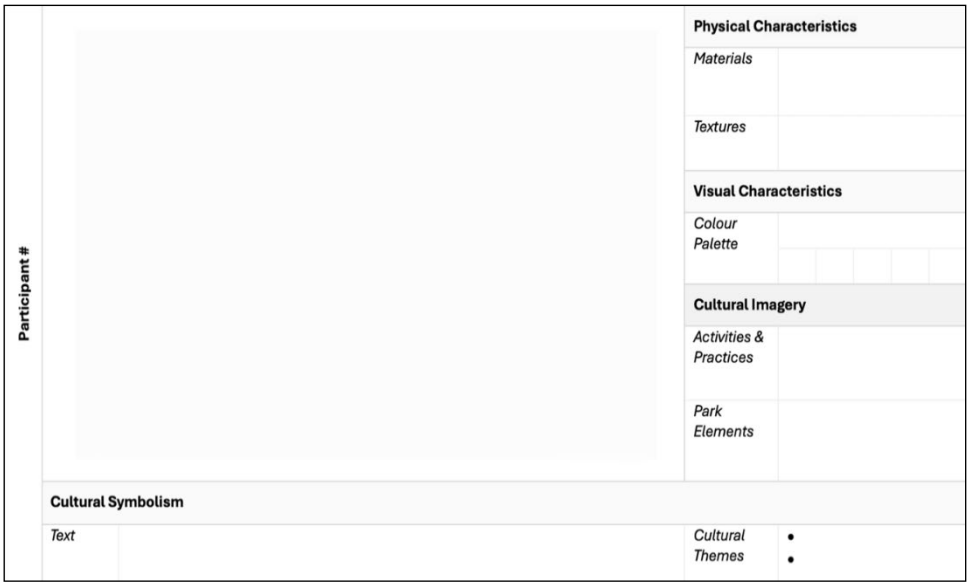
Data Collection & Analysis

All nine collages were photographed and documented to create a visual archive, with basic notes recorded on materials, layout, and recurring visual themes. A two-step analytical process was informed by a comparative review framework developed in previous landscape architecture research:[41]

- **Individual Collage Review:** Each collage was individually analyzed for physical and visual components—such as materials, colour palettes, imagery, and text—capturing both tangible (e.g., trails, benches, lawns) and intangible elements (e.g., events, traditions) **(Figure 3).**

• **Comparative Matrix Analysis**: To further explore cultural heritage themes, a comparative matrix was used to identify and compare tangible and intangible cultural heritage elements across collages. This process revealed patterns, relationships, and areas of cultural significance **(Figure 3).**

• **Questionnaire Response Analysis:** Furthermore, the post-workshop questionnaire responses were analyzed to identify trends and patterns in participants' attitudes, perceptions, and experiences. Each response was assigned a numerical value corresponding to the agreement scale (e.g., Strongly Disagree, Disagree, Neither Disagree nor Agree, Agree, and Strongly Agree). The data were collected and analyzed for frequency distributions and overall trends.



Collage		Physical Characteristics		Visual Characteristics	Cultural Imagery	
#		*Materials*	*Textures*	*Colour Palette*	*Activities & Practices*	*Park Elements*
1						
2						
3						
4						
5						
6						
7						
8						
9						

Figure 3. Individual collage review & Comparative matrix analysis.

RESULTS

Results are organized around three central themes from the analysis: 1) Collage for visual representation, exploring how participants visually communicated ideas, places, and emotions connected to the park. 2) Collage for cultural expression, revealing embedded cultural symbols, narratives, and heritage through imagery and text. 3) Collage for community participation, emphasizing

the workshop setting as a space for dialogue, reflection, and co-creation where individual and collective values emerged.

Collage for Visual Representation

The collages were analyzed through their physical and visual qualities, along with the cultural imagery and symbolism they conveyed. Cultural values were interpreted from recurring images and text elements. As shown in **Figure 4** (Cultural Imagery), the analysis began with physical characteristics (materials and textures) and visual traits such as colour palettes. All nine collages used paper, photographs, magazine clippings, and newsprint, creating layered textures and diverse symbolism. Dominant natural tones such as greens, blues, and yellows varied with the seasons, linking the collages to August's harvest hues and January's crisp, snow-covered landscapes (when the provided photographs were captured), reinforcing participants' connection to the park itself.

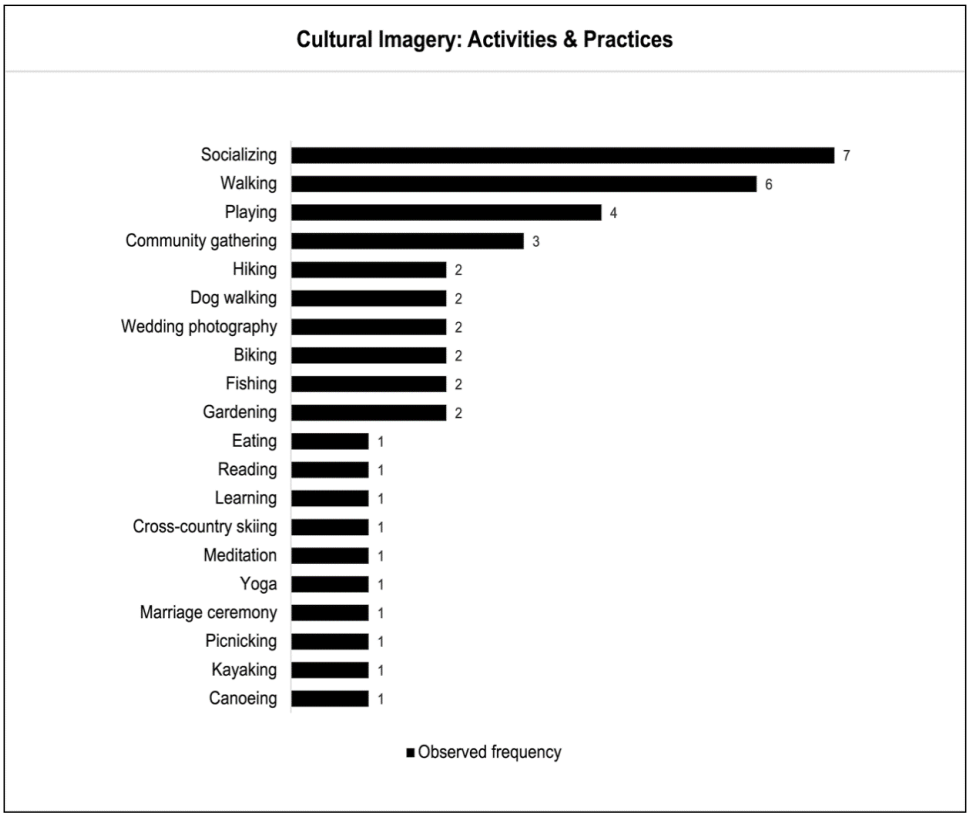
Collage		Physical Characteristics		Visual Characteristics	Cultural Imagery	
#		*Materials*	*Textures*	*Colour Palette*	*Activities & Practices*	*Park Elements*
1		Photos, newsprint	Smooth, glossy	Earthy & natural	Gardening, socializing, playing, canoeing	Playground, mill, outdoor seating, swing set, perennial garden, edible garden, water access, lawn, pathway, forest, trail
2		Photos, newsprint, plain paper, holographic paper	Smooth, glossy, shimmery	Rich & earthy	Fishing, walking, biking, kayaking, picnicking, socializing	Pathway, trail, park signage, perennial garden, waterfall, forest, lawn, water access, river, shade structure, boardwalk
3		Paper, photos, magazine	Glossy, matte	Romantic & botanical	Marriage ceremony, wedding photography	River, forest, bridge, perennial garden, teepee, park signage, lawn, shade structure
4		Paper, photos, newsprint, pencil crayon	Glossy, matte	Vibrant & energetic	Playing, walking, gardening, socializing, community gathering	Mill, bridge, boardwalk, pathway, edible garden, playground, swing set, outdoor seating, shade structure, forest, park signage
5		Paper, photos, newsprint, magazine, paint colour card, tape	Glossy, matte, fibrous	Deep and contrasting	Yoga, meditation, wedding photography, dog walking	Mill, outdoor seating, trail, boardwalk, forest, river, lawn
6		Paper, photos, metallic paper, pencil crayon	Glossy, matte, shiny, metallic, waxy	Playful and bright	Walking, playing, biking	Trail, park signage, boardwalk, outdoor seating, playground, pathway, waterfall
7		Paper, photos, newsprint, magazine	Glossy, matte, shiny	Neutral & rustic	Walking, cross-country skiing, community gathering, socializing	Boardwalk, shade structure, waterfall, mill, pathway, trail, lawn, steps, playground, pollinator garden, perennial garden, outdoor seating
8		Paper, photos, magazine, marker	Glossy, matte, smooth	Warm & rustic	Playing, hiking, socializing, learning, dog walking, reading, community gathering	Trail, boardwalk, forest, playground, outdoor seating, cultural installation
9		Paper, photos, magazine	Glossy, matte	Bold & dynamic	Hiking, fishing, eating, socializing	Park signage, boardwalk, trail, river, water access

Figure 4. Comparative matrix of cultural imagery.

The matrix analysis further shows that collage is a valuable tool for representing complex ideas through the combination of diverse imagery. **Figure 5** visualizes cultural activities and practices, summarizing key actions and organizing them by observed frequency. Since participants intentionally selected these images, it can be inferred that they hold cultural value. For example, while walking may seem like a common activity, it can also represent deeper values such as connection to place, daily rituals, and well-being. In the collages, imagery of trails, paths, and people walking dogs or pushing strollers highlighted these broader themes. Such movements symbolized care, routine, and belonging, reflecting meaningful connections to the park.

Figure 5 further illustrates a strong emphasis on **socializing**, **walking**, **playing**, and **community gathering**. These intentional and recurring images suggest the park is valued both for recreation and for nurturing relationships, among people and between people and the landscape. Play was often depicted through images of children and families in playgrounds and open spaces, while walking appeared in scenes of trails and paths with strollers and dog walkers. Socializing emerged through

depictions of people gathering in shared spaces, open lawns, and around seating areas, reinforcing the park's role as a community hub.



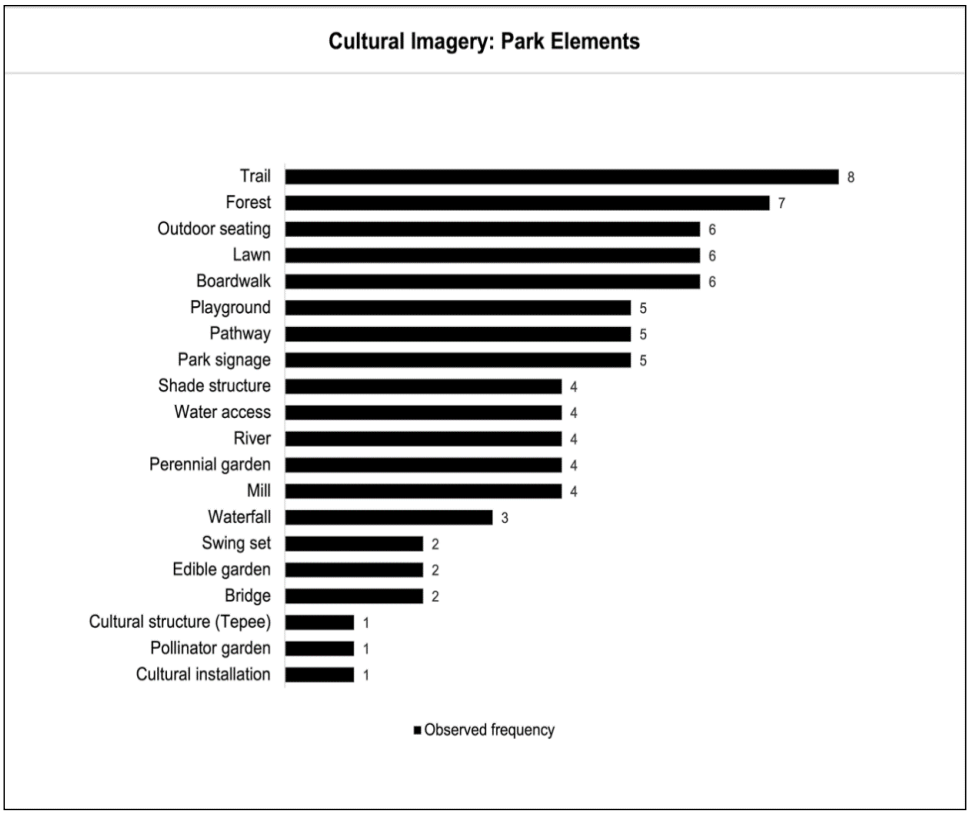


Figure 5. Data visualization of cultural activities and practices, park elements represented in the collages.

Other activities, such as *reading*, *eating*, *meditating*, *canoeing*, and *kayaking*, were represented less frequently. Their relative absence points to opportunities for deeper exploration and potential design interventions. Given the park's location along a calm section of the Grand River, enhancing water-based recreation could be especially meaningful. This might include more accessible launch points or interpretive features that connect visitors to the river through cultural and ecological experiences. Likewise, quieter and more reflective uses could be supported through intentional design—such as shaded lawn areas, thoughtfully placed seating, or subtle features that create micro-environments for individuals and small groups.

Collage also provides a lens for understanding cultural imagery tied to physical park elements. These features shape how the park is used and carry meanings connected to memory, identity, and shared experience. Not every element is inherently cultural; it becomes cultural when it holds social meaning or symbolic value. For example, a forest becomes cultural when it is recognized as a place for gathering or spiritual reflection. **Figure 5** (Park Elements) summarizes tangible cultural heritage elements represented in the collages, interpreting them as cultural based on their repeated presence and layered meanings.

Figure 5 further shows strong preference for **trails**, **forests**, **boardwalks**, **lawns**, and **outdoor seating**. Outdoor seating emerged as a prominent theme, with many participants incorporating benches, picnic blankets, and lawn chairs from various sources, indicating a shared desire for comfort, rest, and social interaction. Benches were frequently depicted using photographs of those already present in the park, highlighting participants' attachment to existing features and underscoring their significance in shaping place-based identity. Less-represented but notable elements included the *cultural structure* (*tepee*), *pollinator garden*, and *cultural installation*, pointing to areas for further exploration—particularly the existing *cultural structure (tepee)*, which also provides seating and shade with a single picnic table currently present.

To synthesize the findings, **Figure 6** shows an illustrated map that integrates observations by highlighting key park elements supporting cultural activities and practices. The map visualizes how these values are distributed across the park, showing well-represented and overlooked areas. This comparison offers insight into current cultural value and informs future design directions.

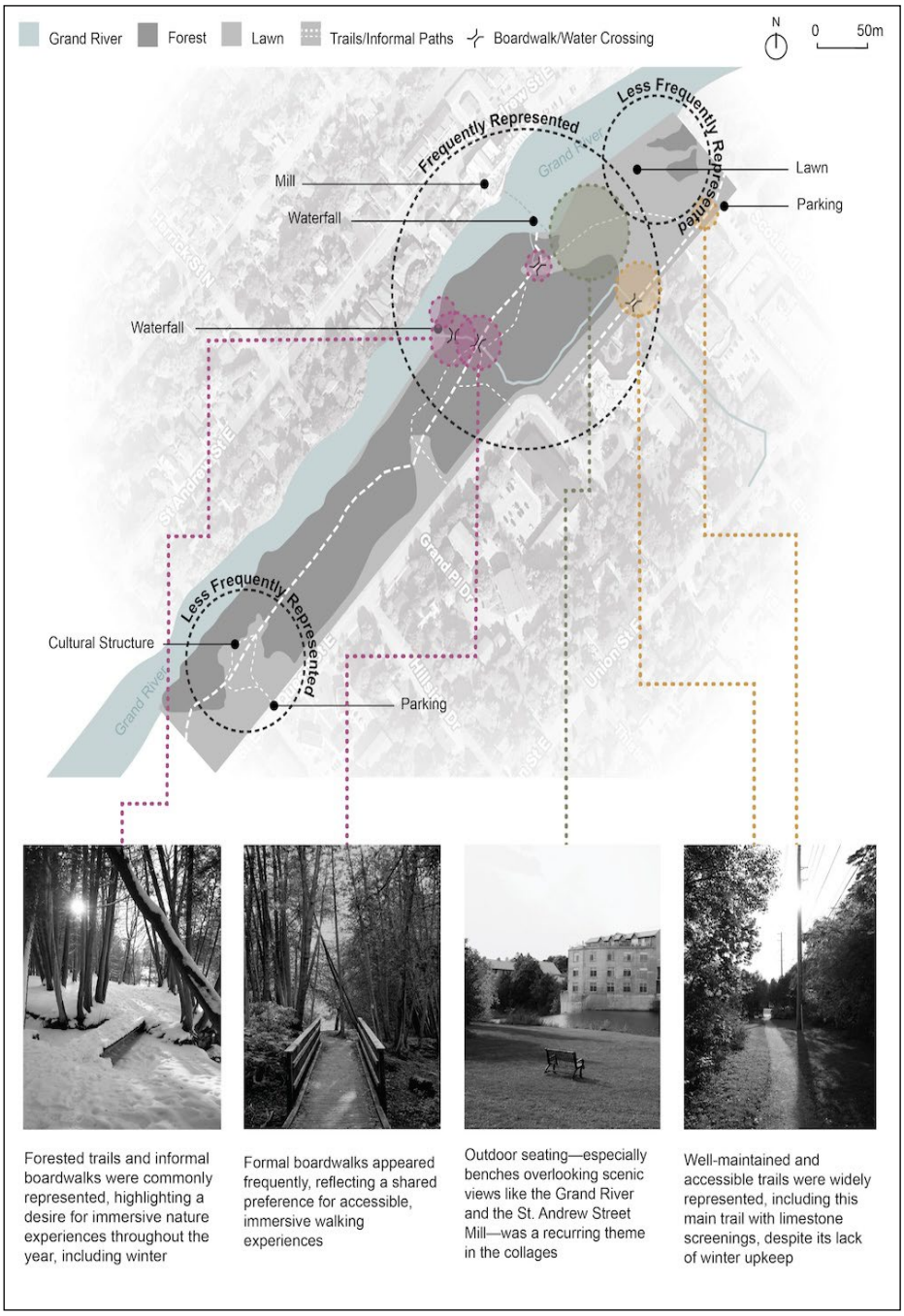


Figure 6. Map of park elements that support cultural activities and practices depicted in the collages.

To explore potential insights, park elements, activities, and practices were grouped into new categories, summarized in **Table 2**. These categories reflect key design elements and planning considerations important for creating functional, inclusive community spaces. Each element represents a different way people value the park.

As visualized in **Figure 7**, the most frequently observed categories were **Circulation & access** and **Natural Features & ecology.** These include trails, pathways, forests, and gardens, indicating a strong appreciation for movement and nature-based experiences. **Recreation & play** and **Structures & amenities** were observed to a lesser extent, showing interest in play areas, seating, and shade. **Social Spaces** were the least frequently observed, suggesting they may be underrepresented in the current design, though they remain important for community interaction.

Design Elements	Park Elements	Activities & Practices
Circulation & Access	Trails, boardwalks, pathways, bridges, water access, park signage	Walking, biking, hiking, canoeing, kayaking, cross-country skiing
Natural Features & Ecology	Forests, rivers, waterfalls, lawns, perennial gardens, pollinator gardens, edible gardens	Gardening, fishing, learning, reading, meditation
Recreation & Play	Playgrounds, swing sets, lawns, outdoor seating	Playing, yoga, meditation, picnicking, dog walking
Social Spaces	Cultural installations, cultural structures (tepee), historic mill, community gathering spaces	Socializing, community gathering, wedding photography, marriage ceremonies
Structures & Amenities	Shade structures, park signage, picnic areas, viewing decks	Eating, relaxing

Table 2. Design elements and associated park elements, activities, and practices.

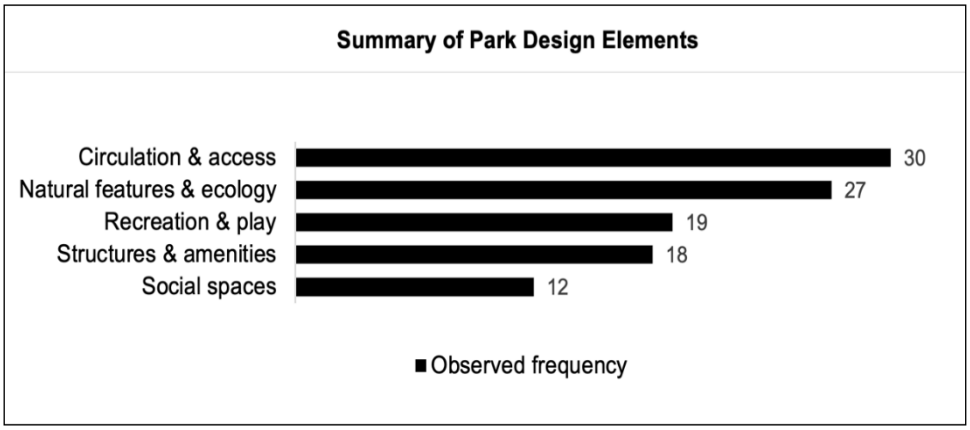


Figure 7. Data visualization of design elements summarized in the matrices.

With nine participants, the frequency of observed elements suggests each person noted multiple categories, emphasizing the layered and diverse ways people engage with the park. The focus on circulation and natural features reflects broader themes of nature connection and environmental stewardship, while other elements highlight the importance of play, relaxation, and gathering.

Collage for Cultural Expression

Beyond visually representing activities and features, collages revealed deeper cultural meanings through layered text. For example, in Participant 1's collage, values are conveyed through text and imagery. Cultural themes were inferred from words like "community garden" and "local," with visuals of gardens and nature suggesting community gathering and nature connection. Images of children's play areas with text like "kids," "healthy development of children," and "imaginative play" represented play

and childhood. Food and culinary were subtly implied by a community garden, suggesting food production and shared growing spaces, less explicit than other themes. These symbolic themes reflect underlying values and priorities, offering richer insight into how people relate to the park culturally. **Figure 8** highlights key patterns identified through analysis of the cultural symbolism matrix.

Collage	Cultural Symbolism	
#	*Text*	*Cultural Themes*
1	Community garden, biodiversity, thrive, kids, wildlife, nature, grasses, local, connecting, healthy develop of children, to create social, creative, imaginative play opportunity for individuals for all abilities	• Community gathering • Play & childhood • Food & culinary • Nature connection • Sports & recreation
2	Catch & release, water access and recreation activities, work together, more community input is needed since the park has a lot of people who life right along that stretch of land and don't have access to many play structures or other types of uses anywhere close, create your vision, a priority, proposed design improvements for a local Fergus park are still in the planning stages	• Community gathering • Sports & recreation • Nature connection • Environmental stewardship • Play & childhood
3	The future, is here, Grand River near Monkland Mills, Fergus, Ontario	• Spiritual & religious practices • Nature connection • Cultural memory & heritage preservation
4	Rural life, growing corn, open space	• Community gathering • Play & childhood • Food & culinary • Arts & creativity
5	Keep it simple, the natural features of this community were stunning before us and will be stunning after we are gone, dedication to preserving local heritage properties	• Wellness & healing • Nature connection • Environmental stewardship • Seasonal celebration • Cultural memory & heritage preservation
6	Wellness, love grows here, family, joy	• Wellness & healing • Nature connection • Play & childhood
7	Call for action, potential for this space for theatre, dance, music, special occasions, weddings, events, festivals, breath of fresh air year-round, support pollinator populations, long strolls, journey, community, events	• Community gathering • Nature connection • Environmental stewardship • Seasonal celebration
8	Play, move, all ages, all nations, all seasons, care for the earth, all species, rooted resilience, transformative placemaking, the art of adaptation	• Nature connection • Indigenous knowledge & practices • Environmental stewardship • Seasonal celebration • Play & childhood
9	Water, easy living, year-round beauty	• Indigenous knowledge & practices • Environmental stewardship • Nature connection • Food & culinary • Sports & recreation

Figure 8. Comparative matrix of cultural symbolism

The four dominant themes were: 1) **Nature connection**, 2) **Environmental stewardship**, 3) **Play & childhood**, and 4) **Community gathering**. Each theme was strongly supported, appearing in the collages of at least half of the participants **(Figure 9).** Collectively, the themes align with many existing features of the park while also revealing clear opportunities for enhancement. For instance, improving and expanding the forest trails could simultaneously strengthen both **Nature connection** and **Environmental stewardship** by fostering greater accessibility to natural areas and encouraging long-term care for the environment. Similarly, redesigning the large lawn as a more intentional and versatile gathering space could better support **Community gathering**, creating opportunities for events, celebrations, and casual social interactions. The strong interest in **Play & childhood** further underscores the need for additional playgrounds and nature-based play areas, particularly given the park's proximity to diverse housing and anticipated future redevelopment in the surrounding area. In contrast, themes such as **Spiritual & religious practices** and **Arts & creativity** were least represented in participant contributions, indicating potential gaps in cultural expression and suggesting rich avenues for deeper exploration in future design and programming.

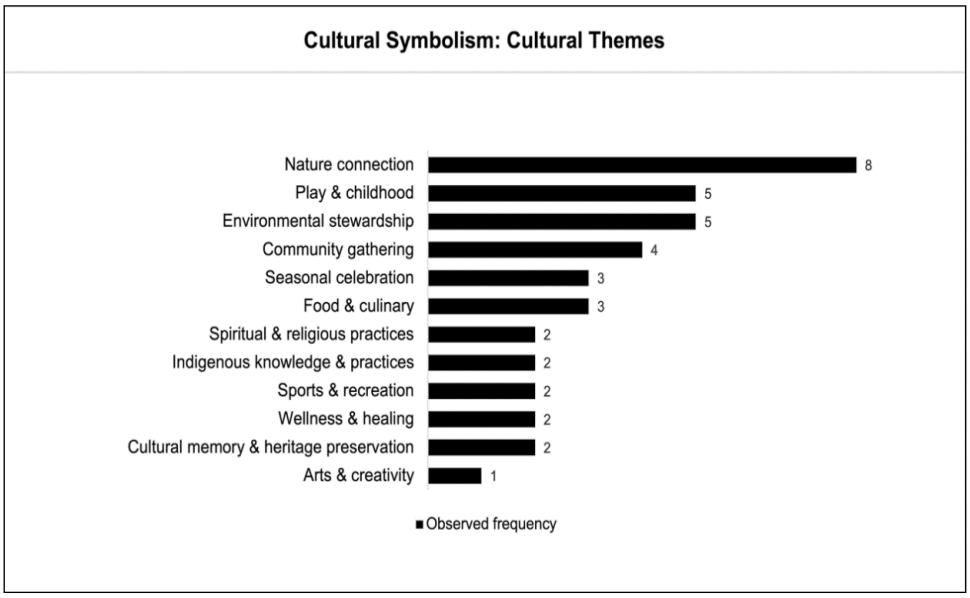


Figure 9. Data visualization of cultural themes represented in the collages

Collage for Community Participation

Collage proved effective in representing cultural values and themes, with many participants viewing it as a valuable tool for community participation. **Figure 10** summarizes responses to six questionnaire questions about collage as a participatory tool. Upon reviewing matrices and questionnaire responses, collage effectively reflects and represents cultural narratives, making abstract ideas more tangible. It was a well-suited tool for public participation, allowing creative expression, inclusivity, and engagement across diverse backgrounds/skill levels. One participant's neutral response to several questions suggests uncertainty or lack of strong opinion, highlighting the range of perspectives and ensuring uncertainty is represented.

Collage also proved effective for expressing cultural values and themes. **Figure 10** further summarizes feedback on four questions related to this. Results suggest cultural values can be identified and visually expressed through collage. Many found the method meaningful and intuitive, using it to visually communicate perspectives, identities, and relationships to Confederation Park. Collages and reflections evidenced that the method helped surface shared values like nature connection, play/childhood, and community gathering. The participant with neutral responses reminds that creative methods do not work the same for everyone. Including this range adds depth and supports a nuanced understanding of collage as a tool for cultural interpretation.

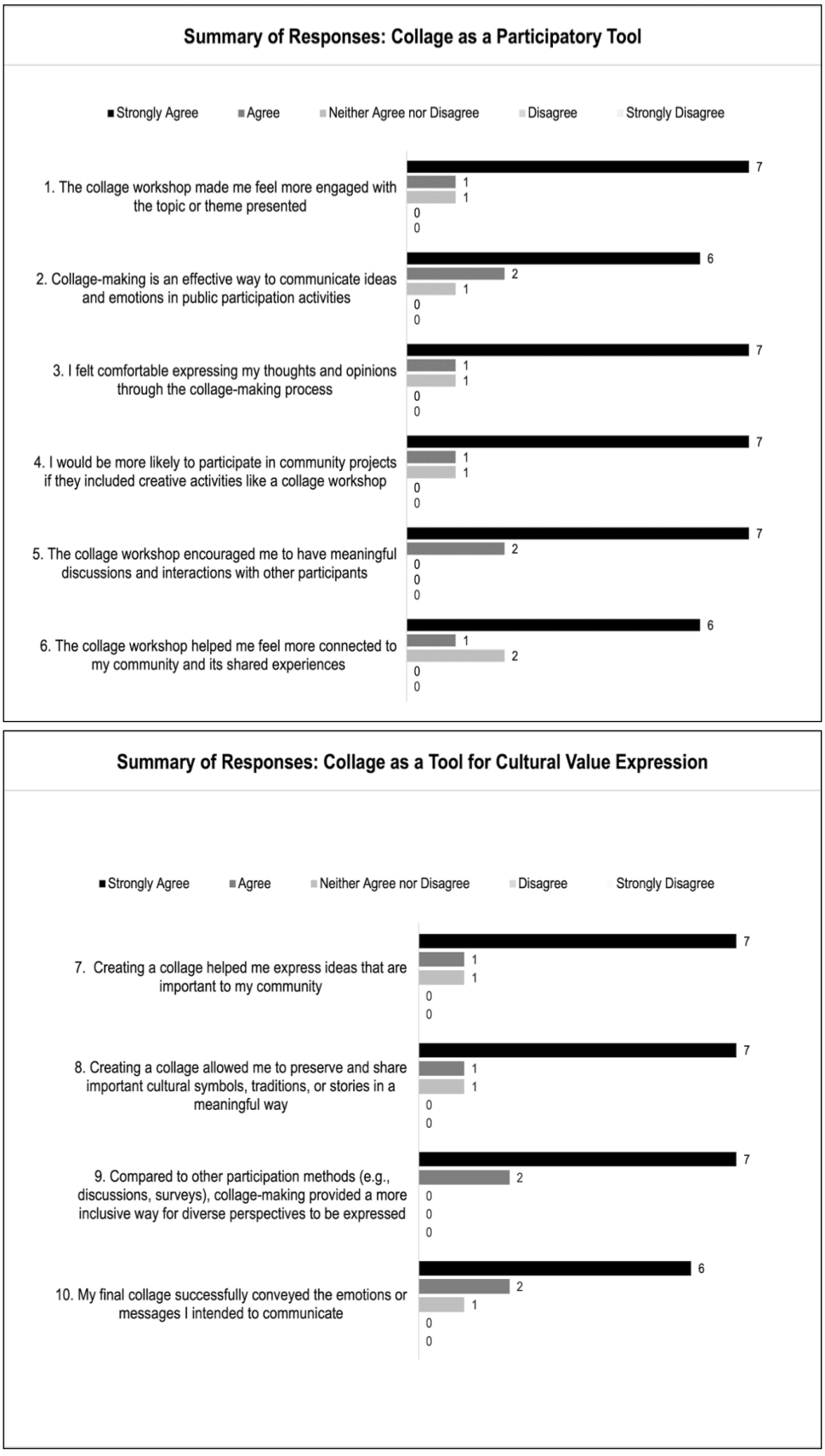


Figure 10. Data visualizations of post workshop questionnaire responses to questions 1-10.

In response to the open-ended question, “How do you think collage, as a qualitative research method, allows for more inclusive and diverse expressions compared to other participation methods (e.g., interviews, discussions, surveys)?”, participants reflected: “The materials offered a way to individualize responses. I can see it as part of a comprehensive method for the collages of facts and ideas”; “This would open the door for those who speak different languages and are maybe newer to the community to express their ideas.” Additional feedback included: “I found [collage] to be an interesting way to share my feelings regarding the environment”; “A more diverse group would be able to give different perspectives”; “I would do this type of activity again and found that it was a different way to express my thoughts. I wouldn’t mind more material to further express my ideas”. These responses highlight positive reactions, suggest enhancing future sessions with wider perspectives, and appreciate collage's ability for self-expression.

DISCUSSION

The findings show that participants saw collage as an inclusive, creative tool that went beyond traditional engagement methods. Its open-ended format supported various languages, experiences, and thinking styles, helping those less comfortable with verbal communication. Collage encouraged reflection, individuality, and diverse interpretations, offering a meaningful way to express cultural values. Cultural insights emerged through selected images, texts, and written responses, with participants reminded to focus on meaning. Unlike tools that rely on speech or fixed answers, collage allowed for the expression of personal stories, emotions, and values that might otherwise go unspoken. The hands-on process fostered both personal reflection and the uncovering of shared values, revealing collage’s value as a potential method for exploring culture in more open, expressive, and accessible ways. It offered rich perspectives on how creativity can support inclusive qualitative research and deepen cultural understanding.

Implications

The results have significant implications for theory and practice in community workshops and qualitative methods. This section discusses how findings inform future workshop designs, cultural practices, and broader community engagement. Collage as a participatory tool allowed meaningful engagement by creating a low-pressure, creative space for visual expression, especially for those struggling with verbal communication. It encouraged idea generation, focused attention, and fostered inclusivity by accommodating varying language proficiencies and cultural backgrounds. This approach has the potential to reshape how participatory tools are designed, prioritizing accessibility, creativity, and comfort, particularly in diverse or rapidly changing communities.

Limitations

Several limitations impacted the research methodology and the implementation of the workshop, affecting its scope and execution:

- **Small Sample:** Limiting participation to 10 was due to resource/time limitations, including financial constraints.
- **Number of Workshops:** Research approval delays meant only one workshop date was feasible, limiting opportunity to engage more participants. A short promotion timeframe impacted outreach, reducing diversity of voices.
- **Seasonal Influences:** Hosting in winter may have influenced facility accessibility and participant cognitive state. Forecasted weather/travel disruptions could hinder attendance. Winter can contribute to fatigue/discomfort, potentially impacting focus.

• **Workshop Timing:** Scheduled during the middle of the day at the start of March Break overlapped with a busy period at the Sportsplex; noise/commotion may have diverted attention.
• **Material Constraints:** Participants used only provided materials (curated paper, imagery, supplies, 6”x9” cardstock base). This constraint was intentional for a shared starting point, highlighting creativity within boundaries, and ensuring consistency for analysis.

Future Research

As collage is an emerging participation concept, potential exists for further research to support its implementation and evaluation as a qualitative method. The areas for further research includes the following:
• **Exploring Diverse Community Contexts:** Investigating collage application across urban, rural, and culturally diverse environments. A larger sample size would enhance generalizability and provide a more diverse range of perspectives on adaptability/effectiveness.
• **Longitudinal Study on Impact:** Hosting multiple workshops could provide more opportunities to explore the creative process and effects. Several sessions with the same group could allow deeper engagement and examination of nuanced/complex ideas over time, potentially across seasons to account for impacts, revealing longer-term effects and offering a more well-rounded understanding.
• **Comparative Study:** Comparing collage with other tools (focus groups, surveys, storytelling) to evaluate relative effectiveness in fostering creativity, inclusivity, and participation. This could include examining landscape architecture firms' use of collage in participatory practices.
• **Exploring Digital Collage Tools:** Investigating how digital tools/online platforms (Miro, Canva) can expand participation, especially for those unable to attend in-person workshops.
• **Visual Design and Interpretation:** Further analysis of collage compositions could examine overall design more deeply, focusing on how elements (composition, colour, layout, scale, spatial relationships) contribute to visual impact/meaning. This may include exploring design principles (balance, contrast, rhythm, hierarchy) and how choices shape viewer analysis/interpretation.
• **Voluntary Materials:** To address material limitations, future research could invite participants to contribute own visual elements. Allowing personal images, textures, found objects may enhance creative expression, deepen connection, and provide insight into unique perspectives. This could include giving participants the option to choose their own base, fostering ownership and resulting in collages more accurately reflecting individual viewpoints.

CONCLUSION

This study offers valuable insight into how cultural values can be identified and visually represented in Confederation Park, Centre Wellington, Ontario, Canada, through the use of collage. As a participatory tool, collage appeared to surface diverse perspectives and reveal the cultural values tied to the park and its surrounding community. It also appeared to allow participants to express personal connections to the park, demonstrating how its design and use are shaped by shared histories, identities, and environmental relationships.
Emphasizing that collage can serve as a creative and imaginative method of inquiry,[42] future research could further investigate how its visual language might be interpreted or translated into written or policy-oriented formats to support design and planning processes. The findings of this study also suggest that creative, non-verbal methods such as collage may encourage participation from individuals who are less comfortable with traditional verbal or written forms of engagement. This points to the potential of such approaches to support inclusive participation and meaningful engagement in community-driven projects, particularly when working with diverse groups and perspectives.

This study also points to a possible need for participatory tools that are responsive to cultural diversity and evolving community expectations. Collage may offer some advantages in this regard due to its flexible and personal nature, specifically where understanding and exploring cultural values is important. Visual tools may support planning processes by helping to recognize and communicate culturally meaningful landscape values,[43] especially within participatory planning contexts. In this way, collage can be understood as a potential tool for design exploration and for engaging community narratives, contributing to broader conversations about how cultural values might be considered in the design of public spaces.

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QUINTA DOS INGLESES: HISTORY, ECOLOGY, ACTIVISM, AND THE QUEST FOR SUSTAINABLE URBAN PLANNING

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INTRODUCTION

This paper investigates the historical trajectory of Quinta Nova, more widely recognized as Quinta dos Ingleses (QI), located in Cascais, and examines the citizen-led movement advocating for its preservation as a public green park. The case is situated within broader debates on sustainable urban development and the contestation of dominant urbanization paradigms.

Dating back to the eighteenth century, Quinta dos Ingleses constitutes a site of substantial cultural and ecological significance. Yet, its continued existence is imperiled by large-scale urbanization projects that privilege intensive development over heritage and environmental conservation. The site thus occupies a dual position: it functions simultaneously as a historical landmark and as an ecological enclave within an increasingly urbanized coastal territory.

This study further analyses the mobilization strategies of the grassroots initiative SOS Quinta dos Ingleses, interrogating the challenges it encounters in countering the interests of powerful real-estate actors and local government policies that promote high-density development models. Through this analysis, the paper foregrounds the discursive struggles over the value and function of urban green spaces, particularly within the tension between high-density growth and more ecologically attuned planning frameworks.

In evaluating the proposal to transform Quinta dos Ingleses into a public park, the research considers the project's potential to serve as a balanced alternative that reconciles urban growth with the protection of cultural heritage and ecological assets. Particular emphasis is placed on the contributions of such an initiative to environmental sustainability, the enhancement of urban quality of life, the strengthening of social cohesion, and the bolstering of resilience to climate change.

Ultimately, this case study underscores the significance of civic engagement in advancing sustainable urban futures. It demonstrates the capacity of local movements to challenge entrenched development logics and calls for the systematic integration of natural and historical preservation into urban planning frameworks at both local and global scales.

HISTORY OF QUINTA DOS INGLESES. GENERAL CONTEXT ON THE HISTORICAL AND CULTURAL RELEVANCE OF THE FORESTED AND HERITAGE AREA OF QUINTA DOS INGLESES IN THE PARISH OF CARCAVELOS

The Civic Movement and the Historical Trajectory of Quinta dos Ingleses

The history of civic mobilizations around the preservation of Quinta dos Ingleses—while not unprecedented in its general contours within the European context—provides a paradigmatic example of the conflict between competing models of territorial governance in Portugal. It simultaneously illustrates the structural limitations of popular action in confronting political decision-makers who often lack technical expertise and remain beholden to entrenched clientelistic and private interests. This dynamic must also be understood within the context of a relatively young democracy of just fifty years, shaped by a historically fraught relationship to land and territorial administration, marked by episodes of dispossession and diverse constraints.

At the same time, the case reflects the broader emergence of a critical-ecological sensibility. Heightened awareness of climate crisis—frequently amplified by media discourses—has fostered a renewed public consciousness of landscapes as both heritage and as living ecosystems. Local populations have increasingly recognized the intrinsic value of natural and naturalized environments, including afforested landscapes in urban areas, many of which originated in earlier land-use interventions such as reforestation programs on marginal or common lands. In this context, the role of trees in mitigating urban heat and pollution has become a central concern. These factors have stimulated a resurgence of conservationist collective consciousness, expressed through local mobilizations that position landscape preservation as a direct challenge to public authorities and their development agendas.

Historical Background of Quinta dos Ingleses

Quinta dos Ingleses constitutes a relatively small territorial unit of approximately 50 hectares, situated in the municipality of Cascais, within the parish of Carcavelos, on low, sandy coastal cliffs forming part of the transitional zone of the Tagus Estuary.

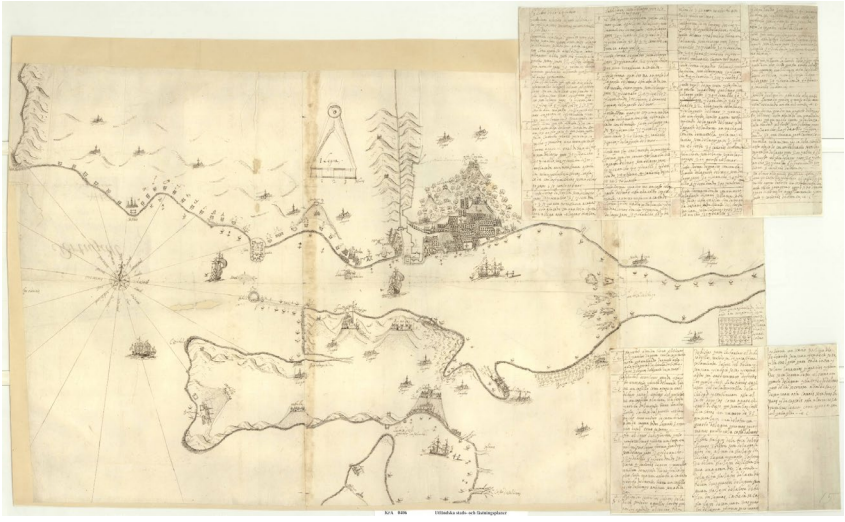


Figure 1. Historical chart of the Tagus embouchure Portugal. Lissabon. Ca. Lisboa 1661 a 4 Febrero. Verdadera relacion del porto de Lisboa y sus fortificaciones modernes, que aun non esta acabadas. Swedish Crown Archives: Riksarkivet, Täby, Arminge Military Archives[1]

The earliest cartographic reference to the area derives from seventeenth-century military surveys: a 1661 map depicts the site as uninhabited and unbuilt, with the sole exception of a defensive wall

adjoining the Fort of São Julião, itself a component of the wider defensive system protecting the Tagus estuary and Lisbon. These fortifications were reinforced during the Napoleonic wars (1807–1814) and persisted into the twentieth century as part of the *Campo Entrincheirado de Lisboa* (Lisbon Entrenched Camp).

Figure 2. Historical chart of the anglo-portuguese defensive lines of Lisboa area: Mappa das linhas de Torres Vedras… 1810 e 1811. Digital copy in Rota histórica das Linhas de Torres, as Linhas de Torres[2]

Despite such military servitudes, the land remained subdivided into smallholdings until the late eighteenth century, when it was consolidated into a single estate: the *Quinta Nova de Santo António*. Conceived as a Baroque leisure estate, it combined a manor house, gardens, and productive farmland, though its agricultural success proved limited, due to poor soils, maritime exposure, and diminishing interest from absentee proprietors.

Figure 3. Carta topographica das fortificaçoens provisionaes...levantada em 1815 pelo major Manuel Joaquim de Sousa Brandão do Real Corpo de Engenheiros, detalhe com a ligação dos redutos de 1810[3]

During the French invasions (1807–1814) and the civil war (1827–1832), the estate became embroiled in national political turmoil. By 1870, it had been leased to the British submarine telegraph company *Falmouth, Gibraltar & Malta Telegraph Co*., later acquired by *John Pender's Eastern Telegraph, and ultimately Cable & Wireless* (1873). Under company ownership, the estate was adapted to accommodate the needs of employees and their families, transforming the property into a hybrid technical, residential, and recreational enclave.

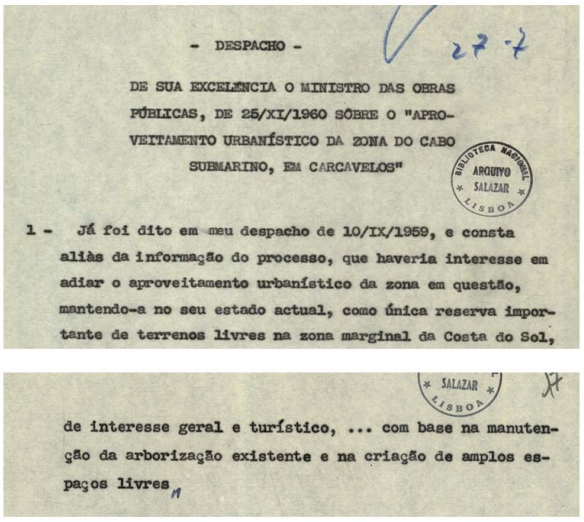
Interventions included:

- the creation of sports fields (cricket, tennis, football),
- limited attempts to revive viticulture, and
- **extensive afforestation** led by company technicians. A surviving draft of a reforestation plan, dated 1921, preserved in the company archives at Portsmouth, attests to the systematic nature of this effort.

This **reforestation** profoundly reshaped the landscape, converting a barren coastal terrain into a densely wooded estate. In this period, the estate's renaturalization aligned with contemporary maritime health culture and reinforced its symbolic and material significance for local residents. The popular designation Quinta dos Ingleses eventually supplanted the official name *Quinta Nova de Santo António*, embedding the estate into the identity of Carcavelos.

From the 1920s onwards, the gradual downsizing of Cable & Wireless and the technological evolution of telecommunications weakened the strategic importance of the estate. Portions were leased for other uses, most notably for the establishment of St. Julian's School in the mid-twentieth century. In 1959, the estate was sold around the time of the foundation of *SAVELOS* (*Sociedade Imobiliária de Carcavelos, Lda.*), marking the onset of enduring conflicts between real-estate actors, political authorities, and local citizens.

Early proposals for urban development date to the late 1950s, following planning studies by *Alfred Agache* and *Étienne de Gröer* in the 1930s–40s. These plans sought to subdivide the estate and reclassify its legal status from rural to urbanizable land. However, the first such proposal was rejected by Minister of Public Works *Eduardo Arantes e Oliveira*, who cited the significant landscape value of the area. This decision provoked direct appeals from the developers to Prime Minister *Oliveira Salazar*, revealing the political stakes of the dispute.



- DESPACHO -

DE SUA EXCELÊNCIA O MINISTRO DAS OBRAS PÚBLICAS, DE 25/XI/1960 SÔBRE O "APROVEITAMENTO URBANÍSTICO DA ZONA DO CABO SUBMARINO, EM CARCAVELOS"

BIBLIOTECA NACIONAL ARQUIVO SALAZAR LISBOA

1 - Já foi dito em meu despacho de 10/IX/1959, e consta aliàs da informação do processo, que haveria interesse em adiar o aproveitamento urbanístico da zona em questão, mantendo-a no seu estado actual, como única reserva importante de terrenos livres na zona marginal da Costa do Sol,

SALAZAR LISBOA

de interesse geral e turístico, ... com base na manutenção da arborização existente e na criação de amplos espaços livres"

Figure 4. Informação para sua Excelência o Presidente do Conselho/Memorando da Sociedade Imobiliária de Carcavelos: Copy of a letter following the ministerial order by Eduardo Arantes de Oliveira to António Salazar on the Quinta preservation, 25 de novembro de 1960[4].

After the closure of the submarine cable station, new development proposals were advanced. In 1982, the Cascais municipal council approved an urbanization plan, albeit without unanimity. A first draft subdivision license was published in 1987, but citizen opposition—gathering momentum since the 1970s—effectively stalled the process. Fifteen years later, the license remained unissued, underscoring both the persistence of civic resistance and the contested nature of land-use transformations in Cascais (https://en.sosquintadosingleses.com/onossopassado).

CITIZEN MOVEMENT FOR QUINTA PRESERVATION

In 2013, Quinta dos Ingleses was granted partial heritage classification. However, this decision represented a weakened and limited resolution, failing to encompass the estate's landscape in its multidimensional and holistic significance as recognized by local citizens. The classification, promoted by the Culture Division of the Cascais City Council, was restricted to the eighteenth-century manor house and the main entrance avenue, while disregarding the broader historical importance of the estate as an integrated whole, including its role in national military engineering and in global communications during the nineteenth and twentieth centuries. Notably, the century-old pine forest was also excluded, despite the stipulations of Cultural Heritage Law no. 107/2001 of 8 September, which explicitly frames such elements as integral to cultural heritage protection. (https://en.sosquintadosingleses.com/onossopassado).

This minimalist designation of Quinta dos Ingleses as a municipal heritage site failed to clarify, let alone justify, the municipality's simultaneous intent to pursue land subdivision and urban development—an agenda that would effectively result in the destruction of the estate's forested heritage. Such inconsistencies and ambiguities intensified public dissatisfaction and mistrust, ultimately catalyzing the

formation of the first civic movement in 2014, *Fórum por Carcavelos*. In its inaugural act of protest, the group organized a human chain on Carcavelos Beach, symbolically opposing the municipal plans that threatened the Quinta's forest landscape.

Figure 5. Aerial View of South Carcavelos.[5]

The *Detailed Urban Restructuring Plan for South Carcavelos* (PPERUCS) was approved despite public consultations that had revealed significant opposition. The disregard for citizen input generated widespread indignation, transforming what had previously been a relatively quiet civic initiative into a visible and influential presence within both the local public sphere and the media landscape.

Figure 6. Real estate project planned for quinta dos ingleses[6].

Between 2018 and 2025, popular mobilization intensified in opposition to the proposed destruction of QI. Both spontaneous initiatives and organized citizen groups emerged, experimenting with diverse strategies of resistance and civic action. Demonstrations took place both on the beach and in the town, including human chains, walking protests, and the circulation of public petitions.

The first petition, submitted in 2021, was presented to the National Parliament's Committee on Energy and Environment and culminated in a Parliamentary Resolution recommending the preservation of QI as a site of local natural and cultural heritage. In the same year, a new civic movement was formally established: SOS Quinta dos Ingleses (SOS QI).[7]

The contestation has since escalated. In 2024, following the authorization granted by the Cascais City Council for land development, construction activities commenced on the estate. This decision prompted a legal injunction filed by a newly constituted association, SOSQI. It is pertinent to note that the authors of this paper, Pedro Mendes and Filipa Candeias, are both founding members of this association as well as local citizens.

This case study brings to light several critical dimensions:
a) the emergence of ecological discourses under an authoritarian regime (initially top-down in orientation);
b) the inherent difficulties of mobilizing the vox populi in the early stages of civic action;
c) the cumulative, "snowball effect" of mobilization, which became particularly evident after 2014, facilitated by social networks and new digital communication platforms.

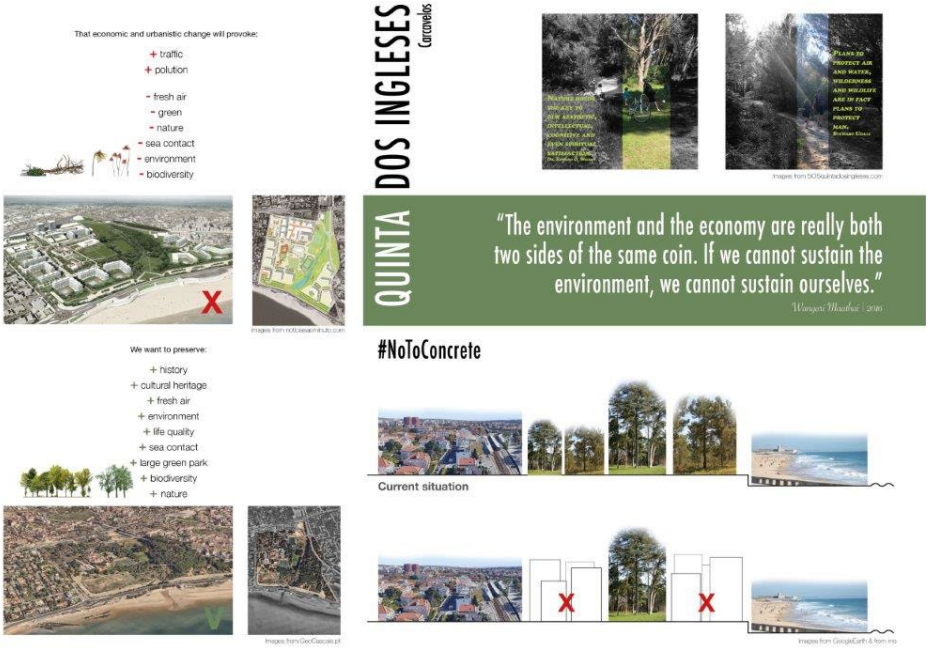


Figure 7. Analysis/proposal of the panel carried out for the New Bauhaus. (Inês Miranda, Pedro Mendes, 2021)

THE FUTURE OF QUINTA DOS INGLESES, POSSIBLE SOLUTIONS, PROSPECTS

Objectives

The proposed intervention is anchored in the design of a **multigenerational public park** that integrates ecological restoration, rehabilitation of existing built structures and pathways, and the reactivation of cultural and historical heritage. The project is grounded in the recognition that the history of the site—both its built fabric and its natural elements—constitutes the foundation of future interventions. The aim is to establish a sustainable balance between constructed and natural environments, giving rise to what may be described as a **"forest architecture"**, where built forms are not imposed upon but rather coexist with the ecological matrix.
Guiding principles include **sustainability, aesthetics, and social inclusion**. These converge in the broader discourse of sustainable urbanism, [8]where environmental stewardship, cultural continuity, and social justice are considered interdependent dimensions of spatial production.

Figure 8. Proposal perspectives carried out for the New Bauhaus. (Inês Miranda, 2021)

Programmatic Possibilities

The program reflects a plural and hybrid conception of space, consistent with the notion of "multifunctional landscapes"[9] and with contemporary calls for resilient and adaptive urban commons.[10] Potential uses include:

- Development of a **multigenerational public park**, accessible to diverse age groups and communities.
- Provision of **public facilities** to support outdoor recreation, sports, and leisure (with a specific focus on surf culture, emblematic of the Carcavelos context).
- Establishment of **community gardens** as spaces of ecological practice and social encounter.[11]
- Revival of **traditional agricultural practices**, including the planting of Carcavelos wine vineyards and cultivation plots, linking local heritage with contemporary sustainability agendas.
- Creation of an **interpretative centre for undersea cables**, acknowledging the site's infrastructural history as part of global communication networks.
- Development of a **documentation hub** on the history of Quinta dos Ingleses and Carcavelos, bridging memory and identity with educational functions.
- Provision of **multipurpose indoor spaces** to host workshops, debates, artistic residencies, and exhibitions.
- Establishment of **spaces for community-building and prospective futures**, enabling experimentation with social innovation.[12].
- Inclusion of **housing and accommodation**, in dialogue with mixed-use development strategies, provided these do not compromise the ecological and cultural integrity of the site.

Civic Mobilization and the Contestation of Urban Development

Between 2018 and 2025, civic mobilization surrounding the preservation of Quinta dos Ingleses intensified considerably, reflecting both the persistence of local resistance and the broader transformations in ecological awareness and civic engagement in Portugal. What began as a relatively dispersed and quiet set of concerns gradually evolved into a structured, multi-scalar movement, marked by diverse forms of collective action, ranging from symbolic demonstrations to institutional interventions.

Citizen initiatives during this period adopted both spontaneous and organized forms. Local residents and concerned stakeholders convened to deliberate on strategies of resistance, drawing on traditions of

neighborhood solidarity while also experimenting with new modes of activism facilitated by digital platforms. Public demonstrations were staged on Carcavelos Beach and in surrounding urban areas, including human chains, walking protests, and other performative acts of dissent. These embodied practices of protest played a crucial role in transforming the defense of Quinta dos Ingleses into a widely recognized cause, both within the municipality of Cascais and across the Lisbon metropolitan area. As Manuel Castells has argued, the "networked" character of contemporary social movements enables local grievances to be amplified through digital media, thereby enhancing visibility and political resonance.[13]

Institutional channels of participation were also pursued. In 2021, the first large-scale public petition was presented before the National Parliament's Committee on Energy and Environment. This act signaled the formal entrance of the movement into the national political arena. The petition culminated in a Parliamentary Resolution recommending the preservation of Quinta dos Ingleses as a site of natural and cultural heritage. Although not legally binding, this constituted a symbolic victory, reinforcing the legitimacy of the movement and underscoring the growing recognition of heritage and ecological arguments within Portuguese political discourse.

The year 2021 also marked the formal consolidation of grassroots mobilization into an organized structure with the establishment of SOS Quinta dos Ingleses. This association represented a strategic evolution from informal protest to institutionalized civic organization, enabling a more sustained and coordinated engagement with municipal authorities, national government, and the wider public. The group actively mobilized media coverage, leveraged social networks, and built alliances with other environmental and civic associations, thereby amplifying its visibility and influence. Here, the dynamics resemble what Sherry R. Arnstein theorized as a struggle for "citizen power" in planning processes, where residents seek to move beyond tokenistic participation towards genuine influence.[14] In parallel, the movement also resonates with Christopher Alexander's conception of participatory, pattern-based design, where collective intelligence is harnessed to generate resilient and human-centered spaces.[15]

Nevertheless, the conflict deepened in 2024 when the Cascais City Council authorized land development on the estate, effectively endorsing urbanization plans long contested by citizens. The commencement of construction triggered a new phase of resistance: the establishment of SOSQI, a legally constituted association formed with the explicit purpose of mounting judicial challenges to the municipal decision. The filing of a legal injunction marked a strategic shift, moving from protest and advocacy into the domain of litigation. It is relevant to note that the authors of this paper, Pedro and Filipa, are founding members of this association and active citizens within the movement, underscoring the intertwinement of research and civic engagement.

Taken together, these developments highlight three critical dimensions. First, the genealogy of ecological thinking in Portugal, which emerged during authoritarian rule in the form of top-down conservationist policies, contrasts sharply with the bottom-up mobilizations that now define the civic landscape.[16] Second, the early difficulties in mobilizing the *vox populi* illustrate the structural barriers faced by grassroots movements in contexts marked by asymmetries of power and knowledge.[17] Third, the post-2014 period evidences a pronounced "snowball effect" of mobilization, catalyzed by the communicative affordances of social media platforms[18] and the growing consciousness of climate crises.

This case study of Quinta dos Ingleses therefore demonstrates the dynamic interplay between local struggles and broader processes of environmental citizenship[19], spatial justice, and the contested governance of urban space. It exemplifies Henri Lefebvre's notion of the *right to the city*, as citizens reclaim threatened landscapes not only as ecological assets but as collective heritage and social

commons.[20] Through these mobilizations, civic actors reshape the terms of public debate and expand the democratic imagination regarding the future of urban development.

CONCLUSION

The case of QI, as examined here, underscores the landscape as a socially produced formation, historically sedimented yet continually subject to processes of spatial reconfiguration and temporal transformation. Far from a neutral backdrop, the landscape emerges as a site of struggle, acquiring ontological and aesthetic density as a repository of collective memory and affect. It is precisely this depth—apprehended by residents as an existential and lived value—that has persistently resisted state-driven strategies of urbanization, generating recurrent refusals in the face of its projected (and perpetually deferred) erasure.

At the same time, the case exposes the structural asymmetries that delimit civic agency: the extraordinary difficulties of sustaining collective mobilization, and the even greater challenge of translating such mobilization into meaningful intervention within the apparatuses of planning and governance. This tension illuminates the uneven terrains upon which spatial justice is contested, and the limits of participation within frameworks dominated by institutional power.

The predicament of the Quinta dos Ingleses thus exemplifies the urgent necessity of rethinking urban development beyond technocratic models, toward practices capable of reconciling economic and infrastructural imperatives with the safeguarding of natural and historical patrimonies. Such a reorientation demands not only recognition of landscapes as carriers of memory and social meaning, but also the institutionalization of mechanisms of direct democracy that allow for the negotiation of antagonistic imaginaries of space and the protection of urban commons.

Ultimately, the case reveals how questions of land, memory, and collective agency converge in the production of space—making evident that urban futures are not merely technical outcomes, but political projects shaped through conflict, negotiation, and the ongoing struggle for the right to the city.

NOTES

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ECLECTIC PROJECT – PARTICIPATORY AND CO-CREATIVE APPROACHES TOWARDS MORE CIRCULAR AND SUSTAINABLE CITIES

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INTRODUCTION

The Role of Participatory Processes in Cities and Circularity Policies

Nowadays, cities face increasing environmental pressures such as high density of socio-economic activities, resource use, waste generation and anthropogenic greenhouse emissions.[1] However, cities also offer unique opportunities to reduce human environmental impacts through circular economy models and to operationalize sustainability in economic activities.[2] For the European Union (EU), the transition to a circular economy (CE) in cities has become a strategic pillar to achieve climate neutrality by 2050, while improving resource efficiency and reducing dependency from virgin resources.[3] The concept of circularity in urban contexts is anchored in sustainability and urban metabolism, in which cities are considered open systems that exchange flows of materials, energy, goods and services.[4]

Despite the widespread recognition of the CE concept as a transformative economic model, the effective transition to circular cities and sustainable urbanization requires much more than technical solutions.[5] Stakeholder engagement and inclusive governance are recognized as key drivers for enabling circular actions and sustainability transition at the local level.[6] The need of engaging communities, civil society, public and private stakeholders in decision-making processes related to urban planning and sustainability transition pathways, is consistently incorporated and encouraged by EU policies.[7]

Participatory methods refer to bottom-up approaches that engage and actively involve communities and stakeholders in development of new policies and in decision-making processes,[8] bringing local perspectives and priorities.[9] They are often allied with co-creative methods and have been shown to improve the effectiveness of urban sustainability transitions, as they integrate local knowledge and create shared value.[10]

Conducting participatory research requires real and strong partnerships with stakeholders throughout the process. This includes joint definition of problems to tackle, selection of methods, gathering information, analysing it, take conclusions and disseminating them.[11]

According to Aga Khan Foundation,[12] participatory processes rely on 5 important phases: 1. Planning (define objectives, methodologies and script); 2. Gathering Information (collect the stakeholders's contributions, worries, potentialities, strengths, and weaknesses); 3. Prioritizing (e.g. needs,

opportunities, solutions and actions to design future action plans to be implemented); 4. Disseminating (providing reports to stakeholders listing their contributions) and 5. Acting (implement actions, clarify, monitor and evaluate them).

To implement participatory processes and to collect real-life inputs from citizens and other stakeholders, Urban Living Lab (ULL) approaches are excellent tools. ULLs orchestrate the participation and collaboration among different stakeholders in cities through co-creation, while contributing to consider the social impacts of circular and sustainability transitions in ways that guarantee social cohesion and inclusion.[13] Simultaneously they enable the validation of innovative circular solutions and strategies by jointly explore challenges and needs, testing and integrating the feedback in real-life environment in sectors such as building, transports, energy.[14] ULLs include diverse perspectives, foster local ownership, enhancing the legitimacy and relevance of CE strategies. The benefits of use of ULLs as efficient methodology to facilitate urban innovation and sustainability were highlighted, as end-users are integrated in the process and the generated knowledge is specific from the context of each living lab.[15]

Greve et al[16] reviewed Living Labs research based on several examples that highlight their wide nature and understanding and recognise that environmental/ sustainability related studies are key areas influenced by such approaches.[17] A deep and logical connection exists between stakeholder engagement and CE, as community collaboration/cooperation is mandatory for an environmentally friendly and inclusive society.[18]There is also a global community of Living Labs, the European Network of Living Labs (ENoLL), that intends to enhance user-driven innovation ecosystems, enabling their implementation worldwide.[19]

The objective of this article is to present the participatory methods adopted in the ECLECTIC project to co-create CE strategies supporting circular and sustainability transitions in small-mid sized cities in the EU. The participatory methods rely on the creation and activation of four City-Region Living Labs (CiRLabs) in Coimbra (Portugal), Bolzano (Italy), Gothenburg (Sweden) and Jonava (Lithuania), showing the local impact generated from the implementation of participatory strategies to engage local/regional entities and communities.

Insights from Case-Studies and Methodological Challenges

Leminen et al illustrated how diverse forms of collaborative innovation, including ULLs, contributed for urban sustainability in six Nordic cities.[20] The utility of ULL as dynamic tools of experimenting, producing new knowledge and testing possible solutions to sustainability changes in cities was confirmed.[21]

Innela et al described the implementation process of ULL´s on CE, in the context of three research projects (RECiProCo, BCC, BHSL), and used a framework similar to that used in the CiRLabs of ECLECTIC.[22] The authors emphasized that “non-experts”/”non-researchers” can give original and unexpected interpretations and contributions towards the development of innovative urban CE pathways. A recent book contains several Finnish case studies on how the engagement of stakeholders from different society sectors can accelerate the CE transition, how to include fringe stakeholders in the process and highlight opportunities for value creation in the context of SME’s.[23]

Table 1 highlight examples of living labs that used participatory methodologies in circular economy, within the EU.

Living Lab	Local Context	Participatory Methodologies	Circular Objectives
Buurzame Stroom (Belgium)[24]	Diverse urban neighborhood	Surveys, workshops, community activities	Circular consumption and local sharing
Tartu Living Lab (Estonia)[25]	Municipal and regional level	Workshops, seminars, co-design	Regional circular economy roadmap
LIVERUR (Europe)[26]	Rural contexts	Multi-actor model with open innovation	Sustainability in small/medium rural businesses
Basilicata Living Lab (Italy)[27]	Cultural heritage in urban area	Co-design with academia, community, and private sector	Circular economy applied to cultural heritage
REPAiR – Hamburg, Amsterdam, Naples (EU)[28]	Urban areas	GeoDesign and spatial participatory planning	Improve environmental and spatial quality

Table 1. EU Living labs on CE topics.

Regarding the methodological challenges of ULL approaches, a recent review referred that a major one is in what extent can the co-designed proposals in pilot studies effectively get "out of the paper".[29] Similarly, Von Wirth et al highlighted that the transformative potential of ULL can be achieved when their lessons can be applied through different sectors, actors, and geographical boundaries.[30] Also, the need to evaluate how ULLs influence civic participation and engagement in CE transition, beyond the "temporary experimental" period, was referred.[31]

Most of the studies focus on cities rather than neighbourhood and district levels;[32] other practical challenges include economic constraints, governance complexities, and stakeholder resistance.[33] Specifically referring to participatory working sessions, other barriers are mentioned citizen lack of motivation/resources/skills to engage, the inadequate communication between them, the difficulty in communicating concepts and showing the benefits to users.[34]

The ECLECTIC Project (Enabling CircuLar Economy aCTIon plans for small and medium-sized Cities)

The ECLECTIC project is a Driving Urban Transitions (DUT) Partnership funded initiative that seeks to facilitate the design, implementation, and monitoring of integrated, innovative strategic action plans for CE that can effectively contribute to climate-neutral, sustainable, and just planning and development of small and medium-sized EU cities.

The ambitions of ECLECTIC are to 1) strengthen connections among local community and stakeholders; 2) foster innovative impact assessment on CE; 3) promote just and inclusive CE strategies; 4) create evidence for circular urban transitions; 5) encourage behavioural change for reuse, repair, repurpose, recycle; 5) capitalize knowledge on CE and 6) raise awareness on CE. The project is a collaborative transnational consortium of 9 partners from 4 countries (Italy, Sweden. Lithuania and Portugal), where four City-Region Living Labs were implemented in four small and medium-sized pilot European cities/regions with different geographical, socio-economic and cultural characteristics, in a quintuple helix multi-stakeholder framework.[35] The city of Bolzano (northern Italy) has 107,000 inhabitants, and the region extends for 7,400 km². The Coimbra region (central Portugal) has 460,000 inhabitants, distributed by 4,335 km². In the city of Gothenburg (Southwest Sweden) live 600,000 people, in approximately 450km^2. Finally, Jonava is a city from the municipality-district in Kaunas County (Central Lithuania), has 43,000 inhabitants, distributed by 944 km². The project is structured into 4 main specific objectives, anchored in different approaches, aiming to deliver advanced tools, metrics, and recommendations as described in Table 2.

Specific Objectives (SO)	Pillars	Outputs
SO1. To develop an impact assessment framework to model and characterize cities in terms of resource flows and stocks, as well as associated life-cycle environmental impacts	Advanced Research: - Urban metabolism (UMAn Model[36]): to analyse city's functionalities - Material flow accounting (MFA): quantify resource flows to and from a city - Life-cycle assessment (LCA): assess environmental impacts from cradle-to-grave	City-profiles (characterization, resource use, environmental impact) Modelled CE strategies potential Monitoring scheme for CE action plans
SO2 To create and activate City-Region Living Labs, trough stakeholder engagement.	Co-Creative stakeholder engagement process Quintuple helix approach (city & regional authorities, businesses & local organizations, citizens and civil society) Diagnosis of needs Identification of Best CE practices Co-create and co-select CE strategies that best fit city-regions environmental targets Choose CE practices to be included in an action plan, to be further provided to local/regional authorities.	4 CirLabs - Coimbra Region (Portugal) - Province of Bolzano (Italy) - Jonava Municipality (Lithuania) - City of Gothenburg (Sweden) Governance Model & Stakeholder Engagement Strategy Portfolio of Best CE practices
SO3. To assess the potential of CE strategies and solutions to contribute to cities' climate neutrality and to provide a monitoring scheme for CE action plans.	Household consumption analysis: socio-economic, demographic and socio-cultural aspects	Monitoring scheme for CE action plans, including a set of key performance indicators (KPIs). CE toolbox to foster replication and exploitation of project results.
SO4. To support the design and implementation of inclusive & just CE action plans.	Interviews with organizations working with vulnerable groups	Policy recommendations to design just and inclusive CE strategies

Table 2. Overview of the Eclectic Project (Objectives, Pillars and Outputs).

Participatory and Co-Creation approach

The participatory and co-creation approach implemented in the ECLECTIC project is presented in this section. The method has been designed as a flexible, replicable and useful approach, to be customized according to the specificity of the 4 pilot city-regions. In addition, it was considered essential that stakeholders feel they are part of the solution and CE movement that is growing in their city-region.
It is schematized in Figure 1 and can be summarized into 8 steps, as described below.

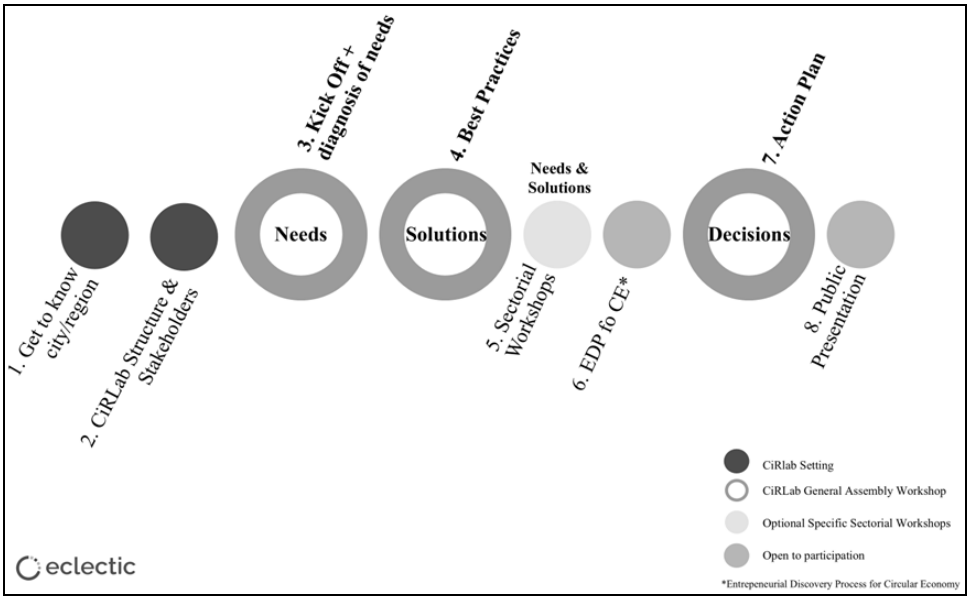

Figure 1. Scheme of the main steps delineated for the Stakeholder Engagement Strategy of the 4 CiRlabs in ECLECTIC project. Details on each step are provided in the text. CiRLab – City Region Living Lab.

1. Get to know your city-region

Templates of CiRLabs characterization are provided to CiRLab representatives to be filled. The main items used to characterize the CiRLabs refer to population size, geography, main economic activities/companies, CE events, social sector/civil society institutions, CE initiatives/strategies, stakeholder engagement strategies already implemented by the city-region, climate change/environmental goals and strategies and social policies for justice and social cohesion.

2. Listing stakeholders working on CE or in areas relevant to CE and choosing CiRLab representatives

CiRLab representatives are asked to list stakeholders belonging to four categories: government, education & research, community, and companies. The criteria for selecting the stakeholder is territorial scope, relevance to the project, involvement in circular economy activities, influence and engagement potential.

3. First CiRLab workshop (Project presentation, diagnosis of needs in CE)

The purpose of the kick off meeting is to present the project to the stakeholders and, through participatory methodologies, to collect their perceived needs on circular economy in their city-region. The information gathered is compiled in a report and sent to the stakeholders because of their participation.

4. Second CiRLab workshop (City-region Urban Metabolism Characterization, portfolio of best practices in CE, identify, discuss and co-create solutions to attend the needs diagnosed in point 3).

During this workshop, results from the analysis of urban metabolism in the city-region are presented, as well as a "Portfolio of circular and sharing economy best practices for small and medium-sized cities".[37] These strategies are the starting points to an interactive working session aiming to co-select and co-create actions to promote CE across the city-region.

5. Sectorial CiRLab Workshops (identify needs, solutions and opportunities for specific economic sectors)

This workshop takes place if key economic sectors with major contribution to city-region inflows and outflows are clearly identified in the urban metabolism analysis. This workshop aims to identify challenges and opportunities for circular and sustainability transitions in specific economic sectors.

6. Entrepreneurial Discovery Process (EDP) for Circular Economy

This activity aims to foster entrepreneurship and innovation in relation to circular and sustainability transitions. It discusses with entrepreneurial actors circular and shared solutions and circular business models. The target are SMEs, businesses and entrepreneurs to co-discover, co-explore and co-develop entrepreneurial opportunities around the CE in city-regions.

7. Third CiRLab workshop (Co-select up to 3 CE strategies for the CiRLab CE Action Plan)

In the third and last mandatory workshop, the main goal is to co-select up to 3 CE strategies to be assessed and modelled using a Life Cycle Assessment to estimate their potential contribution to climate-neutrality and environmental goals of the city-region, to be integrated in the CiRLab CE Action Plan.

8. Public presentation (present the CiRLab CE Action Plan and project outcomes)

The final public presentation aims to disseminate the results of the participatory process to a wider audience. The purpose is to enhance ownership of the CE action plan by the stakeholder engaged and raising awareness among the wider local community, companies and policymakers.

RESULTS: MAIN INSIGHTS FROM THE WORKSHOPS

The characteristics of each city-region (e.g. population, geographical area, socio-economic profiles, past CE projects, partnerships and initiatives) influence the activation and functioning of the CirLabs and the outcomes of participatory methods. Also, the unique CE ecosystem of each CiRLab, consisting of established practices, strategies, actors and different levels of implementation of the CE in the city-region, led to different expectations and needs resulting from the participatory and co-creation approach.

On the one hand, in city-regions with formalized and acknowledged CE strategies and active CE ecosystems where multiple actors are engaged on CE, the clarity and specificity of CE needs and actions was higher. This is the case, for example, of Gothenburg, which is one of the 12 EU pilot Circular Cities and it the Environment and Climate Programme 2021-2030 includes an ambitious CE strategy.[38] On the other hand, smaller city-regions such as Coimbra, Jonava and Bolzano work on CE through the commitments of individual entities to adopt circular practices (e.g. Institutional Pact for the Promotion of the Circular Economy in the Central Region[39]) and stakeholders expressed higher-level opinions and needs in relation to CE strategies.

Table 3 summarizes the main information concerning the activation of the CiRLabs in Coimbra and Bolzano. The results from Gothenburg and Jonava are still under development at the time of writing this contribution.

CiRLab	Participants (nr.)	Participatory Method	Goals	Topics of discussion	Main Outputs
Coimbra, December 2024	25	World Cafe	Diagnosis of needs in CE	i) Definition of Circular Economy ii) CE Priority sectors in the Region iii) Role of Regional Actors iv) CE Regional Needs	i) Reflects the natural concept where "nothing is lost, everything is transformed"; Contributes to Environmental, Economic and Social Sustainability; Reuse, repair, recycle and extend the life cycle of products and materials; Results in greater efficiency in the use and consumption of resources, reduction in environmental impact and creation of economic and social value. ii) Agrifood, Agriculture; Forestry. iii) Adopting and promoting collaborative, conscious and transparent attitudes and cultures; Contributing to raising awareness among the general public about CE. iv) Awareness and Education; Community Involvement; Planning and Cooperation; Innovation and Financing; Development and Implementation of CE Strategies.
Coimbra May 2025	12	Lightning Decision Jam	Present Urban Metabolism results Present Portfolio of best practices Select two regional CE needs, co-create actions and	Needs on: i) CE Awareness & Education; ii) Innovation & Funding	i) Take CE to schools; disseminate good CE practices; create gamification tools to promote CE. ii) Increase dissemination and debureaucratization of existing funding mechanisms.

			analyse impact vs effort.		
Bolzano October 2024	45	Focus Group	Discuss CE in Building Sector	-Challenges and Barriers -Needs and requirements -Synergies and Opportunities -Social Impact	- Setup a Provincial Circular Economy Task Force - Public administration should lead EC policies (e.g. circular procurement)

Table 3. Main results from the Coimbra and Bolzano workshops.

More details on the outputs of Coimbra[40] and Bolzano[41] first CiRLab workshops are available.

LESSONS LEARNED AND CONCLUSIONS

The transition to circular and sustainable cities and regions requires the diagnosis of needs, challenges and opportunities from multiple perspectives, which can be addressed through the engagement of local stakeholders using participatory approaches.[42] In line with Compagnucci,[43] this research found that 1) different urban and regional contexts require different forms of participation, 2) focus on innovation and entrepreneurship is needed, 3) long-terms partnerships towards circularity and sustainability need to be established and collaborations are often side effects of ULL activities; 4) dissemination of results from participatory activities is important to enhance ownership of the CE actions plan and can be mostly digital.

Based on the experience of ECLECTIC and the implementation of the CiRLabs, one key success factor of participatory approaches is clear communication to the engaged stakeholders about the goals of the project, the framing of their participation, expectations from their engagement and use of their feedback in circular and sustainability transitions. Also, showing gratitude for the time spent by stakeholders (ultimately, in promotion of a common good), either by giving feedback on the sessions and on the next steps or sending satisfaction surveys is mandatory. For example, in the Coimbra CiRlab, not all the entities listed for stakeholders attended the first workshop and the number of attendees decreased in the second meeting, which reflects “stakeholder fatigue”. In addition, different city-regions, with different velocities on circular and sustainability transitions demand different framings of participatory approaches, which need to be specific and targeted. For this purpose, providing updated data and information on the CE at the city-regional level help stakeholders understand the status of CE and provides a valuable starting point for feedback collection and discussion. In ECLECTIC, local and/regional challenges and opportunities in CE were collected, supported by the presentation of results on the urban metabolism in each specific city-region, as well as by providing input to stakeholders through a catalogue of best practices in CE. The presentation of data on CE is of paramount importance to have an informed discussion about actions to transitions towards CE and support a future local implementation of CE action plans.

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LISBON AS A SUCCESSFUL SMART CITY MODEL

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INTRODUCTION: SMART CITY PROMISES AND PITFALLS

"Smart city" has become a buzzword in urban development circles. Around the globe, cities are adopting digital technologies, data analytics, and other "smart" infrastructure, lured by promises of greater efficiency and solutions to urban challenges. For city governments, being *"smart"* often seems synonymous with functioning better and attracting tech accolades. For tech companies, meanwhile, the smart city trend opens up new markets and data streams to monetize. Yet, the track record of high-profile smart city initiatives is mixed at best. Ambitious projects hailed as models for the future have sometimes stalled or failed outright – often because they neglected the fundamental element of any city: its people. This presentation examines why Lisbon stands out as a successful smart city, especially in contrast to several much-hyped failures. We will explore how Lisbon's cultural characteristics – its traditions of civic participation, community-driven housing, and municipal leadership – have enabled a more inclusive and sustainable smart city development. In doing so, we'll contrast Lisbon's approach with the pitfalls seen in projects like Toronto's Quayside, Portugal's own PlanIT Valley, and Masdar City in the UAE. These comparisons will highlight the dangers of top-down, non-participatory smart city ventures and underscore the foundational role of citizen participation, public investment, and appropriate technology. Finally, we'll look ahead to the evolving role of AI in cities, considering how Lisbon's people-centric model may be better poised to integrate new technologies in equitable ways.

LISBON'S APPROACH: A CULTURE OF PARTICIPATION AND INNOVATION

Lisbon's smart city success did not emerge in a vacuum – it is rooted in a civic culture that values participation and social innovation. Unlike many "greenfield" smart city projects built from scratch, Lisbon is a living, historic city that has gradually integrated technology as a means to serve its residents, not as an end in itself. The city's official smart city strategy explicitly focuses on citizens' needs, viewing technology as *"only a means to an end"* for achieving sustainability, competitiveness, and quality of life.[1] In other words, Lisbon strives to be *people-centric*. This ethos is evident in the city's long-running participatory budgeting program, which since 2008 has invited residents to propose and vote on local projects. In fact, Lisbon was the first European capital to implement a citywide participatory budget, and it remains one of the longest-running and most influential such programs in the world.[2] Over 11 editions, Lisbon's participatory budgeting (PB) has funneled millions of euros into hundreds of citizen-prioritized projects. It has been internationally recognized – winning Portugal's "Best Participatory Practice" award in 2020 – and studied as a model for how citizen input can drive urban sustainability initiatives. Researchers note that Lisbon's PB achievements *"counteract the dominant engineered approach to urban sustainability"*, showing that residents often advance broader

social and environmental goals beyond what technocratic plans might consider.[3] In short, *participation* is a defining feature of Lisbon's innovation strategy.

Municipal leadership has also been key. In recent years, Lisbon's local government has actively fostered an innovation ecosystem while keeping public interest at the forefront. The city established initiatives like Startup Lisboa (a major incubator) and the Smart Open Lisboa platform to nurture homegrown tech solutions for urban problems.[4] These efforts paid off: in 2020, the European Commission named Lisbon the European Capital of Innovation (iCapital), praising the city's alignment of technology with social inclusion, environmental sustainability, and citizen well-being. The award highlighted how Lisbon's governance approach – reducing bureaucracy, investing in talent, and encouraging collaboration between government, businesses, and academia – created a virtuous cycle of innovation that benefits the public. In fact, Lisbon's mayor at the time (Carlos Moedas, elected 2021) explicitly emphasized turning research and technology into public value, launching programs like the "Unicorn Factory" to drive economic growth alongside social good. All of this reflects a broader cultural characteristic: Lisbon embraces change and technology, but *on its own terms*, ensuring the community is involved and benefits directly.

PARTICIPATORY FOUNDATIONS: HOUSING AND COMMUNITY PROJECTS

To truly understand Lisbon's people-first ethos, one should look at its history of participatory urban development – particularly in housing. After Portugal's Carnation Revolution in 1974, a remarkable experiment unfolded known as SAAL (Serviço de Apoio Ambulatório Local, or Local Ambulatory Support Service). SAAL was a nationwide program (with many projects in Lisbon and other cities) that empowered architects and low-income residents to co-create housing solutions in the wake of acute post-revolution housing shortages. It was ambitious and idealistic, reflecting the revolutionary spirit: the new democratic government provided financial support for a *bottom-up social process* where architects worked *with* neighborhood associations and citizens, rather than imposing designs *for* them. In just 26 months, SAAL teams designed around 170 housing projects involving over 40,000 families, a staggering achievement in participatory planning. Importantly, *"the architects led technical teams (brigades) that designed projects with the residents rather than for them"*, expanding the social role of architecture and giving underprivileged communities a voice in shaping their neighborhoods.[5]

Several iconic housing developments emerged from this era that still inform Lisbon's urban identity. For example, architect Álvaro Siza's Bouça housing complex in Porto (1975–77) was part of SAAL and involved residents in the design process. Likewise, Siza's Quinta da Malagueira project (1977–1997) in Évora extended the ideals of community-oriented design in a new town context, creating human-scaled neighborhoods and innovative communal infrastructure. In Setúbal (a city just south of Lisbon), architect Gonçalo Byrne worked on SAAL housing (e.g. the Casal das Figueiras neighborhood) that similarly engaged local inhabitants in planning their homes. Even within Lisbon's city limits, areas like Bairro Quinta da Bela Flor saw SAAL interventions (as documented by contemporary exhibits) aimed at upgrading informal settlements collaboratively. These projects were not "high-tech" by today's standards – they were concrete, bricks, and sweat equity – but they were *smart* in a deeper sense. They created resilient communities through participatory innovation in architecture. Forty years later, urbanists still point to SAAL as a groundbreaking model of co-production: it *"expanded the social and political role of the architect, addressed housing at the neighborhood scale, and invited the participation of occupants at the beginning of the process"*.[6] The legacy of SAAL in Lisbon and Portugal is a cultural memory that community engagement and social inclusion are fundamental to successful urban development. This legacy set the stage for Lisbon's contemporary smart city projects – from public WiFi installations to sensor-enabled infrastructure – to

be approached with an eye toward empowering citizens and improving daily life, not just showcasing technology.

Figures1, 2. The Bouça social housing complex in Porto (designed by Álvaro Siza) was one of the iconic SAAL projects built with intense resident participation. This 1970s initiative exemplified how Portuguese architects and citizens co-created affordable housing and lasting community infrastructure.

CONTRASTING THE TOP-DOWN FAILURES

Lisbon's achievements become clearer when contrasted with several well-known smart city initiatives that faltered. These cases – Toronto's Quayside, PlanIT Valley near Porto, and Masdar City in Abu Dhabi – serve as cautionary tales of *top-down, technology-first* approaches that failed to gain public support or practical viability.

Sidewalk Toronto (Quayside): In 2017, a Google affiliate (Sidewalk Labs) partnered with Toronto's development agency to propose a futuristic neighborhood on the city's waterfront, famously billing it as *"the world's first neighborhood built from the internet up."* The vision was saturated with cutting-edge tech: autonomous vehicles, sensor networks, timber skyscrapers, and "responsive" data-driven services. On paper, it foregrounded progressive ideals of inclusivity and sustainability, promising *"people-centered"* design and unprecedented innovation. In practice, however, the Quayside project quickly eroded public trust. For the first 18 months, many of the most consequential aspects were hidden from public view, with critical questions about data collection, privacy, land ownership, and governance deflected or unanswered. As observers noted, the project *"defied public accountability"* on fundamental issues – the very *use of public space*, who would control the digital infrastructure, and how citizens' rights would be protected. The result was a growing fear that the Sidewalk Labs vision was *incompatible with democratic governance or the public interest*. In a damning analysis, legal scholars Ellen Goodman and Julia Powles concluded that Sidewalk Toronto *"failed the first test of public administration: engaging the governed."* From the outset, the public forums were superficial – *"skating over"* hard questions like data and privacy – and real decisions were made behind closed doors. This opaque, corporate-driven approach sparked fierce backlash in Toronto. By 2020, amid mounting criticism (and perhaps conveniently aided by economic uncertainties), Sidewalk Labs abandoned the Quayside project entirely. The collapse of Quayside underscores a key lesson: no amount of tech glamour can substitute for genuine public engagement and trust. A city neighborhood cannot be

treated as a product beta-test without accountability; doing so risks *"private gain at the expense of the public* and will ultimately be resisted by the people it is supposed to serve.

PlanIT Valley (Paredes, Portugal): Not far from Lisbon, another ambitious plan floundered – this time before it even got off the ground. PlanIT Valley was conceived around 2010 as a private-sector "smart city from scratch" on a 4,000-acre site near Porto. Envisioned by tech company Living PlanIT, it was often touted as a potential *"living lab"* where advanced urban technologies and an integrated operating system for the city would be developed. However, over a decade later, PlanIT Valley remains largely undeveloped – essentially the smart city that never was. An analysis of the project's failure points to *inadequate funding* (investors were scared off by economic downturns and high risks) and *fragmented planning with no concrete timelines*, which damaged the initiative's credibility. In hindsight, PlanIT Valley may have been a case of vision outpacing reality: it imagined a hyper-modern city in a place with no residents, no organic economy – and thus no margin for trial and error. Without strong public-sector backing or a community base, the project could not weather financial and logistical setbacks. PlanIT Valley's fate illustrates a common pitfall of grand smart city schemes: a city is far more than a collection of tech systems, and building one from nothing requires not just money and gadgets but social and economic foundations.

Masdar City (Abu Dhabi): Perhaps the most striking contrast to Lisbon is Masdar City, the UAE's master-planned eco-city. Initiated in 2006 with extraordinary fanfare, Masdar was supposed to be the world's first zero-carbon, zero-waste city – a showcase of sustainability and innovation in the middle of the desert. The plan called for 40,000 residents in a car-free, solar-powered urban oasis designed by star architects and backed by petrodollars. Fast forward to today: Masdar City, though not completely dead, is a mere shadow of its original vision. Construction slowed to a crawl and was repeatedly delayed; the lofty zero-carbon goal was quietly abandoned. By 2016, only a few hundred people lived there, mostly on a small research campus, and full build-out was pushed to 2030. French photographer Etienne Malapert, who documented Masdar, described *"walking around the silent streets"* and feeling like it was *"a dead, ghostly city…few people in the streets, all is quiet."*[7] Indeed, Masdar has been called a "green ghost town" – a sterile collection of high-tech buildings without the lifeblood of an active city. Why did Masdar falter? Analysts point to several factors: extremely high costs that made living or doing business there impractical for ordinary people, construction delays that sapped investor confidence, and a sense that Masdar was more of a futuristic showpiece than a place built around actual human needs. As one commentator quipped, *"smart cities…should not be just science-fair projects. They need to be practical, affordable, and viable for businesses and residents alike"* – otherwise they end up *"isolated showcases of advanced technology."*[8] Masdar's largely empty streets and half-realized plans drive home the importance of grounding urban innovations in socio-economic reality.

Looking at these failed or stalled projects side-by-side, a common thread emerges. Each pursued a top-down, technology-driven agenda with insufficient regard for the everyday citizens who were supposed to live in those cities. In Toronto, the priorities of a private tech firm eclipsed public accountability. In PlanIT Valley, the gleam of innovation wasn't enough to overcome lack of community and capital. In Masdar, grandiose design ignored practical livability. As a result, all three struggled to attract or retain the very people they needed to succeed. As one industry analysis concluded, *"The common thread to these failures is [failing] to put people – their needs, their financial capacities, their cultural environment – at the center of planning, not technology."* In other words, equating a smart city with just an abundance of new technology is a *misconception*. A true smart city, as Steffan Black put it, *"begins with the citizens and ends with them. It's about them. Always should be. "*[9]

THE DANGERS OF NON-PARTICIPATORY URBANISM

The above examples illustrate the dangers of a non-participatory approach to city-building. When citizens are treated as passive subjects or, worse, mere data points, several risks come to the fore. One major danger is the erosion of democratic governance and public trust. Sidewalk Toronto's saga, for instance, showed how opaque decision-making and privatization of urban planning powers lead to public outcry and loss of legitimacy. A city cannot be "smart" if its residents suspect that the project is a corporate land grab or a surveillance experiment; eventually, political pushback or legal hurdles will stall such initiatives. The "who is in control" question is fundamental: if citizens feel a smart city project is wresting control of public space and data away from them, they will understandably resist.

Another danger is the exacerbation of social inequalities – the digital divide writ large on the urban landscape. Even as we approach an era of driverless cars and high-tech utopias, the digital divide continues to leave marginalized communities behind. Impoverished neighborhoods often exist in a "data shadow," unable to benefit from smart city services and lacking access to the basic improvements that technology is supposed to bring. In a non-participatory model, this divide can worsen: affluent, tech-savvy districts get smarter and greener, while low-income areas are excluded from the planning and remain under-served. A true smart city must proactively narrow this gap, or it risks reinforcing the very inequalities it might have addressed. A smart city must operate in a way that allows us to make headway on the great challenges of our time – from climate change to infrastructure decay to affordable housing – for everyone, not just the well-off. If only certain populations benefit because others aren't consulted or included, then the city isn't really smart – it's just stratified.

Furthermore, non-participatory initiatives can lead to misallocation of resources and technocratic solutions that miss the mark. When planners and tech vendors impose systems without local input, they might solve the wrong problems. For example, an expensive sensor network might monitor air quality in a neighborhood that really needed better public transit or parks – something the residents would have voiced if asked. The failed examples show plenty of "futuristic concepts" that impressed conference audiences but didn't meet actual community needs (Masdar's driverless pod cars come to mind, or Songdo's automated waste chutes). This not only wastes money but can breed cynicism among citizens who see smart city hype as irrelevant to their lives. By contrast, participatory approaches ensure that technological innovation targets real priorities identified by the community. Indeed, Lisbon's participatory budgeting has funneled citizen proposals into projects like new parks, mobility improvements, and public Wi-Fi – many of which tackle sustainability and social inclusion in ways a top-down plan might not have anticipated.

In sum, the danger of excluding people from "smart" urban development is that you may end up with a city that is neither smart nor livable. The city might have the latest gadgets, but no one to use them (the ghost city syndrome), or it might face public revolt, legal challenges, and moral questions about privacy and equity. A city is an organic social system; trying to reprogram it purely through technology, without nurturing the human and cultural operating system, is a recipe for failure. As Goodman and Powles caution, when cities are seduced by "tantalizing visions of privatized urban innovation," they must be very careful not to undermine civic stewardship and public accountability in the process. The Lisbon model teaches us that accountability and participation are not obstacles to innovation – they are the enablers of a sustainable smart city.

CONCLUSION: LESSONS FROM LISBON

Lisbon's example as a successful smart city model offers several powerful lessons. First and foremost: people are the smartest part of any smart city. Technology can provide data and efficiency, but without citizen participation and trust, even the most advanced city will struggle to succeed – as seen in the empty streets of Masdar or the canceled plans of Quayside. Lisbon shows that a city can

embrace innovation while *reinforcing* democratic engagement. In fact, innovation thrives best when citizens are co-creators; their buy-in and local knowledge help avoid costly mistakes and ensure solutions are grounded in reality. From the SAAL housing projects of the 1970s to today's participatory budgets and open innovation challenges, Lisbon's culture has consistently demonstrated the value of "doing with" rather than "doing to" the community. This cultural characteristic – a blend of pragmatism, solidarity, and openness – might be intangible, but it has tangible outcomes: safer streets, greener neighborhoods, a vibrant startup scene, and international accolades not just for innovation, but for inclusive innovation.

Secondly, Lisbon teaches us that municipal leadership and public investment are key to guiding smart city development in the public interest. Instead of handing over the keys of urban innovation to a big tech company (as Toronto attempted with Google), Lisbon's authorities chose to partner with stakeholders on more equal footing – universities, local businesses, social organizations – and retained a strong role in governance. This ensured that technology serves the city's strategic goals (like sustainability, mobility, housing affordability) and that benefits are widely shared. It also means that when challenges arise – be it a data privacy issue or an AI hiccup – the public sector is in a position to address them transparently and uphold citizens' rights. Essentially, Lisbon treated "smart city" not as a product to buy, but as a process it must steward. That approach may not generate as many headlines as a corporate moonshot, but it results in steady progress and resilience. In a world where urban tech failures often stem from profit-driven or top-down misalignment, Lisbon's model of public value-driven innovation stands out as a recipe for longevity and equity.

Finally, as cities worldwide grapple with integrating AI and next-generation technologies, Lisbon offers a hopeful narrative that even these cutting-edge tools can be adopted in an *equitable and inclusive* way. The city's trajectory suggests that embracing new technology does not require abandoning core principles of social justice and community empowerment. On the contrary, those principles can shape how new technologies are used – whether it's AI predicting health needs in a neighborhood or digital platforms amplifying citizen voices. The lesson is that smart cities are ultimately about humans, not machines. The most advanced sensor or algorithm means little if it doesn't improve a person's daily life or if it widens the gap between haves and have-nots. By ensuring that every technological step is accompanied by outreach, education, and participatory governance, Lisbon has managed to be *smart* without losing its soul.

As we conclude, consider this thought: a city's "IQ" is not measured by how many sensors it has or how much data it harvests, but by how well it uses all its tools – social, cultural, and technological – to enhance the well-being of its residents. In that sense, Lisbon's smart city model is indeed wise. It reminds us that the city of the future is not an inevitability handed down by tech CEOs or engineers; it is something co-created by citizens, officials, and innovators working together. And when that co-creation happens, the city becomes not just smarter, but also more livable, just, and sustainable.

NOTES

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ENRICHING UNDERSTANDING OF ECOLOGICAL CITIZENSHIP (FOR A SUSTAINABLE DIGITAL SOCIETY) THROUGH CO-DESIGNED CREATIVE PRACTICES WITHIN THE CONTEXT OF WALES, UK

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INTRODUCTION

The term Ecological Citizenship (EC) was originally coined in the 1990s,[1] expanding understanding of citizenship to address global ecological concerns such as climate change and human-induced mass extinction.[2] More recent research conducted by our team, has incorporated a systemic view that advocates for changes to policies in a sustainable transition,[3] and intergenerational justice,[4] highlighting the importance of ensuring future generations are considered [5] as endorsed by the Well-being of Future Generations (Wales) Act 2015.[6]

As citizens of planet earth, this project envisions an interconnected world where humans, more-than-humans and ecosystems live in symbiosis, where communities are empowered to challenge the status quo and make informed decisions to minimise their impact on the planet and where positive acts and identities of ecological citizenship have a ripple effect, collectively creating a more flourishing planet and society.

This paper will form an overview of how the Wrexham University team are tackling this challenge through co-designed creative practices within the context of Wales, UK. Through explorative, creative and futures thinking design methods, the ongoing research seeks to understand how EC is defined and embodied by those communities at the heart of individual and systemic change. By exploring hyper-localised case studies of EC in action, we ask: how do we make visible existing grassroots networks in society; and encourage more people to consider how small changes in practices can positively affect local communities and impact global issues?

CONTEXT

The context for the research is the wider Ecological Citizens+ project, an Engineering & Physical Sciences Research Council (EPSRC)-funded network development project, led by Royal College of Art, in partnership with Wrexham University and the Stockholm Environment Institute at the University of York. We are a multi-disciplinary team covering the arts, design, science, technology and sustainability.

As a research team we are defining, exploring and enacting EC through research, networking, collaboration, connecting, funding, hosting and sharing events. Through our research, the projects we fund and the collaborations we facilitate, we are exploring such questions as:

- What does it mean to be an Ecological Citizen?
- How can appropriate technologies in a sustainable digital society catalyse acts of Ecological Citizenship?
- How can we engage local communities in relevant, place-based conversations to understand what Ecological Citizenship means to them?
- How can we ensure acts of Ecological Citizenship are accessible and inclusive?
- What can we learn from existing projects, methodologies, practices, communities and cultures in order to better understand how we can all be Ecological Citizens?

Funded Projects

As a network development plus project we are awarding funding to eligible institutions in order that they may define, enact or explore EC through innovative, short-scale projects in a range of different contexts across the UK. We have three thematic funding rounds:

Round 1 *Materials & Resources* - under this theme we received 92 applications and funded 7 projects in our first round (2024-25).

An example of one of these first-round projects is *Flow.Walk.Drag* [7] led by Liverpool Hope University. A microbiology and art performance project which examines historical cholera outbreaks and relates these to current instances of water pollution. Working with local groups and organisations, the team devised local tours led by performers in 'microbial drag,' embodying water-dwelling microorganisms to provoke new perspectives on human-nature relationships.

Round 2 - In our second funding round, we invited applicants to share their ideas around the theme of *The Natural World* and from the 86 applications we received, we are funding 15 projects.

One of these, is *Listen to Bristol,*[8] which asks – *'What if residents from inner-city communities in Bristol recorded urban soundscapes, identified their natural neighbours through their sonic signatures and created unique musical compositions from the digital recordings?'*

Round 3 – Will operate under the theme *Co-creating Everyday Ecosystems.* These are the natural and human-made, or structural, cycles and processes that we engage with (often unconsciously) every day. These ecosystems encompass complex, interconnected networks of key importance, such as food, water, heating and cooling, and mobility and impact and affect us all. Despite their complexity, when we look at these Everyday Ecosystems collaboratively, with a diversity of perspective, they present great opportunities for tangible, real-world change.

These funded projects help us build an Ecological Citizens Network, to further understand how digital interventions create 'the conditions to make change' towards a sustainable post-industrial design society where the 'product' is the experience; where experiences promote human wellbeing and personal resilience; where the digital interventions are sustainable and promote societal resilience.

These projects also use a variety of methods to engage in digital, blue and green spaces, using citizen science and transdisciplinary, multi-modal methods to investigate what EC is, in specific contexts in sites across the UK.

Therefore, these funded projects and all our research activities have helped define and continue to refine our definition of Ecological Citizenship as: *"transcending consumerism, undertaking challenges: impacting culture, enacting sustainable change and empowering resilience. Ecological Citizenship is embedded within communities large and small, urban and suburban from all social classes"*[9] and notes *'This is also encompassed in our approach to the project, to our contextual surroundings, materials we use (and more) as an act of citizenship towards each other and the ecosystem.'*[10]

Theoretical Framing

In terms of theoretical framing, we have used 3 lenses to develop our understanding of ecological citizenship; Social Innovation, Co-Design and Design for Transition.

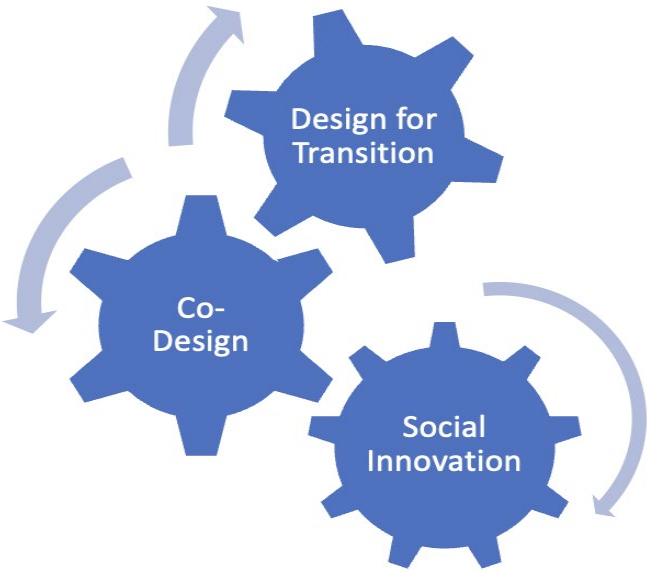

Figure 1. Theoretical Framing

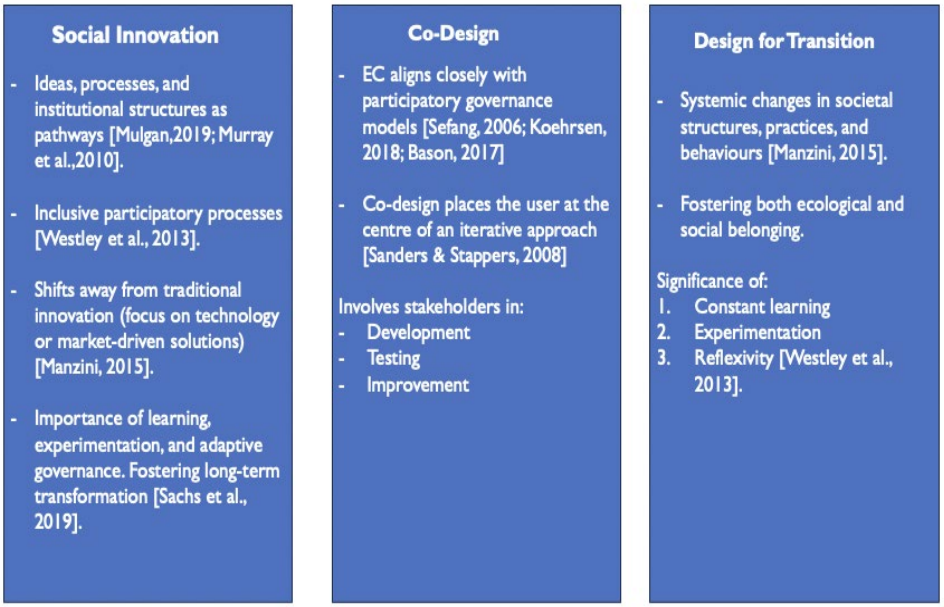

Figure 2. Theoretical Framing – Social Innovation; Co-Design; Design for Transition

EC_Wrexham Network

More specifically, through engagement with a variety of partners, we are developing a regional network in North Wales to identify opportunities for funding and knowledge share, impact policy and to contextualise our work with national and international examples.

We are researching place-based approaches and how community engaged design and arts practices, around the theme of sustainability, can enable and empower a growing network of ecological citizens.

We engaged in a contextual review and looked at selected themes around health and well-being, nature and food and are exploring various locales in our region to share ideas, thoughts, and listen to the questions being asked by local people in order that we learn from best practices at a hyperlocal level. Hyperlocal refers to content, services, or focus that is geographically specific and emphasises information or activities that are relevant to people within a very limited radius —typically targeting a very small area like a single neighbourhood, town, or even just a few streets - a recognisable place. The "hyper" prefix emphasises that this goes beyond just "local"—it's intensely, specifically local, an approach which recognises that people often care most about what's happening in their immediate vicinity.

We are currently focussed on North East Wales, but have representatives from national organisations as part of the group including Natural Resources Wales, NHS, National Trust, and Groundworks Wales, in addition to regional representatives from local authorities.

We discuss topics relevant to the network – which may be project-specific or of regional or national significance. Our first few sessions looked at using 'How might we' statements to explore our research question with the wider network, through discussion and active participation using digital platforms, such as a live Miro Board. We mapped these against both the 17 strands from the United Nations 'Sustainable Development Goals'[11] and the Well-being of Future Generations Wales Act 2015, much of which focuses on sustainability, citizenship and society and underpins much of Welsh Government policy. [12]

Figure 3. United Nations - Sustainable Development Goals

Figure 4. Wellbeing of Future Generations (Wales) Act 2015

Micro-Projects

A series of specific 'micro-projects' – i.e. small hyper-local investigations, were developed to explore and make visible existing networks across North East Wales to discover what EC activities were taking place in our region and to enable us to platform any instances of good practice.

Project 1 - Repurpose/Reuse/Redistribute

A mapping exercise which explores the question *'How do we make visible existing grassroots networks in society; and encourage more people to consider how small changes in behaviour can positively affect local communities and impact global issues?'*

The title is a take on the Reduce/Reuse/Recycle slogan and has been amended to acknowledge that much of the local activity in this subject area appeared to be reacting to need, with a move towards sustainability a secondary consideration. Therefore, the rationale focused on community agency and networks which comprised existing community growing initiatives; food distribution; skills share; reuse and repair. Methods included desk research to uncover hyperlocal networks and wider regional and national organisations operating in our study area of North Wales. This resulted in targeted visits to existing groups and activities, including food distribution and skills-share events, in the company of artist Emma-Jayne Holmes, who documented the information exchange through drawing.

Figure 5. Interviewing participants at an event at Outside Lives (Flintshire) aimed primarily at combating rural isolation, mental health through social and skill- development. ©Emma Jayne Holmes

An analysis of the data collected showed that while those attending or volunteering at hyper-local projects or events were undertaking ecological actions identifiable as ecological citizenship such as sustainability, stewardship, recycling, most were unfamiliar with the term. *"No. I don't know what that is. I consider myself a steward of the world and I attempt to live my life in accordance." And "Yes. Someone who is aware of the benefits of recycling, reusing and sustainability and practices these things to the best of their abilities."* Motivations for attending or volunteering at the three sample sites, included environmental concerns, community engagement, social interaction, and personal development. Many respondents valued the opportunity to share knowledge and connect with others. For example, one respondent commented *"To help promote the message of sustainability to others."* Most of those surveyed also attended or volunteered at other community initiative, not all of which were environmental. The benefits of attending were widely reported with positive experiences centring around emotional and social benefits, community interaction, sharing knowledge, and helping others are strongly highlighted.

Although this was a small sample size, the data collection, including analysis of the attitudinal surveying and interviews detailed above, has informed our understanding of hyper-local projects and existing networks, and resulted in further groups being invited to our North Wales EC network. To date this has enhanced our understanding and work together through developing further collaborative research and project work.

Project 2 - EC_shorts

EC_Shorts – began as a 'How might we? exercise to engage children in our EC work. It explores the question – *'How might we encourage young people in North Wales to engage in Ecological Citizenship through exploring their agency in local green spaces/places, organisations and networks via the production of short films.'*

Eight Primary schools across North Wales took part in developing short films on Ecological Citizenship. Firstly, undertaking film-making workshops conducted by filmmaker Joe Edwards and researcher Tracy Simpson, to expand their understand of Ecological Citizenship and develop film-making skills.

The children were asked to respond to a series of questions, firstly, *'What does ecological citizenship mean to you?'* The children expressed a wide range of responses, including a sense of duty to care for the Earth, suggesting that ecological citizenship involves recognising their role in environmental protection to safeguard the planet. Practical actions around recycling and waste reduction were common themes that reflect an understanding of responsible consumption and acknowledge actions which are possible within children's limited agency – litter picking and putting waste in the correct bin. Some responses highlighted the importance of natural resources, emphasising a connection between ecological citizenship and preserving nature – "*We wouldn't live, we wouldn't be alive, without the plants around us."* Citizenship was linked to community, belonging and collective responsibility – *"Citizen equals community."* Others expressed an emotional or civic aspect of being an ecological citizen – that we should be *"friends with nature"* and that *"if you throw something away it's on your mind."*

The children's responses to the second question, *'If the earth could speak what would it say'* – included pleas for help and protection on the earth's behalf and show empathy and a sense of loss or fear – *"Help me; Save me, I don't want to be killed by rubbish*; and *"Repair the damage."* They also showed awareness of human impact and a desire for change and move away from harmful actions - *"Stop destroying my rainforests; Stop making big cities as it's hurting the earth; Stop littering."* There was also an understanding of global environmental issues and a resultant call to action - *"Let's end climate change together; Turn the taps off properly; Recycle properly."*

The third question, *'If you could make a difference in 1 minute, what would it be?'* called for action. The responses platformed a curb on waste, particularly litter-picking, recycling, energy misuse and water conservation such as reducing shower times and turning off taps. Other suggestions focussed on planting, caring for nature and creative reuse and crafting – *"Make bird feeders; Plant seeds/bulbs; Make stuff out of cardboard."* These suggest that children want to contribute to biodiversity, greening, and see the use of creative methods as a tool for sustainability.

They then used a series of creative methods to respond to these prompts in small groups, through creating storyboards to outline their ideas, and then documenting the ecology of their school grounds through photography.

The children created forty-seven storyboards which follow the broad themes outlined above, with characters engaging in behaviours which demonstrate the consequences of wasting natural resources, including destructive actions around pollution and climate change. However, many detailed a story arc in which the protagonist underwent a personal transformation or engaged in community action and collaboration illustrating more positive themes of nature and wildlife protection or creative reuse and innovation.

Post-workshop the children then made collaborative films together in response to what they had discovered and the skills they had learned. Which platformed a move away from children's individual autonomy and behaviour change towards collective action and social and ecological change. These films were then premiered at a special screening at Ty Pawb, in Wrexham in July 2025.

Findings

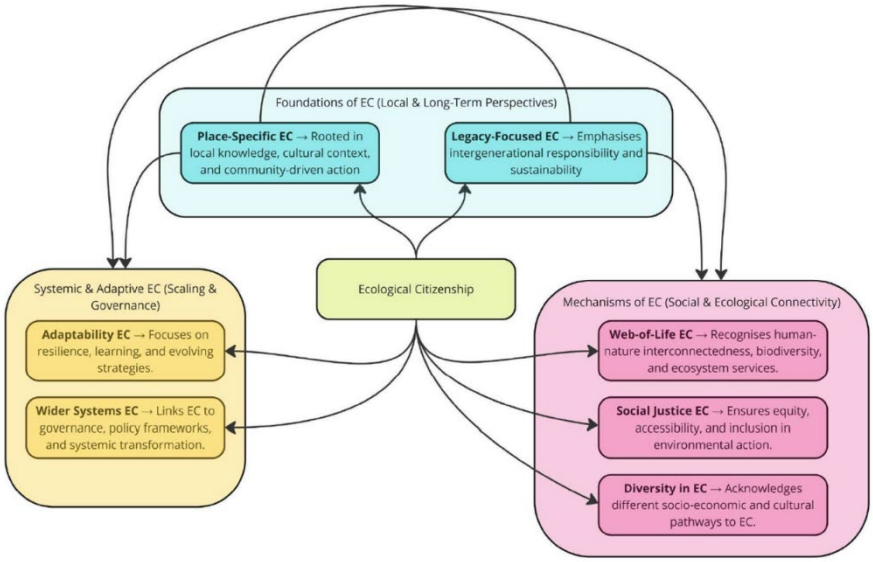

Figure 6. The Seven Ecological Citizen Tenets

We have used the information we have gathered and the activity we have created to feed into our current thinking around EC which we have outlined in Figure 6, above.[13] These are grouped into three specific areas, which detail seven tenets.

The two art-based micro-projects detailed in the section above fall under four of the seven identified - Place-Specific EC, the projects are rooted in community-driven action; Web-of-Life EC, they recognise human-nature interconnectedness through connection to local environments; Social Justic EC, they seek equity, accessibility and inclusion in environmental action by working directly with the most vulnerable; and Diversity in EC, organisations we worked with acknowledge and create different socio-economic and cultural pathways to EC.

Ecological Citizenship has a critical role which acknowledges the value of people-centred, participatory approaches that empower individuals and communities to co-create locally specific and socially creative solutions.[14] It promotes adaptable, situation-specific strategies that address both local and global challenges through a "glocal" lens, which demand that local interested and affected people think global but act local,[15] particularly in relation to governance models. By integrating EC's seven dimensions, sustainability initiatives become more inclusive, resilient, and grounded in justice, intergenerational equity, cooperation, and local knowledge, fostering shared accountability and meaningful change.

Recommendations

The exploration of Ecological Citizens (EC) is ongoing; however, we can already see the benefits of the research in terms of our own networks and knowledge. The following eight recommendations emerge from this work and offer pathways for advancing ecological citizenship in practice.

First, prioritising co-design and participatory governance ensures communities are central to decision-making. This grassroots approach fosters policies shaped by local voices and lived experiences. Equally vital is developing policy frameworks that connect local actions with global sustainability goals. These must be flexible, context-sensitive, and aligned with international commitments.

Intergenerational dialogue is essential, especially in the light of the Wellbeing of Future Generations (Wales) Act 2015. Creating platforms for cross-generational exchange allows traditional wisdom and innovative ideas to inform environmental stewardship. Supporting community-led, nature-based

solutions empowers local action, drawing on intimate knowledge and fostering ownership of initiatives like habitat restoration and sustainable food systems.

Inclusive sustainability policies are needed to ensure all community members can participate, regardless of background or circumstance. Removing barriers and distributing benefits equitably strengthens ecological citizenship. Education and public awareness are also foundational. Integrating EC into curricula and campaigns builds long-term cultural change and helps individuals understand their roles and responsibilities.

Digital tools offer new avenues for engagement, enabling communities to monitor environments, share knowledge, and coordinate actions. These technologies should enhance—not replace—direct participation. Finally, embedding EC principles into climate action plans ensures that strategies are rooted in local capacity and community engagement, making ecological citizenship a core element of climate response.

CONCLUSION

We believe the EC lens has a critical role in creating adaptable, situation-specific solutions that support justice, resilience, and intergenerational equity, cooperation, inclusivity, and local knowledge. That by utilising EC's seven dimensions, sustainability initiatives can be flexible, inclusive, and grounded in shared accountability.

As citizens of planet earth, this project envisions an interconnected world where humans, more-than-humans and ecosystems live in symbiosis, where communities are empowered to challenge the status quo and make informed decisions to minimise their impact on the planet and where positive acts of ecological citizenship have a ripple effect, collectively creating a more flourishing planet and society.

Through our project work, network development and wider research we have actively sought to catalyse change by bringing unheard voices to the forefront and new people together. In doing so, together we have co-created new ideas that have led to future research projects and innovations, spaces or opportunities for action, connection, collaboration and change. This includes an emphasis on equitable, accessible and inclusive structures in developing EC governance[16] that advocates for co-created and democratic research design[17] – a central aspect of the research developed by the Wrexham University team.

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PARTICIPATORY DESIGN WORKSHOP: THE CASE OF RIYADH MUNICIPALITY PROJECTS

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INTRODUCTION

Participatory design in architecture and urban design is a collaborative process that involves stakeholders, residents, and communities in the planning, design, and decision-making of built environments, ensuring the outcomes reflect local needs, values, and lived experiences.[1] In contrast to the traditional design process and rather than treating people as passive recipients of spaces designed by professionals, participatory design treats them as active co-creators.[2] This approach emphasizes inclusivity, equity, and local knowledge, aiming to produce urban environments that are more functional, culturally appropriate, and socially sustainable.[3] Healey argued that planning and designing are not just technical activities; it is also about fostering dialogue and mutual understanding.[4]

The participatory design approach has grown significantly in recent years across the globe.[5] Many critics associated participatory approaches with achieving a sustainable built environment that is socially and culturally appropriate.[6] People-centered approaches and participation have also been widely integrated into international regulations and guidelines of the literature of the international organisations, such as UN-Habitat.[7] Prominent critics have argued for the adoption of a participatory approach to the design of the built environment, for example, Christopher Alexander indicated that "*People should design for themselves their own houses, streets, and communities*".[8] Similarly, Jane Jacobe argued that cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.[9]

Despite the well-recognized advantages of participatory approaches, their application in Saudi Arabia and the wider Middle East remains at an early stage of development. The body of scholarship addressing this issue is still limited, and where it exists, it often lacks robust, well-documented case studies. In recent years, however, participation has gained increasing prominence, particularly under the framework of Saudi Arabia's Vision 2030, which emphasizes sustainable urban development that is both culturally grounded and socially inclusive.[10] Nevertheless, several challenges continue to constrain the effective adoption of participatory practices. These include the accelerated pace of urban growth, the prioritization of giga-projects with top-down planning structures, and the absence of a clear regulatory framework to institutionalize community participation.[11]

In general, while the literature strongly advocates for the adoption of participatory processes in urban planning and architectural design, there remains a notable scarcity of documented cases worldwide, and

particularly from Middle Eastern contexts. This study seeks to address this gap by examining recent experiences of participatory design in Riyadh. It focuses on three newly developed projects in which participatory design workshops were implemented. The objective is to document these experiences and critically evaluate the processes adopted from the perspective of stakeholders, thereby providing a deeper understanding of the contextual factors, challenges, and opportunities involved. Furthermore, the study aims to propose a framework that can guide the adoption of participatory approaches in future projects, ensuring that they are more context-sensitive, inclusive, and effective.

METHODOLOGY

This study follows a qualitative comparative case study analysis. The study selected three cases of Riyadh Municipality projects that have followed a participatory design approach. The data for those cases is obtained from project documentation, which includes reports, presentations, project communications, photos and maps, surveys, etc. These data were the basis for this study and enable researchers to understand the project process in its entirety. The second set of data is in-depth interviews with key stakeholders of each project. These interviews provided valuable insights into the projects and answered many questions regarding the selected participatory approach. Interview analysis involved transcription and then thematic analysis. The two data sets of documentation and interviews provided a comprehensive overview of each case over the process followed, and, in the end, an overall framework was drawn to help define the issues and techniques for future projects aiming to pursue a participatory approach.

THE CASE STUDIES

Riyadh Museum Project

The project

The Riyadh Museum project is an old symmetrical building with a central dome built in the 1970s by King Saud as a reception building to house the events of the kingdom and receive the kings, princes, and presidents of the neighbouring countries. The building was later turned into a library of King Sau University, and after that became vacant and derelict. The building is located in the center of Riyadh, in Almalaz area. The building was called *Bahwa Alamanah,* which means the Municipality Reception. This project aims to renovate the old building and turn it into a museum that narrates the city's history and development.

The intention of the project also extended to renovate the surrounding area and create a social hub for people to come and socialize. The plan was to create a blend of architecture and landscape that not only exhibits the city's history but also reflects its ambition and future aspirations.

Figure 5. Images of Riyadh municipality reception building in the 1970s.

The Design Process

The process of this project involved participatory interactive workshops at different stages of the design process. Two of the workshops preceded the concept design alternatives produced by the architect. At the beginning of these projects, there were many questions with no answers and no vision. Riyadh Municipality aimed to preserve the building and find a new suitable purpose that can benefit the community. However, it was not clear what the building should be and what the options and design directions are. Thus, the first workshop's key aim was to create a vision and build consensus on what the project should be. The workshop was explorative in nature and included a brainstorming activity. The participants of the workshop were museum specialists, academics and historians, NGOs, and government representatives. The participants' organizations included universities, research centers, architecture and heritage commissions, MISK foundation, ICOM Arab and Saudi Arabia, and finally Riyadh Municipality. The key outcome of this workshop was identifying the general key trends and directions for museum design.

The second workshop aimed to develop the museum story and select three design scenarios from the initial brainstorming results developed in the first workshop. As the basic concept was to create a city museum, there were three key directions for the museum story to be based on: the first is cultural, where the focus will be placed on the art, society, history, and heritage, tangible and intangible. The second is a historical museum where the city's history will be exhibited from the beginning to the present and future, through which the key city landmarks, areas, people, achievements, and others will be the content of the museum. The third is urban, focusing on how the city developed, its planning and economy, its geography and natural and human resources, its maintenance and operation. The workshop has resulted in developing each of these directions in terms of aim, vision, and mission, targeted audience, visitor experience, proposed subjects, considerations, and scenarios. The participants of the second workshop included museum specialists, academics and researchers, NGOs, government representatives, in addition to the project team.

The results of the first and second workshops have been taken by the architect to produce three concept design alternatives responding to the initial scenarios of the museum story developed from the workshops. After that, the third workshop was conducted to evaluate the three proposed designs and provide feedback for the architect to consider. The architect then worked on integrating the third workshop review and produced a developed proposal to be presented to the Mayor to select the preferred direction and proposal. The Mayor, although he did not approve the architectural design, selected the historical narrative of the museum. The architect later produced a developed design for the selected scenario, and the space program was also further developed to include some spaces for municipality activities. The developed design outcome was also reviewed by different stakeholders in two focus group sessions to ensure better coordination and communication.

Figure 6. CGI of the proposed architectural design for the selected design alternative.

In general, the participatory process adopted in the Riyadh Museum project (Figure 3) was not only tailored to the specific requirements of the project but also remained adaptive to emerging challenges and contextual issues as the design progressed. The approach reflected the inherent complexity of developing a museum that is both architecturally significant and socially meaningful. By actively involving stakeholders and community representatives, the process aimed to ensure that the museum would resonate with the cultural identity, historical memory, and everyday experiences of the city's inhabitants. This responsiveness to local needs and values highlights the potential of participatory design to bridge the gap between professional expertise and community expectations, ultimately contributing to a more inclusive and context-sensitive urban cultural project.

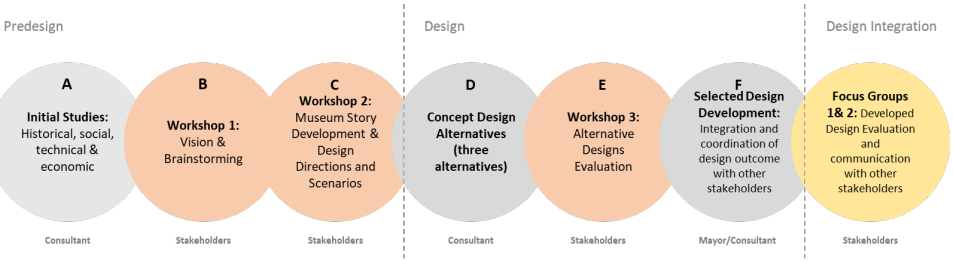

Figure 7. A diagram summarises the participatory design process for Riyadh Museum project

Al-Zal Market

The Project

Al-Zal is a historical and traditional market located in the old historical walled city of Riyadh. The market is surrounded by other traditional markets and next to the old, large mosque, the governor's palace, justice square, and the Masmak palace. The market is a lively place and a living heritage destination at the intersection of history, shopping, and culture. Currently, there many celebrations and events take place in addition to a weekly Friday auction selling some traditional local heritage antiques making it a cultural destination for tourists and locals alike. The project of Al-Zal market aims to regenerate the area and provide an improved and enhanced cultural experience.

The Design Process

The interactive design process followed in Al-Zal market consisted of two stages of interactive workshops. The first workshop was conducted with participants from the shops and business owners, planning and heritage experts, consultants, and municipality project teams. The workshop objectives were to identify the needs for the different users of the market, in particular, the shop and business owner, to understand the cultural and working patterns in the market, to identify the current and possible future challenges and how to address them, and finally to initially develop some ideas and possible design alternatives. The key purpose was to allow for some ideas to emerge and try to build some consensus on what the future of the area should look like. The workshop identifies some different interests between the shop owners and the Ministry of Culture events in the area that attract some tourists and locals. The owners' key concern was that their sales generally fall at the time of these events, as the people coming are not the key buyers but rather people coming for walking and touring the area. In general, the first workshop was critical for the consultant and municipality to identify some of the issues and challenges and then trying to consider that in the regeneration process.

After the completion of the first workshop, the consultant started the design process and produced three different alternative designs. The three alternatives focus on different visitor experiences with varying levels of intervention from high to minimal. The second workshop was then conducted to seek stakeholders' feedback on the design alternatives and a critical review of the proposed design alternatives. The sessions of the workshop were structured to evaluate the design in six areas. The areas for review included the connections with the surrounding areas, visitor experience, design efficiency, response to the area requirements and opportunities, urban and architectural style, and economic impact. Participants involved in this workshop included the project teams of the municipality and consultant, experts, and governments and other institutions representatives.

Following the stakeholders review of the project, the consultant had further developed the design alternatives to be presented to the mayor for selection of the preferable option. Unfortunately, at this stage, the project was postponed due to an intersection between the Municipality and Riyadh Commission for Riyadh City RCRC over the area. A masterplan for the whole central area of the center of Riyadh was being developed, which led to this project being postponed until a new guideline and overall vision for the area were established. Figure 2 shows a diagram of the participatory design process of Al-Zal Market.

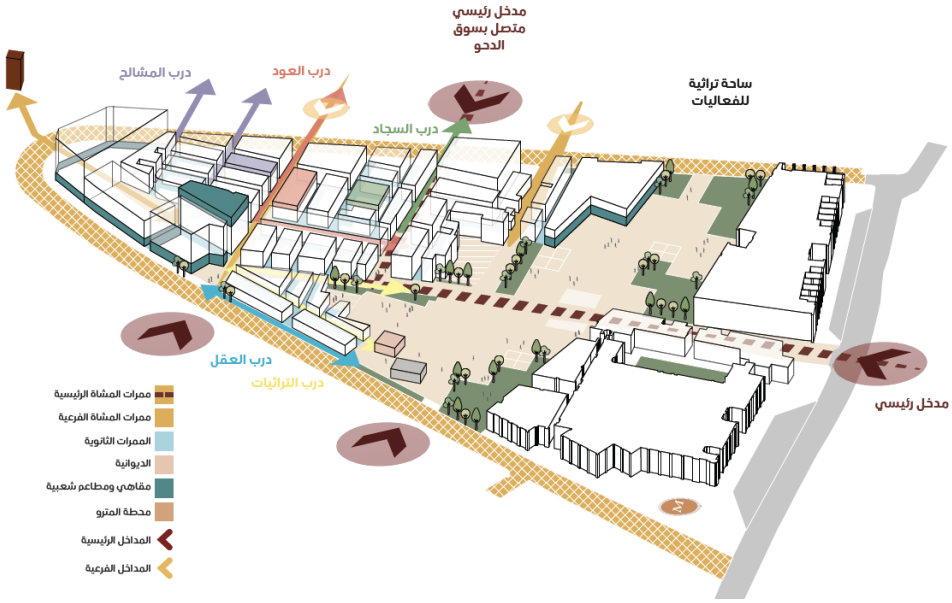

Figure 8. A diagram of a proposed design alternative for Al-Zal Market.

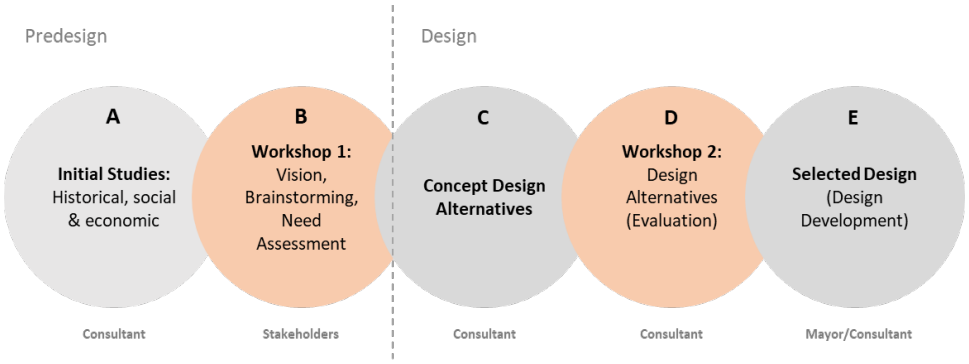

Figure 9. A diagram of the design process of Al-Zal Market

The Historical Municipality Building

The Project

The historical municipality building was built in the 1940s by the prominent Al-Sheikh family. The building is a two-storey mud building built following the Najdi style. The building is located in Al-Diyrah, which is known historically as Hotat Khalid. The building was inhabited by some of the famous people and poets. The municipality's interest in the building started when the building was listed as the first Riyadh Municipality building in the registry of heritage buildings of the Ministry of Culture. Following this inscription, the municipality acquired the building from the previous owner. The building and the area were in a bad derelict condition. The project aimed to preserve the building's historic value and heritage, regenerate the surrounding area, and improve access and infrastructure.

The Process

The historical municipality renovation project adopted a participatory design approach through a series of sequential interactive workshops at different stages. The project firstly started by a documentation of current conditions and social and historical studies for the building and the wider area. After the studies

and documentation stage, the first workshop was conducted. The workshop aimed to create a vision and build a consensus on what the building should be. In this workshop, six development scenarios were developed, taking into consideration factors such as building function, the architectural style, and the urban strategy. A total of 43 participants from different backgrounds representing different stakeholders were involved.

The second workshop was conducted two weeks after the first one and aimed to further develop the six development scenarios that resulted from the first workshop. The developed scenarios should include an initial space program, design user experience, and develop strategies for integrating the new project into the historic urban fabric of the area. The participants of this workshop were young architects and students in addition to the project team. The first and the second workshops were held during the predesign stage, which gave the architect good ideas to produce a conceptual design that takes into consideration the different ideas and expectations of the building and the area should be.

Based on the outcome of the predesign stage, the consultant proposed four design alternatives with varying levels of intervention—from high to low. The first option was a research center with a library, offices, a multipurpose hall, services, and a resto-café. The second was a heritage educational center featuring art and cultural spaces, a traditional restaurant and café, shops, a multipurpose room, a Diwaniya, services, and offices. The third proposed a boutique hotel offering an authentic traditional experience for local and international visitors. The fourth suggested a cultural hub focused on outdoor spaces with minimal architectural intervention.

The four design options were presented to the mayor, who selected a hybrid of the first and fourth alternatives. The consultant refined this into a final proposal for a cultural and heritage hub (Figure 6). A final workshop was then held to fine-tune the design and align stakeholders, with the overall process summarized in Figure 7.

Figure 10. Computer-generated image of the final proposed design (a cultural and heritage hub), the design consists of a restoration of the old historic building and new modern additions.

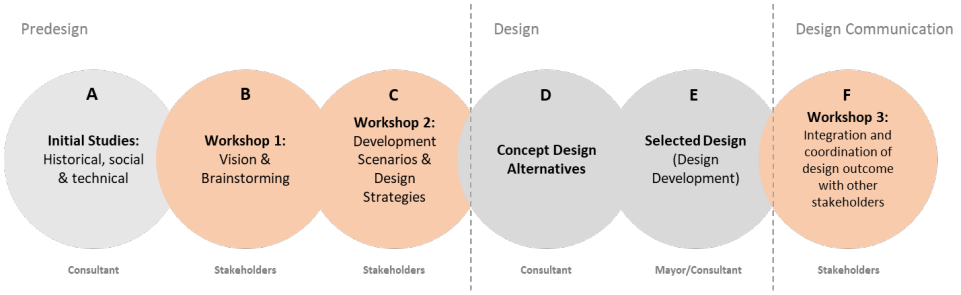

Figure 11. A diagram of the participatory process of the historical municipality project.

THE FRAMEWORK

The participatory design approach adopted by Riyadh Municipality in key architectural and urban projects is promising. The approach followed, focusing on participatory and interactive workshops, reveals a lot of opportunities that effectively engaged the relevant stakeholders. Although the process was time-consuming, resource-intensive, and required significant efforts for planning and execution, it has delivered a well-designed project that responded to the locals' needs and the general varying interests of the engaged participants. It also has a long-term value that lies in fostering social sustainability, enhancing cultural relevance, and ensuring outcomes are widely accepted by the general public. The study also reveals that there is no one universal model for participatory design; rather, approaches must be carefully tailored to the specific objectives, requirements, and contextual conditions of each project.

To help with facilitating the adoption of a participatory design approach, this study suggests a framework for projects pursuing such a process. The framework (Figure 8) divides the design process into three phases: predesign, design phase, and post-design phase. The purpose of participation usually responds to the design phase. In the predesign phase, participation can be for consensus building, needs assessment, or understanding context. Similarly, participation in the design stage could be with the purpose of codesign, design review, or consultation. The participation in the post-design stage can be used for design communication, design coordination, or design integration. Different tools can be used across the phases; however, their use can be restricted by context, cost, or availability.

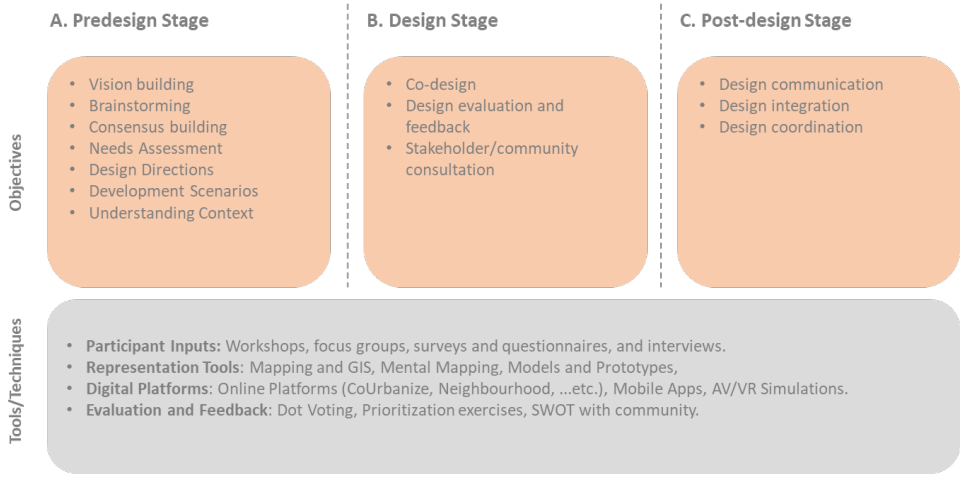

Figure 12. A framework for adopting a participatory design approach

CONCLUSION

Participatory design approaches are quite new in the context of Riyadh and KSA in general. This study shows that there is a growing interest in involving communities and stakeholders in the design process for the significant benefits that can be achieved. This study presented the recent efforts of the city of Riyadh to adopt a participatory approach in some of its public projects. This study argues that in the context of Saudi Arabia, where the planning system remains largely centralized and top-down, participatory design still offers significant opportunities. It can complement formal planning mechanisms by integrating local knowledge, building trust between institutions and communities, and strengthening the legitimacy of planning decisions. This study proposed a framework to guide the design of participatory approaches. The framework divides the design process into three stages: predesign, design, and post-design, and then suggests objectives and possible techniques and tools. Although the framework shows a wide range of participatory techniques and methodologies available, their successful adoption depends on aligning them with project goals, stage of development, available resources, and timeframe.

In conclusion, participatory design should be understood not as an optional add-on, but as a strategic approach that enriches the planning and designing process. By embedding inclusive practices, it becomes possible to move toward more resilient, context-sensitive, and people-centered urban development models.

NOTES

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CO FACILITATING STAKEHOLDER LEARNING AND KNOWLEDGE EXCHANGE FOR LIVABLE CITIES: A DIGITAL PARTICIPATORY PLATFORM FOR SHARED MOBILITY

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INTRODUCTION

The pursuit of sustainable and environmentally friendly mobility has become an urgent priority in light of climate change and its associated environmental impacts. Urban areas in particular face challenges of traffic congestion, air pollution, and limited infrastructure, demanding innovative mobility solutions.[1] Addressing these challenges requires the adoption of green technologies such as micromobility, electric vehicles, smart public transit, and multimodal platforms, which can reduce CO_2 emissions and improve urban quality of life.[2]

Shared mobility has emerged as a promising response by offering flexible, on-demand access to e-scooters, bikes, car-sharing, and ride-hailing, thereby reducing reliance on private cars and fostering sustainable travel behaviour.[3] Central to these systems are mobility hubs, which serve as integrated access points connecting multiple modes of transport. They strengthen intermodal connectivity between urban centers and suburban areas while contributing to climate goals and mitigating traffic-related externalities.[4] Despite this potential, their implementation and long-term impact remain under-researched, highlighting the need for collaborative knowledge sharing across cities.[5]

Successful scaling of mobility hubs depends on multistakeholder collaboration among local governments, transport providers, and technology developers. Such cooperation could be useful for integrating transport modes, aligning infrastructure investments, and ensuring user-centered design. Long-term success further relies on continuous knowledge exchange and institutional learning, enabling stakeholders to share best practices and adapt solutions to local contexts.[6]

A digital learning platform offers a structured environment for this collaboration. By providing decentralized access to case studies, toolkits, and real-time peer exchange, such platforms can accelerate innovation and enhance the scalability of mobility hubs.[7] Previous research on participatory platforms has shown their effectiveness in extending engagement and fostering co-creation.[8] Platform-driven ecosystems, such as open government data collaborations, have further demonstrated how structured digital environments can strengthen institutional learning, reduce redundant efforts, and support municipal cooperation.[9]

Research Questions

One initiative addressing these challenges is the SharedDiMobiHub project, an Interreg North Sea collaboration that aims to accelerate the adoption of shared mobility hubs by fostering stakeholder engagement across municipalities, mobility providers, and urban planners. The project emphasizes participatory governance, co-creation, and the development of scalable and context-sensitive mobility solutions to support more sustainable and livable urban environments.[10] As part of its mission, the project is developing the Shared Mobility Hubs Learning Platform, a digital environment designed to facilitate cross-city collaboration, exchange of best practices, and mutual learning. This platform seeks to build collective capacity among stakeholders, reduce knowledge silos, and promote the diffusion of innovative hub models across regions.

In light of the context outlined above, the present study investigates the potential of digital platforms to facilitate learning and knowledge exchange among diverse actors, with a view to enhancing the implementation and expansion of shared mobility hubs. The paper specifically addresses the following research questions:

(1) What are the broader implications of shared mobility hubs for improving urban mobility systems and advancing livability and sustainability in cities?

(2) How can digital and participatory platforms foster stakeholder learning and cross-city knowledge exchange to support the successful implementation and scaling of shared mobility hubs?

With these questions in mind, the next section explores the existing body of knowledge related to shared mobility hubs, drawing on key studies, frameworks, and best practices to build a comprehensive understanding of the current landscape.

State of the art

Shared Mobility

Academic discourse on shared mobility has expanded, with emphasis on city-wide dynamics. Simulation studies show that dynamic ridesharing can replace multiple private cars and reduce traffic,[11] while an OECD study highlights gains in job accessibility and equity.[12]

Beyond efficiency, research addresses social, regulatory, and sustainability aspects. User adoption depends on trust, platforms, and incentives, while governance frameworks shape long-term impacts.[13] Reviews stress potential benefits for CO_2 reduction, air quality, and livability, especially in multimodal cities.[14] Interactions with public transport remain mixed: ridesourcing often substitutes bus travel, whereas carsharing and rail show complementarity.[15]

Despite these insights, evidence gaps persist. Many studies rely on simulations with little long-term empirical data.[16] Uncertainties around governance, intermodality, and policy integration remain, with challenges in aligning frameworks for sustainable inclusion in public transport.[17]

Digital Platforms

Recent advances in digital learning environments show strong potential for knowledge transfer in shared mobility, offering tailored tools, data frameworks, and AI-driven interfaces to support stakeholder communication and decision-making.

AI-centric methods are reshaping mobility data use. Pablo et al.[18] applied transfer learning with topic modeling and word embeddings to classify ride-hailing content across platforms, enabling robust cross-platform sentiment analysis and demonstrating value for chat-based stakeholder interfaces. Liu and White[19] introduced a meta-learning framework (ST-net) for spatial-temporal prediction, allowing rapid adaptation to new cities with minimal data by leveraging patterns from multiple contexts.

Yet, gaps remain. While open-source systems like Moodle support educational recommendation tools,[20] their application in mobility governance and cross-city learning is limited. No framework currently

integrates adaptive dashboards, meta-learning, and conversational interfaces for stakeholder-specific learning in this domain—representing a key opportunity for advancing collaborative, context-sensitive governance.

METHODS

The ShareDiMobiHub project brings together a multidisciplinary consortium of 17 partners, including 13 main and 4 subpartners, from five countries in the North Sea Region (Table 1). The partnership includes universities, municipalities, transport authorities, and private-sector stakeholders, reflecting the complex, cross-sectoral nature of urban mobility challenges. The project is led by the Province of Utrecht (Netherlands) and is scheduled to run until end of September 2025.

Name	***Country***	***Type***
Province of Utrecht (Lead Partner)	*Netherlands*	*Regional Government*
Capital Region Denmark	*Denmark*	*Regional Government*
Vestfold and Telemark County Municipality	*Norway*	*Regional Government*
Norwegian Public Roads Administration	*Norway*	*National Authority*
Municipality of Tønsberg	*Norway*	*Local Government (Municipality)*
Municipality of Porsgrunn	*Norway*	*Local Government (Municipality)*
Municipality of Skien	*Norway*	*Local Government (Municipality)*
POLIS Network	*Belgium*	*City Network / NGO*
City of Amsterdam	*Netherlands*	*Local Government (City)*
City of Leuven	*Belgium*	*Local Government (City)*
University of Antwerp	*Belgium*	*University*
Municipality of Skien	*Norway*	*Local Government (Municipality)*
Vervoerregio Amsterdam	*Netherlands*	*Regional Transport Authority*
Mpact	*Belgium*	*NGO / Mobility Organization*
Autodelen.net	*Belgium*	*NGO / Carsharing Platform*
City of Rotterdam	*Netherlands*	*Local Government (City)*
Hamburg University of Applied Sciences	*Germany*	*University / University of Applied Sciences*
Hogeschool Utrecht	*Netherlands*	*University of Applied Sciences*

Table 1. Overview of Project Partners Participating in the SharedDiMobiHub Initiative.

Table 1 lists the participating institutions and organizations involved in the SharedDiMobiHub project, including their respective countries and organizational types. The consortium brings together regional and local governments, mobility networks, NGOs, and academic institutions across multiple European countries to collaboratively develop and implement scalable shared mobility solutions.

Broader Implications

To address research question 1 on the broader implications of shared mobility hubs for urban mobility, data was collected by the SharedDiMobiHub consortium across multiple countries (see Table 1). This paper focuses on two contrasting case studies: Grenland (Norway) and Belgium, chosen for their differing implementation strategies and data availability.

In Grenland, a 2024 pilot tested the staged roll-out of a shared e-bike system, beginning in a sub-region and later expanding to a wider area. Data were collected between April and October 2024, supplemented by a winter study to assess seasonal effects. Evaluation combined GPS usage logs with pre- and post-implementation surveys, providing both quantitative and qualitative insights into usage patterns, satisfaction, and perceived mobility impacts.

The Belgian case adopted a system-level perspective, covering shared e-bikes, e-scooters, mopeds, and car-sharing services throughout 2024. Here, self-reported data from mobility providers offered a national overview of availability, coverage, and uptake. While user surveys were not included, this approach enabled comparative analysis across service types and cities.

Together, the two cases capture real-world usage patterns and deployment contexts, offering complementary perspectives. Their findings form the empirical basis for identifying lessons on scalability, public transport integration, and user acceptance, thereby informing broader implications for urban sustainability across European settings.

Digital Platforms

To address research question 2 on how digital and participatory platforms can foster stakeholder learning and cross-city knowledge exchange for scaling shared mobility hubs, a multi-method approach was applied within the SharedDiMobiHub project.

First, consortium workshops with local governments, mobility providers, researchers, and civil society actors identified key stakeholder groups and qualification needs. Insights from partner cities and operators were then analyzed to define the thematic modules of the learning platform, focusing on inclusion, scalability, governance, and integration with public transport. Complementary best practices and interactive diagnostic tools were developed to help practitioners assess inclusiveness and adaptability in their own contexts.

Building on shared experiences, strategic guidelines and motivational levers were formulated, including recommendations for incentive structures and stakeholder engagement. All content for the digital platform was pedagogically structured to ensure accessibility and practical relevance. In parallel, evaluation criteria were defined, covering usability, modularity, interactivity, and openness to co-creation.

The resulting platform thus functions not only as a knowledge repository but also as a participatory environment for continuous dialogue, co-development, and peer learning across European cities engaged in advancing shared mobility hubs.

RESULTS

The analysis of the Belgium and Grenland case studies show several cross-cutting implications for improving urban mobility systems and advancing sustainability and livability through the implementation of shared mobility hubs. These findings reflect how both operational strategies and policy design can significantly influence adoption, efficiency, and environmental impact (Table 2).

1. Supply and Accessibility as Key Drivers

Belgian data show that municipalities with higher vehicle density (≥5 per 1,000 inhabitants) achieved twice as many trips per vehicle. Adequate fleet supply is thus essential for reaching usage thresholds and generating public value.

2. Multimodal Integration Boosts Adoption

Integration into public transport apps and ticketing increased Belgian usage by 18%. In Grenland, hubs near train and bus stations strengthened multimodal connec-tivity and reduced car dependency.

3. Digital Infrastructure Enables Scalability

Geofenced parking zones in Grenland proved more flexible and cost-efficient than docking stations, allowing rapid expansion to new neighborhoods.

4. Behavioral and Environmental Impact is Measurable

Surveys and GPS data in Grenland quantified avoided car kilometers and CO_2 reductions, offering a replicable method for assessing sustainability benefits.

5. Urban Design and Regulation Reduce Externalities

Belgium's color-coded parking zones cut vandalism by 30%, showing how design and clear rules can improve service quality and reduce costs.

6. Transparency Drives Policy Innovation

Public dashboards with KPIs fostered competition among Belgian cities, promoting data-driven improvements and greater accountability.

7. Pilot-First, Scale-Second Supports Adaptive Learning

Grenland's phased rollout allowed adjustments based on real-time data, reducing risks and supporting evidence-based planning.

Implication	**Belgium**	**Grenland**
Supply drives demand	≥5 shared two-wheelers per 1,000 → 2× trips per vehicle	–
Multimodal integration increases use	App + public transport ticket → +18% usage	Hubs near PT (bus/train) stations improve access
Flexible infrastructure enables scaling	–	Geofenced digital parking → scalable, low-cost deployment
Environmental impact measurable	–	GPS + surveys → CO_2 savings & car km avoided
Design reduces negative externalities	Color-coded parking zones → –30% vandalism	–
Transparency fosters improvement	Public KPIs and dashboards → city benchmarking	–
Phased rollout enables learning	–	Pilot → insights → scale-up
Supply drives demand	≥5 shared two-wheelers per 1,000 → 2× trips per vehicle	–

Table 2. Broader Implications for Shared Mobility Hubs: Comparative Findings from Belgium and Grenland

This table summarizes key lessons learned from two case studies (Belgium and Grenland), highlighting broader implications for improving urban mobility systems and advancing sustainability. The findings illustrate the role of service availability, system integration, infrastructure design, and governance strategies in enabling the successful implementation and scaling of shared mobility hubs.

Choose of digital platform foundation

Based on consortium input and stakeholder discussions, Moodle was selected as the foundational platform due to its suitability for cross-city knowledge exchange and stakeholder learning.

Stakeholders identified

Workshops identified three key stakeholder groups for developing and scaling shared mobility hubs: entrepreneurs, policymakers, and civil society. Entrepreneurs (mobility providers, technology developers) ensure innovative solutions and operational viability. Policymakers establish regulatory frameworks, integrate shared mobility into public transport, and secure institutional support. Civil society (community organizations, end users) contributes perspectives on accessibility, inclusion, and acceptance. Qualification and learning objectives were defined for each group to guide the pedagogical and mediadidactic design of the platform.

Identified Content

Stakeholders emphasized a multi-format approach to maximize knowledge transfer. Recommended features include expert videos, interviews, discussion forums, practical tools, guidelines, downloadable materials, and relevant literature—ensuring applicability across diverse urban contexts.

Choice of six modules

Workshops defined six thematic modules to structure the platform: (1) Introduction, (2) Opportunities and Challenges, (3) Concepts and Technologies, (4) Development and Implementation, (5) Funding and Procurement, and (6) Key Takeaways (Fig. 1). This modular design ensures a logical learning progression and allows stakeholders to engage according to their specific needs.

Figure 1. Screenshot of the digital learning platform with six modules, providing targeted access for diverse stakeholders

CONCLUSION

Discussion

This study aimed to explore the broader implications of shared mobility (Research Question 1) as well as the role of digital learning platforms in supporting knowledge transfer between cities (Research Question 2). The combination of empirical findings and a systematic comparison with current research allows for a differentiated discussion of both aspects.

Broader Implications of Shared Mobility

The analysis of the two case studies (Belgium and Grenland) provides evidence that the effectiveness of shared mobility hubs varies depending on the urban context, thus providing an illustration of the relationship between the urban context and the effectiveness of shared mobility hubs, as outlined in research question 1. In densely populated regions with a well-developed public transport system, as exemplified by the Belgium case, hubs serve as a supplement and amplifier of intermodal travel behavior. Notable positive effects were observed in terms of modal shift toward sustainable transport, more efficient land use, and more flexible mobility behavior. In contrast, in less urbanized areas such as Grenland, success was found to depend more heavily on scalable technical infrastructure (e.g., geofencing, flexible parking zones) and active local governance. One key insight was the importance of data-driven governance, including tools such as monitoring, key performance indicators (KPIs), and publicly accessible dashboards. These instruments not only create transparency but also stimulate inter-municipal learning. For example, as shown in the Grenland case, a KPI-based approach can generate a form of healthy competition between cities, e.g., which one achieves the highest CO_2 reduction and thus earns the label of "greenest city." In both cases, the deliberate combination of qualitative communication with users and quantitative impact measurement emerged as a critical success factor.

These findings align closely with literature and state of the art. Studies such as the ITF[21] or simulation-based work by Banister[22] confirm that shared mobile

nty offers high potential in dense urban areas, provided that services are well-integrated with existing systems and clearly communicated to users. Likewise, the literature[23] emphasizes that trust, platform transparency, and regulatory clarity are essential prerequisites for sustainable and lasting impact.

Overall, it becomes evident that shared mobility should not be treated as a standalone measure. Rather, it must be embedded within a broader strategy of integrated urban mobility and development planning. The hubs themselves should be seen not as a goal in and of themselves, but as a means to support new mobility routines and increase the resilience of urban spaces.

Digital Learning Platforms for Cross-City Knowledge Transfer

The development and pilot implementation of the ShareDiMobiHub learning platform demonstrated that structured, digital learning tools can serve as an effective mechanism for practical knowledge transfer, particularly when different cities, stakeholder groups, and governance models must be addressed. The platform's modular design allowed complex content to be presented in an accessible and context-sensitive manner, offering stakeholders a clear and approachable overview. However, several limitations became apparent. While the use of an established platform such as Moodle ensured technical stability and ease of access, it also revealed didactic and structural constraints, especially regarding flexible content design and the integration of graphical or interactive elements.

For more advanced use cases, AI-driven approaches offer greater flexibility and efficiency. Studies such as Pablo et al.[24] have shown that AI models are capable of detecting regional variations in user behavior based on social media con-tent and generalizing these insights, a foundation for more adaptive, context-aware learning in the future. Similarly, the meta-learning model MetaST[25] demonstrates that spatial-temporal patterns can be transferred across cities and adapted even in data-scarce environments. A

further advantage of AI-based systems is that incorporating new data is far less time-consuming, as there is no need to manually create new modules; the model can be retrained or fine-tuned on updated datasets.

At the same time, the current body of research reveals a critical gap: there is no documented framework combining traditional learning management systems like Moodle with AI-powered pattern recognition and conversational knowledge interfaces in the context of urban mobility.[26] Likewise, multinational applications remain underexplored, despite the increasing relevance of cross-border mobility strategies within the EU. The ShareDiMobiHub platform can thus be seen as a pioneering model, bridging concrete implementation with emerging theoretical concepts.

Recommendations and Outlook

Project findings suggest several recommendations for advancing digital learning environments in sustainable mobility. First, iterative piloting and scalable design are crucial; the "Pilot First, Scale Second" approach enables adaptive systems, particularly for small and medium municipalities. Second, AI-driven interaction formats should be integrated, embedding transfer learning models into conversational interfaces to provide personalized, context-sensitive knowledge transfer.

Future platforms should build on open-source systems like Moodle, enhanced with modern UI/UX, gamification, and modular extensions such as simulations. Open interfaces and interoperability especially integration with mobility data platforms and governance ecosystems via standardized APIs are key to reducing silos and enabling real-time use cases.

Equally important is stakeholder-centric learning through role-based pathways, adaptive curricula, and co-creative modules. To ensure long-term impact, platforms must be anchored beyond project lifecycles, for example within local capacity-building strategies, EU mobility programs, or urban governance structures.

Overall, digital platforms can act as pivotal tools for cross-city knowledge transfer, collaboration, and innovation in sustainable urban mobility.

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VISION PLAN FOR ST. MARTINVILLE: A SMALL LOUISIANA TOWN

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INTRODUCTION

The Community Design Workshop (CDW) is a research institute and part of the School of Architecture and Design at the University of Louisiana at Lafayette. It is committed to rebuilding and renovating neighborhoods and downtown areas by establishing clearly defined public spaces such as streets, squares and parks. It supports alternative forms of transportation and a greener city that is more sustainable and compact. The CDW's focus is to aid neighborhoods, small towns, cities, and other stakeholder groups in visualizing their potential as communities. Operating as a faculty-led enterprise that engages both undergraduate and graduate students, the CDW has expertise in architecture, planning, urban design, and sustainability.

The CDW's role in proposing a 30-Year Vision Plan for the City of St. Martinville has been multifold; to produce conceptual and design development drawings, facilitate public meetings, and respond to feedback from the public. In developing the Plan, the CDW acted as a think-tank that explored options for the guided redevelopment of the existing municipal, commercial, and residential areas and addressed options for future development. Several community meetings were hosted allowing interested parties to participate in guiding the Plan's realization. Finally, the CDW revised its initial redevelopment proposals, influenced by community feedback, into the proposed 30-Year Vision Plan. Without the valuable suggestions and thoughtful input from the people of St. Martinville this Plan would not be representational of the community's dreams, goals, and desires. "It emphasizes the important role of cities and positive urbanism in shaping more sustainable places, communities, and lifestyles. And, it implicitly emphasizes that our old approaches to urbanism-our old views of cities, towns, and communities-are incomplete and must be substantially expanded to incorporate ecology and more ecologically responsible forms of living and settlement."[1]

COMMUNITY OUTREACH/VISION PLAN

A Vision Plan cannot be effective without community engagement. The people of St. Martinville are a valuable source of local knowledge and are well-positioned to share their hopes for the future of their city. Providing public forums for discussion and feedback is a common technique implemented in all CDW projects. These forums manifest themselves in two distinct types of discussions: charrettes and public meetings. Charrettes are short design exercises that assist the CDW faculty and students in addressing a wide range of possible design issues. Numerous charrettes were held to understand both the present conditions and future possibilities for development. The charrette process assisted the CDW

in arriving at possible directions that might take place and in providing drawings and images that could communicate these ideas to the public. Public meetings were then held to provide a forum for presenting the ideas generated during the charettes and provide a forum for discussions about urbanism and community. These public meetings encourage the formal exchange of ideas between designers and the public—in this case the leadership and citizens of St. Martinville. "A key component of smart growth is to ensure early and frequent involvement of all stake-holders to identify and address specific needs and concerns."[2] Using the feedback gathered from these public meetings, the CDW was able to emphasize and present concepts and proposals that constitute this 30-Year Vision Plan for St. Martinville's future.

Figure 1. Community members engaging with students and faculty from the School of Architecture

ST. MARTINVILLE – HISTORY AND EVOLUTION

The area now known as St. Martinville was originally settled in the mid-Eighteenth Century by the Poste des Attakapus people. This initial settlement was supplemented by the arrival of French explorers and traders. The settlement was further shaped by the Great Expulsion of 1755 when Acadian refugees began arriving and settling along the Bayou Teche. During this time, the bayou served as a connecting waterway that linked developed regions of Louisiana with one another. St. Martinville, considered the third-oldest city in Louisiana, has subsequently evolved into a vibrant and diverse community.

The city of St. Martinville is now poised to become Acadiana's next significant bedroom community—offering a quiet, friendly, engaging, and safe place to live while travelling to surrounding areas for work. St. Martinville is located only a few miles from larger, neighboring cities allowing residents access to work without the congestion of living in those cities. The thoughtful development of St. Martinville will provide for improved recreational opportunities, additional housing options, improved municipal services and infrastructure, and family-friendly amenities that will foster improved lifestyles and stronger community relationships. "Wherever we settle, we disrupt and reconstitute an ecosystem that now includes us. As we each pursue a personal project, an implicit social structure appears on the land: a family home, then a compound, then a village. There, surrounded by or surrounding our means of sustenance, we cluster our homes in a refuge of health, safety and welfare with clearly marked boundaries, connected to each other by a fine-grained system of paths and streets that link us together and to sharded symbolic centers, crossroads, commons or greens, or sacred meeting place."[3]

DOWNTOWN SQUARE

It is essential for St. Martinville to preserve, manage, and maintain its historic downtown square as a means of reviving, celebrating, and sustaining the community's goals related to lifestyle, culture, and economic progress. This historic architecture and the deep cultural roots that it represents stand as a visual testament to St. Martinville's resilience and character. "One of the most important elements of city design is the square or plaza."[4]

The historic downtown square is the heart and soul of St. Martinville. It acts as a constant reminder of the history, culture, and values of the people. Anchored by Saint Martin de Tours Catholic Church and its associated Presbytère and Parish Hall, the square is bordered by several streets. Civic and commercial developments front these streets creating one of the most beautiful public spaces in the region. Six of the buildings comprising the downtown square are listed on the National Register of Historic Places—a list of historic sites worthy of preservation as nominated by Federal, State, and Local Preservation Officers. Protecting the downtown square through sensitive restoration and targeted economic development will ensure that St. Martinville will have a strong core that safeguards its identity, reflects its values, and encourages continued civic pride. "Activity in a square is important for its vitality and, therefore, also for its visual attraction."[5]

STREETSCAPE ENHANCEMENTS

Main Street

St. Martinville's Main Street corridor serves as the backbone of this historic city, providing a shared sense of community and offering a central space for civic engagement, commerce, dining and culture space for both residents and visitors. It also functions as the city's main transportation route.

A well-designed Main Street reflects local culture and values while shaping the expectations of its citizens. An important expectation includes well-regulated traffic and a safe, secure environment for drivers, cyclists, and pedestrians. Another expectation is that the corridor offer an enjoyable experience for all these users.

To meet these goals and enhance the streetscape, a range of planning strategies can be applied. These include improving sidewalks and bike paths to support alternative transportation, the addition of landscaping, creating curb extensions, and emphasizing parallel parking. Such improvements not only promote safety and accessibility but also strengthen the potential for commercial growth along Main Street by providing convenient parking and walkable access.

Figure 2. Main Street Streetscape Enhancements. Top: Existing Plan, Bottom: Proposed Plan

Olivier Street to Bridge Street

This corridor provides the opportunity to begin the process of connecting the historic downtown square to St. Martinville Primary School and St. Martinville Senior High School. This corridor also serves to connect adjacent neighborhoods to the commercial center and functions to create a truly walkable community. Establishing curb extensions at intersections will allow for improved parallel parking

control and create safer Main Street crossings by limiting the distance pedestrians must travel across traffic. Curb extensions also regulate the flow of traffic as they form visual constrictions that slow drivers. Enhancing sidewalks, providing bike paths, and installing appropriate landscaping, to include street trees, also serve to create safe and enjoyable experiences.

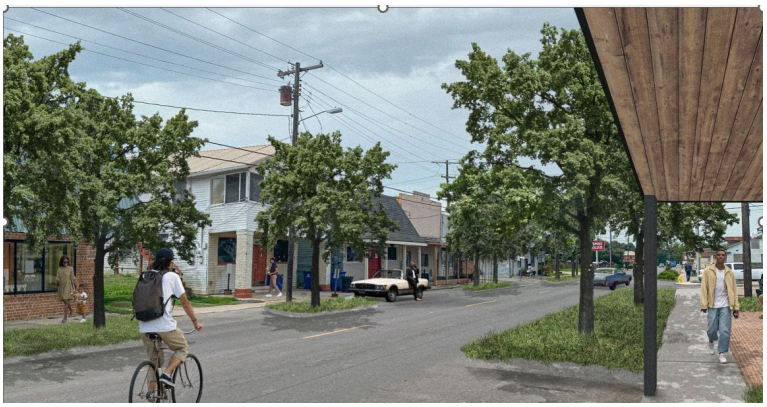

Figure 3. Proposed Main Street Streetscape

EXISTING NEIGHBRHOODS

Existing neighborhoods were evaluated to determine how they support both the livability and future growth of St. Martinville. This evaluation highlighted multiple opportunities to enhance, update, and renovate both neighborhood streetscapes and individual properties to assist these neighborhoods in remaining safe, comfortable, and appealing to current and future residents.

Neighborhoods are significant points of pride to those who live in them; “home” is essential in defining who we are as both individuals and as communities. The 30-Year Vision Plan encourages the thoughtful renewal of existing neighborhoods to help them retain their original character, enhance their safety, and provide amenities that are appealing to current and future residents. Neighborhoods included in the plan provide a baseline for development that should be considered for all neighborhoods. The plan recommends that existing sidewalks be upgraded, new sidewalks be added, pedestrian street crossings be defined, and that appropriate streetscape landscaping be added throughout the neighborhoods to enhance livability, improve walkability, and provide improved pedestrian safety. These improvements will have an immediate impact on neighborhood identity and on community pride. Additionally, new streets should be added to connect existing neighborhoods to adjacent amenities, infill development is encouraged to increase housing stock, and small infill neighborhoods should be added to provide increased neighborhood density.

Church Street to West Hyacinth Street

Home to both the Early Head Start Academy and the City Pool, this neighborhood sees significant pedestrian traffic, suggesting that sidewalk upgrades and additions would be beneficial. Wider sidewalks, with a landscape buffer between them and the streets, provide additional safety for both walkers and cyclists. Incorporating street trees would provide beneficial shade. In addition to improved sidewalks, pedestrian crosswalks should be clearly defined to manage vehicular traffic and increase pedestrian safety. This neighborhood has the potential to increase its density and provide new housing options through both infill development and expansion to the west.

Figure 4. Proposed Housing and Streetscape

West Hyacinth Street to Maraist Street

The location of the Early STEAM Academy, the Early Learning Center, the St. Martin Parish Community Health Center, and Adam Carlson Memorial Park within this neighborhood indicate the potential for substantial pedestrian traffic. Like other existing neighborhoods, it is recommended that sidewalk upgrades and additions be completed, that pedestrian crosswalks be clearly delineated, and streetscape landscaping be provided. These upgrades will ensure continued safety for walkers, cyclists, and drivers. This neighborhood also has the potential to increase its density and provide new housing options through both infill development and the development of new streets and other infrastructure. Further, the development of new streets, particularly the proposed extensions, would provide infrastructure for new housing and provide improved access to Adam Carlson Memorial Park. A new street adjacent to the south side of Adam Carlson Memorial Park would provide new housing. Providing housing options on both sides of the park can reduce the park's sense of isolation and contribute to a greater feeling of safety and security for visitors enjoying the park's many amenities.

NEW NEIGHBORHOODS

St. Martinville is poised for new growth and, as such, several strategies have been considered to ensure that anticipated growth is accommodated in a manner that serves the long-term goals and needs of the city and its people. The first strategy includes the development of infill housing and small infill neighborhoods within existing neighborhoods. This allows existing neighborhoods to retain their vitality and their sense of community while also contributing to increased population density and growth. While this strategy will increase the number of available housing options, the growth will be modest and incremental. A second strategy is to develop new neighborhoods to provide multiple housing options and amenities appealing to families of all sizes. "When lot widths are reduced from 125 feet to 75 feet, for example, hefty costs associated with road construction and utilities installation are cut by about 40 percent."[6]

Two new neighborhoods are proposed near the campus of South Louisiana Community College and would provide easy access to both St. Martinville and surrounding communities. One new neighborhood will contain single and multi-family housing, parks, and commercial and municipal services. This neighborhood will support approximately 1,050 single-family homes and 420 multi-family homes with an expected capacity of 3,650 people. The commercial and municipal services will be located along both sides of North Main Street. The second new neighborhood will consist of approximately 930 single-family homes with the potential to house 2,320 people.

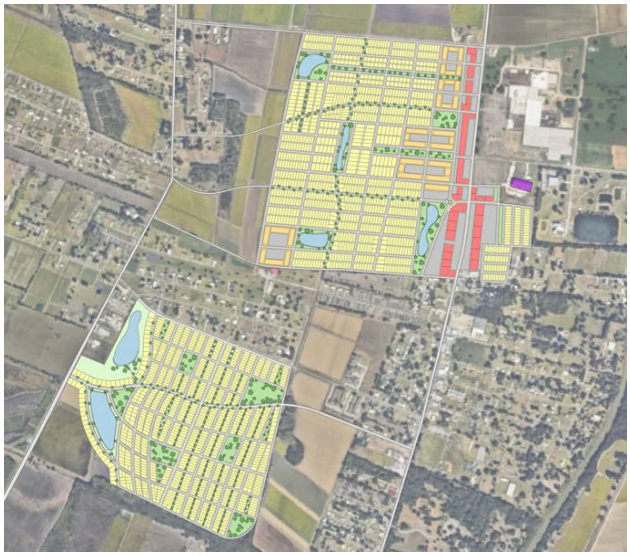

Figure 5. Proposed New Neighborhoods

NEW DEVELOPMENT DISTRICT

A proposed new development district includes commercial and municipal development, single and multi-family housing, a technology park, and a linear recreational park along the Bayou Teche. This development district will anchor the south end of St. Martinville and is intended to address both local and regional needs. It offers a balanced growth strategy that will allow for measured development in line with both current and future needs. This strategy has the potential to boost economic growth and enrich the local community while continuing to preserve the established city's character. "An urban district planned and built in our current age should be a reflection of our society. However, it must also mirror our versions of a future world of tomorrow worth aspiring to. In doing so it should convert our concept of our liberal democratic basic fundamental order, our pluralistic community structure and the dignity of every individual person into the reality built."[7]

New single-family homes will offer multiple housing types, and a variety of lot sizes will give homeowners flexibility in choosing lifestyle options. Multi-family housing will further supplement the choices available. All new neighborhoods within the development district will include amenities such as wide and shaded sidewalks, small pocket parks, and a large recreational park along the Bayou Teche. The existing St. Martinville Junior High School will be incorporated into this neighborhood providing children with safe and secure approaches to and from school.

An area dedicated to commercial and municipal development, serving both the city and surrounding areas, should be developed along both the Main Street and Smede Highway corridors. This development can house both retail and municipal services like dedicated fire, police, and emergency medical service (EMS) facilities. A new technology park is intended to serve regional needs in support of growing technology enterprises including network development, data centers, and the development of alternative energy sources.

PARKS

Parks and other outdoor venues serve as important community and recreational hubs. Proposed upgrades to existing parks and venues, and the means of accessing these areas, will enhance their appeal and provide exceptional recreational and social opportunities for adjacent neighborhoods and for all of St. Martinville. "As an idea, the garden is part of traditional and modern social thought. The garden has long served as a way of thinking about nature and about culture and how each influences the other."[8]

Adam Carlson Memorial Park

Adam Carlson Memorial primarily serves neighborhoods south of the downtown square. Park enhancements focus on increasing visibility, accessibility, and functionality. One essential improvement is the development of both new and existing street access to the park. Currently, the west side of the park does not have vehicular access, and a new connecting boulevard connection would alleviate this deficit. Enhancements to adjacent streets and new walking and bike paths will further improve both access and circulation. New parking areas within the park's boundaries will provide convenient access for visitors. A new entry sequence will enhance the flow of traffic and ensure that cars, bicycles, and pedestrians can move safely and easily within the park. New basketball courts, playgrounds, and water features will further enhance the park's recreational appeal. A proposed farmers market will facilitate community engagement, further improve the visitor experience, and provide a convenient and engaging place to purchase local produce and crafts. A new stage will serve as an ideal place for performances and other community events. These improvements will support a broader range of activities, from fitness activities and family outings to larger community gatherings and festivals. The selective development of Adam Carlson Memorial Park will ensure that it remains a lively focal point for community engagement and recreation and will continue to foster a greater sense of community for residents.

St. Martinville Festival Grounds

The St. Martinville Festival Grounds, located along the Bayou Teche north of the historic downtown square, provides a venue for activities centered around the city's cultural character including the Pepper Festival and Mardi Gras festivities. The festival grounds acts as a public space for family picnics, children's play, and recreational fishing along Bayou Teche. The existing Festival Grounds is a highly active community space that requires a thoughtful update of both its amenities and character to fully realize its potential. Redevelopment of this area includes a scenic, tree-lined walking path that wraps the festival grounds and activates the entire area, regulates circulation, and encourages physical activity and environmental engagement. This pathway system connects to a new boardwalk along the Bayou Teche that provides a boat dock for direct access to the waterway as well as ample space for fishing. New pavilions line the boardwalk to offer shading and provide gathering spaces. A character-defining viewing tower creates a landmark that allows for unobstructed views along the bayou. New parking on the north side of the festival grounds provides for discreet parking and easy access to the festival stage. Other proposed amenities include the development of a children's playground and accessible public restrooms near the stage.

Figure 6. Left: Proposed Walkway, Boardwalk, and Tower Along the Bayou Teche. Right: Proposed Site Plan of Festival Grounds

INFRASTRUCTURE

Sustainable growth can only be supported by enhanced infrastructure, including new connector roads between major thoroughfares, the strategic use of landscaping for the development of new parks, green spaces, and retention ponds, and updates to existing utility services. The addition of tree-lined boulevards, upgraded sidewalks, and walking and bike paths will create inviting pedestrian spaces that elevate existing neighborhoods and connect new neighborhoods to commercial hubs, parks, and public amenities. "Walking, bicycling, and public transit on an interconnected network of streets, alleys, paths, greenways, and waterways that enhances convenient and healthy mobility, connectivity, and efficiency need to replace the automobile for routine tips."[9]

New Streets

New streets and updates to existing streets will ease traffic congestion and provide improved access and vehicular circulation. New connector streets will allow for easier and more efficient access throughout the city and will provide additional means for vehicular circulation which is vital in lowering emergency services response times, support public transportation, and provide safe and efficient evacuation routes during hurricanes and other emergencies. New and improved streets also facilitate better access to commercial areas and are intended to foster growth and improve the overall quality of life.

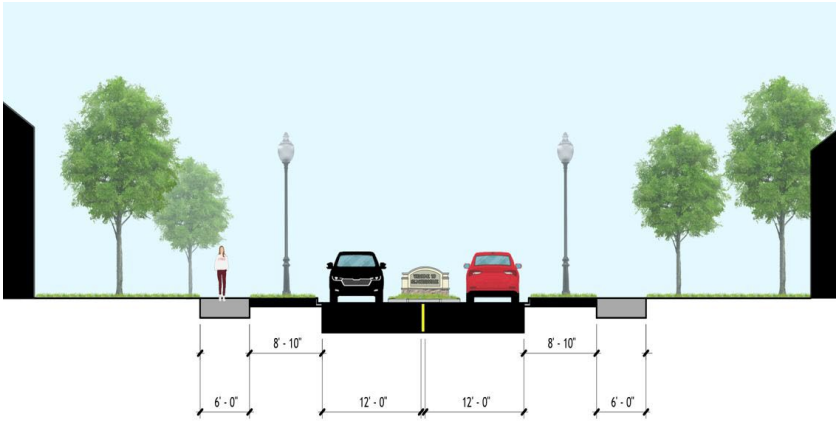

Figure 7. Upgrades include new walking and bike paths, entry signage, landscaping, and streetlights.

Bike Paths and Sidewalks

"…cities are centers of political, economic, religious, and cultural power. Maps of urban centers reflect the aspirations of humankind and yet also the realities of life."[10] The addition of bike paths and both new and improved sidewalks will assist in defining circulation associated with non-vehicular traffic and help ensure the safety of members of the community as they move through St. Martinville. Cyclists and pedestrians will have clear, designated pathways removed from vehicular traffic that can reduce the risk of accidents involving vehicles. These pathways will encourage, and provide, more sustainable transportation options that reduce traffic congestion and the environmental impact of vehicular traffic on the city. Streetscape enhancements associated with Main Street include sidewalk upgrades and a new bike path while envisioning additional bike path and sidewalk installation allowing for continued improvements when St. Martinville streets are updated or added.

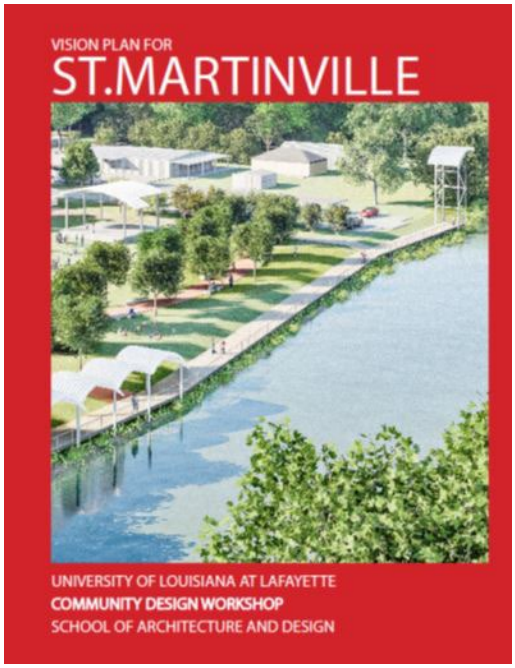

Figure 8. Completed Proposal for St. Martinville Vision Plan

CONCLUSION – 30-Year Vision Plan

It is intended that the 30-Year Vision Plan for St. Martinville will act as a "living document" that assists local government and citizens in realizing their goals and objectives for the future. This document should be used in visualizing and planning for future-focused growth and development that is both measured and meaningful. The 30-year Vision Plan aims to unite the city's historic charm with future-focused growth. Through a thoughtful blend of residential, commercial, and civic development, St. Martinville is poised to become a vibrant community hub that balances tradition with necessary development. "What is Urban? How can we make t? It is not a matter of density, or size, or a particular architectural style. Large cities, medium towns, and even small villages can be urban."[11] This Vision Plan is a visual representation of the city's potential and illustrates to the community goals for the future. The Vision Plan demonstrates how the public can be engaged in a design process that ensures their continued participation in the public life of their city. The success of this project depended upon the collaboration and dedication from many parties including the students and faculty of the UL Lafayette Community Design Workshop, La Louisianne Consulting, and the Mayor, City Council, and engaged citizens of the City of St. Martinville. By providing a vision that looks into the future, St. Martinville can control its growth and development in a measured and meaningful way and ensure that it remains a livable and welcoming community for generations to come.

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INVOLVING LOCAL COMMUNITIES IN THE CONCEPTION OF CONTEXT-SPECIFIC MICROMOBILITY SOLUTIONS

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INTRODUCTION

Over the last twenty years, the application of internet-based information and communication technologies (ICTs) has been contributing to the creation and growth of 'smarter' urban spaces, where constant real-time data exchange generates responsive loops which connect individuals, products, and infrastructures within the built environment. This, in turn, nurtures the development of countless web-based services which are conceived to facilitate citizens' daily life and routine. In this respect, mobility plays a crucial role in citizens everyday life, as they require efficient and reliable transport. However, several criticalities persist within this digitally enhanced society, as transportation is still deeply connected with congestion, inefficiencies, pollution, and raising costs, which in turn generate stress, inequalities worsened living conditions social divide.

The role of local administrations and leading companies in the relevant sectors is key to foster innovative solutions through the application of ground-breaking technologies and service-based approaches to mobility, it will be possible to promote an easier access to mobility services whilst reducing inequalities, which is one of the social benefits to move towards the operating model of a smart city for all users.

The paper argues that involving stakeholders – such as citizens, commuters, local administrators, and service users – in the ideation and design process can contribute to the conception of products and services that acknowledge local specificities and improve urban mobility. In doing so, this article intends to explore the state of art of pilot projects and identify key insights from previous research activities in the field of participatory design. This would allow to suggest further actions, which tap into collaborative networks and identify pathways to scalable and yet context-specific projects for multi-modal, sustainable, and accessible transport within specific urban contexts.

THE RISE AND GROWTH OF SHARED AUTONOMOUS TRANSPORT

The starting point of this dissertation is a general outlook of the main opportunities derived from the pervasive spread of information and communication technologies (ICTs) and the potential gains connected to the application of Artificial Intelligence (AI). This smart feature has the potential to be embedded into vehicles and allow for autonomous driving, subsequently changing their architecture and how we interact with them. However, this shift towards self-driven transport may be both exciting and concerning to people, due to the scale of the vehicles moving around in cities and neighbourhood, as underlined by Laurie Yoler, an expert of driverless technology who matured decades of industry experience in this field.[1]

As responsive technologies become embedded not only within products and services used by billions of individuals during their daily life, but also into vehicles and urban spaces, the result is a multi-layered techno-centric environment, in which citizens and visitors acting as commuters, drivers, customers, and service users, are constantly connected to the tangible and intangible dimensions of the built environment. The widespread use of portable devices connected to the web underpins the creation of responsive loops in which individuals, constantly exchange data with other individuals, vehicles and the surrounding spaces. More broadly, data is constantly gathered and utilised by companies and local authorities, which run real-time services and monitor urban spaces through big data collected from sensors and social media. Technologies such as the Internet of Things (IoT), AI, and urban digital twins, are then used to provide insights for public safety, energy efficiency, and traffic management, ultimately aiming to create responsive and sustainable environments.[2]

Current Project Scenario

Within such smart(er) city environments, transport plays an important role, and autonomous vehicles (AVs) have greatly evolved over the last ten years, developing from sci-fi concepts to on-the-road tangible reality. The number of pilot projects currently under development to test self-driving technology and their application to ride hailing and taxi services is remarkable and proves both the potential benefits and the risks connected to a grown number of automated vehicles on the road. Several projects are currently being developed and rolled out, such as:

- Baidu – the Chinese search engine giant is active in the field of driverless technology through its self-driving service Apollo Go.[3] After launching the rental service in its home country, the company is planning to road test its vehicles in Europe – mainly UK and Germany – and partner with Uber and Lyft for the use of their platforms globally, outside the U.S. and China.[4]
- Cruise – the General Motors (GM)-owned vehicles have been offering rides to customers in key American cities – e.g. San Francisco, Houston, Dallas, Austin, and Miami since 2021. However, the robotaxi service has been in a state of indefinite suspension following a serious incident happened in late 2023.[5] Since then, GM has pulled funds and focussed its research activities on personal vehicle automation.
- Lyft – Founded in 2012, the company has grown into a global mobility platform, focussed on expanding its 'hybrid' rideshare network that combines human-driven vehicles with fully autonomous options. In doing so, the company is collaborating with several software and hardware companies, which provide specific know-how and allow Lyft to expand its presence across Europe and Asia.[6]
- Moia – the Volkswagen-owned subsidiary, which has been testing autonomous vehicles in Germany since 2019 and is now planning to launch a ride-pooling service in Hamburg in 2027. The intent is claimed to be the creation of a scalable and accessible service deploying Level 4 ID. Buzz AD vehicles.[7]
- Nuro, Lucid and Uber – After testing their self-driving a partnership created to develop, test, and launch a robotaxi service deploying a fleet of more than 20,000 Lucid vehicles, equipped with the Nuro Driver hardware, and available exclusively via the Uber app from late 2026.[8]
- Further to this project, Uber has been leading several projects, which aim to pioneer the introduction of autonomous vehicles for the transport of people and goods, in partnership with several software, hardware, and industry leading companies. Safety is meant to be a crucial and leading aspect at the core of each project.[9]
- Tesla – the company is currently working on its robotaxi project, which is limited to the area of Austin, Texas. Using a dedicated app, customers can book their trip, which currently utilizes its owned vehicles equipped with the Full Self-Driving (FSD) software.[10] Dedicated electric vehicles – called 'Cybercab' and 'Robovan' – were presented in 2024 and expected to be produced after 2027. These electric vehicles

are expected to be fully electric, have no steering wheels, and accommodate either individuals or larger groups of customers.[11]
- Waymo – the subsidiary of Google's parent company Alphabet started their activities in the field of driverless technology vehicles in 2009, and since 2016 has been developing and testing self-driving vehicles for ride-hailing services and logistics. The project is currently operating in a number of United States (US) cities – e.g. Atlanta, Austin, Los Angeles, Phoenix, and San Francisco – as the primary self-driving car service available to the public. The project is planned to be scaled further in the coming years and operates through fully electric and AI-controlled vehicles available to its customers 24/7.[12]
- Zoox – the Amazon-owned robotaxi start-up, which is developing and testing a fully autonomous smart vehicle which will be applied to a ride-hailing service. As indicated in their official website, the service is scheduled to be launched between 2025 and 2026 in Las Vegas, the service will then be expanded to other big cities, such as Austin, Miami, and San Franscisco.[13]
Further to the above, there is a growing galaxy of companies and partnerships, which are active in various areas of the Mobility-as-a-Service (MaaS) and AV domains to relentlessly develop and test technologies and services for urban applications. Self-driving vehicles have now the potential to become mainstream through a range of services currently being tested and planned to be rolled out have the potential to bridge the gaps between large-scale public transport and the privately-owned cars. This is a crucial aspect which will be gaining relevance in the future, when autonomous driving (AD) technologies will be applying AI to a range of sensor-equipped vehicles and services, which aim to make multi-modal and last-mile mobility safer and more sustainable, while improving the overall road conditions through a broader range of options within the urban environment.[14]

Sustainability and cost

Accessibility and affordability play a crucial role in the development of innovative and effective mobility solutions. Urban areas, where more than half of the global population is currently living, with a proportion expected to grow to 68% by 2050,[15] keep growing and subsequently face challenges connected to quality of life, availability of resources, affordability, social inequalities, and sustainability. In this scenario, urban mobility plays a crucial role, as ensuring accessible and efficient transport systems to citizens, visitors, and commuters becomes an essential element that underpins the quality of life in the built environment. At the same time, cities become the ideal testing grounds for AVs and shared mobility services, such as ride hailing, taxi, public transport, micro-mobility, and multi-modal transport, which have the potential to positively impact urban areas by reducing emissions and optimising the number of vehicles circulating on the street.[16]
While transport is one of the main contributors to global greenhouse gas emissions, freight transport is responsible for a big portion of them. More specifically, it accounts for one third of transport emissions in the UK, 77% of which come from road freight transport.[17] Therefore, decarbonising freight emissions is a priority which manifests itself also within the urban areas, where interventions that address emissions and operational efficiency through logistics, propulsion, and vehicle design innovations are required.
A more efficient, accessible, and circular approach to urban mobility is required in the implementation of public and shared services as an alternative to privately-owned ones. Further to this, the growth in delivery services is adding complexity to the urban mobility scenario, and while local administrations collaborate with private companies to address delivery issues and improve citizens' commutes at different levels, a one-size-fits-all approach to a variety of context-specific factors may hinder the success of mobility plans and schemes.

Last-mile deliveries appear to be an increasingly relevant issue to local authorities. As indicated by Daniela Paddeu,[18] the five key challenges related to last-mile deliveries identified through the research work with 35 local authorities and 25 councillors in England are:
- Increased traffic congestion and subsequent pollution connected to the use of internal combustion engine (ICE) vans and cars.
- Need for financial support from local and central government to cover the costs of implementing 'cleaner' changes to logistics and vehicle networks.
- The divide between rural and urban settings which require different solutions.
- The scale of online shopping within the UK, with around three billion parcels sent and 25% of products returned every year. This is reflected in the number of deliveries, with subsequent congestion and pollution.
- Willingness of stakeholders to join collaborative schemes and educate end-users towards more sustainable and responsible behaviour, e.g. propensity to reduce consumption

Local administrations can challenge well-established consumption paradigms and achieve more sustainable futures through strategic collaborations with industry, research, and third sector, which aim to apply groundbreaking technologies to context-specific projects. These constructive partnerships have already contributed to the implementation of shared transport and micro-mobility services across several cities and will be increasingly crucial in the coming decades as the boundaries of service-orientated transportation design and urban planning will blend to achieve a safer, more efficient, and sustainable approach to city mobility.[19]

Relevant transport factors

This digitally enhanced society multiplies the opportunities to sense and manipulate urban spaces towards more liveable and sustainable cities. However, criticalities persist, leading to divides and pollution, which are clearly visible in the field of transport, where congestion and delays generate stress on both travellers and transport infrastructure. The pilot projects and technologies being currently tested and rolled out by several companies in the field demonstrate that key priorities tend to be safety, affordability, scalability of service, and use of shared hardware & software platforms. As a result, accessibility and customisation not always the leading values in the project. Some cities and activities may require alternative arrangements and services which better fit within the specific context and truly benefit the local communities alongside the service providers. A one-size-fits-all approach to mobility and transport services is not always a winning solution, and this is demonstrated by a number of projects which manage to strive in several contexts but fail when 'scaled' and 'translated' to different countries, regions, and cities.

INVOLVING STAKEHOLDERS IN THE DESIGN PROCESS

Over the years, a variety of theories, tools and approaches have been applied to the ideation and design process to promote a rigorous and structured involvement of users' perspectives and subsequently deal with the real-world complexity.[20] Involving local stakeholders such as citizen groups, administrations, service providers, and industry experts, allows to gain precious insights from their direct experience. This, in turn, has the potential to informs the conception of tailored solutions which challenge homogenisation tendencies and meet local requirements. In the field of transport, this translates into sustainable, efficient, accessible vehicles and services which fit the local context and challenge profit-driven homogenisation tendencies.

This bottom-up approach vas the lens through which a research activity undertaken between 2015 and 2017 was undertaken to explore the application of groundbreaking driverless technologies to vehicles designed for specific urban contexts. The aim was to explore how a range of insights coming from

diverse stakeholders – e.g. industrial experts, academics, designers, local administrators, and potential customers (citizens and commuters – could inform the architecture and the internal layout of vehicles designed for a specific city. To do so, the research used London and Milan as two case studies, due to relevant similarities alongside (such as comparable areas of Greater London and the Province of Milan) accompanied by very different settings in terms of public and shared transport. More specifically, at that time:

- London represented a large city with a fully integrated transport system across the 'Greater London' area subdivided into concentric zones. A congestion change scheme was in place in the central area.
- Milan represented a medium-sized city with a similar congestion charge system being tested in the city centre. However, the public and shared transport services were more limited and less capillary, as focussed mainly on the central areas of the municipality.

Starting from essential background research (literature review), a series of activities – one-to-one interviews, surveys, workshops – were designed to derive both qualitative and quantitative insights from different perspectives – e.g. experts, potential customers, and designers – in a structured manner.

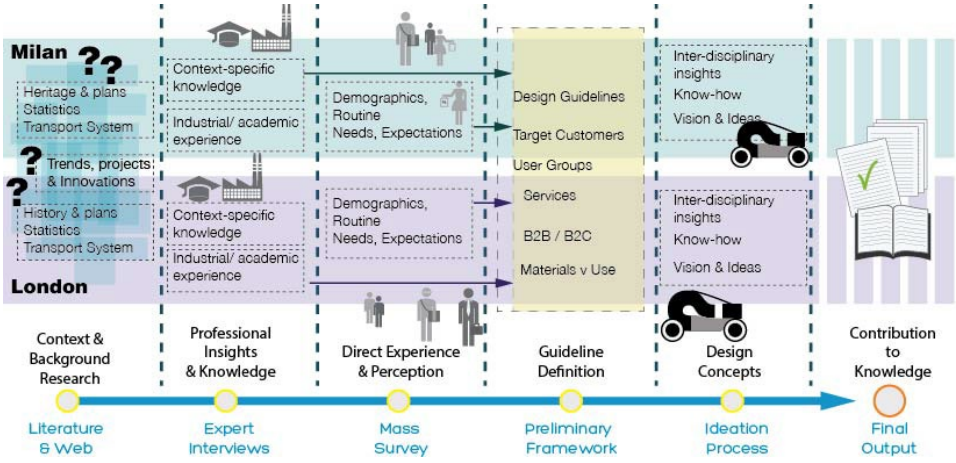

Figure 1. The co-creation process.

The intertwined insights derived from the activities were structured according to six key areas defining the specific urban scenario: these pertain to tangible and intangible aspects of the urban environment, its inhabitants, and the range of technologies, products and services used daily within it.

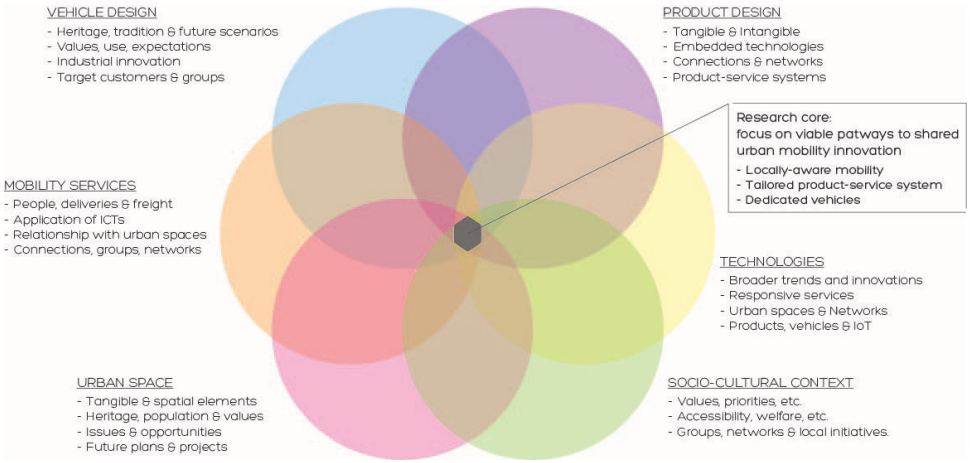

Figure 2. Main areas of investigation.

These insights derived from the structured activities allowed for a multi-perspective mapping of key factors influencing the perception of technologies, products, vehicles, and services. An intertwined system of factors, which included inherited habits, local values and priorities, strengths and gaps in the urban/inter-urban transport system, demographics and distribution of points of interest the specific urban mobility scenario, and other social and economic elements, was found to be affecting the overall perception of urban mobility and success or failure of standardised/ scalable transport-relevant services. These considerations helped inform the design of locally relevant Mobility-as-a-Service (MaaS) shared vehicles meant to embed autonomous-driving technologies and bridge the between private and public transport. More specifically, the activities identified distinctive categories of vehicles for each city, with recommendations leaning towards minibus and shuttle-types of vehicles to be applied to public and shared services, while in London the suggested vehicles underlined more interest towards deliveries and business-orientated services.

The structured body of guidelines and recommendations derived from interviews and survey were then discussed with local designers living in Italy and in the UK, who were asked to interpret them using images and keywords collected as mood-boards. Further to this, two designers were asked to sketch their vision for the overall architecture and the interior space of a vehicle aligned with guidelines and mood boards.

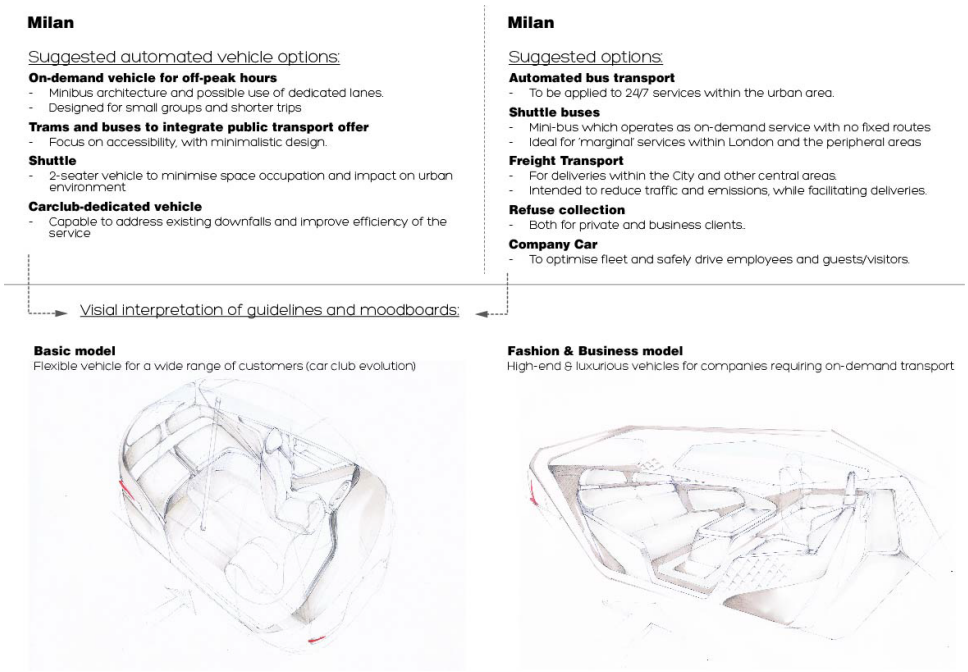

Figure 3. Suggested vehicle options and visualisations.

CONCLUSION: HOW CAN THIS IMPROVE THE CURRENT SCENARIO?

The above outlined research activity demonstrates the potential impact of involving local communities and experts, as this can proficiently inform the design process towards the conception of vehicles and services designed to meet the needs and expectations of specific local communities and user groups who live and travel in a city which has its specific identity.

After nearly a decade since the completion of this study, the circumstances have somehow changed, even if – both in the two case-studies and in most cities – the progress towards more sustainable, efficient, and resilient mobility service systems has been slower than forecasted.[21] Once-in-a-Lifetime events, such as the COVID-19 pandemic and, more recently, the widespread adoption of AI across

multiple sectors, have the potential to shift people's behaviour and attitude towards transport and services at large.

Although general resistance toward innovations – electrical vehicle (EV), autonomous driving, shared mobility, etc. – appear to be widespread and connected to costs, trust in technologies, and habit-related factors, citizens and service users can proficiently be involved in research activities intended to gain a better understanding about their unspoken needs and expectations towards urban mobility and transport. By gathering both qualitative and quantitative insights from customers (citizens, commuters, user groups) and experts in the mobility and planning field (industry stakeholders, local administrators) it will be possible to identify promising solutions to urban mobility and planning capable to address:

- Sustainability, in line with the UN Sustainable Development Goals.
- Efficiency and integration to link various transport modes.
- Technology adoption, such as smart systems, EVs and AVs.
- Accessibility, social equity, and desirability.
- Local context, to adapt solutions to specific needs and cultural values.

In doing so, key activities for the development of local transport solutions would include:

- Preliminary analysis of the wider scenario – e.g. city context, heritage, social background, and urban or inter-urban transport system. Using literature review and case studies as crucial elements in the process, it will be possible to gain a deeper understanding about best practices, trends, and relevant innovations.
- Surveys, interviews, and focus groups to involve both experts and citizens in the research activities.
- Co-creation workshops and activities that translate guidelines into visions and concepts for locally rooted and future-proof transport solutions. Such activities would be led by designers and creatives but possibly involve administrators and 'end-users' such as citizens, commuters, and drivers. This would facilitate the generation and discussion of ideas and proposals.
- Prototyping and testing: using small production technologies such as 3D printing and local manufacturing to create maquettes and customise existing products, this phase would allow researchers, designers, and industrial partners to collaborate on prototypes to be locally tested and discussed with the end users.
- Rolling out small scale pilot transport services in specific areas of the city. This would allow researchers to supervise the testing phase and gather rich datasets to support the assessment and further development of the project.

As identified in this short contribution, the collaboration amongst different stakeholders – e.g. local communities, academics, administrators, and industry partners – has the potential to unite, generate visions, and unlock funding opportunities to tailor vehicles, technologies and industrial goals and truly innovate local transport to suit the local end-user needs.

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EDGES OF POTENTIAL: PLACEMAKING AND INTANGIBLE HERITAGE IN CAIRO'S LINEAR URBAN FRINGES

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INTRODUCTION

In Cairo's dense and complex urban landscape, certain spatial conditions remain critically overlooked. Narrow, fragmented, and linear zones that exist along the city's thresholds may have long seem as a dividers rather than connectors. Among these are the historic gates of Bab Zuweila, Bab Futuh, and Bab Nasr; the Magra El Oyoun aqueduct; and the residual infraspaces beneath Zamalek's urban bridges. Though diverse in form and function, these sites share characteristics of neglect, edge conditions, and latent cultural value. Often excluded from formal development agendas, they remain embedded in local memory and informal use. Through a framework rooted in intangible heritage, community engagement, and tactical urbanism, this paper explores their potential as civic assets through site specific placemaking interventions.

First Life, Then Spaces, Then Buildings…

The theoretical foundation of this research draws on people centered urbanism, emphasizing the primacy of everyday life in shaping meaningful spatial experiences. Jan Gehl's assertion;[1] human first urbanism, emphasizing that design must begin with life before shaping space and architecture. He challenges the logic of top-down urbanism and reorients the design process toward the lived, sensory, and social dimensions of public space. This perspective finds further articulation in the Project for Public Spaces' framework, *What Makes a Great Place,*[2] which identifies four interrelated qualities accessibility, activity, comfort, and sociability as indicators of a space's vitality as seen in Figure 1. These qualities are not static attributes but emerge through use, improvisation, and collective memory. Placemaking US[3] expands this discourse by advocating for iterative, community led processes that treat public space not as a finished product but as a cultural platform fluid, adaptive, and responsive to the nuances of local context. Together, these frameworks offer a counterpoint to formal, infrastructural approaches, instead situating spatial transformation within the cultural and performative practices of those who inhabit and informally shape the city. This theoretical lens is particularly salient in Cairo's liminal urban zones, where informal use, memory, and ritual resist erasure and offer alternative logics for civic reclamation.

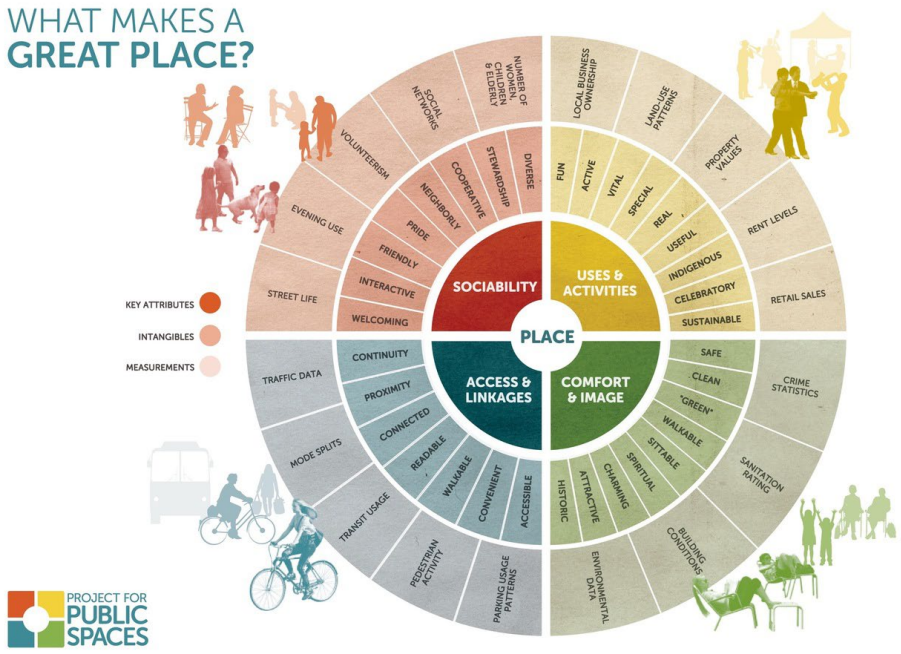

Figure 1. Four interrelated qualities of place as indicator of space's vitality.

Tactical Urbanism Approach

While the first theoretical lens centers on designing around lived experience, tactical urbanism offers a practical methodology for activating that experience in space. Characterized by low cost, short-term interventions that are adaptable and community-driven, tactical urbanism resists top-down, static approaches to planning.[4] It is particularly relevant in urban thresholds and in-between spaces linear, fragmented zones often located at the margins of formal development. These spaces, while physically neglected, serve as social and cultural interfaces between districts, publics, and histories. In such contexts, intangible heritage becomes a crucial driver of spatial meaning. Practices such as street rituals, informal performances, local storytelling, and small-scale economies transform space through use and memory. These cultural expressions, often overlooked by conventional planning, reveal how informality can act as a form of spatial intelligence one that sustains everyday life and fosters incremental, culturally grounded transformation. Together with placemaking philosophy, these concepts reinforce the value of working with, rather than against, the existing social fabric of the city.

People – Life – Spaces

The research positions the selected urban sites as an experimental ground for placemaking, guided by an integrated lens of people, space, and activities. These three components serve as interconnected entry points for reading and reimagining spatial conditions. People are understood not only as users but as co-producers of space; individuals and communities whose cultural habits, social interactions, and lived experiences are central to shaping meaning. Space is considered beyond its physical dimensions, encompassing the social, historical, and symbolic layers embedded in Cairo's marginal and fragmented urban landscapes. Activities refer to both structured and spontaneous forms of use ranging from ritual and play to informal economies and daily movement. Framing the study around this triad enables a process oriented understanding of placemaking, where transformation is driven by everyday life rather than imposed design solutions.

This publication is the outcome of a two semester placemaking course conducted with tenth semester architecture students at the German University in Cairo. The course introduced students to a variety of media beyond theoretical texts, including the influential documentary The Social Life of Small Urban Spaces by William Whyte,[5] which examines behavioral patterns in urban public spaces. The pedagogical approach was framed by the philosophy of Jane Jacobs,[6] a pioneering advocate for public life in cities, who famously described cities as "immense laboratories of trial and error, failure and success, in city building and city design." Despite Cairo's rich urban fabric, structured and community centered placemaking practices remain scarce in both academic and professional planning contexts. The course also engaged with the work of eminent geographer Yi-Fu Tuan,[7] whose phenomenological approach to space emphasizes how people think and feel about their environments; how attachments form to home, neighborhood, and city, and how such emotional connections are shaped by time and culture. Tuan's insights proved especially valuable in exploring the experiential and symbolic dimensions of urban space.

METHODOLOGY

This study builds its methodology around three interconnected layers of aspect: economic, sociocultural, and environmental. These are not treated as separate silos but as overlapping dimensions that shape how people engage with space in everyday life. The economic layer looks at how small scale, often informal, economic activities such as street vending or neighborhood services contribute to the life and resilience of public spaces. The sociocultural layer is concerned with how communities express identity, memory, and tradition through daily routines, social rituals, and cultural practices that may not be visible in formal planning. The environmental layer considers not only the physical state of these spaces but also how people interact with their material and ecological conditions; whether through care, adaptation, or neglect. By working across these three dimensions, the methodology seeks to reflect the complex and lived realities of Cairo's urban thresholds, offering a way to engage with them that is attentive, participatory, and place specific.

The study includes ethnographic fieldwork including participant observation and interviews, behavioral mapping including patterns of use, informal activities and narrative cartography such as community stories and memory mapping. This methodology is grounded with site specific values however eventually is aimed to be reflected into the wider cases in similar settings.

CONTEXT: CAIRO'S URBAN LIMINAL SPACES

In rapidly expanding megacities such as Cairo, the tension between urban growth, cultural continuity, and livability presents an ongoing challenge. The sheer scale and density of the city often lead to uneven development, where historical areas, local identities, and everyday public life are marginalized by infrastructural expansion and real estate pressure. While Cairo continues to undergo formal planning and development, much of its intangible cultural fabric remains overlooked diminished or rendered invisible by strategies that tend to prioritize infrastructure, control, and efficiency over lived experience and cultural continuity. Within this context, questions of livability access to meaningful public space, walkability, environmental resilience, and cultural visibility are deeply entangled with how urban heritage is understood and engaged.

A particularly pressing spatial manifestation of this issue is the prevalence of underused linear and liminal spaces edges, infrastructural corridors, and residual pockets of land that form physical and social gaps in the urban fabric. These spaces often fall outside formal planning agendas, remaining fragmented, overlooked, or perceived as voids. Yet they function as urban thresholds: between districts, between scales, and between formal and informal use. Their ambiguous status makes them culturally and spatially significant, even as they remain underutilized. In this light, tactical urbanism emerges as

a strategic mode of engagement one that can operate within these conditions of marginality to propose adaptive, low-cost, and culturally responsive interventions. By aligning short term, community rooted actions with long term visions of livability and heritage activation, tactical urbanism offers an alternative pathway for placemaking in megacities like Cairo. It shifts attention from large scale redevelopment to localized acts of reclamation that restore spatial continuity, social relevance, and cultural memory to the urban fringe

These underutilized and fragmented spaces, while often perceived as voids or leftover zones, are in fact deeply embedded in the everyday rhythms of the city. Their seeming marginality conceals a latent cultural richness shaped by informal uses, social memory, and spatial improvisation. In many cases, these are places where people pass, pause, trade, or gather despite their lack of formal infrastructure or recognition. A more radical approach again shifts the focus beyond both hard infrastructure and incursions and improvisations in socio-technical networks to foreground *"people as infrastructure",*[8] emphasizing the role of human presence, relations, and routines as the primary organizing logic of such spaces. However, the absence of structured planning and investment often leads to their physical degradation and social underuse. Within the scope of the placemaking course, various urban areas were critically examined including Zamalek, Heliopolis, Downtown Cairo, Islamic Cairo (Bab Zuweila, Bab Futuh, Bab Nasr), and Magra Al Oyoun. Although each location presents its own distinct spatial character and cultural potential, four sites (See in Figure 2) were selected for focused investigation to align the study under a shared lens: that of linear and liminal urban spaces. This thematic framing not only sharpens the research scope but also highlights the transformative possibilities of placemaking in overlooked spatial conditions. Here, placemaking is understood not as superficial beautification, but as a participatory process rooted in local knowledge, informal practices, and the cultural life of the street aiming to reclaim these fragmented edges as meaningful civic environments.

Figure 2. Maps highlighting sites, from left to right, Aqueduct, Zamalek Bridge, Bab Futuh and Bab Nasr, Bab Zuwaila.

Despite their diverse histories and locations within Cairo, the selected sites Bab Zuweila, Bab Futuh, Bab Nasr, the Magra Al Oyoun aqueduct, and the under bridge spaces of Zamalek share key spatial characteristics that define their condition within the urban fabric. First, they are predominantly linear in form, following infrastructural, historic, or territorial lines rather than enclosed or centralized typologies. This linearity often results in fragmented or transitional experiences of space, where continuity is interrupted and orientation disrupted. Second, these areas exist along urban edges borders between districts, between movement and pause, between visibility and invisibility.[9] As such, they function as thresholds rather than destinations, producing an in-between spatial identity that is often overlooked in formal urban planning. Third, all exhibit signs of neglect, whether through physical decay, infrastructural abandonment, or cultural disconnection, yet the condition of marginality that

renders them open to re-imagination. These shared spatial traits linearity, edge-ness, and neglect not only bind the sites together conceptually, but also make them fertile ground for tactical, community rooted placemaking interventions.

Importance of the Sites in Terms of Placemaking

Selected four sites hold particular significance for placemaking precisely because of their in-between status. Their linearity and edge like qualities often position them outside the reach of formal planning agendas, yet within the daily movements and experiences of the communities that surround them. This makes them uniquely accessible for bottom-up transformation. Unlike central squares or established landmarks, these residual and neglected spaces offer a degree of openness both physically and socially that allows for experimentation, adaptation, and localized appropriation. Their lack of predetermined function invites creative use, making them ideal grounds for community-led interventions that respond to everyday needs and cultural practices. Despite being socially and culturally active, they suffer from neglected infrastructure, spatial fragmentation, and limited public investment, which constrains their full potential. This paradox of vitality amid physical deterioration makes them particularly relevant for placemaking. Their openness and lack of rigid programming create opportunities for low-cost, community driven interventions that can enhance their usability, safety, and cultural expression without displacing existing practices.[10] In this sense, placemaking in such spaces is not about reinventing use, but rather about amplifying and sustaining the everyday life that already exists, through targeted, responsive, and inclusive spatial strategies.

Figure 3. Photos taken on sites, from left column to right, Aqueduct, Zamalek Bridge, Bab Futuh and Bab Nasr, Bab Zuwaila.

Building on the earlier framework, the analysis of the selected sites sought not only to document their existing conditions, but to uncover the deeper dynamics that shape how they are inhabited and improvised daily. Looking across sociocultural, economic, and environmental dimensions revealed overlapping patterns of use, contestation, and adaptation ranging from informal economic exchanges and ritual practices to spatial appropriation and ecological strain. Rather than isolating problems, this approach helped identify latent opportunities embedded in each site's everyday life. It also sharpened the research focus toward recognizing what interventions could be most meaningful, feasible, and respectful of the existing social and spatial fabric. In doing so, the study moves beyond diagnosis toward a tactical reading of place one that sees potential not in what is missing, but in what is already happening, waiting to be acknowledged and amplified.

Figure 4. Bab Futuh and Bab Nasr spatial analysis

Selected examples from the spatial and user analyses are illustrated in Figures 4 and 5. These analyses were conducted through three distinct lenses sociocultural, environmental, and economic allowing for a multi-dimensional understanding of each site. Student groups were assigned one of these aspects and guided to examine common elements: users, spatial configurations, and observed activities. This phase functioned primarily as a diagnostic stage, where mapping tools were used to identify patterns, challenges, and latent opportunities. The findings from this process formed the groundwork for proposing context sensitive placemaking interventions in the following phase.

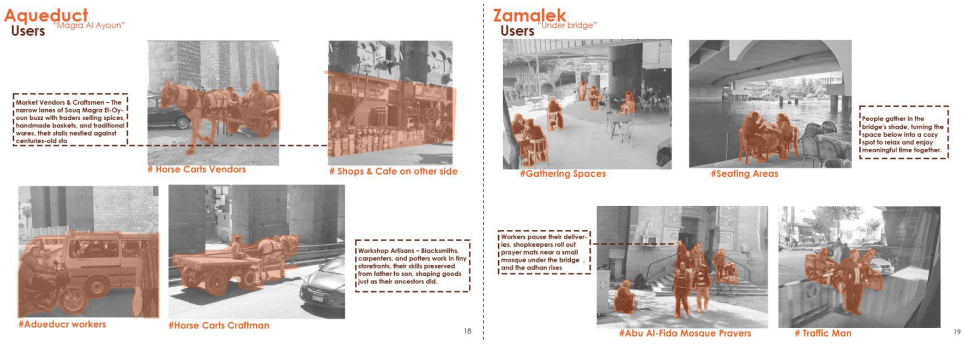

Figure 5. Aqueduct and Zamalek user analysis

Following the site-specific analysis, students conducted a comparative scan of international case studies, can be seen in Table 1, relevant to their assigned thematic focus sociocultural, environmental, or economic. Each group selected five to six precedents that demonstrated innovative or contextually responsive placemaking strategies from around the world. Through in-depth analysis, they extracted key principles, design tactics, and implementation methods with potential relevance to their local sites in Cairo. Importantly, this analytical phase was aligned with the United Nations Sustainable Development Goals (SDGs),[11] allowing students to evaluate how each case contributed to broader global objectives such as inclusive urbanization (SDG 11), sustainable communities (SDG 3 and SDG 13), and equitable economic opportunities (SDG 8). This added dimension encouraged critical reflection on the social, environmental, and economic impacts of placemaking, while reinforcing the value of locally grounded yet globally informed interventions.

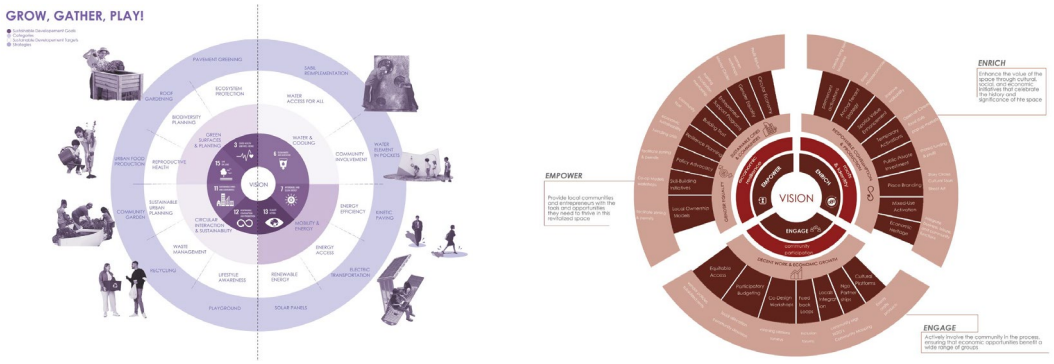

Figure 6. Action lists categorized according to the SDG Goals.

Building on the insights gained from both the site mapping and global precedent studies, each group developed a context sensitive action list tailored to their assigned theme and site. These proposed actions were directly linked to specific SDG targets, ensuring that the interventions addressed not only local challenges but also contributed to broader global development priorities. Rather than prescribing rigid solutions, the actions were intentionally framed in abstract and strategic terms highlighting principles such as spatial inclusivity, ecological responsiveness, cultural activation, and micro-economy support. This approach allowed the proposals to remain adaptable, offering a flexible toolkit that could be applied or scaled across similar liminal and underutilized sites in Cairo. In doing so, the exercise emphasized the importance of replicability, long-term vision, and grounded design thinking in tactical urbanism and placemaking practice.

Nr	Project Name	Aspect	Location	Key Features	SDG Goals
1	Al Khalifa Park	Environmental	Cairo, Egypt	Eco-friendly irrigation system, ground water treatment	3,6,9, 11,13,15
2	Barrio 31	Economical	Madrid, Spain	Economic revitalization, infrastructure upgrade	8,9, 11
3	Belfats conflict memory trails	Sociocultural	Belfast, Northern Ireland	Heritage revival, artistic storytelling	4,11
4	Bhadra Fort	Sociocultural	Old Ahmedabad, India	Façade light mapping, citizen engagement	11
5	Chandi Chowk Redevelopment	Sociocultural	Old Delhi, India	Restoration, Pedestrianization , Eco-friendly infrastructure	8,11
6	Cheonggyecheon Stream Urban Renewal Project	Economical	Seoul, South Korea	Urban identity, biodiversity, sociocultural impact	8,9,10, 11
7	Crystal Pool	Sociocultural	Shanghai, China	Urban activation	5,11
8	Floating Park	Environmental	Rotterdam, Netherlands	Recycled material integration, waste management	9,11, 12,13
9	Folly for a Flyover	Sociocultural	Hackney Wick, UK	Street light show, art venue workshops, Recycled materials	11, 12
10	Granby Four Streets	Economical	Liverpool, UK	Reclaiming the neighborhood, public involvement	11,16
11	High Line	Economical	New York, USA	Preservation authentic spaces, stimulate nature in city center	8,11
12	Open air market	Sociocultural	Bangkok, Thailand	Temporary architecture, informal economy	8, 11
13	Pavegen Kinetic Energy Tiles	Environmental	London, UK	Public installation, Renewable energy	7,11
14	Smale Riverfront Park	Environmental	Cincinnati, Ohio, USA	Interactive playscapes, intergenerational engaging spaces	7.11
15	Soundscape Park	Environmental	Florida, USA	Underutilized urban plot management, environmental comfort	3,11
16	Superkilen Park	Economical	Norrebro, Denmark	Economic impact, community integration, cultural presentation	8,9, 10,11
17	The Fountain House	Environmental	Montreal, Canada	Infrastructure integration, climate adaptability	11,13,15

Table 1. List of relevant global cases in alphabetical order.

These underutilized and fragmented spaces, while often mischaracterized as voids or urban leftovers, are in fact richly embedded within the everyday life of the city. Their marginal appearance belies a deep

cultural significance, shaped over time through informal practices, social memory, and spatial improvisation. Far from being empty, these are places where people pause, gather, trade, and perform imprinting them with personal and collective meaning despite the absence of formal recognition or infrastructure. As Manzo and Perkins[12] argue, the vitality of public space lies not in its physical form alone, but in the symbolic, emotional, and cultural attachments that residents develop through lived experience. In Cairo, these connections are especially resonant in spaces that have evolved organically, outside the boundaries of top-down planning. Acknowledging this depth of place attachment is central to the project's placemaking approach, which deliberately avoids framing outcomes as final or prescriptive. Instead, the study adopts a flexible, participatory model that treats placemaking as an ongoing process responsive to community input, cultural continuity, and local knowledge. The action strategies generated through this framework are intentionally open-ended, designed to be interpreted, adapted, and expanded by a range of actors including NGOs, designers, residents, and urban practitioners. In doing so, the work repositions these overlooked thresholds not as problems to be solved, but as dynamic cultural terrains continuously lived, reimagined, and shaped by those who inhabit them.

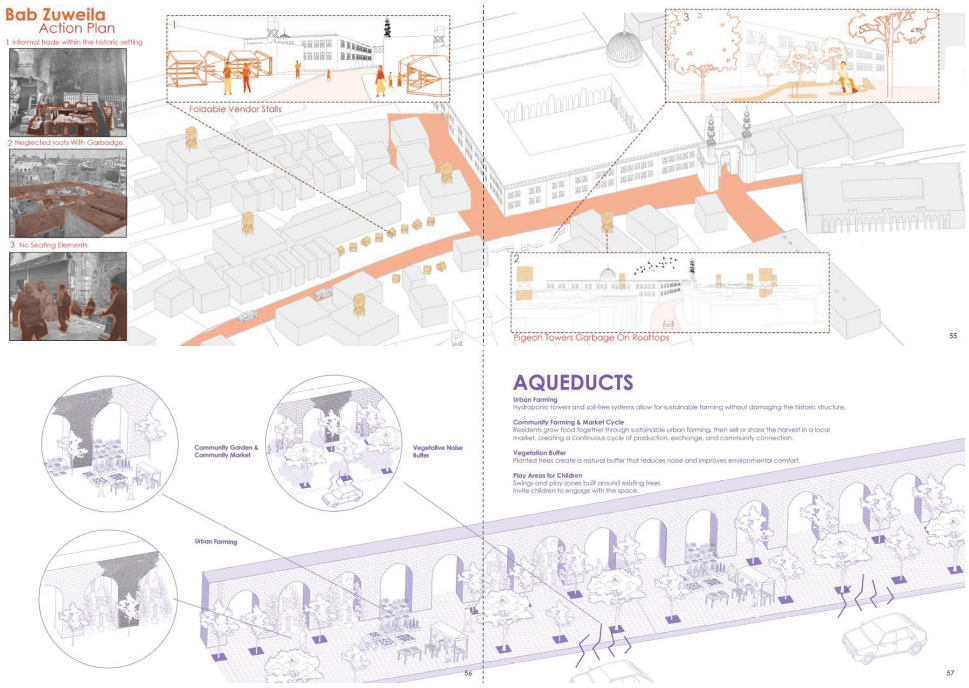

Figure 7. Pilot actions applied on Bab Zuweila and Aqueduct.

Discussion

The exploration of placemaking in Cairo's liminal and linear urban spaces has revealed critical intersections between informality, cultural continuity, and spatial resilience. The selected sites rich in activity but poor in infrastructure expose the limitations of conventional urban planning frameworks that often overlook the nuanced realities of everyday life. Through the student led analysis, grounded in site specific mapping, global precedent studies, and SDG aligned action plans, it became clear that the vitality of these spaces stems not from formal interventions, but from layered social practices, adaptability, and embedded cultural memory. Rather than imposing prescriptive solutions, the project embraced a bottom-up approach that values negotiation, co-creation, and open ended use. By framing the proposed actions as adaptable frameworks, the study encourages diverse stakeholders planners,

NGOs, designers, and local communities to engage in continuous shaping of urban space. This reflects the broader potential of placemaking not just as a design strategy, but as a civic tool for cultivating more inclusive, livable, and culturally grounded cities.

CONCLUSION

This research demonstrates that underused, edge-like spaces in Cairo are not voids to be filled, but complex, living environments with untapped civic potential. Through a methodology, that combines ethnographic observation, global case study analysis, and student led design inquiry, the study underscores the power of tactical urbanism and community rooted placemaking to reframe neglected urban thresholds. The work reveals that activating these sites does not require grand architectural gestures, but rather small, iterative, and inclusive interventions that amplify what already exists. The outcomes are not final blueprints, but strategic seeds anchored in SDG goals that invite broader participation and long-term evolution. Ultimately, the paper positions placemaking as an ongoing cultural, spatial, and social practice capable of transforming the overlooked edges of the city into dynamic civic assets shaped by the people who use them.

NOTES

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TRES: BUILDING COMMUNAL IDENTITY VIA MIGRATORY MEMORY IN EXPERIENTIAL ART

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INTRODUCTION

TRES (2025) is a multimedia art installation that can act as a case study for how public art works to create a sense of belonging for newcomers to an urban, pluralistic society. Artists, cities, and the general public partnered to initiate a public discourse that explores the relationships between migratory memory, place, the public sphere, and experiential art; audiences then had the opportunity to respond with their own memories, as this growing database formed part of an expanding collective experience. As a project that was freely open to the public, it acted as the culmination of various site-specific art works presented at various cities that have large immigrant populations in Broward County, Florida; 37.8% of Broward residents were born outside of the U.S., and of these 39.5% are not currently U.S. Citizens.[1,] The three Broward cities involved in this project offer free access to public gallery spaces, allowing for individuals and families to interact with local contemporary artists and art works. In contrast to the narrative that art galleries are exclusive or elitist, this project invites the public to actively participate, to exercise agency, and to belong in these spaces.

Figure 1. Maps of Pompano Beach, Pembroke Pines, and Coral Springs.

ACCESS AND INTERACTIVITY IN CITIES OF BROWARD COUNTY

These cities fund public galleries that make these art works freely accessible to the audience, reducing economic barriers and expanding the perception of who belongs in art spaces. *TRES* is an example of how cities can support artists to active projects through collaborative performance with a communal third space that attracted various communities and programming, e.g. immersive Geodome Pop-Up experience in collaboration with Fort Lauderdale's Museum of Discovery and Science. The installations in each city emphasize community-building through collaborations between the artist and the public

audience. Installations incorporated animation, sculpture, live performance, and memory-sharing to engage local audiences. Personal and collective memory transform into an evolving and immersive experience in accessible public spaces. This sequence of projects began in the Fall of 2023 at Pompano Beach Bailey Contemporary Art Center, continued into 2024 at the Frank Galleries in Pembroke Pines, and concluded in 2025 at the Coral Springs Museum of Art.

Figure 2. Outdoor projections during BaCA art residency in Pompano Beach.

Pompano Beach: *Garden of Memories* (2023) & *The Making of Water State* (2024)

The first portion of *TRES* was titled *Garden of Memories* (2023). This occurred as part of an artist-in-residency program at the Bailey Contemporary Art Center in Pompano Beach, South Florida. The City of Pompano Beach Cultural Affairs Department manages the Artists in Residence (AiR) at the Bailey Contemporary Arts Center (BaCA); the Pompano Beach Cultural Center and the Ali Cultural Arts Center worked with the artist to provide free workshops for the public to experience how culture can be created in collective conversation.

Figure 3. The Making of Water State gallery exhibition at the Pompano Beach Cultural Center.

Garden of Memories employed drawings and cut-outs to assemble animations of memories relating to the garden of the artist's grandfather in Venezuela. Throughout her residency at Bailey Contemporary Arts, she invited people to share their own stories related to plants by scanning a QR code. The stories formed the basis of various playful indoor and outdoor interpretations and activations of the installation (e.g. outdoor projections, claymation, paper cut-outs, collages, etc.). Window projections displayed memories to passersby in this urban area, inviting them to explore the gallery and perhaps share their own memories as well.

Figure 4. Outdoor projection and public storytelling at the closing of The Making of Water State.

The BaCA residency led to a grant to develop *The Making of Water State: Florida as Refuge* (2024). This grant period over the summer of 2024 included community interaction by offering art workshops, while at the same time providing time to develop an animated collage that celebrated the state of Florida's biodiversity. The subsequent exhibition ran from August 9 until the closing event on September 20. This concluded with a one-time viewing of the animation on the terrace of the Pompano Beach Cultural Center. The video was projected onto the building itself at sunset; afterwards, the community was invited to share their own experiences as immigrants who found a sense of refuge in the state of Florida.

Pembroke Pines: Lexicon de Plantas (2024)

Next came *Lexicon of Plants* (2024) at The Frank C. Ortis Art Gallery in Pembroke Pines. This was a large-scale, participatory, audiovisual, and site-specific art installation featuring a typewritten poem by the artist's grandfather, Jose Colmenares, written in Caracas, 1949. The exhibition placed the poem in a triptych alongside drawings and animations based on the artist's childhood memories of her grandfather's garden; these were projected onto paper sculptures.

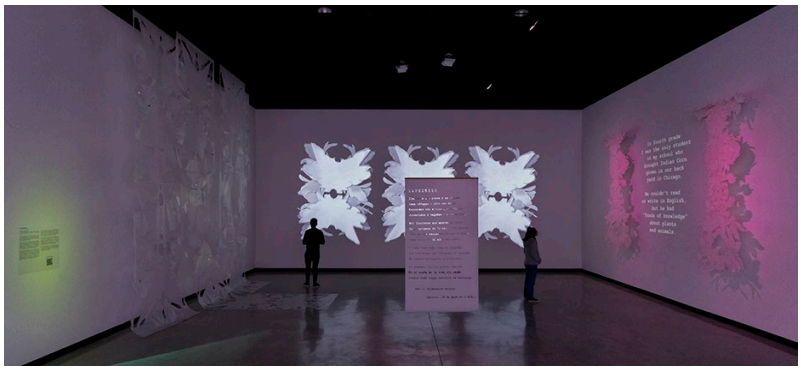

Figure 5. Lexicon of Plants at The Frank Gallery in Pembroke Pines. Photograph by Zachary Balber.

Community-sourced texts came from locals in Pembroke Pines who visited the exhibition during the months of February to May. The installation prompted a dialogue of stories shared by the community, as visitors were invited to scan a QR code to answer the question "What is your memory related to plants?" These memories were then projected as part of the exhibition and were regularly added into the video during the 4-month exhibition. The closing featured a session that allowed the audience to publicly share their memories via microphone. The installation made it clear that members of the community not only belong in that art space, but also that their stories form essential aspects of the exhibition as a whole.

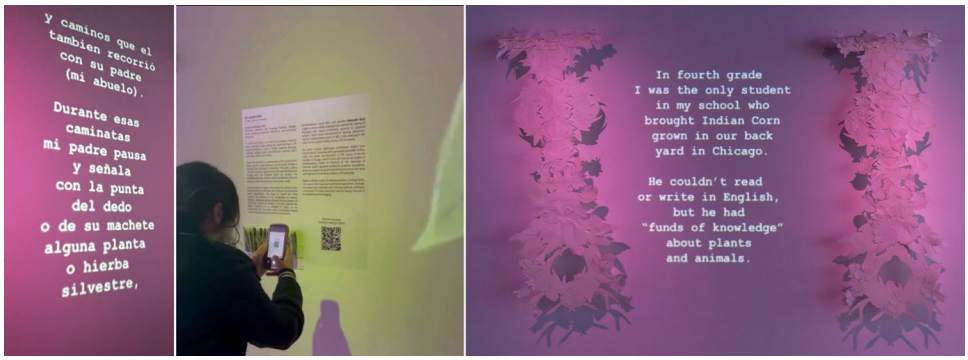

Figure 6. Sharing community memories via QR code at The Frank Gallery.

Coral Springs: *Water State* (2024-2025) & *TRES* (2025)

Water State (2024-2025) was experimental short that addressed Florida as a refuge for immigrant hybridity; it utilized moving collages of natural landscapes alongside documentary interviews with community members in public parks. This work was possible with the support of the Broward County Cultural Division Artist Support Grant, and has been presented thus far in three forms: 1) the aforementioned *The Making of Water State* outdoor screening; 2) an interactive installation in *TRES*, where audience interaction with a web camera would reveal the contexts of the video, and 3) a one-time pop-up experience projected inside a geodome mobile planetarium.

Figure 7. Geodome pop-up experience featuring excerpts of Water State.

TRES was a multimedia installation at the Coral Springs Museum of Art that included hanging paper sculptures, drawings of plants, ceramics, animations, a video looping publicly sourced memories of plants, and the interactive version of *Water State*. The artist gathered stories from various residents in Broward County and wove those memories into the animation. The goal here was twofold: to transform art galleries into immersive environments that provide a sense of belonging and home, as the audience can see themselves and their stories inclusively represented in the work, and to bring the beauty of the vibrant natural world of South Florida, particularly the Everglades, into urban spaces where audiences can interact with nature through public art.

Figure 8. Opening night of TRES at the Coral Springs Museum of Art.

PUBLIC ART AND THE ARCHITECTURE OF BELONGING

These cities work with artists to enact a philosophy of public good, as each city offered free art experiences and opportunities through programming and educational workshops. Cultural exchange is vital in a multicultural society, as it helps to bridge gaps and build mutual empathy as people see commonalities even in their perceived differences. Organic engagement can occur through voluntary interaction, as visitors add their own memories to the work; these carry over into the next iteration of the work in a neighboring city, building connections among communities in cities across South Florida. Georgică Mitrache writes that the "drive to congregate with other people in order to share things both great and small" is "inherently human," and "the public space was called upon to be the scene of the meeting between art and people"; this leads to "a three variable equation: art, the public, and the built context in which individuals coalesce into *the public* — in short, architecture."[2] Given the rapid social shifts in the 21st century, public art does not serve a merely aesthetic function; rather, "[a]rt vacillates between… an *aesthetics of disappearance* (gradual erosion of the body and human presence from public space) and being the antidote to that very crisis."[3]

TRES ties to the living memory of each place, as individual and collective identities manifest in the agency of the public in a storytelling domain. The gallery buildings serve as an architectural intervention

where people can congregate and experience connection without being expected to perform the role of passive consumer that is standard in many public spaces. This kind of public art rests on "the notion that meaning is not immanent to built form (artistic, architectural or urban), but is performative and continually constructed," and in so doing it can "entice the inhabitants to engage and reconnect with these spaces."[4] The gallery space then becomes an ideal environment to serve the community in an interdisciplinary manner. During the opening of *TRES*, local educational organizations like Popcorn Academy sponsored tours for bilingual children to hear the artist describe her work and processes in both English and Spanish to demystify the process of art creation. This kind of activity in the public sphere celebrates and cultivates the variety of native languages in South Florida, countering the assumption that art spaces require elite access and education by inviting regular folk to explore and belong in the art world.

The core values of the art space and artist aligned to foster collective wellness by accepting hybrid identities that embrace belonging, regardless of one's language and culture. It also prompted the audience to address lost connections, as the work offered immigrants a moment to relive memories of closer ties with nature. Immigrants to a new urban setting may feel the need to deny those cultural and environmental connections to the land for the sake of assimilation. In building continuity between past, present, and future, these group tours activated the museum to consider how the art works relate to the cultural needs of local families and individuals.

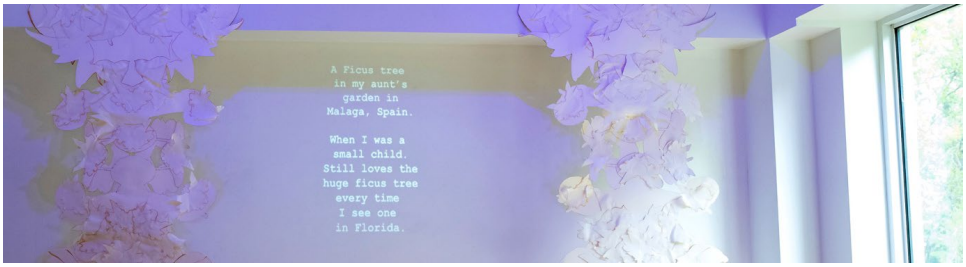

Figure 9. Projection of shared memories in TRES at the Coral Springs Museum of Art.

Sharing Migratory Memories

TRES featured projections of the text of these shared memories. A recurring theme in these memories was the experience of migration, as individuals and families left their beloved homes to try to find a more stable life in Florida. *TRES* opens a generational conversation with the public about the process of uprooting and re-rooting, which in turn connects to plant life, as humans often learn to adapt and form new hybrid identities. Migration does not need to be defined just by loss, but it can also involve gaining a new sense of community and belonging. Stuart Hall writes that "[t]he diaspora… is defined, not by essence or purity, but by the recognition of a necessary heterogeneity and diversity; by a conception of 'identity' which lives with and through, not despite, difference; by *hybridity.* Diaspora identities are those which are constantly producing and reproducing themselves anew, through transformation and difference."[5] The gallery space becomes a vessel for hybridity, to share memories, to engage, and to welcome individuals into a shared collective story.

Figure 10. Opening performance for TRES at the Coral Springs Museum of Art featuring T.M. Pride.

Music, Dance, and Public Memory in the Audiovisual Space

The artist's grandfather's cuatro, a four-stringed Venezuelan lute, served as the impetus for the musical scores, enacting the hybridity that can result from traditions meeting new contexts. The fact that folk music *is* the official music of Venezuela is important. Instead of an arbitrary division between low and high cultures, Venezuelan folk music embraces the dignity of the worker, and particularly one who works the land in communion with nature. The score includes subtle hints towards the new hybrid context in South Florida by juxtaposing sounds from the natural landscape of Venezuela, especially birds and frogs, with minimalist synthesizers that create a textural bed for the score. The goal was to create a lush sound to emphasize the interactions between various forms of life that create our ecosystems.

The music and sound design work with the visual data to create sensory cues that aim to connect the objective work to the subjective recollection of personal memories. These prompts work to evoke memories that can be analogously understood as "Proustian" – i.e. the ability of "sensory modalities" to "spontaneously to cue autobiographical memories" and to "affect emotion and physiological changes" and "cognitive abilities (e.g. memory, task performance)."[6] As these subjective experiences entangle with the experience of the objective work, audiences have the opportunity to put themselves and their own histories in dialogue with the art; this in turn can lead to a sense of belonging, given the perception that their own narratives relate to the physical work that appears in the gallery space. By sharing their own memories, the audience is not merely passive recipients of the art works, but they are active agents in the creation and dissemination of stories that connect art, community, and nature.

The opening of *TRES* featured a dance performance by choreographer T.M. Pride, which served as an activation of the gallery space for the audience. The musical score played over the gallery speakers as T.M. moved from work to work, inviting the audience to follow suit. This was particularly important for the interactive pieces like *Water State*, as the audience could see a demonstration of how they could physically engage with the work. Allan Kaprow writes that "[f]or John Cage, an experimental action in music was one whose outcome couldn't be known in advance"; "[m]usical and nonmusical sound ("noise") were equally welcome."[7] While the music itself was prerecorded, so that it could play continuously over the months of the exhibition, the "experimental action" occurred as audiences physically engaged with the work. Some visitors danced in front of the webcam; others would laugh, sing, or whistle unprompted accompaniment to the music and sound design. The audience exercised agency in responding to the audiovisual data, establishing that visitors not only belong in this community but that they also are essential parts of the art installation itself.

Aesthetic & Philosophical Contexts

TRES invites new perceptions by changing the architectural norms of art galleries by activating the spaces via visual play, employing aesthetics that change the environment and actively incorporate the memories of the visitors. Experimental film maker Stan Brakhage called for artists and viewers to see

differently by imagining "an eye which does not respond to the name of everything but which must know each object encountered in life through an adventure of perception."[8] In the domain of perception, the stories surrounding the audiovisual experience in *TRES* are not complete without the participation of the audience.

TRES builds on the aesthetics of works such as: Oskar Fischinger's *Optical Poem* (1938), in the use of paper shapes, cut-outs, and abstraction, while adding the new content of communal memory to extend a link between the past, the present, and imagined futures; Olafur Eliasson's *The Weather Project* (2003), with audience participation regarding questions of how humans and nature can productively relate via technology; William Kentridge's *Johannesburg, the 2nd Greatest City After Paris* (1989), given the social commentaries on how memory relates to power structures; and Barbara Kruger's *Thinking of You. I Mean Me. I Mean You* (2021), which employs the visual language of advertising while utilizing large gallery spaces to create an immersive installation. TRES participates in this discourse of reconsidering how we view the norms of history and commerce, subordinating them to the active wills of artist and audience to consider how humans and technology can integrate and belong in both nature and in urban settings of the body politic. As Eli Bornstein writes, art and architecture can "learn fundamental lessons from observing wild and perennial natural phenomena… and discover pathways of almost limits renewal and continuity."[9] This allows for activity in cities where the public may not typically have access to the experience of nature. This acts as "a power to enter into communion with living and lifeless things; to enter into a union with nature's powers and processes"[10] through the art itself.

CONCLUSION

Cultivating living culture for the people is a significant step in making our cities sustainable. Through participatory and socially engaged art, particularly when artistic expression is often devalued and reduced to mere commodity, we can signal to the community the value of artistic acts as they actively create cultural meaning by recording and responding to living memory in experiential art. The pieces in these installations were not for sale, emphasizing instead the pricelessness of the cultural response as "relational art has demythologized the object and replaced it with the social dialogue of artist, spectator, and more generally, community."[11]

The memories of immigrant populations carry great depth and complexity. They often hold the culture and history of their original homeland in reverence, resulting in a nostalgic longing; yet the promise of modernity in a new homeland can pressure immigrants to assimilate by jettisoning the past to embrace the new. Simply meeting others with similar experiences can be a significant way to integrate these opposing impulses. Reconciling the past and present can pave the way to imagined futures where hybridity, rather than separation and alienation, can help to reconcile seemingly disparate aspects of the psyche – that is, accessible art spaces can work to unite immigrants and non-immigrants, humanity and nature, technology and plants, and the urban and the rural. As the city provides space for the artist's practice, the artist provides programming for the public, and the public provides communal interaction to create collective culture. *TRES* looks beyond the loss of identity that can occur via immigration, assimilation, and erasure, and instead celebrates the possibility of gained hybrid identities in contemporary urban settings.

NOTES

[1] "Urban Planning Division: Quick Facts," Broward.org Publishing Organization; Broward County, Florida - Census Bureau Profile.".
[2] Georgică Mitrache. "Architecture, Art, Public Space." *Procedia - Social and Behavioral Sciences* 51 (2012): 562.
[3] Mitrache, "Architecture, Art, Public Space," 563.
[4] Mitrache, "Architecture, Art, Public Space," 565.
[5] Stuart Hall. "Cultural Identity and Diaspora." Essay. In *Colonial Discourse and Post-Colonial Theory*, 402. London: Columbia University Press, 1994.
[6] S Chu. "Odour-Evoked Autobiographical Memories: Psychological Investigations of Proustian Phenomena." *Chemical Senses* 25, no. 1 (February 1, 2000): 111–16.
[7] Allan Kaprow. "Just Doing." *TDR (1988-)* 41, no. 3 (1997): 101.
[8] John G Hanhardt. "From Screen to Gallery." *American Art* 22, no. 2 (June 2008): 3.
[9] Eli Bornstein. "Structure And Color In Nature: Toward Symbiosis in Art and Architecture." *The Structurist* 0, no. 31 (1991): 96-97.
[10] Bornstein, "Structure and Color in Nature," 100.
[11] Michael D Slaven. "Relational Art and The Appropriation of The Public Sphere." *International Journal of Arts & Sciences* 5, no. 6 (2012): 614.

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“ALOJAMENTO LOCAL” AND COMMUNITY PARTICIPATION IN LISBON

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INTRODUCTION

This text examines the legislative and popular participation processes involved in regulating short-term rentals (called “*alojamentos locais”*) in Lisbon, Portugal. The article aims to identify, among other issues, the actors involved in the regulation of these platforms; the forms of community participation in the development of this regulation. It is based on documentary research and qualitative analysis. In recent years, there has been intensive use of platforms such as Airbnb for offering short-term rental properties in Lisbon, which has generated a series of reactions both from communities and from municipal authorities.In recent years, the city suspended the authorisation of new short-term rental registrations and created containment areas in five historic neighbourhoods. This work explores the conflicts within these processes and presents the Brazilian model of popular participation in urban planning and management. Finally, it proposes, in its conclusions, a brief comparison between participatory models in Brazil and Portugal.

THE REGULATION OF LOCAL ACCOMODATION

The study underlying this text seeks to examine aspects of the legislative processes involved in regulating Local Accommodation in the city of Lisbon, Portugal. The term “Local Accommodation” as used in this study refers to the utilization of residential properties for hosting tourists on short stays, particularly through platforms such as Airbnb and similar services. Its objectives are to analyze, in the context of Local Accommodation regulation in Lisbon, the forms of public participation in the formulation of such regulations and to evaluate the extent to which community opinions are incorporated into the regulatory framework. This work is part of research conducted during postdoctoral studies at the Centre for Social Studies of the University of Coimbra in 2019, under the supervision of Professor Giovanni Allegretti.

In recent years, the growing demand for accommodation has contributed to the intensive use of Airbnb and other platforms, especially in Portugal’s main cities—Lisbon and Porto—allowing the short-term rental of part or all of residential properties, in a process of urban center gentrification. Gentrification is understood as “a change in the economic status of a location from the perspective of the real estate market, which also transforms existing services, as well as the physical quality and social characteristics of the area.” [1]

It is evident that the significant increase in tourism in Lisbon and the consequent displacement of the local population in recent years result from changes in internal economic policies in Portugal aimed at attracting external investment in the real estate market, creating a significant social problem with rising rental prices.[2]

According to the website of the Housing Referendum Movement: "in the Lisbon area, where more than 19,000 homes are designated for Local Accommodation, the problem is not scarcity, but rather usage (…)".[3] Historically, Portugal has one of the highest proportions of vacant homes in Europe. According to 2021 Census data, the National Statistics Institute (INE) recorded 723,215 vacant homes in Portugal, equivalent to 12.1% of the total housing stock.

According to real estate data specialists from Confidencial Imobiliário, rental prices in Lisbon have more than doubled over the past decade.[4] According to the Lisbon City Council, there are currently over 19,000 registered units, representing approximately 7.5% of the city's housing stock.

Historical Context of the Suspension of New Local Accommodation Authorizations in Lisbon

In 2022, at the beginning of the new political administration in Lisbon, the first suspension of new Local Accommodation authorizations was implemented for a period of six months, pending the enactment of changes to the Municipal Local Accommodation Regulations, in parishes "where the ratio of Local Accommodation establishments to permanent housing units is equal to or greater than 2.5%, either currently or projected during the suspension period."[5]

Between 2 and 27 May 2022, public participation was opened for the amendment of the Municipal Local Accommodation Regulations,[6] receiving only 53 submissions.[7] According to the report "Contributions for the Revision of the RMAL", of the 22 participants who contextualized their contributions, five were residents and 16 were representatives or entities whose work is directly or indirectly related to Local Accommodation. These included residents working in universities, tourism operators, associations, business managers, and property owners.

Subsequently, in November 2024, the Lisbon City Council suspended all new short-term rental registrations across the city, citing the need to contain the sector's growth while preparing new municipal regulations.

According to Municipal Assembly Resolution No. 609/AML/2024: "The authorization of new registrations for Local Accommodation establishments is suspended for a period of six months, subject to renewal for an equal period, until the amendment of the Municipal Local Accommodation Regulations comes into force, without prejudice to existing containment zones."[8]

During this period, important legislative changes occurred concerning Local Accommodation in Portugal. Decree-Law No. 76/2024 of 23 October introduced changes to the legal regime of Local Accommodation, strengthening the role of municipalities in defining and managing containment zones, where limitations on new Local Accommodation establishments can be imposed. It established deadlines (up to 90 days) for the analysis of registration requests in new containment areas. Moreover, these areas are now linked to objectives of preserving permanent housing and controlling tourism. In relation to condominiums, the assembly can oppose the use of housing units for Local Accommodation, through a reasoned resolution approved by more than 50% of condominium owners, which can then be submitted to the municipal council for registration cancellation.[9]

The suspension in Lisbon was extended for an additional six months, according to Assembly Resolution No. 249/AML/2025 of 6 May 2025, and further extended in Order 187/2025 of 3 November 2025. To date, the suspension of new Local Accommodation authorizations remains in effect.[10]

Finally, in December 2025, the Lisbon City Council approved amendments to the Municipal Local Accommodation Regulations,[11] reducing the absolute containment ratio from 20% to 10%,[12]

representing a partial lifting of the previous restrictions. During this period, the municipal administration changed from socialist Fernando Medina (PS, 2015–2021) to Carlos Moedas (minority mandate starting October 2021, re-elected with a majority for 2025–2029, supported by right-wing parties PSD/CDS-PP/IL/MPT/PPM/A).

Popular Referendum on Local Accommodation in Lisbon

Amid legislative uncertainty regarding the maintenance or lifting of the suspension on new Local Accommodation establishments and residents' concerns over the resulting issues, grassroots social groups requested a local referendum on the matter. In Portugal, forms of direct public participation in planning and public management include plebiscites, referenda, binding public hearings, consultations, and participatory budgeting initiatives.

The legal framework for local referenda in Portugal is regulated by Organic Law No. 4/2000 of 24 August and subsequent amendments. The process involves multiple stages, including approval of the deliberation by the municipal council, submission for review by the Constitutional Court, announcement, execution, and publication of results. Article 4 of the Law excludes certain matters from local referenda: a) issues within the legislative competence of sovereign bodies; b) matters regulated by national legislative or regulatory acts binding on local authorities, among others.[13]

The request for this referendum—the first popular referendum initiated by society in Lisbon—was submitted on 8 November 2024 by the Housing Referendum Movement, a grassroots organization uniting multiple social groups advocating for affordable housing, which gathered over 11,000 supporting signatures.[14]

The initiative focused on two main questions:

Do you agree with the amendment of the Municipal Regulations on Short-Term Rentals, so that the Lisbon City Council, within 180 days, orders the cancellation of short-term rental registrations in residential properties?

Do you agree with the amendment of the Municipal Regulations on Short-Term Rentals, so that short-term rentals are no longer permitted in residential properties?

According to the Brazilian newspaper Folha de São Paulo, after the municipal council approved the referendum, the Constitutional Court was tasked with validating the ballot questions. The referendum was scheduled for the first semester of 2025 and would have been the first Lisbon vote initiated by popular petition, with potentially binding effects on municipal administration.[15] However, in a January 2025 session, the Portuguese Constitutional Court rejected validation due to administrative irregularities and insufficient signatures.[16]

According to information published on the Portuguese Constitutional Court's website, the Court plenary decided not to confirm the legality of the local referendum initiated by popular petition, which had been approved by the Municipal Assembly of Lisbon in its 3 December 2024 session. The Court deemed that the case violated the Legal Framework for Local Referenda (Organic Law No. 4/2000, with subsequent amendments), which excludes matters regulated by national legislative or normative acts binding on local authorities.[17]

On 13 January 2025, following the judicial rejection, the Housing Referendum Movement submitted a revised referendum proposal to the Municipal Assembly of Lisbon. The new questions were:

Do you agree to amend the municipal regulation on short-term rentals, so that the Lisbon City Council, within a maximum of one year, orders the cancellation of short-term rental registrations in the apartment modality?

Do you agree to amend the regulation so that residential use is no longer considered compatible with the operation of new short-term rentals in apartment and single-family housing modalities?[18]

The Housing Referendum Movement criticized the judicial decision on its website, stating: "The Constitutional Court ruling makes it clear that, although 'the accommodation is local,' one cannot act locally on it (…) which we neither understand nor accept." According to the movement, "Local Accommodation, being a matter of local interest, should have its regulation decided by municipal or parish authorities, within their jurisdiction, even if shared."[19]

Rui Martins observes[20] that, despite its importance, the history of local referenda in Portugal is marked by bureaucratic restrictions that hinder implementation and effectiveness, highlighting "the urgent need to review and update legislation on local referenda to remove bureaucratic obstacles, broaden citizen participation, and ensure that decisions truly reflect popular will."

The Brazilian Participatory Experience in Urban Planning

This section explores the Brazilian experience of popular participation in urban planning and the procedures for involving populations in public discussions about urban life, including housing issues, to later compare them with the case of Local Accommodation in Lisbon.

According to Brazilian legislation—Article 182 of the Federal Constitution of 1988 and the provisions of the City Statute (Lei Federal No. 10,257/2001)—decision-making processes related to urban planning and management must be participatory, particularly concerning municipal master plans. These processes require the organization of public hearings and consultations, as well as plebiscites and referenda.

Article 182 of the Federal Constitution establishes:

"The urban development policy, implemented by the municipal government in accordance with general guidelines established by law, aims to ensure the full development of the social functions of the city and the well-being of its inhabitants (…) §1. The master plan (…) mandatory for cities with more than twenty thousand inhabitants, is the fundamental instrument of urban development and expansion policy." (Brazil, Constitution art. 182)

The City Statute, in Article 2, II, establishes that urban policy must guarantee public participation in the formulation, implementation, and monitoring of urban development plans, programs, and projects.[21] The principle of democratic city management, enshrined in Article 2, II of the Statute, constitutes one of the core principles of Brazilian urban policy. It requires that urban issues be discussed both with various sectors of society and directly with affected or interested populations.

Brazilian municipalities are also required to establish instruments of democratic governance and collegial bodies for urban policy, such as the Master Plan Council or the City Council (Conselho da Cidade). These bodies must ensure equal representation of social, business, and governmental organizations. Municipalities are further required to hold conferences and municipal congresses on urban policy, including debates, public hearings, and consultations.[22]

The City Statute guarantees popular participation and transparency in decisions affecting land use and urban development. Among the regulated instruments, the municipal Master Plan is considered the fundamental tool of urban development and expansion policy. Since its enactment, the Master Plan has been guided by the need to bridge technical and bureaucratic urban planning with the social, economic, territorial, and environmental realities of municipalities, ensuring meaningful public participation. The participatory master plan must also align with environmental legislation, building codes, and the municipality's economic and fiscal plans.[23]

Failure to comply with these legal requirements and limitations on social participation runs counter to the principles guiding urban planning in Brazil—principles enshrined in the Federal Constitution, the City Statute, and regulatory frameworks such as Resolution No. 25 of the National Council of Cities.[24] Brazilian courts have consistently upheld these provisions, extending them to other urban and environmental legislation.

Consequently, a large portion of urban decision-making in Brazil necessarily includes participatory stages, particularly public hearings. However, these procedures are not always fully effective. Since Brazilian law mandates participatory stages, some local administrations comply formally with these requirements but restrict broader engagement of affected populations.

Differences in Urban Participatory Models: Brazil vs. Portugal

Brazil is a federal state composed of the Union, the States, the Municipalities, and the Federal District, organized within a system of distributed powers. Each federated entity (federal, state, and municipal) possesses legislative authority and shared responsibilities. Municipalities enjoy political and administrative autonomy within limits established by the Federal Constitution and are empowered to legislate on matters of local interest.[25]

Portugal, by contrast, is a unitary state with centralized political authority. The Constitution assigns the National Assembly (Assembleia da República) responsibility for legislating on the basic principles of land-use planning and urbanism, while Municipal Councils (Câmaras Municipais) approve plans and implement urban policies at the local level.

In Brazil, stakeholder participation in the preparation and approval of urban plans is mandatory and direct, occurring through public hearings, consultations, or sectoral councils. This participation constitutes a legal and constitutional requirement prior to legislative approval. Portuguese legislation, in contrast, articulates the principle of participation in the 2014 Framework Law on Land Policy, emphasizing consultation and negotiation of interests. The law stipulates that territorial management instruments are subject to prior public review—particularly those binding on individuals "through the submission of proposals, suggestions, and complaints, as well as the right to receive a reasoned response from the administration."[26]

Participation and Digital Platforms in Brazil

In the specific case of renting properties through digital platforms, Brazilian legislation is still incomplete. Bills addressing this issue have been submitted, such as amendments to the Civil Code at the national level and proposals for the city of Rio de Janeiro. In the absence of regulatory law, the Superior Court of Justice (STJ) has ruled that residential condominiums may prohibit Airbnb rentals, based on condominium agreements, which classify the practice as similar to hotel operations and inconsistent with residential use. While the activity is not formally considered hotel activity under the Tenancy Law, the STJ recognizes it as a new form of lodging with hotel-like characteristics.

The debate is therefore not only economic but also concerns access to housing, which affects quality of life in cities, as well as housing costs and broader housing policies. Legislative discussions on this topic should be subject to broad public deliberation through participatory instruments such as hearings and public consultations.

CONCLUSION

Decision-making processes that directly affect urban populations must include citizens' direct participation through hearings, consultations, and referenda. Portugal, unlike Brazil, does not yet mandate such legislative obligations, which could help prevent the judicialization of processes, as observed in the case of short-term rentals.

A comparative analysis of participatory processes in Brazil and Portugal, using community participation in the debate on Local Accommodation in Lisbon as a reference, shows that the Brazilian model provides legally mandated and institutionalized mechanisms for direct participation in urban planning decisions. Portuguese legislation, in contrast, relies mainly on consultation, information dissemination, and negotiation, limiting the effectiveness of participatory processes.

In the Lisbon case, there are clear formal difficulties in conducting genuine public consultations on issues of community interest due to the absence of institutionalized instruments for direct participation—a framework long established in Brazil. This presents a challenge that Portuguese society and legislators must confront: expanding legal channels and instruments for citizen participation.

Regardless of the governing party, political representatives in Portugal tend to retain decision-making privileges and limit citizen movements, even in areas of fundamental social concern and participatory democracy.[27] Programs such as BIP-ZIP and its national version, Healthy Neighborhoods, have opened civic spaces for discussion on urban renewal. In other cases, such as Lagos, housing regulations were developed through participatory methods. Portuguese laws, including the Basic Housing Law and programs approved by socialist governments between 2018 and 2019, recognize participation as a prerequisite but do not allow sufficient time for meaningful engagement. At the same time, issues such as over-tourism and Local Accommodation remain largely outside institutionalized participatory processes.

Brazil, conversely, still lacks comprehensive regulation and legislative attention regarding Local Accommodation. The problem is not as widespread as in Portugal, partly due to housing programs such as Minha Casa, Minha Vida, which mitigate housing pressures. Nevertheless, studies show growing influence and pressure from the real estate market, including speculation, gentrification, and rising rental prices, especially in major cities. This underscores the importance of community participation in debates on housing access and urban development.

NOTES

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SELF-ORGANIZED BUILDING ADAPTATION: THE ROLE OF INHABITANTS IN ADAPTING INFORMAL HOUSING TO FLOODS

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INTRODUCTION

Situated along the Pacific Ring of Fire, Chile is one of the world's most seismically and volcanically active countries.[1] Over time, earthquakes have shaped building regulations and transformed Chilean society's perception of seismic risks. These regulations have evolved in direct response to these events, with significant revisions occurring roughly every twenty-five years based on lessons learned and the frequency of major earthquakes. However, these regulations primarily apply to formal structures. In the Disaster Risk Reduction framework, these are referred to as planned adaptation**,** also understood as contingency planning[2] and usually developed from scenario-based analysis.[3] This raises the question: What happens to the countless dwellings in informal settlements that fall outside these regulations?

Informal settlements in Chile often emerge in peripheral, environmentally sensitive areas such as the coast and are excluded from formal planning systems. Nearly one-third of Chile's informal settlement population lives in disaster-prone regions, facing threats such as floods, landslides, and fires.[4] Over the past decade, informal settlements have significantly increased, particularly along the coast,[5] where geographical vulnerability exacerbates these risks. In response, inhabitants of informal settlements must develop adaptive strategies, testing both the flexibility of their homes and their capacity to respond effectively to environmental risks.

According to Alegría and Dovey, urban informality refers to a "set of self-organized practices that produce architecture, urban design, and planning beyond the control of the state".[6] These practices are often dynamic and evolve incrementally over time.[7] Informal settlements represent a form of local architecture that responds to aesthetic and social values, local economies,[8] and the ability to learn from problems[9] and hazards. Dwellers of informal settlements are often forced to modify or rebuild their homes with minimal external support or guidance,[10] relying primarily on shared knowledge,[11] accessible resources, and environmental conditions.

This paper reviews the concept of self-organized adaptation of dwellings, the adaptive process that has taken place outside the planned adaptation. It presents part of the conceptual framework for the broader doctoral research project, **"Narratives of Adaptation".** The research explores how experiences of natural disasters influence the ways inhabitants of informal coastal settlements adapt their dwellings, focusing on four communities in central Chile to examine how personal and communal experiences shape their responses to and preparations for environmental risks.

Adaptation

The term '**adaptation'** is derived from the Latin *ad* (to) and *aptare* (fit). Conceptually, 'to adapt' refers to modifications made to fit a particular structure or circumstances. Adaptation is also an inherent characteristic of humans, like other species, and the success of this process depends heavily on individual adaptive capacities.[12] It can also be understood as "human decision-making under conditions of uncertainty".[13] Its meaning and interpretation depend not only on what is adapting or is being adapted but also on the disciplinary context.

In Disaster Risk Reduction (DRR), adaptation is considered the last step in the Resilience Cycle.[14] The cycle consists of four key actions or steps.[15] The first one is preparation, followed by resistance, which comes right after the disruptive event and, as the name suggests, focuses on the first response to a disaster. Reconstruction follows, leading ultimately to adaptation. Resilience is often associated with the idea of 'bounce back',[16] while adaptation is related to the ability to 'bounce forward'.

Adaptive processes seek to reduce potential losses and to recover more efficiently.[17] This is achieved by successfully reinterpreting the territory and urban infrastructure after a natural disaster[18] and its efficiency is highly influenced by the adaptive capacity of the inhabitants and communities, and how that ability is distributed.[19] In other words, it is the response of individuals and communities to environmental disturbances, whether natural or anthropogenic. Since natural systems are influenced by climate change, the nature and modes of adaptation must evolve with the new circumstances, as disturbances and the built environment constantly change.[20] In this document, 'adaptation' will be understood as the spatial alteration carried out by people after interpreting the environment.

Since adaptation involves human responses and modifications to the built environment, it is essential to analyze its impact on architecture and human habitat. In this sense, architecture reflects adaptation and conditions the capacity to respond to extreme events.

For instance, in architecture, adaptation can be understood as (1) any action taken to modify, repurpose, or improve a building to meet new demands or conditions[21] and (2) the deliberate alteration of a building to a specific and extreme geography or unusual territories.[22] Although buildings are inherently static and immovable objects, their organic nature allows them to reflect the decisions and life dynamics of their inhabitants, becoming dynamic as they adapt to internal or external triggers through planning and necessary changes.[23] As Grothmann & Patt stated, motivation and perceived abilities determine humans' actions, shaping the house and the built environment.[24]

Adaptation in Informality

The impact of natural disasters is not evenly distributed; vulnerable populations, particularly those in socioeconomically disadvantaged communities, face disproportionate risks and challenges in adaptation. In the Global South, rapid urbanization presents significant challenges for both authorities and citizens, as many expanding urban areas already face high levels of poverty, unemployment, informality, and environmental risks.[25] As a result, low-income groups are often pushed into disaster-prone locations, with a significant portion of no permanent houses in the developing world, nearly 40%,[26] now located in areas.

This socioeconomic vulnerability is particularly pronounced in informal urban areas, where urban expansion, environmental risks, and economic instability intersect to complicate adaptation efforts. Similarly, a sociologist Lindón describes informal settlements as a clear example of urban dynamism.[27] They consist of multiple interventions occurring over an extended period. Thus, they are considered a complex and unpredictable system that adapts in unforeseen ways,[28] where self-management and self-organization are key.[29]

In DRR, the process is defined as autonomous adaptation. It consists of self-initiated adjustments that individuals or groups make in response to environmental risks, often without state intervention or

formal planning.[30] Regarding the building process, self-adapted and built houses are inexpensive, effective, and have higher social value.[31] For example, flood-prone areas like Mathare Valley in Nairobi, Thorn et al. observe that households adapt to floods by insulating roofs with plastic sheeting and elevating homes using sandbags to mitigate flood damage.[32] However, as Smit et al. note, whether an adaptation is classified as "autonomous" depends on its degree of spontaneity,[33] distinguishing it from planned adaptation.

Additionally, many informal settlements are located in flood zones and other hazardous areas, where a lack of compliance with urban planning regulations and the absence of property titles often result in delays or legal obstacles to resettlement efforts.[34] Meanwhile, the increasing frequency and severity of extreme weather events due to climate change have accelerated this cycle of reactive adaptation

Adaptative process

They respond to both internal household dynamics and external pressures. These actions or alterations to the home also vary in scale and intention, ranging from minor to significant adaptations.[35] The adaptive process can lead to significant shifts, such as social and economic restructuring within families, the involuntary displacement of entire communities, and technological interventions to mitigate risks. However, it is almost impossible to separate climate adaptation decisions from those influenced by social or economic events.[36] Thorn et al. emphasize that some actions may not seem directly linked to adaptation but still contribute to it.[37] For instance, a household might build a low wall around its property to mark the site's limits, but this structure could also serve as a barrier against minor floods. The success of this barrier during one flood can influence the decision to invest in maintaining or reinforcing the wall to ensure it responds well to the next flood.

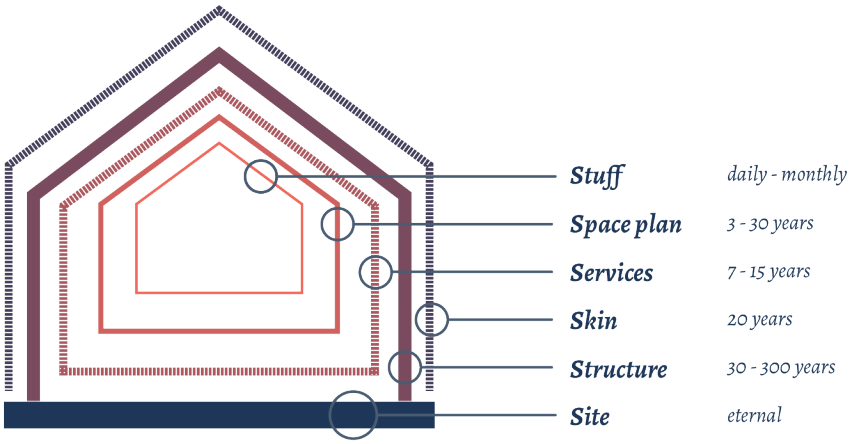

Figure 1. Shearing Layers of Change. Adapted from Brand (1994)

Regarding the scale, Brand proposes dividing a building into five layers, each of which changes at different rates and periodicities: Stuff, Space Plan, Services, Skin, Structure, and finally the Site,[38] as illustrated in Figure 1. These layers illustrate how household changes differ in speed and permanence. For instance, immediate changes, like daily life or acquiring new items (Stuff), happen quickly and are usually non-permanent. In contrast, more permanent changes, such as renovations or structural transformations (Skin and Structure), develop gradually and are generally influenced by external factors and long-term needs. Household finances, priorities, and external conditions influence these variations in scale and pace, highlighting how some changes are swift and temporary while others are slow and

enduring. This attention to different temporalities of change parallels how disaster mitigation strategies can be understood in terms of their duration and permanence.
Sen et al. distinguish between coping and adaptation strategies regarding their short-term or permanent nature,[39] respectively. For example, using sandbags to reduce flooding is a short-term coping strategy, while building a stilt house or seawall represents a long-term adaptation measure. These strategies are also linked to time and space. Sandbags, for example, don't change the house and are placed just before or during a flood. In contrast, stilt houses and seawalls significantly alter private and public spaces. They're often built as preventive measures but can also be responses to disasters. Considering timing while exploring adaptive measures is also critical, mostly in informal contexts. Grothmann and Reusswig define installing protective water barriers, structural changes to the dwelling, or furniture rearrangement as "private precautionary adaptation".[40] They argue that these actions can significantly reduce flood damage. Whether these adaptations occur before or after an event determines whether they are proactive or reactive responses.

MALADAPTATION

As previously established, the adaptive process led by inhabitants in their dwelling implies that individuals or communities often implement adaptive actions to mitigate risk without depending on other entities, such as national and regional institutions. Forsyth & Evans argue that the actors' actions in this case could have unpredictable outcomes and are not always successful.[41] Malik stated that a successful and completely autonomous adaptation is utopian, highlighting the role extra-local interventions have to play in the well-being of the inhabitants,[42] as the adaptation done by the inhabitants alone should be accompanied by a planned or conducted adaptation.[43]
Without knowledge-sharing between communities and experienced professionals, the adaptation efforts can lead to maladaptation**,** unsuccessful responses that recklessly increase risks.[44] Maladaptation can occur in systems reorganization or processes related to the built environment. Furthermore, inaction is also a form of maladaptation.[45] It can also be defined as mitigation strategies that do not decrease the physical vulnerability of a population but distribute it into a larger area. As Atteridge & Remling emphasize, while altogether preventing vulnerability redistribution may be impossible, it is essential to acknowledge this issue and develop targeted interventions.[46]

CONCLUSION

As climate risks intensify, the urgency of adaptation grows. Yet planned adaptation, while essential, is often slow, top-down, and disconnected from lived realities and values, external or non-local ideals of urban development. Informal settlements demonstrate agile, grounded forms of adaptation. But without institutional recognition and support, these efforts remain isolated. Moreover, many informal settlements face legal and infrastructural barriers to planned relocation or other forms of assistance. To be effective, adaptation must balance institutional frameworks with localized strategies.
A crucial factor in this balance is the role of local knowledge. The Sendai Framework for Disaster Risk Reduction prioritizes integrating local knowledge into adaptation strategies to address disaster risks and enhance resilience[47]. Local building techniques and self-initiated modifications strengthen disaster resilience, particularly in vulnerable communities. Effective disaster risk reduction requires a cross-sectoral approach, where local realities and context shape adaptation strategies. In this process, individual efforts contribute to collective resilience and community preparedness, reinforcing the connection between personal adaptation and broader community disaster response.
This literature review suggests that self-organized adaptation is not a temporary fix but a critical, underrecognized driver of resilience and spatial innovation. By understanding these communities' tacit knowledge, shared practices, and resourcefulness, we can gain valuable insights into improving disaster

preparedness and response. To conclude, Adaptation is not merely technical, but spatial, social, and deeply cultural. Self-organized practices in informal settlements are not exceptions to planning; they are a form of it. While these adaptations are highly context-specific, they demonstrate an enduring capacity to reimagine space in response to risk. As the Intergovernmental Panel on Climate Change (IPCC) notes, even small, household-level adaptations can influence broader community resilience.[48] Recognizing and integrating these adaptations that inhabitants make in the dwellings into formal planning processes can bridge the gap between institutional frameworks and local initiatives. This would create a more adaptive and inclusive approach to disaster mitigation.

NOTES

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UNCHARTED WATERS: NAVIGATING RETREAT AND CULTURAL IDENTITY IN ADAPTATION PLANNING

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INTRODUCTION

Inundated roads, neighbourhoods, and strip malls have become emblematic of the weak points in Florida's resilience networks. Networks necessary as protection from both coastal and upland flooding. While coastal flooding from storm surge, hot summer king tides, and sea level rise is often expected during the annual hurricane season, three record shattering back-to-back hurricanes recently tested Tampa Bay's infrastructure and development patterns that date back to the post-WWII development boom. The region is both urban and rural, with communities facing a wide range of recovery and adaptation challenges. Simultaneously, emergent stories about neighbours coming together demonstrates the value of, and continued need for, robust social and information networks as we work toward long-term planning decisions. The following paper utilizes Hillsborough County's Vulnerability Assessment and Adaptation Plan as a case study for understanding the stop gaps to implementing impactful change - seeking ways to grapple with the causal relationship between intertwined development patterns, cultural identity, and climate change. The 2024 hurricane season hit in the middle of the state mandated Vulnerability Assessment Update - forcing an invaluable moment of pause for local governments working to support community recovery while navigating emergent challenges in preparing for, surviving, and recovering from intensifying natural and manmade hazards. The assessment became an opportunity to test predictions, to learn through recovery, and to reevaluate how the community conceptualizes adaptation. Projected flood scenario modeling juxtaposed with real-time experiences illustrates the scale of regional vulnerabilities, including the linkages between networks of social capital, infrastructures, and natural resources. The following discussion aims to allow for the complex reality of adapting to flood conditions when factoring in cultural histories that are wrapped in generational identity and the financial constraints associated with lack of agency and diverse communities. In this context, the sociocultural response to retreat as a component of adaptation is met with resistance; requiring communities to rethink their relationships to the waterfront and to challenge long held identities of what it means to be a thriving community. Successful adaptation will be about collective awareness as much as it is about physical investments or policy change.

GUIDING QUESTIONS

How do practitioners and community members draw upon the lessons of the past while navigating unprecedented and destabilizing environmental and political conditions? How does that impact our capacity for long-term planning?

How can decision makers act on the concept that landscape provides critical public safety and property protection services?
How can communities reckoning with water-related climate hazards find the resources and time to work holistically; in partnerships, across geographic scales, or temporally for nature to function and recover?

BACKGROUND

Florida, How Did We Get Here?

A lot can be said about Florida. Despite shifting stereotypes and perspectives, few can dispute the salesmanship inherent to the Sunshine State's identity being firmly rooted in tourism, citrus, and real estate. As early as the 1880's, the peninsula was sold on the image of a climate perfect paradise. Pamphlets and newspapers, like what you see below, promised eternal escape from winter. A place in the sun. But the thing that made Florida a semitropical playground - climate and waterfront property once seen as an inexhaustible resource – has now become its greatest liability.

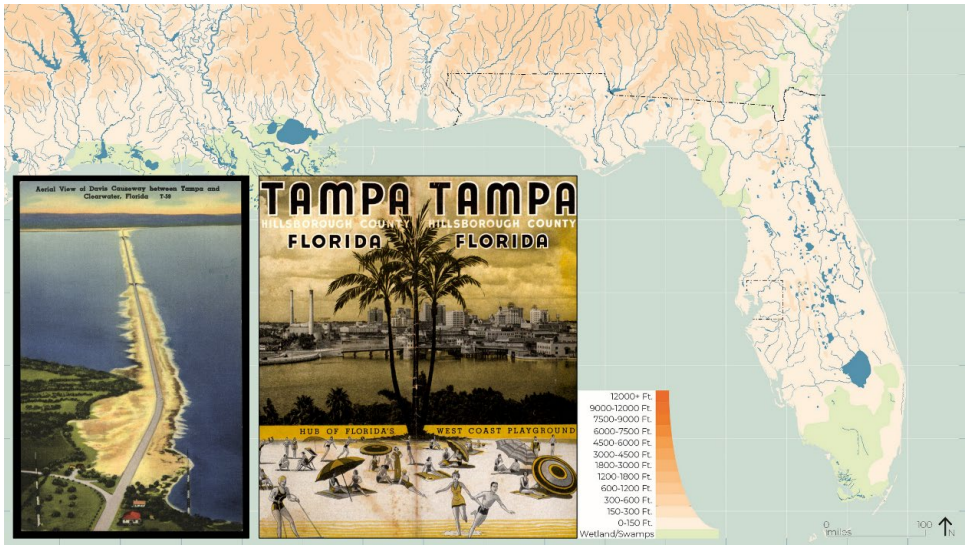

Figure 1. Selling Florida, historic advertising pamphlets (USF Digital Archives) with topographic map of Florida illustrating Hillsborough County, the state's 8,400 miles of coast, low-lying elevation, and hydrology. FCCDR.

In 1973 the State issued a publication called 'Florida 10 Million', in which it celebrated and projected 10 million residents by 1982.[1] At that time, population growth was seen as "an indication of a healthy environment, a healthy climate, and a healthy economy."[2] Development continued. As of 2020 the County had experienced a decadal twenty percent population growth, which correlates with a 20% loss of agricultural land in the same period.[3] Regional growth contributed to statewide numbers, making Florida the 3rd most populous and 8th most dense state in the United States.[4]

The Sponge and the Sandcastle

Development came with trade-offs. The region's vulnerabilities are social, ecological, and manmade. As the twin industries of tourism and real estate fueled the desire to pave over paradise, development quickly cannibalized and mutated the wetlands, sandhill pine forests (cattle and forestry), and citrus orchards. Twisting and winding suburbs now stand in their place, with names like Egret Way as remembrance to the ecologies that had evolved to suit the state's porous foundations.

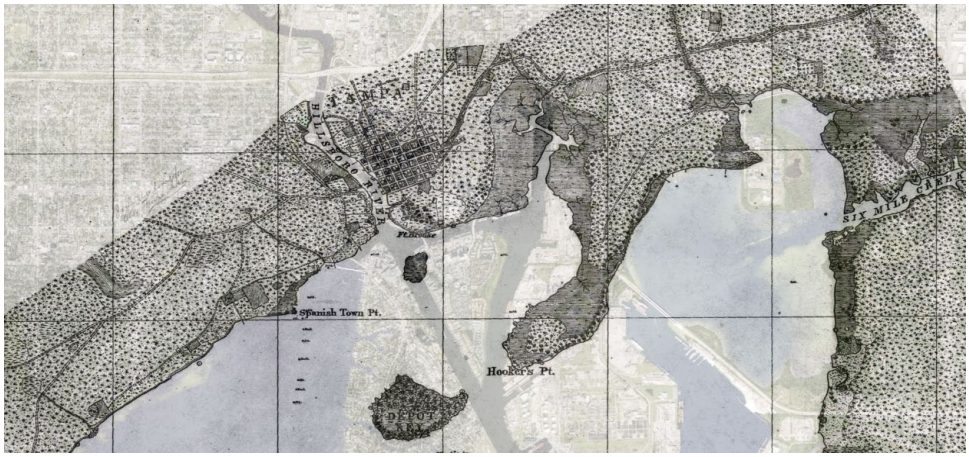

Figure 2. Tampa's coast, comparing a historic map from 1836 to current satelite imagery. FCDR.

For generations, Florida has been defined by its growth economy – measured by people and pavement – without questioning the assumption that natural resources would always be bountiful, clean, and productive. Shorelines were filled in, added to, and hardened. Until the 1970's, developers created more real estate by dredging and filling to create long fingers of waterfront property, often at the cost of the barrier island's structural integrity. Upland development, although regulated since 1982, demonstrates a similar strategy of marketing waterfront stormwater ponds.[5]

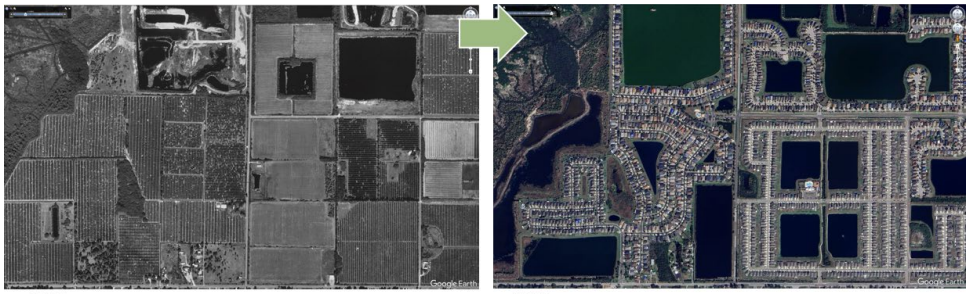

Figure 3. Aerial photography, demonstrating changing land use, typical development conversion from agriculture to residential from 1995 to 2025. Google.

Short-term solutions to housing demand and the developer goldrush added another layer of vulnerability for Floridians. Temporary solutions to low-incomes and high demand-in the form of mobile homes-became permanent. Florida in the 1970's had low unemployment, but mostly low-paying sectors.[6] Mobile homes were not designed for climate hazards and, despite improvements to newer modular construction, reports estimate that approximately seventy-five percent of Florida's mobile homes do not meet hurricane standards.[7] Additionally, modular housing lacks the traditional mechanisms to create generational wealth-thus minimizing resident capacity to adapt, mitigate, or thrive. Unprecedented population growth, compounded with the impacts of increasingly severe shocks and stressors, underscores how problematic regional development patterns are for mitigating future climate change impacts and create a challenge for adaptation strategies to make the community more resilient. What makes Tampa Bay particularly vulnerable is the increasing intensity of rainfall (and drought). Over the past century, Tampa experienced fewer than 200 days with more than 2 inches of rain, but 10 of those events happened in the last two years. A recent storm dropped over 2 inches in under 30 minutes.[8] Areawide infrastructure was not designed for this. Sand and limestone that once absorbed heavy rains are now compromised by having been paved over and channelized.

2024 Hurricane Season

Was Paradise lost? The unprecedented scale, frequency, and intensity of flooding, population density, and political climate opened many residents' eyes to previously unheeded warnings. Over 1,000 small businesses were impacted by flooding from Hurricanes Helene and Milton. Both high-value neighborhoods and historically underserved communities were hit hard. In neighboring Pasco County, nearly 10,000 structures suffered damage, with some buildings under water for over a month. The economic losses from Hurricane Helene in Pinellas County alone are estimated to be $2.1 billion.[9]

Figure 4. Tampa and Hillsborough County, pre-development 1925 and post-development 2025.

VULNERABILITY ASSESSMENT AND ADAPTATION PLANNING

The concepts of vulnerability, resilience, mitigation, and sustainability are often conflated and treated as distinct from adaptation, despite their interconnected roles in climate planning. Notably, the working definition of resilience has evolved—from a focus on physical capacity to encompass social and political dimensions essential for recovery and long-term adaptation.[10] In Hillsborough County, this shift is reflected in a coordinated, countywide effort to update the Local Mitigation Strategy and Vulnerability Assessment, culminating in the development of the county's first Adaptation Action Plan. This initiative serves as a catalyst for redefining community resilience through integrated planning.

Under Florida law, local governments must conduct Vulnerability Assessments (VAs) as part of the Resilient Florida Program. These assessments evaluate risks associated with flooding, sea level rise, and other climate-related hazards, and are a prerequisite for accessing state resilience funding.[11] Hillsborough County presents a significant case study, spanning 1,000 square miles and is home to approximately 1.5 million residents, projected to reach two million by 2045.[12] Nearly twenty percent of County area, according to Vulnerability Assessment calculations, is water-covered, underscoring the urgency of comprehensive flood risk planning.

	SLR + Storm Surge			Rainfall
	2050 Int. Low	**2050 Intermediate**	**2050 High**	**2050 24-hour**
100 (per year)	2.80 ft	2.91 ft	3.39 ft	3.91 inches
50 (every 2 years)	3.50 ft	3.61 ft	4.09 ft	4.41
10 (10 year)	4.50 ft	4.61 ft	5.09 ft	8.61
5 (20 year)	5.00 ft	5.11 ft	5.59 ft	11.87
2 (50 year)	5.80 ft	5.91 ft	6.39 ft	15.16
1 (100 year)	6.50 ft	6.61 ft	7.09 ft	19.07
0.2 (500 year)				29.57
	2080 Int. Low	**2080 Intermediate**	**2080 High**	
100 (per year)	3.5 ft	4.17 ft	6.24 ft	3.91
50 (every 2 years)	4.2 ft	4.87 ft	6.94 ft	4.41
10 (10 year)	5.2 ft	5.87 ft	7.94 ft	9.19
5 (20 year)	5.7 ft	6.37 ft	8.44 ft	12.78
2 (50 year)	6.5 ft	7.17 ft	9.24 ft	16.25
1 (100 year)	7.2 ft	7.87 ft	9.94 ft	20.59
0.2 (500 year)				31.42

Compound extreme water scenarios for the Tampa Bay Area, NOAA, 2022

Figure 5. Compound and discrete extreem water scenarios being assessed for the Hillsborough County Vulnerability Assessment for SLR, Storm Surge, and Rainfall. Red rectangle outlines the coastal flood depth and inches of rainfall that the region experienced during the 2024 hurricane season.

The state mandates that VAs address four categories of public assets—transportation, natural/cultural resources, infrastructure, and community/emergency facilities—using current and projected flood modeling scenarios for 2050 and 2080, including compound flooding and precipitation impacts. However, Hillsborough County's assessment identifies two additional critical asset categories: population and private property. Both of which are foundational to community resilience yet notably absent from the Florida Department of Environmental Protection's required checklist.[13]
This omission raises a critical question: Can adaptation be truly effective if it excludes the very people and homes it aims to protect? Without incorporating population and private property into flood scenario planning, adaptation efforts risk overlooking the most vulnerable stakeholders.

Testing Assumptions Communicating Risk

In Hillsborough County, approximately 150,000 single-family homes—40% of the total—are at risk. The Assessment found that, of the county's 450,000 buildings, two-thirds were constructed before 2002, predating current storm design standards. This legacy infrastructure heightens vulnerability across the region.[14]

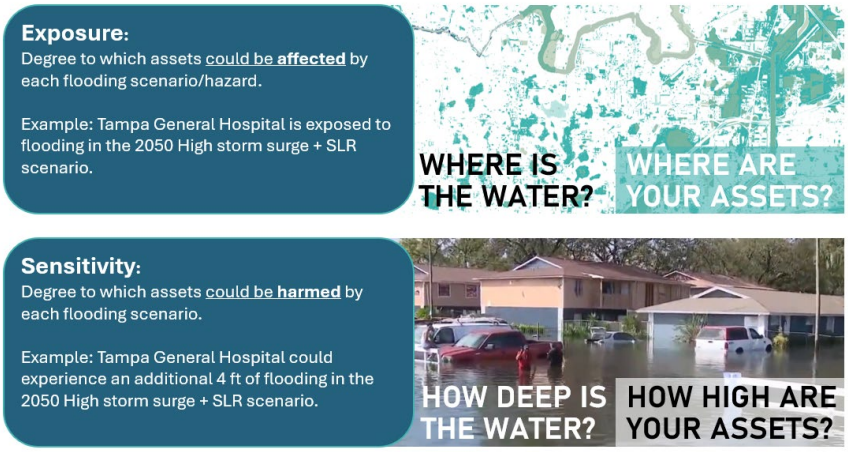

Figure 6. Technical and interpreted definitions of vulnerability assessment terms. Communication of the study's required components to facilitate community engagement. FCCDR.

Rather than relying solely on compound flooding models, Hillsborough applied a countywide bathtub model inspired by Copenhagen's cloudburst methodology, scaled to local conditions.[15] This approach assumed a failure of water conveyance infrastructure—including pumps typically used to mitigate flooding when the ground is saturated and the water table is elevated—providing a more conservative and stress-tested scenario for planning.

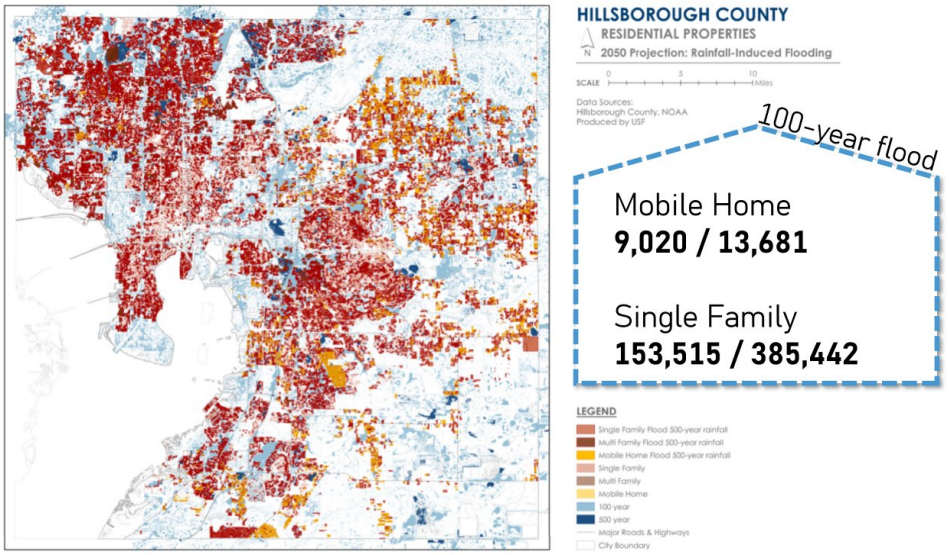

Figure 7. A draft assessment of housing at risk of being impacted by flooding, using 2050 projections for rainfall-induced flooding. FCCDR.

OVERCOMING BARRIERS TO CHANGE

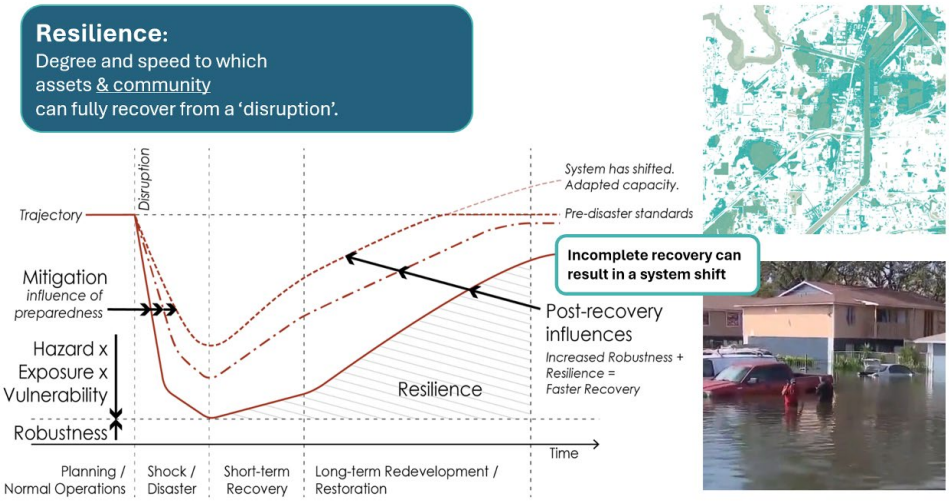

Figure 8. Expanding the definition of resilience from its original ecological context to include cultural and logistical challenges, including the impacts of location, intensity, and timing between hazard events on planning for, surviving, and recovering from hazard events. FCCDR.

Cultural Resistance to 'Retreat'

One of the most profound barriers to adaptation is the cultural resistance to retreat. The generational ties to place and identity complicate discussions around relocation. In Florida, where waterfront living is deeply embedded in the cultural and economic fabric, the idea of managed retreat is often perceived as defeat. Brown emphasizes that retreat is not just a logistical or an engineering challenge—it is a cultural one. Communities must reconcile their historical narratives with the physical realities of rising seas and intensifying storms. This resistance is particularly strong in marginalized communities, where relocation may be seen as erasure rather than protection.[16]

Governance

Navigating Florida's layered governance structure is challenging. Multiple agencies, overlapping jurisdictions, and inconsistent funding priorities create a fragmented policy environment that hinders coordinated action. As noted in the Post-Hurricanes Session Final Report,[17] local governments often face conflicting mandates from state and federal agencies, making it difficult to implement holistic adaptation strategies. Calthorpe argues that resilience requires regional planning that transcends political boundaries and focuses on ecological and infrastructural systems.[18] Without this alignment, even well-intentioned policies can become barriers.

The inability of institutions to respond to extreme uncertainty is rooted in a lack of flexibility. Traditional planning models rely on historical data and predictable patterns. But climate change is disrupting those assumptions. The rapid intensification of Hurricanes Helene and Milton caught many agencies off guard. The NOAA reports document how both storms intensified by over 50 mph in less than 24 hours, leaving little time for preparation.[19] Berger supports Calthorpe's argument that resilience requires flexibility—both in infrastructure and governance.[20] This means embracing adaptive management, scenario planning, and iterative learning. The Hillsborough County Action Plan's use of real-time storm data to test flood models is a promising step in this direction.

Infrastructure

The back-to-back hurricanes revealed the fragility of Tampa Bay's infrastructure. Inundated roads, neighborhoods, and commercial areas exposed the weak points in the region's resilience networks. These failures were not isolated; they cascaded across systems. The NOAA reports on Hurricanes Helene and Milton document how storm surge and rainfall overwhelmed drainage systems, leading to prolonged flooding in both coastal and upland areas. When the power went out, so did the pumps. The Florida Climate Center further highlights how Milton's tornado outbreak and power outages disrupted emergency response and communication.[21] These events illustrate the "interdependent systems." A saturated coastline means upland neighborhoods flood. Failing drainage in one area creates backups in another. Infrastructure failures in drainage can ripple through transportation, housing, and economic systems. This interconnectedness demands a systems-thinking approach to resilience, as emphasized in the Hillsborough Adaptation Plan and echoed by Calthorpe.

Natural Systems

Florida's unique karst geology and watershed dynamics are often overlooked in planning. Understanding how water "should" move through the landscape and how it intersects with other systems is critical before designing adaptation strategies. The Hillsborough Action Plan advocates for working with nature rather than against it. Yet, as the NOAA and Climate Center reports show, many flood control systems failed because they were designed for past conditions, not future extremes. Nature-based solutions—such as floodable parks, greenways, and wetland restoration—offer opportunities to enhance resilience while improving quality of life. Projects ranging from large-scale regional like the

Netherlands' Room for the River Project, to neighborhood-scale in New Orleans' Gentilly Resilience District and Boston's Climate Ready Plans, to smaller parcel restorations like Tampa's Ulele Springs Park provide vibrant models, demonstrating how infrastructure can serve both ecological and social functions stretching across political boundaries and jurisdictions.

Communication and Trust

Another barrier identified is the lack of clear, consistent, and multilingual communication before and during disasters. Outreach efforts stress that many residents do not understand evacuation zones or flood risks.[22] During Hurricane Milton, for example, rapid intensification and an erratic track led to confusion and delayed evacuations.[23] The Florida Climate Center notes that over 3 million residents lost power, cutting off access to emergency alerts.[24] This demonstrates the need for a unified communication platform. This also aligns with Brown's argument that resilience must be co-produced with communities, not imposed upon them.[25] Effective communication is not just about information—it's about trust.

Lack of agency in marginalized communities and financial constraints are major barriers to adaptation, further exacerbating communication challenges. These communities often live in the most flood vulnerable areas and structures, have the least access to resources, and are the last to receive aid. Brown critiques the "resilience for whom?" question, arguing that adaptation must be equitable and inclusive.[26] Mobile home parks, immigrant communities, and low-income neighborhoods were disproportionately affected by the hurricanes and faced the greatest challenges in recovery.[27] This inequity is compounded by policy blind spots. For example, many adaptation plans focus on physical infrastructure but overlook social infrastructure—such as community networks, local knowledge, and informal support systems—that are critical during crises.

DISCUSSION

Reviewing the recent events and disaster aftermath, mitigation alone is insufficient in addressing long term community-wide resilience. Three key takeaways are evident: build bridges across agencies, fix communication before crises, and move from projects to systems thinking. These lessons are echoed throughout the supporting literature and reports. Calthorpe calls for regionalism, integration, and sustainability.[28] Brown calls for equity, participation, and cultural sensitivity.[29] Adaptation and Mitigation Plans and after-storm reports consistently call for better forecasting, infrastructure upgrades, and public education.[30] Together, these insights point to a new paradigm for adaptation—one that is holistic, inclusive, and forward-looking.

Despite the aforementioned challenges, social capital is a powerful asset. Stories of neighbors helping neighbors, informal support networks, and community-led recovery efforts demonstrate the importance of social infrastructure. Resilience is not just about buildings and roads—it's about people. The TBRPC report notes that Community Organizations Active in Disasters and Voluntary Organizations Active in Disasters played a critical role in recovery, especially in areas where formal infrastructure and communication networks failed.[31] Strengthening social networks before disaster strikes is essential. This includes investing in community centers, local leadership, and multilingual outreach. Resilience must be defined together, adaptation must be designed together—with communities, not just for them.

The 2024 hurricane season was a wake-up call for Tampa Bay. It exposed the vulnerabilities of outdated infrastructure, fragmented governance, and inequitable planning. But it also revealed the strength of community networks, the value of real-time learning, and the potential for transformative change. Adaptation is not just a technical challenge—it is a cultural, political, and ethical one. Overcoming the barriers to change will require vision, collaboration, and courage. But the opportunity is clear: to build a future that is not only resilient, but just.

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BARRIERS IDENTIFIED IN THE LOCALISED TOOLS CO-CREATION PROCESS

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INTRODUCTION

In the framework of international climate change adaptation and mitigation targets, regional and local planning and implementation of climate actions play a pivotal role.[1] Innovative data-driven tools can support regional and local policy creation and monitoring.[2] In recent years, collaborative approaches, such as co-creation, have shown high potential both as a tool and an approach for urban climate governance.[3] A collaborative governance platform can enhance the legitimacy and, therefore, acceptance of decisions, foster innovation, capacity building, and enable jointly tailored solutions which are specifically adapted to the particularity of a context, if implemented, addressing the diverse implications related to inclusion and diversity.[4]

The interdisciplinary LOCALISED project aims to provide information, especially for those local administrations and businesses that do not have the knowledge or the capacity to collect and process data on their own.[5] The tools provide an integrated knowledge that enables climate action across scales and sectors, harmonized indicators such as SDGs for local evaluation with SOIs;[6] integrating data for climate adaptation and mitigation;[7] downscaled pathways;[8] and providing a Social Impact Assessment (SIA) for adaptation[9] and mitigation measures, especially on vulnerable groups, enhancing the importance of reaching a just transition. Further, some guidance was assembled on how to organize local engagement processes and co-create actions with citizens.

This study aims to (1) identify the barriers to increasing stakeholders' diversity in the co-creating process on the local level for science-based climate action tools, particularly when different typologies

of actors are involved in different phases of co-creation and science-practitioner interaction; (2) explore the reasons behind them; and (3) suggest strategies. A comparative qualitative analysis of the different approaches for the tools co-developed is conducted, involving different types of stakeholders, in order to identify common challenges and lessons learned for the improvement of future strategies for successful engagement. The different tools and dedicated co-creation as well as final outputs of the analysis, will be introduced in the following section.

Co-creation

Co-creation assumed increased importance in recent years, with the research community becoming more focused on developing useful tools for local practitioners in climate action[10]. With the increased evidence of the importance of social impacts, vulnerable groups, and inclusion, citizen engagement and just transition are seen as crucial elements of the process.[11] Collaboration with different stakeholders is indeed recognized as crucial for implementing urban plans and increasing community climate resilience.[12]

Brandsen and Honingh describe how co-creation as a concept originates from the field of marketing and business. It implies collaboration with consumers/users. On the other hand, co-production refers to the collaboration between state agencies and citizens/stakeholders.[13] Although the distinction between the two concepts is identifiable, the terms co-creation and co-production are often used interchangeably.[14] The main characteristic is the multidimensionality of the processes that imply knowledge transfer, production, and use, where participation is implied not merely as consultation but as a creative process.[15] The concept of co-creation and related approaches are now broadly utilized in different sectors such as urban planning, policy development, and environmental modelling.[16]

Co-creation platforms have shown high potential both as a tool and as an approach for urban climate governance.[17] Still, research done so far on urban climate action focuses on big cities and ´success´ cases, where studies on small- to medium-sized cities are limited.[18] Furthermore, research and practical experiences clearly show a lack of integrated and systemic approaches to support horizontal and vertical coordination across sectors, departments, and institutional levels.[19] This stresses the need for innovative integrated data-driven tools and downscaled projections for science-based policy-making, particularly for supporting local actors.[20] Participatory approaches such as co-creation can indeed address the need for more integrated and systemic approaches in knowledge production across disciplines and with practical experiences (particularly for decision makers) while offering science-based tools. This can also assist in addressing the knowledge integration-related challenges of inter- and transdisciplinary research.[21] Its significance stems from enabling the (co)production, integration, and transfer of knowledge from different and diverse sources. For this, potential direct and indirect benefits of co-creation are also recognized in environmental modelling research.[22] These include addressing uncertainties, negotiating trade-offs and meeting environmental, economic, and social goals.[23] The stakeholders can use the model for discussion and education processes to find sustainable paths. However, this requires some elements characteristic of social learning, such as reflection on concepts and values and commitment to capacity building.[24] Co-creation has the potential to let different actors agree on policy pathways, but processes must let the stakeholders feel empowered to take responsibility. This is recognized as crucial to designing, developing, and implementing (innovative) policies. In this way, collaborative approaches can be transformative when developing policy and action plans.[25] Indeed, co-creation platforms have become instruments for cities to enhance both legitimacy and innovation.[26] Although the different potential outcomes, such as increasing citizen involvement, generating informed decision-making and tailored measures, are shaped by political, social, and cultural factors.[27] If the challenges are addressed, the adoption of a co-produced perspective in the urban climate

resilience context may have a high transformative impact for moving towards more democratic, better-informed, and community-oriented arrangements.[28]
Furthermore, from the literature, the importance of diversity and inclusivity for increasing usability and bridging the ´usability-gap´[29] in services and products production is clearly shown. The importance lies in gaining a better understanding of which designs and implementation strategies are effective for enabling synergies and unlocking co-creation potentials for a more systemic coordination and continuity in evidence-based urban climate governance.

METHODOLOGY

The LOCALISED project was designed to fill some research gaps identified beforehand. Hence, producing instruments that also address the gap in the limited integration of adaptation and mitigation[30] and enable cross-sectoral and systematic planning. One of the starting points was to use good practices and lessons learned in the most advanced big European cities to provide valuable knowledge to inform the development of tools for small and medium-sized cities. City partners, such as Barcelona and Vienna, have been contributing since the early stages with their rich experiences.[31] The project team encountered several limitations and challenges during the co-development of the four tools, including the application of these tools in real world contexts, achieving a common understanding, and fostering broad engagement in their development.
The objective of this study is to identify the main common barriers to science-practitioners' collaboration when different typologies of actors are involved in the different phases of co-creation processes in order to increase the diversity of stakeholders involved. This study analyses the co-creation processes conducted in the course of the LOCALISED project by adopting a comparative qualitative approach based on (1) data from the project activities where stakeholders were involved; (2) survey results described in deliverables and project reports;[32] and (3) 13 semi-structured expert interviews.
A comparative analysis of the approaches within the project scope allows for the identification of barriers and successful strategies for improving future designs. A framework was developed to assess the different processes, expressed in an interview guideline. It integrates approaches from different literatures, like key elements of (climate service) co-production processes, such as (i) forms of engagement, (ii) entry points for engagement, and (iii) intensity of involvement,[33] and factors influencing the dimensions of participation, such as the willingness to agree to participate, to actually participate, and to remain engaged.[34] Further, based on the literature on barriers for collaboration in urban risk-sensitive planning, a suggested classification includes 33 barriers in four categories: external, inter-organisational, intra-organisational, and personal.[35] Given that LOCALISED is a European project, an additional category was incorporated to address linguistic barriers. The interviews were analyzed with the software MAXQDA, where they were coded following the structure developed for the study.

Glossary

In the early stages of the project, in order to address linguistic barriers and the typical challenges of a team with members from different disciplines and fields in sustainability research,[36] collective strategies were applied to facilitate effective collaboration and communication of scientific terminology. A glossary was developed as a guideline within the project communication, work, and outcomes. The harmonization of the glossary has been implemented with some specific strategies such as establishing consensus definitions, continuous validation and feedback in coordinated exchanges, meetings, working groups, and discussions among project members from the different partners and fields to validate and agree on terminology, and iterative refinement, adjusting as necessary.[37]

Stakeholders process

The co-design process done for the previous EU Calculator project can be seen as the foundation for the co-creation of national decarbonization pathways used as input for the LOCALISED project. In this previous project, the sectoral ambitions and potentials were developed in different co-design expert consultation workshops, and the scientific robustness was proven by a public call for evidence, all described in detail in D9.4.[38]

The LOCALISED project was built on this, but also formulated its own structured stakeholder process, which was based on a stakeholder mapping done at the beginning of the project to identify different groups (see Figure 1 and Del. 8.1[39]).

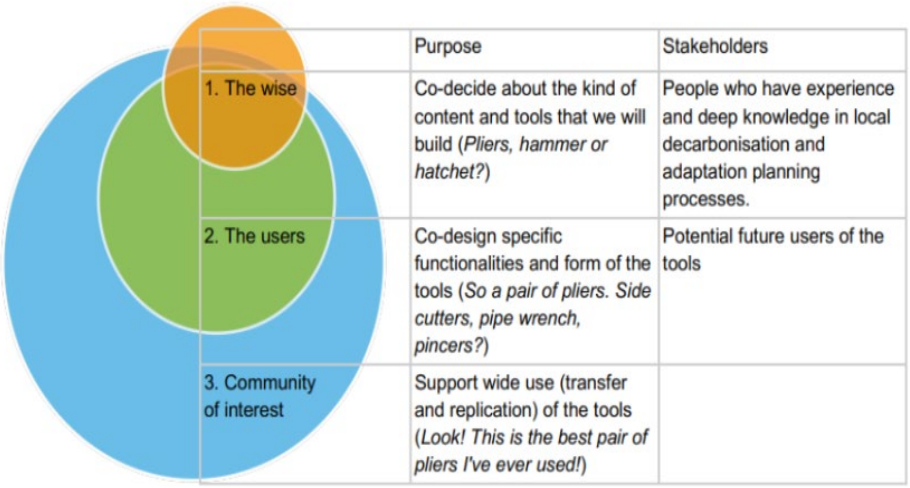

Figure 1. LOCALISED stakeholder groups

The main purpose of stakeholder interaction is to understand the questions and needs of the users, which is a prerequisite for making the tools widely applicable and practically useful for them. In this sense, interaction with stakeholders is essential for increasing the likelihood that the tools and services developed will be widely used as they are aligned with real needs.

LOCALISED tools: CAST, CE, SBMC, NZBC

The following is a brief description of the co-created project outputs.[40]

Climate Action Strategiser (CAST)

CAST is a science-based tool focusing on supporting local administrations of small and medium-sized municipalities and regions in action planning by integrating mitigation and adaptation measures. The results are embodied in the standardized Sustainable Energy and Climate Action Plans (SECAPs) template developed by the Global Covenant of Mayors. The CAST is based on downscaled national decarbonization trajectories, consistent with Europe's net-zero target and supporting the establishment of and the monitoring of related Sustainable Development Goals. It not only evaluates the costs, emissions´ cut, or risk reduction capacity, but also includes the evaluation of social impacts and equity of chosen measures. The local project partners, especially Barcelona and MAGGS, co-created with their experience and practical knowledge. In addition to other stakeholders, who are involved as well, they acted as 'wise', providing input on the process described above.

Citizen Engager (CE)

The Citizen Engager is a practical manual and step-by-step guide for citizen participation in the field of climate policy at local and regional scales. It aims to enable the co-creation of climate policies between citizens and local decision makers. The manual has a special focus on supporting decision makers in involving affected and vulnerable groups of society in citizen engagement processes on climate topics. The recommendations are the outcome of a systematic evaluation of five citizen engagement processes in Austria, Spain, and Poland, in collaboration with the project city partners of the City of Vienna, the Barcelona City Council, and the Metropolitan Area of Gdansk, Gdynia and Sopot. The city partners of LOCALISED were involved in the development of the manual both as 'wise' and as 'users' stakeholder types. The manual is also integrated into the CAST tool.

LOCALISED Sustainable Business Model Canvas (SBMC)

SBMC is primarily targeted at companies with established sustainability departments or consultancy firms specialized in sustainability and climate strategy. The tool is designed to help analyze and transform business models to align them with sustainable development. It could be particularly useful for guiding companies that lack the resources or expertise to conduct strategic reviews on their own, enabling an initial analysis of their current business model, the identification of barriers and areas for improvement, and the visualization of potential measures and instruments to advance towards decarbonization. In a co-creation process, SMEs and consultancy offices were contacted to test the tool, verify its usefulness and validate its features. After that, an improved version was developed.

Net-Zero Business Consultant (NZBC)

The key functions of the NZBC are the climate change vulnerability index for key business sectors and the mitigation/adaptation option explorer. For the co-design, the partners worked closely with Assolombarda (Italy), the Baltic Eco-Energy Cluster (Gdansk, Poland), and ecoplus, the Business Agency of Lower Austria. These associations provide not only access to a wide network of industries in their country, but also valuable insights into what kind of tools and interactions would be most useful for their members. The NZBC focuses on the sectors: manufacturing, agriculture, transportation and energy. Some associations were included at the early stage and involved in the course of the project, with more business partners joining the process by collecting feedback with the help of a survey.

STUDY RESULTS

First, it was necessary to divide the results according to the different stakeholder groups involved. The stakeholders are from different sectors and participated in different phases (entry points) and forms.[41] Table 1 summarizes the main results regarding the key elements:

	CE	CAST	NZBC+SBMC
Stakeholders involved in co-creation	Citizens who participated in engagement activities, with a focus on vulnerable groups (e.g. low income, girls and women, foreigners), local administrators, local civil servants in partner cities	planners	SMEs Associations and SMEs
Forms of Engagement	workshops, surveys, interviews	interviews, workshops, focus groups, surveys	workshop, interview
Entry Points for Engagement	non-linear	non-linear	non-linear

Table 1. Key elements of the LOCALISED tools co-creation processes based on Máñez Costa et al. (2022)

Following Table 2 shows the factors influencing the dimensions of participation and main barriers identified in the surveys.

	CE (citizens-scientists- local administration collaboration)	**CAST (scientists-practitioners-local administration collaboration)**	**NZBC+SBMC (local businesses-scientists collaboration)**
Willingness to agree to participate			
Main influencing factors	Lack of defined financial plans and implementation roles Lack of financial and human resources	Lack of defined financial plans and implementation roles Lack of financial and human resources Lack of enthusiasm and commitment to collaborative initiatives Conflicting interest and competition Lack of clear-cut responsibilities and overlapping responsibilities among stakeholders makes the system ineffective and less accountable	Lack of defined financial plans and implementation roles Lack of financial and human resources Limited coordination and breakdown in communication among many fragmented actors at different levels
Attributed barrier	External and Intra-organisational	External, Intra and Inter-organisational	External and Intra-organisational
Willingness to actually participate			
Main influencing factors	Lack of defined financial plans and implementation roles Lack of financial and human resources Long-term and inelastic collaborative process Limited coordination and breakdown in communication among many fragmented actors at different levels Communication breakdowns due to skepticism, use of jargon, and different official languages	Lack of defined financial plans and implementation roles Lack of financial and human resources Lack of enthusiasm and commitment to collaborative initiatives Long-term and inelastic collaborative process Communication breakdowns due to skepticism, use of jargon, and different official languages	Long-term and inelastic collaborative process Limited coordination and breakdown in communication among many fragmented actors at different levels Lack of information-sharing between stakeholders
Attributed barriers	External and Intra-organisational	External and Intra and Inter-organisational	Inter and Intra-organisational

	CE (citizens-scientists- local administration collaboration)	CAST (scientists-practitioners-local administration collaboration)	NZBC+SBMC (local businesses-scientists collaboration)
Willingness to remain Engaged			
Main influencing factors	- Lack of coherence in government policies and legal instruments Absence or lack of policies that promote collaboration Lack of information-sharing between stakeholders	Lack of defined financial plans and implementation roles Lack of financial and human resources Lack of enthusiasm and commitment to collaborative initiatives Limited coordination and breakdown in communication among many fragmented actors at different levels Conflicting interest and competition	Lack of defined financial plans and implementation roles Lack of financial and human resources Limited coordination and breakdown in communication among many fragmented actors at different levels
Attributed barriers	External and Inter organisational	External, Personal, Intra and Inter-organisational	External and Intra-Organisational

Table 2. Main barriers and Factors influencing dimensions of participation

Figure 2 shows that for all stakeholder groups it is very difficult to agree to participate, to actually participate and to stay engaged because of the barriers mentioned at each level in Table 2 across all the tools.

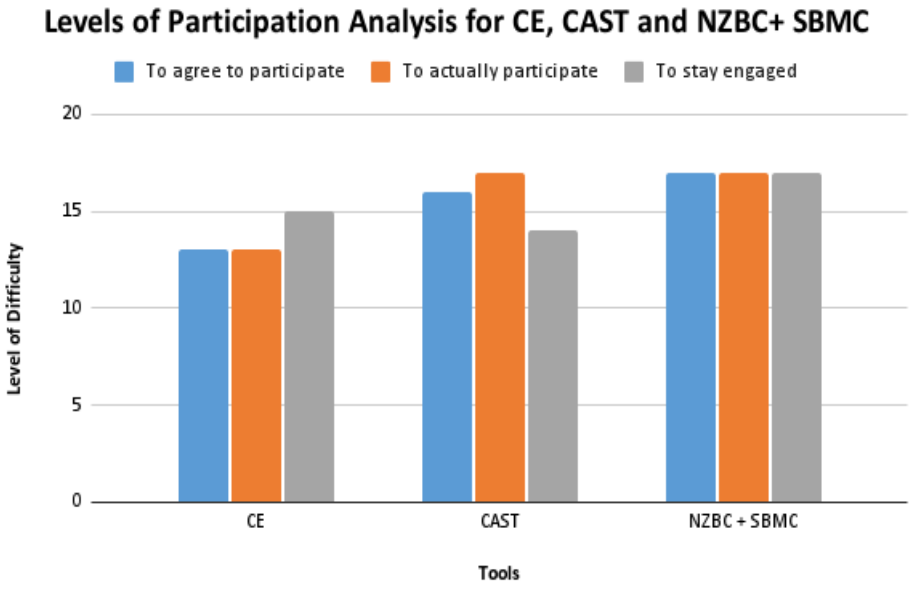

Figure 2. Results showing the level of difficulty per stakeholder group in each dimension of participation (20 being the maximum difficulty level for each level)

Following the systematic framework by Ganeschu et al. (2023), we can confirm that external barriers have a high driving power. Table 3 shows the detailed list of barriers and in the last column our results based on the surveys conducted.

Theme	Barriers	Interview results
External barriers to stakeholder collaboration		
Policies and legislation	Absence or lack of policies that promote collaboration	Legal instruments and political willingness to support inclusive engagement, handle unforeseen scarcity of resources, implementation of structures and processes
	Lack of coherence in government policies and legal instruments	
	Lack of legislation support, legislative authority to delegate stakeholders' responsibilities and duties	
	Lack of defined financial plans and implementation roles	
Governance	Lack of clear-cut responsibilities and overlapping responsibilities among stakeholders making the system ineffective and less accountable	Importance of political anchoring and dedicated resources and formats for engagement processes, enabling structures and responsibilities
	Rigid formal governance structures	
	Lack of a coordination mechanism in governance arrangements	
Politics	Lack of political guidance/support/leadership/willpower for planning and implementation	Commitment to consider and value the given inputs and ensure full process transparency
	Political interference	
	Competing interests and visions among politicians	
	Thematically structured political committees	
Inter-organisational barriers to stakeholder collaboration		
Leadership	Lack of leadership among stakeholders	Bringing new people into power (by election or new structure)
	Disagreement in the selection of key leading organisations for collaboration	
Organisational interests	Competing interests	Economic situation can force legislation to change priorities
	Different sectoral needs, interests, and issues	
	Unrecognised common interests	
Communication and coordination	Limited coordination and breakdown in communication among many fragmented actors at different levels	The clarity of the process and own benefit of taking part need to be clear, the level of interaction and
	Lack of information-sharing between stakeholders	

Theme	Barriers	Interview results
	Communication breakdowns due to scepticism, use of jargon, and different official languages	transparency in the engagement formats influenced the willingness to remain engaged
	Lack of knowledge-sharing	
Collaboration processes	Involvement of a large number of organisations	Flexibility needed in the process
	Long-term and inelastic collaborative process	
Intra-organisational to stakeholder collaboration		
Organisational structure	Unsupportive organisational structure for collaboration	Sectoral structures hinder internal collaboration
	Existing roles and responsibilities which do not allow or support collaboration activities	
Organisational culture	Traditional silo-based organisational capabilities and thinking	Lack of commitment to collaborative initiatives
	Following old routine practices	
Organisational resource capacity	Lack of financial and human resources	Adequate availability of resources needed
	Inadequate technical capacity to collaborate	
Personal barriers to stakeholder collaboration		
Intrinsic barriers	Lack of enthusiasm and commitment to collaborative initiatives	Many requests, benefit unclear
Profession-related barriers	Conflicting interest and competition	n/a
	Fear of losing power	
Knowledge-related barriers	Lack of knowledge of stakeholders	Lack of time and complexity hinders to dive deeper
	Stakeholders' reluctance for exploratory learning	

Table 3. Interview results analyzed according to the four categories investigated by Ganeschu et al. (2023).

As mentioned before, barriers were investigated by stakeholder groups (Table 1), in regard to the dimension of participation (Table 2 and Figure 2) and also for the 33 barriers presented in Table 3. We followed this mixed approach in order to investigate barriers in the process in different dimensions. Following a short summary of this analysis:

With regard to the main challenges per target group (Figure 3), we see for **SMEs** the **challenge of engaging stakeholders with limited time and capacity.** Therefore, it is fundamental to **balancing time with outcome**. Willingness to engage is higher when activities are perceived as not too demanding and with a practical outcome and (interesting) benefit. For **local authorities**, the main challenge was offering them a **collaboration which is fruitful on both sides**. Main challenges are a lack of time, qualified staff, and financial resources dedicated to the extra task. Challenges with encouraging **citizens** to participate in the workshops are based on a **lack of awareness** and a **lack of trust** in the process.

Furthermore, individuals who are vulnerable often do not self-identify as part of the aforementioned group, likely due to the social stigmatization associated with such a classification.

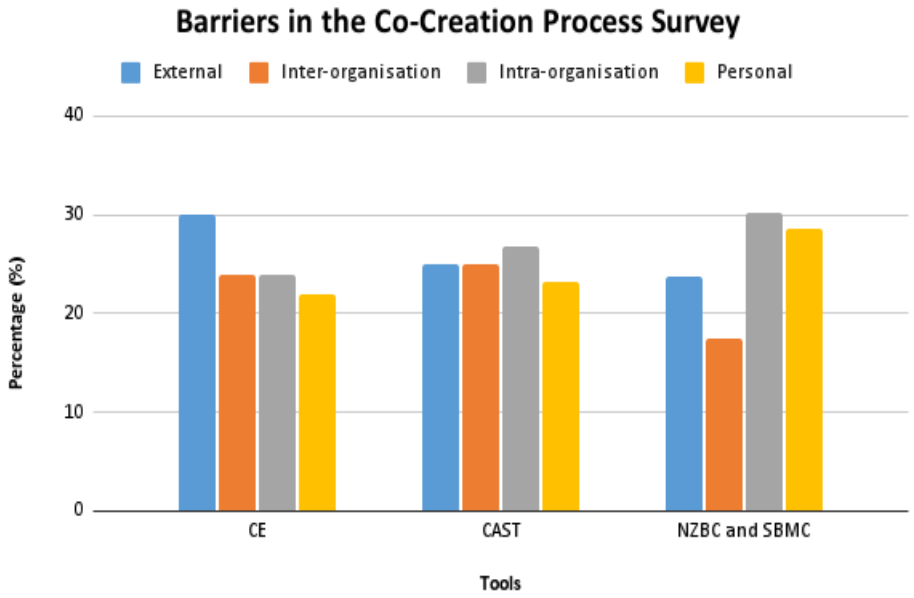

Figure 3. Results showing the influence of each barrier per stakeholder group.

Common barriers are identified as related to lack of incentives and harmonized regulation, political shifts, lack of resources and cross-sector coordination. Mainly external, inter-governmental and intra-governmental, often in relation to time and personal resources. Personal barriers were overcome because of the presence of dedicated strategies and budgeting.
In this study, the findings align with the literature.[42] It was additionally observed that, although various aspects related to the dimensions are present, the main barriers do not vary significantly in relation to the dimensions (Figure 3). For instance, the **willingness to stay engaged** is higher once the stakeholder agrees to engage. But if time resources are scarce, the willingness is affected similarly. The factors influencing the dimension that can be addressed through design are taken into consideration for strategies. For example, it could be observed that the level of interaction in the engagement formats influenced the willingness to remain engaged. **Linguistic barriers** are another aspect to consider, especially when trying to involve local authorities and companies. For example, the hands-on testing sessions were conducted in the local language (Spanish).

CONCLUSION

Systematizing the results, **four key dimensions** can be identified which contribute to a well-designed co-creation process that helps to overcome the barriers investigated successfully.

1. Preparation: Excellent planning and early contact

One key dimension is clear planning of the co-creation process from the beginning. This includes timelines, target groups, formats, resources, ethical and communication guidelines, a glossary of definitions, boundaries of planned work, clear team responsibilities, and extra time for tasks that may require more effort, as well as feedback loops. Nearly all interviews recommend **keeping engagement time-bound and results-oriented**. This can be achieved by scheduling activities within a short, well-defined timeframe and providing interim outputs to keep stakeholders informed about progress. Another

success factor is considering working through sectoral associations, local business networks, or innovation hubs to reach relevant companies and other groups through their multipliers. Crucial is to contact them in the early stages.[43] These intermediaries can help identify potential users and lend credibility to the initiative. This also helps with building trust, which is often mentioned as a key factor for engagement.

2. **Diversity**: Team and stakeholders

Research consortia that develop local planning tools should be set up in a way that allows them to bridging the biggest barriers by directly including diverse stakeholders in the team. With the allocated funding, they can hire staff who can contribute their knowledge from the beginning and engage over a longer period of time.[44] This approach also allows for the involvement of multipliers, such as associations, who can collaborate with local and scientific partners from the same region. This helps with translation work in terms of both language and scientific approach.[45] Developing a common glossary is recommended to overcome linguistic and knowledge-related barriers among project partners, supporting transdisciplinary processes within the team as well as later with other stakeholders in the co-creation process. Furthermore, a diverse team (age, gender, culture etc.) comprises **different perspectives** and can inform the best ways to motivate different stakeholder groups. This can support both in better understanding the different roles of multiple local actors[46] and in filling the ´usability gap´.[47]

3. **Flexibility:** Adaptive co-creation process[48]

In addition to non-linear entry points into the co-creation process, the provision of **multiple modes of engagement and flexible formats are also key**, as mentioned frequently in our interviews. There are significant differences depending on the target group and objective. The most convenient way to structure the process for participants is to consider language, time commitment, clear benefits, incentives, collaborative eye-level communication, interactive online or in-person meetings, and a trustworthy, non-hierarchical atmosphere. This increases the willingness to participate and stay active. It also helps to be able to stay flexible, for instance, to adapt to external timelines, changes in the team, or among stakeholders, but also in regards to formats, or other activities which can be useful to partner with.

4. **Transparency:** Clear and open communication

According to our results, the most important dimension is a **clear outline of the co-creation and engagement process.**[49] This outline should include the expected time commitment, proposed meeting dates, the type of input required, and the benefits or outcomes that participants will obtain. **Transparent communication builds trust**. Highlighting the strategic relevance of participation and the benefits for participants increases the chance of success. Additionally, designing a truly collaborative process that avoids one-sided or overly technical sessions creates a space where stakeholders can openly express their concerns, needs, and expectations, as well as express their emotions. Having a **neutral moderator** who does not judge and clearly sets the scene, including limitations and expectations, is extremely important. Finally, continuous communication of immediate feedback, next steps, timelines, and results ensures transparency throughout the process.

Overall, we highly emphasize the **importance and value of the co-creation process** for developing tailored tools in LOCALISED. Some results, like the SBMC, were not planned from the beginning, and the co-creation process made us aware of the need and potential. Without flexibility and diversity in the process, we would not have reached this level of usability. The co-creation process itself must always be regarded as **having intrinsic value and being a continuous process.**[50] This is due to the fact that,

when the implications are addressed, it can facilitate the distribution of responsibilities and power, fosters trust-building within formal institutions and the scientific community, and increases legitimacy.[51] Furthermore, it enhances social learning and innovation, enables knowledge transfer, and fosters capacity building for all participants,[52] thereby contributing to the mobilization of transformative potential for accelerating climate action.

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LIVABLE URBAN SPACES IN TIMES OF CRISIS: RESHAPING THE PRIVATE BALCONY

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INTRODUCTION

During the COVID-19 lockdown, access to urban public spaces was heavily restricted to protect public health. While streets and parks remained, social interactions were displaced, leading residents to turn to balconies as temporary substitutes. Balconies offered visibility, sociability, and informal civic presence within domestic life. Italy's early "balcony songs" in February 2020 became a global symbol, inspiring similar acts in France, Lebanon, and the US through applause, exercise, and displays. In Tel Aviv, balconies became floating stages at twilight, transforming vertical edges into platforms of shared presence.

Access to public space has long been considered essential to a livable city, fostering social cohesion, participation, and everyday encounters. When this access collapses, what spatial improvisations arise to preserve these functions? Our study examines the balcony as a temporary spatial response that enabled residents to maintain elements of public life during a period of restricted access to formal public spaces. It highlights how domestic thresholds can briefly accommodate civic and social practices in times of collective constraint.

The public sphere, as classically theorised by Habermas,[1] is an arena between the private domain and the state, enabling the exchange of ideas, collective opinion formation, and discourse. Arendt[2] shifted the focus to action and plurality, emphasising that political life depends on spaces "which can find their proper location almost any time and anywhere". Fraser[3] and others[4] have challenged the ideal of a singular, unified sphere, highlighting the coexistence of multiple publics: political, cultural, and civic.[5] Walzer[6] argues that the city enables encounters among strangers that carry both the pleasures of urbanity and the discomfort of unfamiliarity. This further emphasised that the public sphere can be diverse and inclusive, yet it inherently contains potential exclusions that challenge its collective nature.[7] The exclusions, tensions and contested claims often mark public spheres and are not anomalies but inherent features of the urban experience, especially in times of collective stress or disruption.

Acknowledging the multiplicity of spaces and the inherent tensions of the public sphere, Breese[8] developed a typology that maps public spheres along axes of scale and content. Her classification reinforces the understanding of public spaces as inclusive, dynamic and complementary. These perspectives also underscore that publicness may go beyond physical sites and, most importantly, emerges through social practices that enact visibility, recognition, and interaction.

During the COVID-19 pandemic, the dynamics of public spaces, where strangers must negotiate shared space and enable interactions, have changed. While open-air public spaces were valued for their health benefits, state-imposed restrictions rendered them temporarily inaccessible.[9] The interactions, once

structured by relationships between people and places, buildings and streets,[10] are in question. Our study responds to the global phenomenon[11] and builds on emerging scholarship that frames balconies as "newly made public spaces" during the pandemic.[12] The current research will shed light on human agency; the wide array of activities taken by people, reshaping the 'public' space and reclaiming the city.

Earlier conceptualizations as Le Corbusier's view of balconies as an extension of private space into public space and a way to improve the quality of living by connecting to light, air and urban life, and Van Eyck, concept of In-between, originally mentioned as the idea of a 'doorstep', a space between the interior private house and its exterior and not a "private space".[13] During lockdown, this threshold became a micro-infrastructure of publicness: a site for visibility, ritual, and resilience.

This study thus asks: how did people's activity in and around the urban balcony mediate the tension between private and public during COVID-19 restrictions? What does this reveal about the elasticity of public life under crisis? In addressing these questions, we contribute theoretically to debates on public spheres and liminality, and practically to understanding how domestic thresholds can sustain livability when formal public spaces are inaccessible.

RESHAPING THE PRIVATE-PUBLIC DIVIDE OF A LIVABLE CITY

The COVID-19 restrictions directly affected the urban public realm, which stopped fulfilling its usual roles and seemed to vanish from the cityscape. Yet, the need for social interaction and urban life remained. This study analyses the meanings attributed to actions and uses of the façade balconies in shared residential buildings in Tel Aviv, where private space intersects with the urban public realm. By conducted qualitative content analysis of media coverage in newspapers, news channels, and of Facebook posts[14] and ten in-depth interviews.[15] It reveals how balcony activities have taken on public space characteristics, becoming an alternative means of sustaining city livability. During lockdowns, people spent more time on their balconies, using them as separate spaces for self-encouragement and social connection. Communication, both planned and spontaneous, happened safely from a distance. While the balcony's physical boundaries stayed the same, its use reshaped the private-public divide and supported a livable city.

Redefining the balcony as an In-between space

Situated between interior and exterior, private yet public facing, the balcony uniquely separates from the home while affiliating with the external public realm. This theme explores its dual role through design and care practices that blur inside-outside boundaries, extending its public dimension in the spirit of Van Eyck's ideas. Balcony gardening saw a significant increase during the first COVID-19 lockdown. This trend was evident in the growth of Facebook groups such as "Urban Balconies"[16] and "Inspirational Balconies in Israel."[17]

Balcony care during lockdown reflected its dual significance: a private refuge for comfort and an outward-facing display. Balcony gardening activities are known for their environmental, aesthetic, and psychological benefits, which foster creativity and improve quality of life.[18] An interior designer highlighted this, stating, "The balcony becomes our only connection to the outside world, especially now, in times of crisis. As first aid, I would enrich the balcony with as many plants as possible. Plants and greenery have a healing power and nourish the soul."[19]

Our interviews devoted considerable attention to cultivating their balconies as distinct from indoor spaces. These areas were intentionally maintained to encourage outdoor presence, attract external attention, and boost both individual and communal morale. One interviewee transformed her balcony into a relaxing sanctuary: "We spent a lot of time on the balcony. We hung up a longyi that reminded us of India to create an Indian guesthouse atmosphere, with garlands, so it felt like we were there." This

differentiation from the home made the balcony a symbol of freedom and refuge from pandemic realities. Another shared her renewed motivation: "My motivation to tend the balcony picked up momentum during the lockdown. I started with plants." A third interviewee noted how abundant plants, combined with neighboring balconies, created a "green and lively corner within the city, with plenty of breeze," often leaving doors open for fresh air. The balcony became a mood-lifting space, fostering positive atmosphere-related activities, as one participant recounted, “I spent a lot of time on the balcony; all my Zoom calls with friends were from there. Not work calls, because the balcony is a fun zone.” Beyond personal enjoyment, cultivating the balcony as distinct from the home also served as an outward signal of encouragement. Balcony users emphasized this dual function: enabling themselves while signaling hope to the outside. An interviewee described her partner's actions: "He lights a variety of lights almost every night [...] to cheer up people in the street. There are many plants [...] because visibility from outside is very important to him [...] People definitely notice, especially at night when all the lights are on and flashing." Another echoed this outward signaling: "At one point, we wanted to cheer up the outside, so we hung colored lights to create a festive atmosphere for passersby."

This dual role aligns with Van Eyck's “twin phenomenon”, which views apparent opposites as complementary halves of a whole, uniting in an “in-between” space. Traditionally, a private extension, during the pandemic, the balcony became a polyphonic space, blending private and public. It stretched and reclaimed its public pole, reaffirming urban qualities and residents' commitment to city livability.

The lockdown heightened the balcony's connection to air, nature, health, and freedom. While private, its plant arrangements linked it to nature, setting it apart from indoor space. This greenery symbolised a connection to the natural world and transformed it into a distant place, blurring private and public boundaries. Long perceived as a boundary, it is now positioned more outside and within the city. The display also aimed to influence external perceptions, offering encouragement to passersby.

This process resembles fashion as a form of public self-expression. When such avenues are restricted, self-expression shifts to alternatives like the balcony. Its liminal qualities alter the private-public boundary, helping maintain city livability.

Transforming the Balcony into a Space for Social Communication

While the balcony has previously been recognized as a space of communication, during the COVID-19 pandemic it assumed a renewed and vital role. Social interactions shifted from public spaces to this zone between street and balcony, keeping street vitality alive. For example, a Facebook post recounted a resident alleviating her mother's loneliness through balcony visits: "I open the gate, stop halfway down the path, and my mother, with her walker and her devoted caregiver beside her, comes out to the balcony. She waves goodbye to me, sometimes sits and talks with me for three minutes." Another interviewee described coordinating meetings with friends: "A close friend of mine gave birth right at the start of the pandemic, on March 16, and during their first walk with the baby, they passed under our balcony, so we saw the family for the first time and wished them luck from the balcony."

The balcony offered a unique opportunity for social interaction during isolation,[20] enabling safe, physically distanced meetings. One participant recalled, "There was a period when we were in isolation, so friends came to talk to us through the balcony because we couldn’t leave the house." During lockdowns, when most communication was digital, the balcony remained almost the sole means for face-to-face contact: "If we had any communication with friends, it was through the balcony.”[21]Another interviewee explained: "I spoke with my neighbour across the building through the balcony. She’s a friend, but I was really afraid of her because she worked in a public health clinic. I preferred to talk through the balconies." This demonstrates the balcony's emergence as a safe, distant communication space.

This physical social connection also manifested through specific weekly temporal markers, like the festive meal on Friday evening.[22] Pandemic restrictions made traditional gatherings impossible, but the balcony offered a creative solution for cultural continuity. One interviewee recounted, "On Friday afternoon, we walked around the neighborhood and met a friend on her way to a shared friend's balcony. We joined them. She prepared a 'challah' and 'schnitzel' for everyone and lowered it down on a rope to the building's lawn. It was so fun to eat and sit with friends while she was on the balcony."

Moreover, the balcony facilitated spontaneous, unplanned encounters typical of public spaces. One interviewee described: "I was drinking a smoothie on the balcony when a friend who lives in the neighborhood passed by downstairs. We talked. He was walking with his baby, and we spoke through the balcony." Another detailed a neighborhood coffee-sharing ritual: "There was a period during the lockdown when cafés were closed, and neighbors who had coffee machines made coffee for each other. Since we were already on the balcony and accessible, if someone came to get coffee, there was still a height difference, so it felt like you kept your distance and didn't risk catching COVID."

The balcony revived its pre-pandemic social uses. As an interviewee shared, "Friends would pass under the house and call my name because they knew I was home."[23] An interviewee recalled: "We used to go to friends who had a balcony, and beyond the balcony was like the edge of the lawn. We'd pass by without announcing ourselves, and they would bring out chairs and beers. We'd sit there all evening, they on the balcony, we on the lawn." In the pandemic crisis, the balcony reclaimed lost functions, gradually becoming a bridge for face-to-face encounters, shaping urban life. Interviewees described how occasional spontaneous meetings evolved into regular rituals.

Transforming the Balcony into a Place of City Belonging

By late March 2020, a notable ritual emerged in Tel Aviv: public calls for residents to applaud healthcare workers from their balconies at a designated hour. On March 19th, news broadcasts showed people clapping in unison from their balconies. A journalist described it as "a small, uncomplicated gesture that brought people to the verge of tears."[24] One interviewee recalled, "When the clapping started, I went out to the balcony and watched."

Initially spontaneous and later coordinated events boosted morale, broke isolation, and encouraged casual interactions. They shifted urban social life from public squares to balconies, creating new spaces for the community. Despite lockdowns restricting access, the need for connection persisted. Balconies became symbols of care and solidarity, especially among strangers.

Interviewees recounted deliberate efforts to bring joy to strangers. Three flatmates described playing music for a neighbor displaying birthday balloons: "We went out to the balcony, put music on the speaker, and celebrated him. That's how we met a neighbor we hadn't known before […] because of the lockdown we decided to lift his spirits. It was lovely, we were singing and dancing from balcony to balcony." Others organized small events to cheer passersby. One participant shared: "We danced people during the holiday […] everyone was feeling down […] so we played music (from the balcony) […] and people just stopped and joined us. There was communication through dancing. People were looking for it."

The balcony became not only a space of visual or symbolic communication but a site for spontaneous interaction with strangers. Interviewees recounted deliberate efforts to bring joy to strangers. Three flatmates described how balcony karaoke led to shared rooftop meals, and a participant shared forming a new relationship with a neighbour through "inter-balcony contact." Others recalled friendly exchanges with sanitation workers or elderly pedestrians that grew meaningful over time. One interviewee described her partner routinely chatting with a woman walking her dog past their building: "Now when we see her in the street, we say hello. It started during the lockdown. Before that, we hardly interacted with people like that."

As time spent on the balcony increased, residents became visible and recognisable to those on the street. One interviewee explained that when her partner was absent from the balcony, "people asked where he'd gone. During the first lockdown, he had brought a record player outside and played saxophone music for the neighbourhood. When he returned to work, people actually asked what had happened to the music." The interviewee also reflected on her own shift in attitude toward public exposure: initially seeking privacy, she eventually embraced the balcony's visibility and social role: "We are the street and that's amazing […] when we moved in, I said, 'Too bad we don't have a rear-facing apartment. I don't want the whole world on my balcony.' But that's exactly what happened and it turned out great."
As earlier discussed, initial spatial activities, like decorating or gardening, enabled this shift. In this third theme, these efforts laid the groundwork for a deeper blurring of the private-public boundary. This boundary was transgressed from inside out, and urban life also reached in. Urban residents, accustomed to chance encounters, found these interactions displaced from streets and squares to balconies, which now mediated a reconfigured but still vivid form of urban life.

CONCLUSIONS

Throughout the lockdowns imposed during the pandemic, balconies in Tel Aviv emerged as spaces of extended presence and renewed significance. Residents increasingly cultivated and differentiated these spaces from their domestic interiors, using them both as personal sanctuaries and as outward-facing platforms of encouragement and connection. What initially appeared as isolated acts of private comfort and aesthetic expression soon revealed themselves as embedded in broader social, spatial, and civic dynamics. The research showed that the balcony the balcony became a liminal space, open to the street yet anchored in the home that facilitated both individual well-being and collective urban vitality.
As demonstrated, balcony-related practices reflected and refracted the essential functions of public space: communication, participation, and the cultivation of belonging. The architectural characteristics of the balcony, along with its liminal nature, allowed it to be reimagined as a unique site of hybrid activity: private in ownership, public in orientation. As a physical and symbolic threshold between inside and outside, the balcony came to embody the negotiations between withdrawal and engagement, safety and visibility, solitude and solidarity.
The balcony assumed new roles: First, it became a space for planned communication that respected public health regulations. Second, it enabled unplanned spontaneous encounters with familiar passersby restoring a core element of urban life. These encounters, typically confined to streets, parks, and cafes, now took place between the vertical levels of balconies and sidewalks, producing new micro-rituals of connection. It also functioned as a safe zone, offering a sense of security while maintaining visual and auditory access to the social world outside. As Simmel[25] noted, architectural openings such as balconies simultaneously separate and connect. The balcony offered both: it reinforced physical distance while creating points of contact through sightlines, shared music, or even a Friday dinner with the courtyard below.
Activities typically reserved for the public domain found expression on balconies, transforming a collection of individuals in their private dwellings into a temporary civic body. Spontaneous applause for healthcare workers, communal singing, or dance interactions with strangers transformed the balcony into a symbolic arena where private residents could enact a form of civic presence. These insights, while focused on Tel Aviv, hold global relevance for maintaining vibrant, livable urban environments, particularly when access to public spaces is limited due to pandemics, emergencies, or other disruptions, underscoring the critical role of human agency.
Zacka[26] argued that the balcony enables participation without full participation, sociality without intimacy. It offers a high degree of privacy relative to public space, and a high degree of visibility

compared to private interiors. One can observe the street without being seen or overhear conversations without revealing one's presence. Though not a classical public space, the balcony allowed engagement with city life, enabling individuals to recover a sense of connection, belonging, and shared presence. The balcony functioned as an "ad hoc" public sphere: a transitional and two-way channel between home and city. In moments of crisis and restriction, the balcony offered a vital sense of control, participation, and city-embeddedness. It granted residents a foothold in the public realm, not through grand gestures or institutional channels, but through intimate, repeated, and deeply human acts. Thus, the balcony revealed itself as a key urban interface: one that simultaneously protects, connects, and expresses the ongoing desire for a livable city**.** In a time of uncertainty and isolation, the balcony offered a sense of belonging to the city that was grounded not in grand urban gestures, but in the small, repeated, and meaningful encounters of everyday life.

NOTES

[1] Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger (Cambridge, MA: MIT Press, 1991); Jürgen Habermas, Sara Lennox, and Frank Lennox. "The Public Sphere: An Encyclopedia Article (1964)," *New German Critique* 3 (1974): 49–55. https://doi.org/10.2307/487737.

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[3] Nancy Fraser, "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy," *Public Space Reader* 26, no. 25 (1990): 34–41, https://doi.org/10.4324/9781351202558-6.

[4] Gary Alan Fine and Brooke Harrington, 'Tiny Publics: Small Groups and Civil Society," *Sociological Theory* 22 no. 3 (2004): 341–356, https://doi.org/10.1111/j.0735-2751.2004.00223.x.

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[6] Michael Walzer. "Pleasures and Costs of Urbanity," *Dissent* 33, no. 4 (1986): 470–475.

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[8] Elizabeth Butler Breese, "Mapping the Variety of Public Spheres," *Communication Theory* 21, no. 2 (2011): 130–149, https://doi.org/10.1111/j.1468-2885.2011.01379.x.

[9] Jordi Honey-Rosés et al. "The Impact of COVID-19 on Public Space: An Early Review of the Emerging Questions – Design, Perceptions and Inequities," *Cities and Health* 5 (2021): S263–S279, https://doi.org/10.1080/23748834.2020.1780074.; Yael Zilberstein-Barzida, "'Every Man Needs a Place': The Corona Crisis and Urban Nature," *Environment and Ecology* 11, no. 1 (2020): 3–5. https://www.magazine.isees.org.il/?p=16773; Tamar Tauber-Pauzner and Nurit Hashimshony-Yaffe, "A Balcony with Seaview: Reshaping Perceptions of Public Space in Coronavirus Era." Israeli Sociology 21, no. 2 (2021): 192–199; Francesca Ugolini et al. "Effects of the COVID-19 Pandemic on the Use and Perceptions of Urban Green Space: An International Exploratory Study," *Urban Forestry and Urban Greening* 56 (2020): 126888, https://doi.org/10.1016/j.ufug.2020.126888.

[10] Douglas Vieira de Aguiar, "What Is Urbanity About?" (paper presented at the 2013 International Space Syntax Symposium, Seoul, Korea, 31 October–3 November, 2013).

[11] The Phenomenon became universal and raised intense academic discourse. For more information on urban developments under COVID-19 in European, Middle Eastern and African cities, See for example Alison Blunt et al., *At Home in London During COVID-19: Policy Recommendations and Key Findings* (London: Queen Mary University of London, 2022); Caroline Wanjiku Kihato and Loren B. Landau, "Coercion or the Social Contract? COVID-19 and Spatial (In)Justice in African Cities," *City & Society* 32, no. 1 (2020). https://doi.org/10.1111/ciso.12265; Ka Yan Lai et al. "The Nature of Cities and the Covid-19 Pandemic." *Current Opinion in Environmental Sustainability* 46 (2020): 27–31. https://doi.org/10.1016/j.cosust.2020.08.008; Andy C. Pratt, "COVID-19 Impacts Cities, Cultures and Societies." *City, Culture and Society* 21 (2020): 100341, https://doi.org/10.1016/j.ccs.2020.100341; Salman Rawaf, Harumi Quezada Yamamoto, and David Rawaf. "Unlocking Towns and Cities: COVID-19 Exit Strategy." *Eastern Mediterranean Health Journal 26*, no. 5 (2020): 499–502, https://doi.org/10.26719/emhj.20.072; Przemysław Śleszyński et al. "COVID-19 Spatial Policy: A Comparative Review of Urban Policies in the European Union and the Middle East." *Sustainability* 15, no. 3 (2023): 2286, https://doi.org/10.3390/su15032286.

[12] Efthalia Thaleia Grigoriadou. "The Urban Balcony as the New Public Space for Well-Being in Times of Social Distancing." *Cities & Health* (2020): S208–S211, https://doi.org/10.1080/23748834.2020.1795405; Pouya Molaei et al. "Semi-Open Spaces of Apartments Considering COVID-19 Pandemic: General Expectations of Balcony Design in the Post-Pandemic World." *Architectural Engineering and Design Management* 18, no. 5 (2022): 705–722, https://doi.org/10.1080/17452007.2021.2021385; Esra Bayazit Solak and Sule Kisakurek. "A Study on the Importance of Home and Balcony during the COVID-19 Pandemic." *Environment, Development and Sustainability* 26, no. 10 (2024): 26345–26363. https://doi.org/10.1007/s10668-023-03732-w; Dimitrios Tsiotas, Efstratios Makridis, and Serafeim Polyzos. "Measuring the Effect of Covid-19 on the Functionality of Urban Public Spaces: The Case of Thessaloniki, Greece." *Theoretical and Empirical Researches in Urban Management* 18, no. 4 (2023): 5–23.

[13] Oscar Newman, *CIAM '59 in Otterlo* (Stuttgart: Karl Kramer Verlag, 1961), 33–38.

[14] The focus is on the first nationwide lockdown, marked by initial cautious adaptation and rapid shifts in behaviour as residents coped with the unexpected. Media coverage from March 14 to May 14, including key dates such as March 25, when leaving home was further restricted. Channels 11, 12, and 13, and the following websites: Ynet, N12, Israel Hayom, and Haaretz.
[15] Due to the lockdown, all interviews were conducted by phone, which created a shared experience between researchers and participants.
[16] Urban Balconies, Facebook, accessed December 15, 2025.
https://www.facebook.com/groups/2265598530342261/about
[17] Inspirational Balconies in Israel, Facebook, accessed December 15, 2025.
https://www.facebook.com/groups/InspiringBalconies
[18] Jacklyn Johnson and John Newton. *Building Green: A Guide to Using Plants on Roofs, Walls and Pavements*. London: Greater London Authority, 2004, 27–30.
[19] Meitar Schleider Potschnik, "Balcony Singing: Do you Have a Balcony? Now's The Time to Invest in It," *Walla!,* March 20, 2020. Accessed December 15, 2025, https://home.walla.co.il/item/3347407. [Hebrew].
[20] The reference here is to isolation not in the sense of a lockdown, but rather a period of isolation due to, for example, suspected exposure to a confirmed patient, which also prohibits going out even for essential supplies.
[21] "100 Meters" is a photography exhibition created during the COVID-19 lockdown, when people were restricted to a 100-meter radius from their homes. The exhibition captures intimate and creative glimpses of daily life within that limited space, reflecting resilience, isolation, and adaptation during the pandemic.
[22] In Israel it's the equivalent of a Sunday roast.
[23] This street-to-balcony calling was common in 1960s-1970s Tel Aviv, pre-mobile phones, when children would call out to friends from below.
[24] Channel N12's Main Evening News, March 19, 2020, report by journalist Ben Mittelman.
[25] George Simmel, "Bridge and Door." In *Rethinking Architecture: A Reader in Cultural Theory*, ed. Neil Leach (New York: Routledge, 1997), 63–76.
[26] Bernardo Zacka, "What's in a Balcony? The In-between as Public Good," In *Political Theory and Architecture*, eds. Duncan Bell and Bernardo Zacka (London: Bloomsbury Academic, 2020) 81–103.

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ECOLOGY AND URBAN MICROCLIMATE: A FRAMEWORK FOR SOCIO-ENVIRONMENTAL FORMATION IN NEW YORK CITY

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INTRODUCTION

Climate change has amplified the vulnerabilities embedded within urban systems, with rising global temperatures and accelerated urbanization intensifying the urban heat island (UHI) effect. The UHI phenomenon, intensified by the widespread replacement of vegetated and moisture-retentive surfaces with dark, impervious materials such as asphalt and concrete, has transformed urban microclimates into pressing environmental, social, and public health concerns. Beyond exacerbating thermal stress, UHI compounds energy demand, elevates greenhouse gas emissions, and heightens risks for vulnerable populations.

Climate change is expected to produce an increase in annual mean temperatures as well as more frequent and intense extreme temperature events, such as heat waves.[1] Quantitative projections, derived from global climate models indicate substantial shifts in both temperature and precipitation means and extremes over the coming decades.[2] For New York City, climate projections show that average annual temperatures could rise by 4.4–5.6 °C (8–10 °F) by the 2080s,[3] with concurrent increases in the frequency, duration, and intensity of heat waves, as illustrated in Figure 1.[4]

Extreme heat represents one of the most direct and physiologically destabilizing climate stressors affecting human health. By overwhelming the body's thermoregulatory capacity, prolonged exposure to high temperatures disrupts core metabolic and cardiovascular functions, compromises cellular integrity, and places acute stress on multiple organ systems. Periods of extreme heat impose a substantial public health burden by adversely affecting the cardiovascular, renal, neurological, and respiratory systems through interconnected physiological pathways, including heat-induced cytotoxicity, systemic inflammatory responses, dehydration, and ischemic stress. The resulting health outcomes span a continuum from heat exhaustion to mortality.[5] Heat exhaustion have been associated a life-threatening condition marked by severe thermoregulatory failure and clinical manifestations including markedly elevated core body temperature, tachycardia, headache, dizziness, nausea, and loss of consciousness.

New York City constitutes a canonical case for investigating the urban heat island phenomenon. With a population exceeding eight million and a built environment characterized by impervious surfaces, concrete, and thermally absorptive dark roofs, materials distinguished by low albedo and high emissivity, the city experiences a pronounced UHI effect. While surface air temperatures across the

metropolitan area often exceed those of nearby rural regions, mean temperatures within the city's largest park, Central Park, remain consistently lower than those observed in the surrounding districts. During the summer months, nocturnal air temperatures in the city remain markedly elevated relative to adjacent non-urbanized zones. These persistent thermal disparities highlight the essential role of vegetation, soils, and hydrological systems in modulating microclimates and enhancing the regulation of urban thermal performance.

The urban heat island effect in New York exhibits marked spatial variability. Heat exposure, heightened energy burdens, and associated health risks are inequitably concentrated in marginalized neighborhoods with higher proportions of Black, Hispanic, and low-income residents. These communities frequently lack sufficient tree canopy, access to green space, and other forms of ecological infrastructure, thereby reinforcing cycles of vulnerability of climate shocks. Research on heat vulnerability in New York City demonstrates that extreme heat risk is disproportionately concentrated in certain neighborhoods, shaped by the interaction of urban form, housing conditions, land cover, and socio-demographic inequality. These disparities are closely linked to characteristics of the built environment, including dense impervious surfaces, limited tree canopy, aging housing stock, and inadequate access to cooling, which intensify localized urban heat island effects and exacerbate indoor heat exposure.[6]

Epidemiological analyses of heat-related mortality show that neighborhoods with higher concentrations of low-income households, elderly residents, and people of color experience disproportionately higher rates of heat-related illness and death, even when citywide temperatures are comparable.[7] Empirical health data further underscore the severity of these conditions. An analysis of hospital records, emergency department visits, death certificates, and medical examiner reports demonstrates that extreme heat has posed a persistent and substantial public health burden in New York City over multiple decades. Between 2000 and 2011, an annual average of approximately 447 residents were treated and released from emergency departments for heat-related illness, 152 were hospitalized, and 13 deaths were directly attributed to heat exposure, with nearly half of all fatalities occurring during two major heat waves in 2006 and 2017.[8] Rates of heat-related illness and mortality increased with age, were generally higher among men under 65, and were disproportionately concentrated in neighborhoods with higher levels of poverty, reflecting the intersection of climatic exposure and social vulnerability. Across both hospitalized cases and fatalities, cardiovascular and respiratory disease, diabetes, mental health disorders, substance abuse, and obesity were common comorbidities, highlighting how extreme heat exacerbates pre-existing health conditions. Importantly, the majority of fatal heat exposures occurred indoors, most often within individuals' homes, indicating that risk is mediated not only by outdoor temperature extremes but also by the thermal performance of residential environments. Among fatality investigations where information on cooling was available, none documented the use of a functioning air conditioner at the time of death, underscoring the critical role of indoor thermal conditions and access to cooling infrastructure in preventing heat-related mortality.

More recent syndromic surveillance data from the NYC Environment & Health Data Portal, which tracks heat syndrome emergency department visits, including heat exhaustion, heat cramps, fainting, and heat stroke, across all New York City emergency departments, indicate a continued rise in heat-related ED visits since 2017.[9]

In response to these spatialized risks, New York City's Heat Vulnerability Index integrates social vulnerability indicators with environmental exposure metrics to identify communities at greatest risk and guide targeted heat mitigation and public health interventions. More recent work demonstrates that neighborhoods shaped by historical disinvestment and racial segregation experience systematically higher urban heat exposure, reinforcing the role of structural inequality in producing contemporary thermal risk.[10] Together, this body of research positions heat vulnerability in New York City not solely

as a climatic phenomenon, but as a socio-environmental condition produced through urbanization, housing systems, and long-standing planning inequities.

The intersection of climate dynamics and socio-spatial inequality highlights the urgency of ecologically informed and socially just interventions. This paper positions ecology as a foundational framework for reinterpreting and restructuring urban environments. Rather than Relegating trees, soils, and hydrological systems as ornamental or supplementary, the ecological paradigm positions living systems as infrastructural determinants of urban performance. Within this paradigm, microclimate emerges not as a byproduct of urban densification, but as a deliberate domain of design and governance, one where ecological processes operate as both the medium and the mechanism of resilience. Through the case of New York City, this paper develops a framework for socio-environmental formation that links ecological function, climate adaptation, and social equity in the pursuit of resilient urban futures.

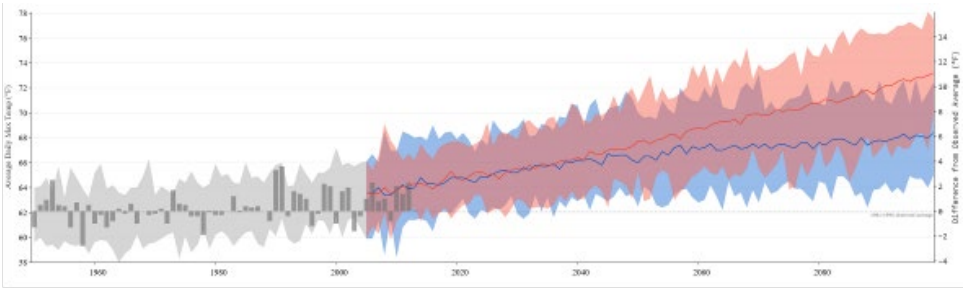

Figure 1. New York County-Average Daily Maximum Temp (°F). Credit: The Climate explorer.

Urban Microclimate in New York

The microclimate of New York emerges from its dense morphology, extensive impervious surfaces, and spatial disparities in tree canopy and soil cover.[11] High-rise canyons and narrow streets reduce sky-view factors, constraining longwave radiation release and limiting airflow.[12] Asphalt-dominated pavements and dark rooftops absorb heat throughout the day and release it slowly after sunset, sustaining elevated nighttime temperatures.

High-rise building clusters in New York City exacerbate the urban heat island (UHI) phenomenon through both geometric and material-based processes. Their dense, canyon-like configurations obstruct ventilation, trap longwave radiation, and enhance heat retention in facades and pavements, driving elevated daytime and particularly nighttime temperatures.[13] A study employing hyperspectral imaging and radiative transfer modeling across nearly 100 Manhattan blocks underscores how tightly packed skyscrapers accumulate and re-radiate heat, significantly impacting surface temperatures and urban energy budgets.[14] While other research suggests that taller buildings can generate airflow under specific canyon geometries, the prevailing effect in compact high-rise clusters is one of thermal trapping and elevated temperatures.[15] In contrast, areas with substantial green infrastructure, such as Central Park, Prospect Park, and Staten Island's north shore, exhibit localized cooling of 2–4 °C relative to adjacent built-up zones.[16] Within the city, Central Park exhibits a localized cooling effect, with mean temperatures 1.20–3.02 °C lower than those of neighboring districts. At the metropolitan scale, New York's surface air temperature can exceed that of rural environments within a 100 km radius by up to 8 °C, a differential that becomes more pronounced during heat wave conditions.[17] Such thermal disparities underscore that urban microclimate is not an incidental byproduct of densification, but a constructed condition rooted in material choices, zoning practices, and ecological investment. Where tree canopy is sparse and dark surfaces dominate, heat exposure intensifies, where ecological infrastructure is robust, cooling benefits are generated and distributed more equitably.[18]

The study area encompasses New York City and its surrounding boroughs, including Brooklyn, Queens, the Bronx, and Staten Island. The city has a mean elevation of approximately 10 meters (33 feet) above sea level. Its highest natural point is Todt Hill on Staten Island, which rises to about 125 meters (410 feet).[19] In Manhattan, the maximum elevation is located at Bennett Park in Hudson Heights, at approximately 81 meters (265 feet) above sea level. Additional areas of notable topographic relief include Riverdale in the Bronx, characterized by steep slopes overlooking the Hudson River, and sections of Queens such as Cambria Heights, which reach around 15 meters (50 feet), as illustrated in Figure 2.[20] the vertical dimension of the built environment further shapes the city's microclimate. New York hosts one of the world's most concentrated high-rise building clusters, with more than 6,400 high-rise structures exceeding 35 meters (115 feet) in height, of which over 300 qualify as skyscrapers above 150 meters (492 feet).[21] These towers are primarily concentrated in Manhattan, particularly Midtown and Lower Manhattan, as illustrated in Figure 3 and 4, forming dense urban canyons that constrain sky-view factors, trap longwave radiation, and alter wind dynamics, thereby amplifying the intensity of the urban heat island effect.

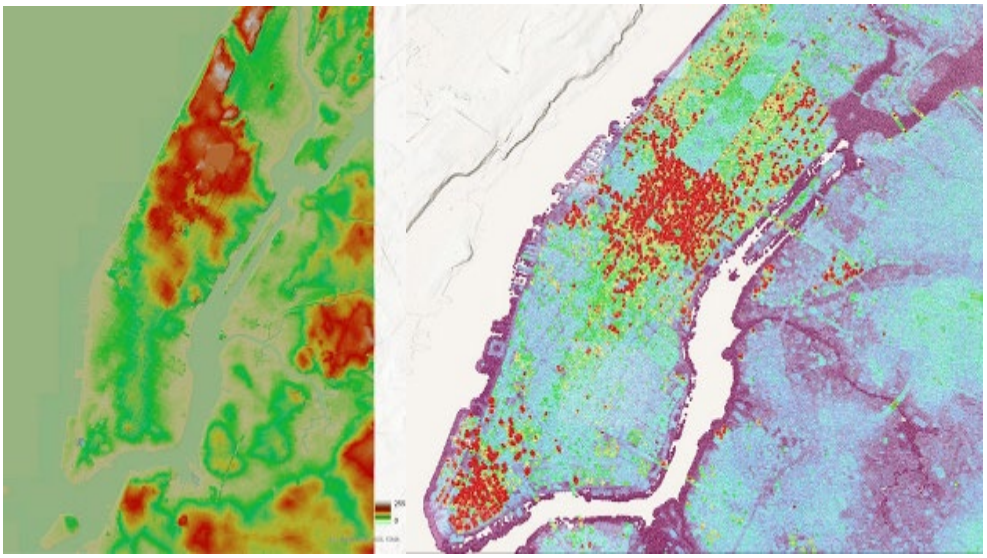

Figure 2. Topographic and Topographic LiDAR-derived Digital Elevation Model (DEM.
Figure 3. Topobathymetric Classification using LiDAR Point Cloud (2017).

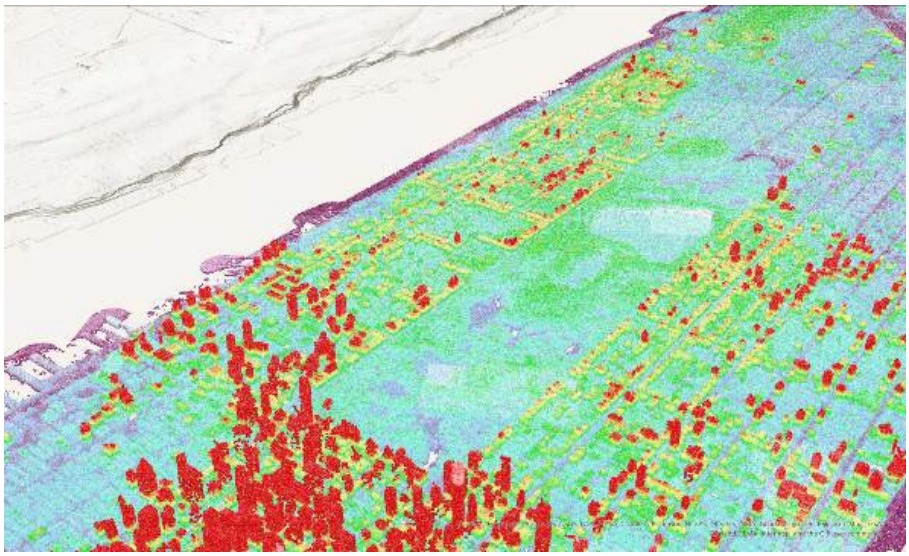

Figure 4. Topobathymetric Classification using LiDAR Point Cloud (2017).

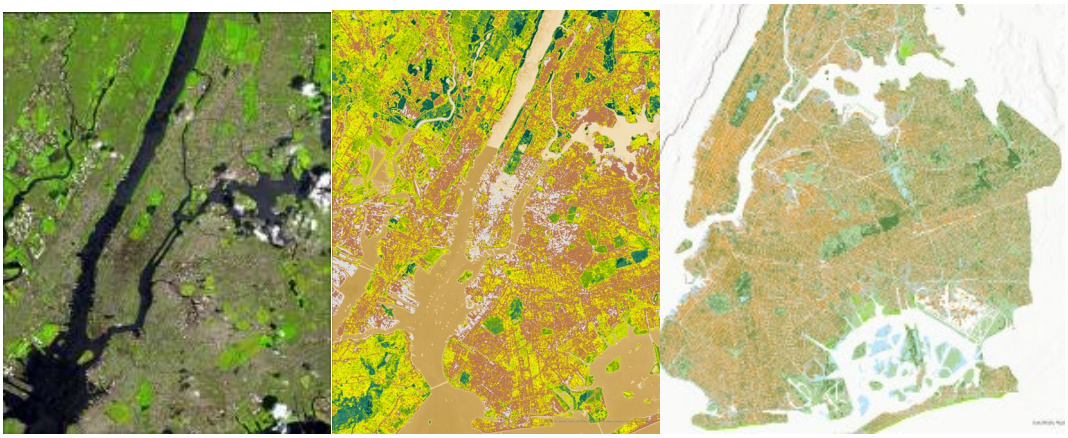

Figure 5. Landsat 8 and 9 multispectral and multitemporal imagery rendered on-the-fly as Normalized Difference Vegetation Index (NDVI) Colorized for visualization and analysis. Credits: Esri, USGS, AWS , NASA

Figure 6. Satellite imagery from Landsat 8/9 OLI (USGS/NASA)

Satellite-derived land surface temperature (LST) analyses reveal the uneven spatial distribution of heat across New York City. Central Brooklyn, the South Bronx, and eastern Queens consistently exhibit elevated surface temperatures, reflecting the predominance of impervious cover and limited vegetative presence.[22] Figure 5 illustrate the spatial interrelationship between LST, impervious surfaces, and vegetation. The LST maps highlight thermal concentrations in densely built neighborhoods, while the map showcasing impervious surfaces, demonstrates the prevalence of asphalt, concrete, and other sealed materials that reinforce these heat patterns. By contrast, vegetation and tree canopy cover are most extensive in Staten Island, Central Park, and Prospect Park, where continuous canopy networks produce localized cooling of 2–4 °C relative to adjacent built-up zones.[23] The false-color satellite

composite of New York City, shown in Figure 6, differentiates land-cover types according to spectral response rather than natural color. Purple areas denote dense built-up and impervious surfaces, including buildings, roadways, and rooftops, while green patches correspond to vegetated cover such as parks, street trees, and riparian corridors. The spatially averaged satellite-derived land surface temperature map, as illustrated in Figure 7, representing daytime summer conditions by neighborhood, identifies South Jamaica, Queens, as exhibiting the highest thermal intensities. Collectively, these maps underscore the critical role of vegetation and open space in mitigating the urban heat island effect and regulating microclimatic variability.[24]

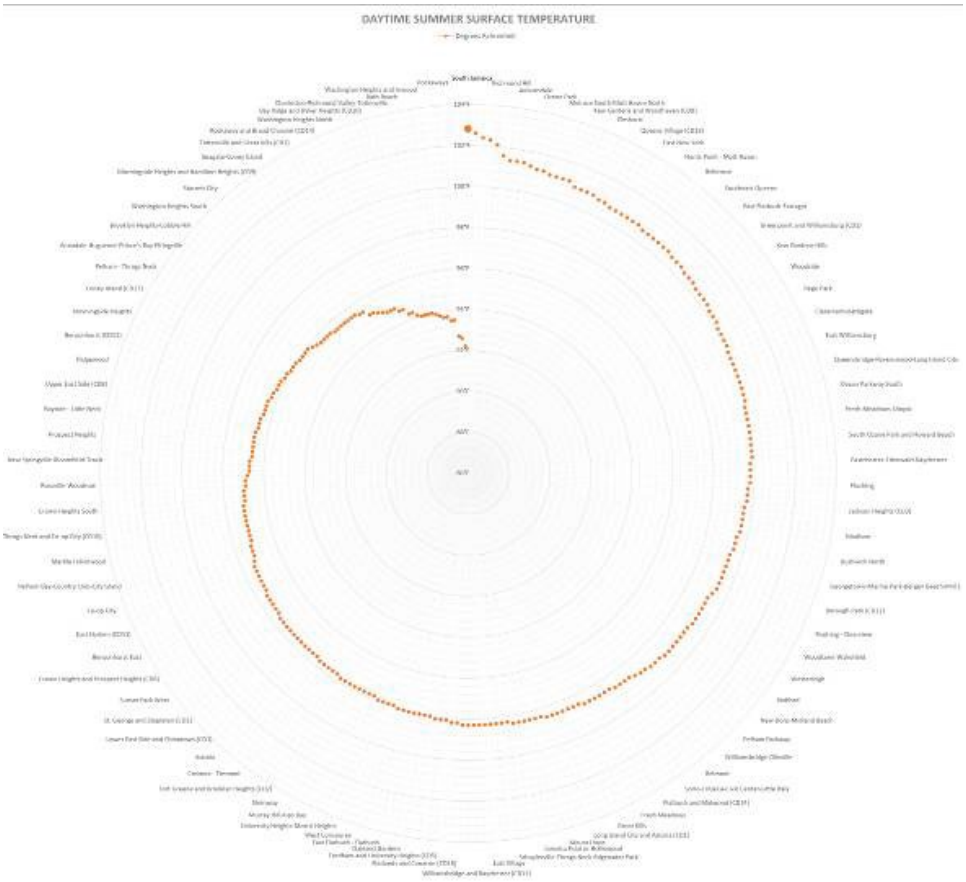

Figure 7. Spatially averaged land surface temperature data, measured by satellite, were obtained from the Environment & Health Data Portal and visualized by the author.

Socio-Environmental Vulnerabilities

To assess neighborhood-level vulnerability in New York City, where residents face elevated risks of mortality during and immediately following extreme heat events, this study applies the Heat Vulnerability Index (HVI), as illustrated in Figure 8. Constructed through a statistical modeling framework, the HVI synthesizes multiple environmental, social, and demographic determinants of heat risk into a composite, neighborhood-scale metric that reflects both material and demographic dimensions of vulnerability.[25] Core variables include land surface temperature, vegetative cover, household access to air conditioning, median household income, and the proportion of residents identifying as non-Hispanic Black.[26] By combining these indicators, the HVI moves beyond physical measures of the urban environment to capture the intersection of climatic exposure with socio-economic

inequality and racialized vulnerability. In this study, the framework is extended through the incorporation of an additional vegetation layer, as illustrated in Figure 10, and the explicit consideration of Black population distribution, illustrated in figure 9, enhancing its ability to capture ecological and demographic inequities.

When compared with 1930s-era Home Owners' Loan Corporation (HOLC) redlining maps, which codified racialized patterns of disinvestment, the results illustrate how structural inequalities continue to shape climate risk in New York City.[27] The HVI operationalizes this relationship by assigning neighborhoods scores from 1 (lowest vulnerability) to 5 (highest vulnerability), based on quintiles of its underlying indicators.[28]

Specifically, the refined HVI integrates: median household income from the American Community Survey (2016–2020);[29] vegetation and canopy cover derived from 2017 LiDAR data collected by NYC DOITT, demographic data from the 2020 Census;[8] land surface temperature from NASA ECOSTRESS imagery (August 27, 2020); and reported household access to air conditioning from the 2017 NYC Housing and Vacancy Survey.

Despite the widespread use of social vulnerability analyses in environmental and public health research, vulnerability indices have inherent limitations when applied to policy and planning decision-making. These indices typically function as relative measures, capturing vulnerability in comparison to other geographic areas rather than representing absolute levels of exposure, sensitivity, or adaptive capacity.

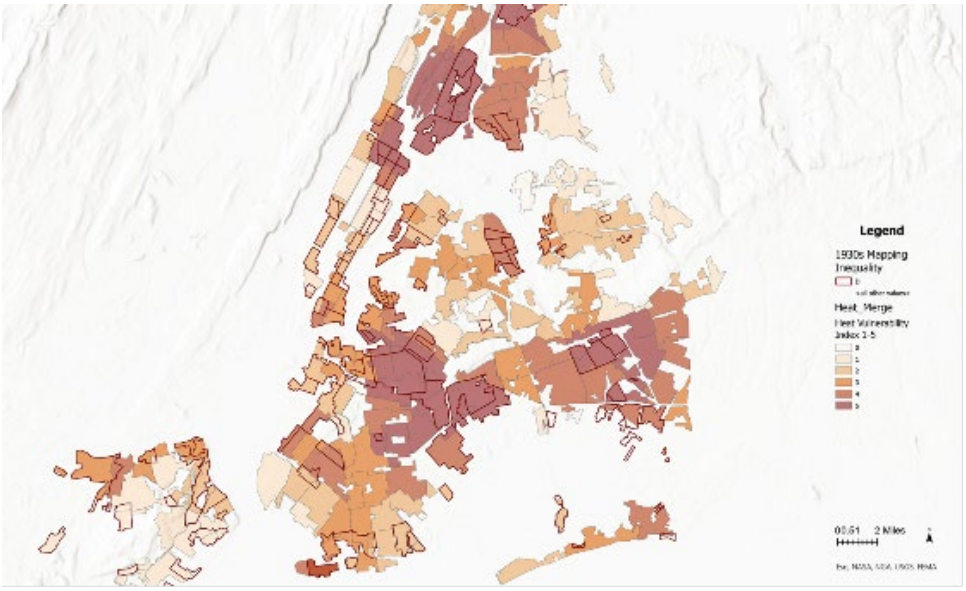

Figure 8. Heat vulnerability Index and 1930s Mapping Inequality (HOLC) Classifications.

Figure 9. Heat Vulnerability and Black Population in Relation to 1930s HOLC Redlining.

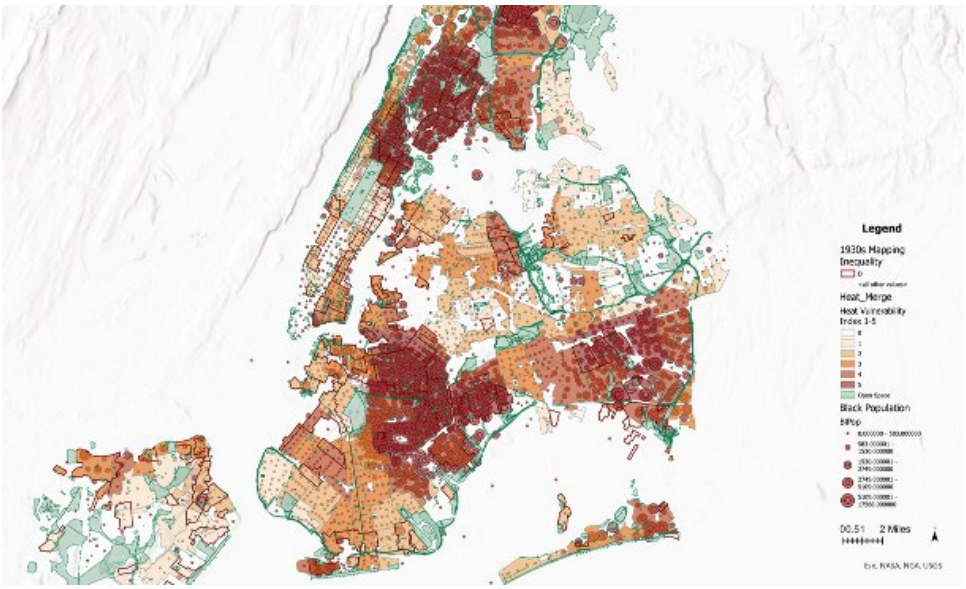

Figure 10. Heat Vulnerability and Black Population in Relation to 1930s HOLC Redlining.

CONCLUSION

The case of New York City demonstrates that urban climate is neither neutral nor incidental, but a socio-environmental condition actively produced through historically situated regimes of planning, governance, and material investment. Urban thermal environments emerge not only from biophysical processes, but from policy decisions that have shaped land use, housing quality, infrastructure provision, and ecological distribution over time. By mobilizing ecology as an infrastructural paradigm, the city illustrates that urban climate is governable: targeted interventions such as expanding tree canopy, enhancing vegetative cover, and implementing reflective or permeable surface systems can measurably reduce ambient temperatures, improve air quality, and mitigate heat-related morbidity and mortality. These interventions reveal environmental design as a critical interface through which ecological processes are translated into public health outcomes and urban resilience.

Heat Vulnerability Index (HVI) analyses further demonstrate that heat risk in New York City is not randomly distributed, but is systematically patterned by entrenched socio-spatial inequalities rooted in historical planning and housing policies. The spatial correspondence between neighborhoods subjected to redlining in the mid-twentieth century and contemporary zones of elevated heat vulnerability underscores the enduring role of structural racism in shaping present-day climate exposure. Redlining produced long-term disparities in building quality, infrastructure investment, maintenance regimes, and access to green space, conditions that continue to structure urban thermal performance. Satellite-derived analyses of land surface temperature, impervious surface coverage, and vegetation distribution reveal that these historical decisions remain materially inscribed in the urban landscape. Areas that benefited from sustained ecological and infrastructural investment, such as Central Park and portions of Staten Island, exhibit pronounced cooling effects, while formerly redlined districts in the Bronx, Brooklyn, and Queens experience persistently elevated thermal stress due to dense impervious development, limited canopy cover, and aging housing stock.

Beyond their analytical utility, vulnerability indices raise critical ethical and political questions regarding how risk is represented, communicated, and operationalized within urban governance. When vulnerability rankings are abstracted from the historical processes, such as redlining, racialized disinvestment, and uneven infrastructure provision, that produced contemporary exposure, they risk framing vulnerability as an inherent characteristic of places or populations rather than as the outcome of cumulative policy decisions. Such framings may inadvertently reproduce processes of social and spatial stigmatization, shaping public discourse through deficit-oriented narratives that normalize unequal exposure and obscure institutional responsibility. Moreover, the technocratic deployment of vulnerability metrics can legitimize managerial or paternalistic interventions while sidelining demands for structural repair, redistribution, and accountability. Stigmatizing representations may also erode trust between communities and public institutions, undermining the effectiveness of heat mitigation strategies by discouraging engagement with public resources or adaptation programs. Addressing these limitations requires moving beyond index-based rankings toward interpretive frameworks that foreground historical causation, emphasize the material and political production of vulnerability, and support planning approaches grounded in redistribution, co-production, and climate justice.

Taken together, these findings affirm that urban microclimates are not merely the byproduct of urban form, but socio-environmental formations shaped by racialized histories of investment and neglect, governance practices, and material design choices. Reconceptualizing ecology as infrastructure offers both a theoretical and operational framework for addressing urban heat, one that clarifies how environmental design can simultaneously mitigate climatic extremes, improve public health, and advance social equity. In the context of accelerating climate change, this ecological paradigm reframes climate adaptation not as a reactive or technical response, but as a proactive and reparative project, one that confronts historical injustice while reshaping how cities are designed, governed, and inhabited.

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A SEARCH FOR A SOLUTION BEYOND THE PUBLIC-PRIVATE SPACE DICHOTOMY FOR THE CONTINUITY OF URBAN OPEN GREEN SPACES THROUGH TURKISH EXAMPLES

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INTRODUCTION

Urban green spaces serve as environmental refuges for city dwellers to rest in today's increasingly concretized cities. At the same time, they provide public,[1] semi-public or private spaces for people to gather and socialize. Finally, they are gathering places during natural disasters. However, in the era of neoliberal urbanism that prioritizes profit motives over people, urban green spaces are struggling to survive against political, economic (financialization, marketization, green gentrification, etc.) and construction pressures. As a result, they are transforming into controversial or contested spaces[2] among different interest groups.

In this paper, we define urban green spaces as social (green) infrastructure,[3] which can be public, semi-public or private and, depending on their use, can become a community space or a third space. This work seeks to answer the following questions: What are the main urban processes behind the transformation of urban green spaces today? What conflicts surround urban green spaces, and how are they resolved? By answering these questions, we aim to produce knowledge about the directions of change and conditions of sustainability of urban green spaces in the neoliberal era.

We present two examples of urban green spaces from Ankara and Samsun, based on secondary sources and observations. These are: Pastor's Vineyard in Ankara's Çankaya district, and Yalı Cafe in Atakum, Samsun. This preliminary study is limited to a long-term observation of the selected sites in daily life and secondary sources, including articles, institutional reports and statements, and news about these sites after the 2000s. We have also looked at the social media and blog posts about these sites to understand people's perceptions of them and to prepare for future interviews with different stakeholders.

Urban open green spaces and their challenges

The common view of the benefits of urban open green spaces in the literature is that these spaces are good for the physical and mental health of city dwellers and that their decline causes a number of problems in cities. At the top of the list are air pollution and health problems. They also provide opportunities for people to socialize, especially for non-working groups. For example, they can act as a meeting place against the risk of social isolation for older people living alone.[4]

In addition to these positive effects on urban social life, urban green spaces also contribute to the development of their area and the environment.[5] Buckland and Pojani also emphasize the contribution of urban green spaces to the environment and their positive aspect for the quality of life, stating that they reduce the "urban heat island" effect. In addition to their ameliorative effect on global warming, urban green spaces became increasingly important during the COVID-19 pandemic, despite an initial decrease in their number of users, and Noszczyk et al. demonstrated their stress-reducing effect through their study.

These spaces are now facing a number of man-made challenges. In addition to urban environmental problems such as global warming, urban political economy also shapes urban green spaces. When the conditions are right, urban green spaces can play a role in increasing the value of their surrounding areas and neighbourhoods, their becoming more expensive and gentrifying. In other cases, megaprojects may cause significant damage to the natural and cultural ecosystems of cities.

Urban green spaces also have a social class dimension. It is studied under the themes of unequal distribution, (socio)environmental injustice and distributional outcomes.[6] It is stated that socioenvironmental justice with the three dimensions of distributional, interactional and procedural influences the equitable provision of urban ecosystem services.[7] Underlying socioenvironmental injustice is a perceived lack of "green planning",[8] and urban green space planning that takes into account social relational networks is expected to produce more just outcomes.[9]

In the work of Gül et al., which examines the legal regulations on the urban open green spaces in Turkey, shortcomings were diagnosed such as the lack of common definitions in the legal regulations. At the same time, the fact that different administrative units are responsible for different green space categories in cities creates difficulties for a holistic green space planning and management.[10] The legal criterion of 10 m2 of green space per person is not met in many cities in Turkey.[11] Especially in metropolises such as Istanbul, the lack of urban green spaces is at the level of threatening public health and safety, both in everyday life due to reasons of air pollution and stress, and in the case of health crises such as the COVID-19 pandemic and natural events such as disasters.[12] Definitions such as risk or reserve areas in urban renewal programs, the opening of emergency assembly areas or military areas for construction and megaprojects are important factors behind the construction in urban green spaces in Turkey and Istanbul to begin with.[13]

Finally, regarding Turkish urban green spaces, the Turkish government has been pursuing a public garden project for a couple of years. When considered as an example of urban planning that reflects the categories imposed on the public by symbolic power, it takes on a different meaning to that of a mere technical issue.[14] This meaning starts with the name, which was also used in the Ottoman period,[15] and the positioning and power struggles of different types and sizes of capital within the social space[16] of a "rent garden".[17]

PASTOR'S VINEYARD IN ANKARA

To start from the end, the restaurant section of Pastor's Vineyard, which is located in a valley at the intersection of the Kazım Özalp and Büyükesat neighbourhoods in the Çankaya district of Ankara, has been closed to the public since around the spring of 2024. One of the authors climbed up the hill on foot in May 2024, only to find the place closed with a sign saying that it was temporarily closed for renovation. But when she tried again in July 2024, it was the same, except that the sign had also disappeared. In September 2024 the place was still closed and this time the entrance was blocked by iron barriers. The authors called the telephone number written on the entrance and spoke to a former employee who said that the place was closed because the owners' family members could not agree on what to do after the death of an elderly family member. He tried to help get an interview with the family members, but they were not open to give interviews.

Figure 1. The entrance door to Pastor's Vineyard and temporary closure notice (Author's archive, 28.09.2024).

The area bounded by Uğur Mumcu Street to the south, a narrow passageway with stairs leading to LÖSEV from Filistin Street to the north, Kuleli Street to the West, and Turgut and Kemer Streets to the east, was observed to have a multipartite structure. Although the authors were unable to enter the restaurant formerly run by the owners of the Pastor's Vineyard, they were able to walk in the open green space between the LÖSEV in the north and the private apartments in the east and west. The boundaries of the private property are therefore not visible at first glance. The accessible part is a natural and neglected open green space. The surrounding flats have enclosed their back gardens adjacent to the green space with fences or garden walls and continue to benefit from the view of the green space. It is possible to see advertisements for flats with a view of Pastor's Vineyard. For example, a rental apartment was advertised on Sahibinden.com as "3+1 renovated and furnished on Kuleli Street with a view of Pastor's Vineyard" (34.000TL) and another rental apartment was mentioned as "Duplex apartment with a view of Pastor's Vineyard" (44.000TL). A 3+1 apartment for sale was advertised as "Quiet and peaceful apartment with views of Pastor's Vineyard" (7.450.000TL). In November 2024, only the second rental was still online with a 500TL discount.

Figure 2. The open green space of Pastor's Vineyard except for the restaurant facility (Author's archive, 28.09.2024).

In a recent architectural work on the Pastor's Vineyard, Tükenmez and Sökülmez provide a micro-history of the site, using interviews, documents and mapping techniques, and looking at this important space for Ankara through a conceptual framework of "urban nature". The authors conclude this work,

which was published a year before the closure of the site, by defining it as still a piece of urban nature that is used intensively in certain months despite the uncertainties of its future. They define the nature of the place as follows: “The Pastor’s Vineyard, whose current status is ‘land confiscated without expropriation’, is private property, not open to construction and shows the characteristic of being open to the public”.[18] From their study, we learn that the place, which has been in the hands of the same family since 1923, was operated in the same commercial function—tea garden and restaurant—from 1963 until its recent closure. In 1983, it was declared a green area, in 1991 it was declared a park and recreation area and in 1994 it was declared a grade one natural site area. Çorbacıoğlu states that the family that owns the Pastor’s Vineyard acquired this status in order to protect the site from the construction of the Sheraton Hotel.

From Tükenmez and Sökülmez’s study, we learn that the Pastor’s Vineyard has been the subject of various controversies between different actors, including the family, professional chambers, metropolitan and district municipalities, the judiciary, foundations such as LÖSEV and the Regional Council for the Conservation of Cultural and Natural Property since the 1980-1990s. Related professional chambers, such as the Ankara branches of the Union of Chambers of Turkish Engineers and Architects (TMMOB), made public statements about the Pastor’s Vineyard after the 2000s. Looking at the important developments after the 2000s, the 1/5000 scale general construction plan (2015), the reversion of the site to a qualified nature reserve status (2017), and a construction plan initiative with protection purpose (2021) are indicated as critical turning points.[19]

Examples of documents that reflect the transformation of this green space into a “contested space”,[20] include an internet news item about the court’s rejection of the Ankara Metropolitan Municipality’s initiative to transform the Pastor’s Vineyard, a grade one natural site area, into a commercial recreation area[21] and the TMMOB’s public statement.[22] The Pastor’s Vineyard, which is mentioned in Coşkun’s column as a spatial reference point, becomes a means of comparing the modesty-conspicuousness values and cultural capital of old and “new Turkey”.

One comment about the Pastor’s Vineyard in Ekşi sözlük reads: “It was a green place in the centre of Çankaya, Ankara, but now it is completely closed. It is for sale as a whole, 45 million is being asked for 800 m2. I hope it will be bought by people who know how to manage it and it will be taken care of”.[23] Leaving aside the debates about the quality of the service and the expectations of the decoration, the online comments help us to understand that almost everyone thinks that the place functions as an oasis in an over-concretized city and that it should be protected without being opened up to building. The expert interviews point in the same direction, emphasizing the additional function of the Pastor’s Vineyard as a place of remembrance for generations of Ankara people.

THE FORMER YALI CAFE IN SAMSUN

The Yalı Cafe, located in the Mimar Sinan area of the Atakum district of Samsun, is an ongoing project of the Samsun Metropolitan Municipality that is currently under construction. The legally controversial project is described on the metropolitan municipality’s website as being in “harmony with the nature and greenery” and promising “a warm atmosphere for everyone from students who want to study to those who want to research and read”.[24] However, since the start of the new project, which includes three main buildings and a small mosque situated in such a way as to narrow the street, most of the pine trees have been cut down and the area, described in a news as a “social facility and green space”[25], has been concretized. In addition, according to news reports, the almost finished buildings have been taken to court for exceeding height limits.

Figure 3. After the demolition of the former Yalı Cafe and the enclosure of the area for the new project (Author's archive, 17.06.2022).

According to a recent news report, Republican People's Party (CHP) council members have filed a lawsuit against the construction in the area for the sixth time.[26] However, despite the cancellation of building permits in the past, the Justice and Development Party (AKP) metropolitan municipality continued construction in the area almost to completion by preparing new development plans and changing the status of the area.[27] In addition to the area as a whole becoming a subject of the judiciary, the mosque in front of it is also put on the agenda as an illegal construction.[28] Some news that interprets the construction of this mosque on the Atakum seafront as meeting the demands of a group of people who wanted to have a mosque to be built on the seafront before the 2019 local elections, after which the Yale Cafe changed hands.[29]

On the other hand, the project is presented in the mainstream media as "Samsun's brand value" in line with the discourse of the Samsun Metropolitan Municipality, and this discourse opens the door to see the economic dimension behind the transformation of the area.[30] In other publications that adopt the discourse of the same symbolic space, there are references to lifestyle struggles through the example of drinking alcohol in this place.[31] These could be interpreted through the overlaps and conflicts between the physical, symbolic and social spaces, which Wacquant calls Bourdieu's trialectic.

Figure 4. Construction of the new Yalı Cafe almost complete (Author's archive, 19.10.2024).

Outside the political and media spheres, from the perspective of the local residents, the residents of Atakum and various political and civil society organizations considered the change of ownership of Yalı Cafe as an "expropriation" and organized a protest event against Samsun Metropolitan Municipality's coffee house project.[32] There are multiple actors in this physical, social and symbolic space war, in which the Samsun Metropolitan Municipality has adopted a two-steps-forward, one-step-back tactic similar to the national government to circumvent the legal barriers.

In the Google comments you can find various comments made before the cafe closed. For example: "The only place where I could sit properly while I was in Samsun. It is very different to go there and drink tea with a view of the sea all the time. Comfortable and spacious unlike other cafes with small tables just next to each other".[33] The fact that the former Yalı Cafe, which was intensively used by a wide range of people, including old and retired people, housewives, etc., is being taken away from them and presented only to students and researchers or readers, could also be problematic, as Samsun, which has a total age dependency ratio of 47%[34], is also a city of pensioners with 14% of the population aged 65 and over.[35]

Although Yalı Cafe, with a history of no more than twenty-five years, has also undergone formal changes in the past, the 2019 local elections in Turkey are a major turning point in the direction of the place, which has nevertheless, gained a certain importance and value for the people of Samsun.

CONCLUSION

Based on the description of both cases, Bourdieu's triology of physical, symbolic and social space[36] may provide a more appropriate conceptual framework to better understand them rather than for example, green gentrification. Although the Pastor's Vineyard is a private green space characterized as a natural value in the city, its status as a "green space open to the public"[37] was protected until it was closed last year. Nevertheless, it has become the subject of multiple conflicts ranging from its legal status to ownership between different social actors positioned in the social space, as can be seen from Tükenmez and Sökülmez's study. However, as it was protected from its purchase by a family in 1923 until its closure last year, it is an interesting example that opens up debate on the relationship between the private or public status of urban green spaces and sustainability. While its private status has allowed it to be protected until now, with a small change in the family dynamic, it was closed to the public.

The former Yalı Cafe, on the other hand, as a commercial public facility that had served as an open green space with its old pine trees changed hands between two public institutions of different scales and representing different political ideologies. In the end, the metropolitan municipality won the conflict and completely and irreversibly transferred its symbolic power to the physical space of the place. What happened in this urban space was precisely a power struggle and displacement. As Wacquant points out in his book for other contexts, here too the material basis of the symbolic power struggle was hidden behind an image of benevolence (taking care of the students' needs).

Both situations can change the direction of the debate on the protection and maintenance of urban green spaces towards the search for an alternative to the dichotomy of public/private property. Güneş's proposal against widespread privatization to "look for ways to reposition the public as a social actor and rebuild public spaces" could provide a clue for a first step in this ideational and material search.

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THE ISRAELI PUBLIC SPACE OFFERS A RARE OPPORTUNITY FOR AN UNMEDIATED ENCOUNTER BETWEEN DIVERSE ETHNORELIGIOUS AND NATIONAL COMMUNITIES.

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INTRODUCTION

The Israeli public space in the current era has become one of the rare opportunities for an unmediated encounter between the various polarized communities. Sometimes, the only thing the different groups share is a bench or shade in the summer. Therefore, public space art assumes a new role; it seeks opportunities to create poetic connections alongside social criticism, which also presents a challenge: how to communicate in a sophisticated manner? How do you not shout too loudly and thus return viewers to their reference groups? The course "Art for Whistleblowers" in the Department of Material and Visual Culture at Bezalel academy examined methodologies for impersonation, assimilation, the use of technologies, and speculative design to locate spaces that invite poetics or expressions of protest. The students were sent to embed new information, such as text, technology, or performance, in the urban territory. They did this to create unmediated encounters and express social or political criticism. The willingness to be exposed outside the walls of the safe academy brings with it friction with reality with new intensity. This article reviews selected products and how a significant public space operation is created, alongside a flood of ethical questions of when the lines are crossed.

Attention revolution

In the era of the "Attention Revolution,"[1] according to the book by Michah Goodman, social networks have created an "attention economy" in which technology companies compete for the limited attention of users. The algorithms encourage content that evokes strong emotions such as anger and polarization, because such content keeps users connected to the screen for a longer time. Thus, it locks them into their reference groups.

In contrast, the public space allows a rare opportunity for meeting and exchanging information between different groups that share the same public and digital space. The public space sustains many other groups within it, but the encounters between them are few. A meeting between minorities, tourists, immigrants, and natives is sometimes only under the shade of a tree in the summer or in line at the store. In Israel of 2025, the street has become a widespread protest center for various groups.[2] Groups that oppose the government, ultra-Orthodox religious people who advocate separatism from the state and its mechanisms, Palestinians who feel excluded from the public space in the face of government supporters

who are angry about the violations of social order and roadblocks during demonstrations. The street has become a center where political content is created and decoded on social networks. In the other direction, social networks shape the political discourse of the public sphere.[3]

Public space art

Public space art is a rare opportunity to create connections and transformation of emotional or political information alongside a means to present vulnerability or protest. It takes place outside the screens and, therefore, is devoid of a "decoding agent" that the algorithm has chosen for you. Viewing art in a public and everyday place that supposedly belongs to everyone, yet also belongs to no one, allows us to reveal the hidden power mechanisms of public space. The pirate invasion of space is a demonstration of power, and thus the works raise questions such as "Who owns the territory?" The use of street phenomena that lack ownership, such as puddles or garbage on the street, asks "Are there places or phenomena that cannot be claimed as ownership and therefore cannot be enforced by laws regarding their use?" Works by disadvantaged and Marginalized groups reveal the hidden intention of the sovereign. The questions "Who is invited to express themselves in space?" or "Who is excluded from it?" will be revealed at the level of enforcement against those works.

In the "Art for Whistleblowers" course at the Bezalel Academy of Art and Design in Jerusalem, students were sent on various street art assignments. They include impersonation, camouflage, taking objects from the space, reworking them in the studio, and returning them to the space loaded with new political and emotional information. Each work is measured by whether it achieved an effect in the public space or in the classroom. Did the student manage to create an experience? Or perhaps, without noticing, did he actually create antagonism? Did he shout too loudly and return the viewers to their reference groups?

The web and the net

The book *TAZ*[4] by "Hakim Bey" is the main theoretical book in the course. It reviews historical piracy phenomena and ways to evade the sovereign. The author distinguishes the network: *THE NET* from the fabric: *THE WEB*. According to the author, the NET is controlled and dictated by the sovereign of the territory. He controls the information, the centers of power, he writes the laws and enforces them. Still, while he does so, without noticing, he creates the fabric: THE WEB, which according to the author, is those holes in the "fishing net" where parasites exist "off the grid" and manage to create connections, communities and transmit information in a pirated manner between the various groups. The more total the control over the NET, the greater the radicalism of the WEB, and it becomes more pirated and more dangerous, but also more necessary. "Hakim Bey" asks "Are we who live in the present doomed never to experience autonomy, never to stand for one moment on a bit of land ruled only by freedom".[5]

Inspired by the book, students are asked to try to create islands of freedom through their actions. To manipulate existing objects and try to make a manipulation that will create new meaning.

Guerrilla lighting fixture

In the "Illuminating Object" exercise, students learn soldering and build a simple electrical circuit that lights an LED strip and are then asked to embed it inside an object and place it in a public space. Placing it in a specific public space gives new meaning to the location. Lighting is a way to capture a focal point without forcing it. Public spaces are often plagued by light pollution from billboards, vehicles, and street lighting. "Guerrilla" lighting fixtures prompt the question: Who owns the light in public space? One student used glass candle holders and lit them next to a glass bottle recycling station (see Figure 1).

Figure 1. Guerrilla lighting fixture from memorial candles by Mica Padan (Jerusalem, 2024).

In Israel, it is customary to light candles in memory of the dead. With the outbreak of the war on October 7, the custom of lighting candles for relatives killed in the war, civilians and soldiers. Her action is political because she actually came to present the number of deaths in the war and ask: "Is there any point in more deaths?" Her ability to express an idea without text, slogans, or protest signs, but rather with the intensity of lighting and a connection to the right place and the proper object, demonstrates the principle of the exercise.

Body in Public Space

In the works of the artist "Mark Jenkins[6]" there is a use of the human body in the public space. He sculpts human figures. He covers the sculptures with clothes and places them in impossible situations on the street (see Figure 2).

Figure 2. Body Sculpture by Mark Jenkenis (Barcelona, 2008).

The presence of a human body in bizarre situations in the public space creates an urban "bug" for passersby. On the street, every person has a purpose, every person is going somewhere, on the way

somewhere, the only reason to linger in the space is for an action with a clear reason, for example a municipal worker installing something or a police officer.
Public space is efficient, and a strange activity of using the human body is "anti-efficient" and therefore creates curiosity.
In response, the students placed body sculptures in public spaces. Some with their own bodies and some with human-like sculptures (see Figure 3).

Figure 3. Body Sculpture by Lina Bar and Vasilisa Mokhov, (Tel Aviv, 2024).

The placement places the student in a vulnerable position but also invites compassion. He knows he is being watched. Sometimes he is embarrassed and sometimes he is excited by the status and the stage he has created for himself. The action can bring with it both fame and misery. It can provoke criticism but also appreciation. Most often, the student only reaps the fruits of the action when presenting it in class.

Public Space Art vs. Gallery Art

The difference between public space art and art in a gallery or theater is like the difference between a tattoo and a painting. With a "tattoo" you also pay for the pain, the slaughter of the skin, and the determination and standing behind the work. The street artist is usually uninvited and imposes himself on passersby. In his action, he overwhelms values that are already charged in the space (culturally, historically and politically) in order to expose them or add new meaning to them. The gallery or theater is a safe space. There is an agreement that anyone who enters the gates of these institutions is willing to accept the rules of the place and consume culture. There is a very clear hierarchy between the visitors to the exhibition, the creator, and the artwork. The artworks are illuminated by light. The theater stage is illuminated and the actors are amplified with microphones. The gallery and theater are built in such a way that they can host the next exhibition or performance, often without leaving a trace of the one that came before them as described in the book "*Inside the White Cube*" by Brian O'Doherty[7]. The act of vandalizing the works in a gallery or disrupting a theater performance would be considered unacceptable. In contrast, in the public space there is complete equality between the sides of the triangle: the viewer, the space, and the artwork (see Figure 4).

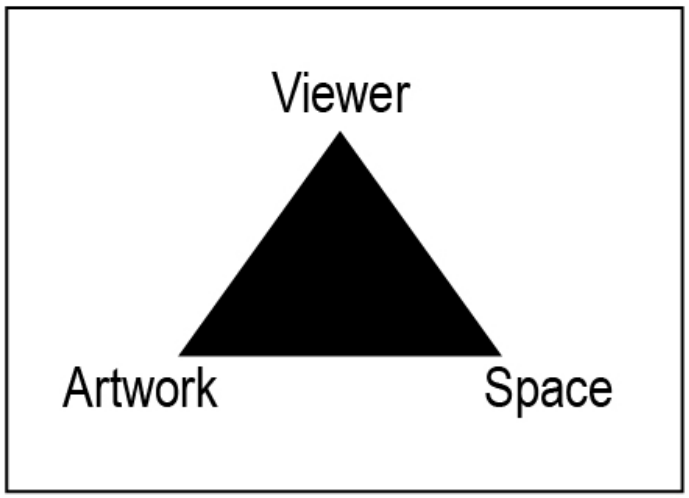

Figure 4. A triangle between the viewer, the space and the artwork.

Viewers can vandalize a work of art or take it with them as a souvenir. To criticize or to praise. An artwork that is located in a specific place is already charged with context. It plays on the cultural, historical, and political aspects or brings them to an innocent place and in effect says: "This place has never been neutral."

"NO MANIFESTO"

In one of the exercises, the students were sent to write a resistance manifesto inspired by the *NO MANIFESTO*[8] of the choreographer "Yvonne Rainer". That resistance document was written in 1964 and was created to oppose the aesthetic, traditional dance, full of spectacle that was customary until then. Writing a document of resistance provides the student with justification for their action, which can sometimes be embarrassing or difficult to carry out. Writing helps students develop the decisiveness required to justify their actions.

One student created a decisive action. An installation at the "*Western Wall*" in Jerusalem. This wall served as the wall of "The Temple" for about 2000 years and is now considered one of the holiest places in Judaism. People from all over the world pray there and place notes with their requests to God, hoping that He will listen to them. The student dressed up as an Orthodox religious woman and hid a Bluetooth speaker in her bag (see Figure 5).

Figure 5. Performance at the Temple *Wall, by Noga Lili Garzon (Jerusalem, 2023).*

Every time a visitor placed a note on the Wall, she played a sound that said "Your request has been accepted" in an auto-answer tone. That project required a lot of courage and put the student in danger. When she presented it in class, it created resentment. Some students were offended and felt disrespected for their faith, compared to others who saw the project as a way to oppose religion. As a lecturer, I thought that a line had been crossed. On the one hand, the action was powerful, but on the other hand, it could have put her in danger. The line is crossed when public space art is so provocative that it offends certain groups and creates the opposite result. Instead of connecting, it returns viewers to their reference groups and habitats. Despite this, her work was significant, influential, political, and resonated, meaning it achieved its goal.

Observation

Sometimes action in public space requires a pause and a different form of observation. Non-judgmental. In Georges Perek's book " *Species of Spaces and Other Pieces* [9]" he lists exercises he gives himself. He reviews his most personal space: his bed, and then zooms out into the room, the house, the building, and so on into space. In his exercises, he describes how he should patiently and almost "stupidly" navigate the space. His goal is to turn off the intellect and allow things to be seen beneath the surface, beyond their "signifiers." The students were instructed to simply stay on the busy street, stare at it, and look for interesting phenomena or impressions. One of the projects that emerged from the exercise was a student who chose to walk through the space dressed entirely in white, holding a blank protest sign (see Figure 6).

Figure 6. "Empty White Sign" performance by Lina Bar (Jerusalem, 2025).

During the turbulent period in Israel surrounding the war, public space became fertile ground for demonstrations and confrontation between the various groups. Each person is categorized according to the side they seem to be taking in the conflict. The student walked around in white, and every person who met her in the Jerusalem space immediately cast his mind toward the white sign. His opinion bounced back to him, like a mirror but in reverse. National religious people saw her as an agent of the radical left and even as someone who preached for surrender in the war. However, they enjoyed her strange presence and legitimized her action. It is difficult for passersby to tolerate an action without an understandable meaning, and this creates embarrassment that may arouse antagonism, but also generates curiosity in the viewer, allowing them to linger.

Public space performance

Performance in public space creates a double move. Both the performance and the documentation itself are another artistic product. An example of this is the work of the artist "Guy Ben Ner," who entered an IKEA[10] showroom in Europe and filmed a sitcom drama series in the style of "TRASH" that uses the display spaces as if they were domestic spaces (see Figure 7).

Figure 7. Guy Ben-Ner, *Stealing Beauty*, IKEA (Berlin, 2007).

The artist took advantage of IKEA's manipulation, which designs the display spaces as if they were real rooms in a house, such as a living room, a children's room, or a kitchen. The room is full of exemplary designed products, just like a "dream apartment". The actors entered under the identity of innocent buyers after holding theater rehearsals on dramatic texts in advance. They enter the designed kitchen space or living room and behave as if they live there. They acted in scenes depicting a failed relationship. The artist planted more FOLEY sounds in the editing to complete the manipulation. Occasionally, a real customer enters the frame and intrudes on the filming of the scenes, or sometimes the filming is interrupted because the employees of the place chase them away. The action criticizes the capitalist control mechanisms and the obsession with class consumption by using the space where the shopping takes place.

Nudge theory

Another principle that the students learned about is *NUDGE*, as described in the book by Nobel Prize winner in behavioral economics, Richard Teller[11]. In his research, he presents the possibility of pushing people to action with a slight, unconscious push. The push is sometimes influenced by creative principles that utilize design, engineering, ergonomics, or priority manipulations, making people choose a course of action that is convenient for the manipulator. An example of this is the printing of flies on urinals at Schiphol Airport in Amsterdam toilet (see Figure 8).

Figure 8. Toilet at Schiphol airport (Amsterdam).

The idea was to create an entertaining gaming incentive that would make men "aim" better and thus save cleaning and water costs that amounted to millions of euros per year. The action was natural with minimal effort and with a considerable achievement that is better than attempts at education or persuasion. The students followed the NUDGE principle to take action in public spaces and created interventions to encourage people to change their behavior in these areas. In the "Changing Behavior in the Public Space" exercise in the Industrial Design Department, students constructed metal stepping surfaces marked with reflective paint. (see Figure 9).

Figure 9. Metal surface at the bus station by Gil Adam, Bosmat Eliezer and Ziv Tubin (Jerusalem, 2010).

The surfaces served as a step from the sidewalk to the road. They placed it at a specific point at the public bus stop to entice the driver to stop so that the door to board the bus would be precisely in front of the surface. There is no reason for the driver to stop specifically in front of the surface since it is a useless step, and yet the bus drivers interpreted it as an official stopping point and stopped exactly in front of the surface.

CONCLUSION

The student's works in the course puts them in conflict and forces them to deal with their statement and with the consequences of their action. They must refine their actions to ensure that they are not creating provocation for no reason or generating indifference. This action is not trivial for everyone; the experiences pushed the students out of their comfort zone and initiated contact with the political and

social reality outside the phone screen. As a lecturer, I must maintain their safety and set boundaries for their actions, but on the other hand, not protect them too much to allow them to create a meaningful intervention. In some cases, the works created resentment in the classroom, but the strong conceptual infrastructure justified provocation. The goal is to create an encounter. The works that managed to create a significant connection in the triangle between the viewer, the object, and the specific place made a substantial statement, while others whose connection was loose simply echoed existing opinions. A considerable connection allows the viewer to step out of the familiar narrative and experience an aesthetic and immediate experience in an everyday place. The goal is to turn the "crime scene" into a "temporary temple".

NOTES

[1] Micha Goodman, *Mahapekhat Ha-keshev* (The Attention Revolution) (Or Yehuda: Dvir Publishing House, 2021) 12-14.
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[4] Hakim Bey, *T.A.Z.: The Temporary Autonomous Zone, Ontological Anarchy, Poetic Terrorism* (New York: Autonomedia, 1985), 106.
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[6] David Valinsky, "Mark Jenkins: Irony as a way of survival," *Metal Magazine*, accessed June 3, 2025, https://metalmagazine.eu/en/post/mark-jenkins-irony-as-a-way-of-survival.
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[8] Yvonne Rainer, “No Manifesto,” in *Work 1961–73* (New York: New York University Press, 1974).
[9] Georges Perec, *Species of Spaces and Other Pieces* (London: Penguin Books, 2008), 51.
[10] Guy Ben-Ner, *Stealing Beauty*, video (2007)
https://www.youtube.com/watch?v=Z3A9Ljm6uZs&ab_channel=DavidRiff
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CREATIVE IDENTITY IN URBAN DESIGN

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INTRODUCTION

This article presents a case study within a broader investigation of neglected "urban backyards" in global cities. While metropolises celebrate iconic landmarks as emblems of urban identity, they frequently marginalize traditional crafts that embody vital aspects of cultural heritage.[1] Processes of gentrification displace vulnerable communities, marginalize craftspeople, and accelerate the disappearance of craft practices.[2] Vertical urban development further eclipses these traditions, thereby threatening their continuity. The study, based in Tel Aviv's "Tahiya 14" industrial complex, examines collaborations between craftspeople, designers, and artists who reframe neglected sites as creative hubs.[3] These initiatives demonstrate how traditional craft can be reactivated and embedded within contemporary urban identity, bridging heritage and innovation. Projects of this kind also explore, as part of the broader research strategy, how the designer operates not only as a creator but also as an entrepreneur, able to identify subtle cultural dynamics, engage with all phases of the project, and thus exercise full agency over its trajectory.[4]

BACKGROUND - TEL AVIV HISTORY

Like many other global cities, Tel Aviv is built on layers of social, cultural, and economic inequality. Municipal services such as green spaces, playgrounds, and cultural programs are unevenly distributed, often reflecting income levels, while bureaucracy further deepens the gaps.[5]

From its founding in 1909 as a small suburb north of Jaffa, Tel Aviv quickly expanded with waves of immigration. In the 1920s–1930s, it grew into the "White City," shaped by Bauhaus architecture and a flourishing cultural scene. After 1948, the city absorbed massive immigration and pushed northward, often clearing poorer neighbourhoods in favour of new housing blocks.[6] By the 1980s–1990s, investments in infrastructure and culture strengthened its image as "the city that never sleeps." In the 21st century, Tel Aviv emerged as a hub of high-tech and creativity, but rapid development also accelerated gentrification, displacing vulnerable communities and eroding local identities.[7]

Against this backdrop, I sought to conduct a case study. The layered stories of Tel Aviv reveal how crucial the role of the designer, entrepreneur is in shaping modern cities, able to recognize cultural nuances, navigate urban transformations, and sustain identity where it is most at risk. These insights led me to choose my case study within this context. In the 21st century, Tel Aviv has emerged as a global centre for technology, culture and progressive policy, but its rapid development has fuelled gentrification, displacing communities and weakening local identities.

TAHIYA 14

Located in South Tel Aviv, Tahiya 14 is a neglected former light industrial complex built in the 1960s on the city's periphery, then bordered by open sand dunes. Covering approximately 10,000 square meters across three floors (Figure 1), the building was originally designed to accommodate trucks unloading and loading goods outside the dense urban fabric. Over time, as Tel Aviv expanded, the site became embedded within the metropolitan core and eventually stood on highly valued real estate. The uniqueness of Tahiya 14 lies on the diversity of its users. Today it houses roughly forty-four workshops, small factories, artist studios, design practices, high tech companies, and cultural spaces. Some workshops have been passed down across three generations, others, represent remnants of Israel's declining local industries, and some belong to artists, working in rare or nearly extinct methods. This heterogeneous ecosystem generates a layered urban fabric where past, present, and future coexist simultaneously. The building holds significant urban meaning at a time when gentrification is erasing informal spaces, inflating rents, and displacing creative communities. Within Tahiya 14, interrelations among veteran craftspeople, artists, and multidisciplinary designers foster potential for dialogue and mutual exchange. Recognizing its value, the landowners, rather than demolishing the structure for residential towers, approached the Tel Aviv municipality with an alternative plan, transferring ownership of the building to the city, in exchange for development rights in adjacent plots. This agreement facilitated the first project on site, which included an in-depth investigation of its users, mapping, user experience, and restabilizing the internal community while connecting it to broader networks. This foundational process enabled the continuation of research and the development of the "Tool & Touch" project. Thus, Tahiya 14 emerges as an organic system of relations, voices, materials, and memory. Its persistence raises a critical question: how can the identity of craftspeople, inevitably threatened with disappearance, be sustained and embedded within the evolving design culture of the city?

Figure 1. Tahiya 14 by the author.

TOOL & TOUCH RESIDENCY

These are manifested in a residency program, designed to cultivate collaboration between emerging designers, informed by contemporary technologies, and master craftspeople (Figure 2), who have been operating for decades in the industrial complex of Tahiya 14. The project sought to establish a critical dialogue between vanishing bodies of traditional knowledge and the experimental, rapidly evolving field of contemporary design.

The two-month process was structured around a principle of precise pairing, each designer was matched with a craftsperson to enable mutual learning and collaborative exploration. Designers immersed themselves in the workshops, engaging not only with materials, tools, and production techniques but also with the cultural and biographical dimensions of craft practice.

The preparatory phase involved recruiting seven participating workshops and issuing an open call to young designers. Applicants submitted portfolios and proposals for collaborative projects, and craftspeople conducted final interviews to ensure professional and personal compatibility. Selected designers were provided with studio space, funding, and logistical support.

The first phase emphasized ethnographic research: observation, dialogue, and documentation of working methods, tools, and generational transmission of skills. The second phase focused on production, with the strict requirement that all final works be fabricated using only the existing tools, materials, and infrastructure of the workshops. This constraint forced designers to work within the established logic of the craft.

The residency concluded with an exhibition that juxtaposed finished objects with documentation of processes, foregrounding both the endurance of artisanal knowledge and its re-articulation through contemporary design languages.[9] The project demonstrates how situated collaboration can generate hybrid practices that reconcile heritage with innovation.[10]

Figure 2. The craftsmen by the author.

The Craftsmen & the Designers

A.R. Abrasives & the Jewellery Designer

A.R. is a family business that has operated for more than forty years and is now managed by the third generation. Roni, oversees the production line, while his son Omer is responsible for operations and logistics. The company specializes in manufacturing custom polishing tools for industries ranging from

defence industries to high-tech. For the last decade, they have been located at the Tahiya 14 complex. Their success is based on the development of dedicated machines and unique techniques for producing small, precise series.

Avigail is a young jewellery designer, focusing mainly on designing and producing rings. From the beginning, she felt a strong connection to polishing materials, which reminded her of familiar processes in jewellery making. During the residency, she examined the stages of polishing, from coarse to fine abrasives, and discovered that the finer the material, the shinier and more perfect the result, culminating in the "mirror" stage. She also studied the machines that produce polishing wheels, their individual components, and the technological logic behind them.

The collaboration was reciprocal, she learned from them about polishing techniques and traditions, while they gained new insights that encouraged them to rethink their marketing. Together they created videos and innovative methods of presentation, refreshing the company's image and making it more appealing to a younger audience. Avigail's artistic outcome reflected the encounter between two worlds. She collected discarded machine parts, polished them to a mirror finish, and attached brass handles associated with jewellery. The result was a series of handheld mirrors (Figure 3) resembling jewellery pieces, expressing a shared process of polishing, transformation, and creation.

Figure 3. *Handheld mirrors by Denis Fomin.*

Plisse Art & Fashion / Product Design

Plisse Art is the last remained factory in Israel dedicated to fabric pleating. The factory has been run for nearly sixty years by Moshe, who developed deep expertise in the field. For the past two decades his daughter Rotem has joined him, and today she manages the business. Based in the Tahiya 14 complex for over twenty years, the factory produces pleated textiles on demand, serving fashion designers and the religious sector.

Tamara is a designer with dual training, a bachelor's in fashion design and a master's in product design. Her passion for textiles led her to Plisse Art during her residency, where she explored the machines, tested different fabrics, and studied pleating methods. At the same time, she conducted historical research, discovering pleating's roots in ancient Egypt, where it symbolized status and prestige.

Combining technological curiosity with historical perspective, she developed a personal project linking past and future.
Their collaboration was close and experimental. Tamara tested varied fabrics, folds, and techniques, challenging Moshe with unusual pleats that expanded his view of his machine's potential. She also used AI tools to reinterpret Egyptian symbols, printing new motifs onto fabric. These were cut into iconic shapes referencing pharaonic imagery and layered with stitching to intensify the sense of fold. The outcome was an installation (Figure 4), merging traditional pleating with contemporary technologies and historic symbols, creating a new textile language that reimagines pleating as artistic expression.

Figure 4. Plissa art installation by the author.

Ceramics Studio 1220 & Computer Science / Design

Lior is renowned for her expertise in creating tableware cups, plates, bowls, and related serving piece. She has worked in ceramics for over thirty years, fifteen of them in this studio. She has developed two main methods: the first uses molds, shaping an initial model, casting it, and repeating the process to produce uniform series; the second is freer, using liquid clay poured across surfaces that flow organically until they harden.
Or comes from an interdisciplinary background with a degree in computer science and a master's in design. Her interest is in ceramics with a desire to merge technology with traditional craft. She was especially interested in translating sound into form. To explore this Or used software that converts audio into three dimensional files and recorded everyday sounds in Lior's studio, amongst them, tool creaks, casting rhythms, firing beats, and conversations with clients. Their collaboration was highly productive. Or converted the recordings into 3D printed models based on Lior's vessel forms. Together they used these models to create casting molds, producing a series of vases, cups, and bowls, each marked by the unique sonic imprint of the studio. Through this process, Lior explored digital and AI tools, whereas Or gained practical experience in mold-making, casting, and firing.
The outcome was a collection of ceramic pieces (Figure 5) embodying a dialogue between sound and material, technology and tradition, and two creators integrating diverse skills into shared expression.

Figure 5. A series of ceramic products, cups, vase by Denis Fomin.

Alata Photography & Product Design / Advertisement

Alata is a darkroom photography studio established two years ago by creators Idan and Dar, working at the Tahiya 14 complex. Together they revive the traditional analog photography experience. Their studio functions as both a technical facility and a community hub. Gal is an experienced product designer who, in recent years, has also worked in advertising and marketing strategy. His early passion, however, was photography, a hobby that accompanied him since youth. Returning to the darkroom reignited this passion, giving him the chance to re-examine the material process of image development. He discovered that by manipulating the image during its development, he could add extra layers to a single picture, creating complex, multi-layered visuals. This exploration also led to a personal question: who stands behind the camera? Gal had often documented others, while his own presence was absent. Their collaboration was especially productive. Idan and Dar guided Gal through the process, teaching him new techniques and offering full access to their studio for experimentation. Gal advised them on marketing strategies, making the studio more accessible to a wider public. His artistic outcome was a series of analog photographs (Figure 6), each incorporating his own figure as a renewed act of presence. Alongside this series, he designed a sculptural promotional object, a chandelier-like structure made from film holders and analog slides that functions both as a display and as a beacon highlighting the communal spirit of the darkroom.

Figure 6. Analog photographs incorporating the photographer by the author.

Estabil Carpentry & Product Design

Avi is a veteran carpenter with more than fifty-five years of experience, all of them spent working at the Tahiya 14 complex. His uniqueness lies in the techniques and tools he has developed through the years, particularly in the art of unconventional and precise wood joints, that have become his hallmark. Yuli is a young product designer known for developing an innovative material made from rigid, durable sheets produced from orange peels. The process she created transforms organic waste into a polymer like material with structural strength. With her entry into the residency program, Yuli decided to design a collection of lighting fixtures. She sought a partner with expertise in wood who could help her explore the potential of combining her new material with traditional carpentry.

Their collaboration was especially engaging. Avi welcomed her into his workshop, guiding her through various wood types, the principles of bending and joining, and the techniques he had refined over decade. Yuli brought her innovative material, searching for ways to merge it naturally with wood. Together they experimented with new connections that allowed the orange peel polymer sheets to integrate with delicate wooden structures. The outcome was a lighting collection (Figure 7), fixtures mounted on walls or suspended from ceilings where Avi's precise wood joints supported Yuli's material. The pieces represent a fusion of traditional woodworking and sustainable material innovation.

Figure 7. Lighting collection by Denis Fomin.

Woodworker Carpentry & Product Design

Moshe and Shay are second-generation carpenters, continuing a family tradition established decades ago. they began working in ther father's carpentry shop at age fourteen and has dedicated themselves to the field for forty-four years. Today, they specializes in producing boutique armchairs for designers. They are operated at the Tahiya 14 complex for nearly twenty years. Their main specialty is wood bending, including the development of unique molds for each new commission.

Yael is a young product designer specializing in furniture and material experimentation. she developed a method for integrating textiles between layers of bent wood, allowing the fabric to penetrate the structure, add texture, and create a distinctive appearance. During the residency, she aimed to apply this technique to new furniture while learning from Moshe and Shay's mastery of wood bending. The collaboration unfolded naturally: the brothers shared years of expertise, while Yael introduced a novel approach, integrating additional materials into traditional wood bending.

Together, they held brainstorming sessions, produced sketches, and debated issues of strength, aesthetics, and durability. Yael refined ideas into precise drawings, while Moshe and Shay helped identify structural feasibility. Their dialogue generated new molds and experimental connections. The outcome was a set of bent wood furniture pieces, a stool (Figure 8) and a bench, where textile was embedded within the curves. These objects embody the meeting of traditional carpentry and innovative material research, producing furniture that unites heritage with contemporary design.

Figure 8. Stool by Denis Fomin.

Skoumpi Carpentry & Set Design

Eldor runs a carpentry workshop specializing in unique, custom-made kitchens. His practice relies on manual machines, giving each product a personal touch. Eldor has been part of the Tahiya 14 complex for more than twelve years.

Naama comes from stage and set design for the theatre. In recent years, she focused on weaving and braiding techniques. She is drawn to collecting natural materials: branches, stems, and fibres and creating objects that are both useful and aesthetic. Within the residency, she sought to merge her skills with carpentry through the design of brushes, combining wood and weaving. For this purpose, she selected five trees characteristic of the local landscape: ficus, palm, olive, cactus, and pine.

Their collaboration focused on producing brushes that combined processed and raw wood. Each brush comprised three parts: one shaped with Eldor's tools, one left raw, and a woven element binding them together. After extensive experimentation, they decided the handle should be made of processed wood, while the brush head remained raw.

The result was a set of five brushes (Figure 9), each expressing a different way of connecting the states of wood. The project reflects the meeting of carpentry and weaving, the fusion of processed and natural, and the tension between function and art.

Figure 9. Brushes collections by Denis Fomin.

CONCLUSION

The article explores how authentic urban identity can be preserved and cultivated through peripheral areas where craftsmen, artists, and creators operate outside the city's official narrative. Tahiya 14 in South Tel Aviv serves as a case study, showing the transformation of an old industrial complex into a vibrant creative hub.

Within the Tool & Touch project, a platform enabled collaboration between seven veteran craftsmen and seven young designers. Over two months, mutual learning unfolded: designers were exposed to tools, techniques, and materials passed down through generations, while craftsmen engaged with contemporary technologies and approaches. The results, presented in a group exhibition, combined tradition with innovation and showed how a new design language can emerge from existing practices.

Today, the designer's role must expand to initiating and leading projects at an urban scale. Designers should adopt a broad perspective, understand the entire urban system, collect data, preserve local knowledge, and bridge the gap between community, bureaucracy, and design. They shape not only final objects but also visions, resources, municipal systems, and collaborations. In this expanded role, designers become key actors in preserving identity and promoting justice, reflecting a model of radical preservation: conserving buildings while working with daily practices, materials, craft, and community. In this way, artisan culture can remain embedded in urban identity, even as practitioners face the risk of disappearing.

NOTES

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EXPLORING MINING HERITAGE THROUGH THE TOURIST AREA LIFE CYCLE: SUSTAINABLE DEVELOPMENT STRATEGIES FOR THE CAT VILLAGE

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INTRODUCTION

Houtong is located in northeastern Taiwan, nestled within the upper valley of the Keelung River. Characterized by steep terrain and limited flat land, the area's physical constraints have long restricted the scale of its settlement development.It's hard to believe that the mountains, rivers, and air in this place were once shrouded in darkness, thick with swirling coal dust.[1]

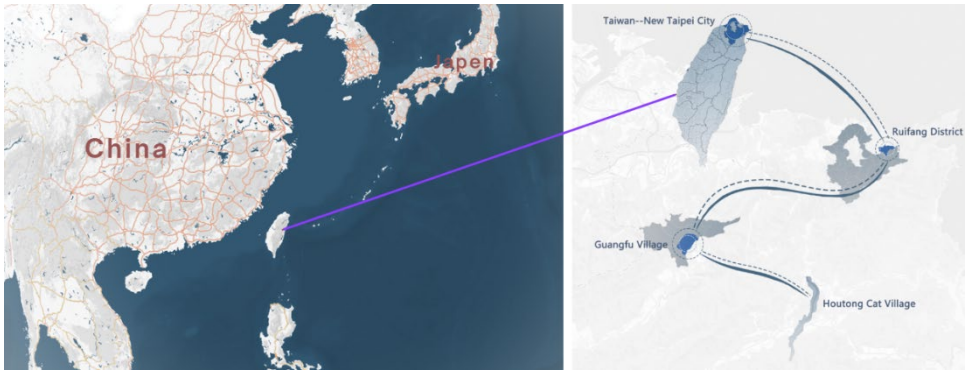

Figure 1. Houtong's Geographical Context Map. (Source:Created by the author.)

Originally a quiet mining town, Houtong rose to unexpected international fame as the "Cat Village" and was even named by CNN as one of the world's top six cat travel destinations. The origin of this transformation dates back to 2009, when a passionate cat lover—later affectionately known as the "Cat Lady" —visited the area. She discovered a large number of stray cats roaming the village amid unsanitary conditions and harsh surroundings. Moved by the situation, she began cleaning the area and rallied volunteers and local residents to join in. Together, they created a more hospitable environment for the feline inhabitants. What began as a spontaneous act of compassion ultimately reshaped Houtong's identity, turning it into a destination renowned for its cat-friendly character.

In fact, Houtong is far more than just a "Cat Village." Since the early 20th century, coal mining has played a pivotal role in Taiwan's industrial transformation, serving as a major energy source during the shift from an agricultural to an industrial society. Coal was extensively used in cement manufacturing, brick kilns, steam locomotives, and thermal power generation, contributing significantly to the

country's economic development[2]. Located in the northeastern region, Houtong was once the largest and highest-quality coal mining site in Taiwan. At its peak, it attracted numerous miners and merchants, shaping a distinctive mountainous urban landscape often referred to as a "mining town." The coal industry greatly influenced the spatial form and cultural fabric of northern Taiwan, giving rise to unique hillside settlements and folk traditions, which hold important value in terms of historical, cultural, and natural heritage. However, as the industry gradually declined, mining activities ceased entirely by 1990. The remaining land and industrial relics—once vital to Taiwan's development—quickly deteriorated, becoming symbols of a bygone era. Today, only around 100 residents, mostly elderly, still inhabit Houtong. One theoretical approach to handling decommissioned mining areas is the concept of reclamation, which emphasizes restoring land productivity and visual appeal while repurposing it for new uses after extraction ceases[3]. In this light, this research seeks to identify Houtong's existing landscape and cultural advantages to propose a cultural route strategy, aimed at reactivating key heritage nodes and revitalizing mining memories embedded in the terrain.

Literature Review

In recent years, as the tourism industry has flourished, growing attention has been paid to the challenges associated with its development. These challenges reflect the dynamic relationship between humans, the geographic environment, and society at large. Tourism, as a spatial activity, involves resources embedded within a specific geographical context and highlights the unique landscape and cultural features of a destination. One of geography's major contributions to the study of tourism is the "Tourism Area Life Cycle" (TALC), which systematically examines the evolution of tourist destinations through various stages—from exploration and development to stagnation and potential decline or rejuvenation.[4] Proposed by Butler, the TALC model outlines six distinct stages: exploration, involvement, development, consolidation, stagnation, and either decline or rejuvenation. This framework conceptualizes tourism development as a systemic process, with each stage reflecting changes in visitor behavior, local participation, and environmental impact. It also helps identify when tourism growth may become unsustainable—such as when tourist volumes exceed local capacity—and serves as a foundation for crafting strategies aimed at promoting sustainable regional development.

In January 2010, Houtong received only around 500 visitors, as its tourism infrastructure was still underdeveloped, with only basic facilities and a mining heritage park still under construction. However, a sudden turning point—amplified by media coverage—rapidly boosted its visibility, and by the second half of the year, the number of visitors surged to tens of thousands.[5] As tourism planning gradually improved, Houtong reached its peak in 2019 in terms of annual visitor numbers. Yet the outbreak of the COVID-19 pandemic severely disrupted the tourism industry, and lockdown measures directly impacted travel destinations, including Houtong. By 2021, visitor numbers had dropped to an all-time low. With the easing of pandemic restrictions, however, tourism began to rebound rapidly, and Houtong once again saw a surge of visitors—further solidifying the association between the village and its "Cat Village" identity.

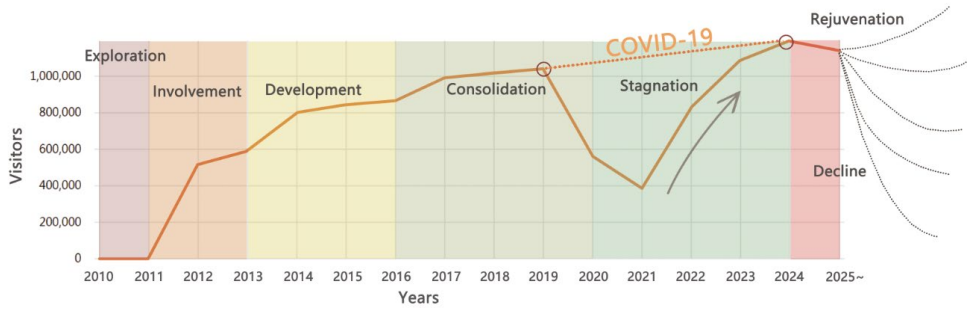

Figure 2. The Tourism Area Life Cycle of the Houtong Region. (Source:Created by the author.)

According to the data and the characteristics of each stage, the tourism area in Houtong was in the exploration stage in 2010. At that time, the site was undeveloped, with no tourist facilities, and received only around 500 visitors per month, indicating limited attractiveness. Between 2011 and 2012, with the help of cat lovers and exposure through online media, local residents began voluntarily improving the environment and caring for the stray cat population. In 2012, the Tourism Bureau proposed the "Cat Village Overpass Reconstruction Plan," which integrated design imagery of mining and cats,[6] marking the beginning of tourism awareness and entering the involvement stage. Between 2013 to 2015, Houtong was selected by CNN as one of the "Top 6 Cat Destinations Worldwide," leading to steady growth in tourist numbers. Daily passenger volume at the station reached about 1,500, accompanied by increased public sector support and external investments. This period corresponds to the development stage. Between 2016 and 2019, tourist numbers peaked, surpassing one million annual visits. The identity of "Cat Village equals Houtong" became widely recognized. Tourism facilities were mature, but signs of saturation emerged, along with negative impacts on the environment and cat habitats. Tourists began trespassing into residential areas, disturbing cats, and leaving behind trash—common drawbacks of cat-related tourism,[7] placing the area in the consolidation stage.In 2020–2021, the COVID-19 pandemic led to a stagnation of tourism and a sharp decline in visitor numbers.Between 2022 to 2024, as restrictions eased, tourists quickly returned, but the area continued to face saturation and declining tourism quality, entering the stagnation stage. Without new strategic interventions, Houtong risks entering the decline stage, marking a critical period for transformation.

The decline in tourism quality can be attributed to several factors, including an overreliance on the singular image of the "Cat Village," the tendency for most visitors to remain only in the area near the train station, and limited participation from the local community. At this critical stage, the key challenge lies in how to re-attract visitors and achieve a sustainable revitalization of local tourism—this forms the central aim of this study.

Site Contex

Houtong is located in northeastern Taiwan, near the upper reaches of the Keelung River. It serves as a transit point for travelers in northern Taiwan, with trains regularly passing through the area. To the north, it faces the famous Jiufen, while to the south, it connects with Sandiaoling, a destination known for ecological tourism. Houtong is a former coal mining village equipped with a railway station. In the 1950s, due to the success of the local mining operations run by the Ruifan Mining Company, the village's population once reached 6,000. It was home to the largest and highest-quality coal mines in Taiwan at the time.[8] Local daily life was closely intertwined with coal mining, ecology, and the surrounding landscape.

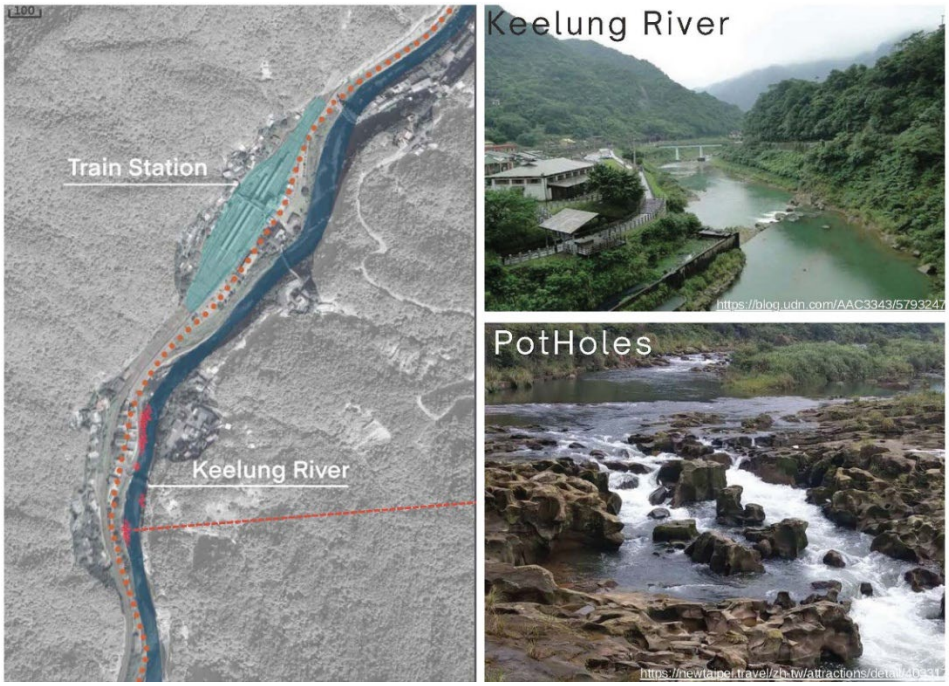

Figure 3. Spatial Distribution of Landscape Resource Advantages (Source:Created by the author.)

In addition to its physical infrastructure, the upper reaches of the narrow Keelung River in Houtong feature a world-class natural wonder — the pothole landforms, known locally as "the dimples of stone." These formations appear as circular or cylindrical depressions, with depths ranging from a few centimeters to several meters, and some with diameters of several meters. What makes them particularly valuable is the fact that their formation requires hundreds of thousands, or even millions, of years, as well as a combination of factors such as climate, water flow, and rock composition — not just a single cause.[9]

Figure 4. Spatial Distribution of Ecological Resource Advantages.(Source:Created by the author.)

The image highlights one of Houtong's key ecological assets: *Bretschneidera sinensis*, a rare and valuable plant species listed in 1988 as one of Taiwan's protected and endangered flora. Once believed to be nearly extinct, it is recognized for its bell-shaped flowers that hang downward, earning it the nickname "bell-flower tree." This species prefers humid, rainy, and well-drained mountain slopes—conditions well-matched by Houtong's environment.[10] As a result, *Bretschneidera sinensis* grows densely in the area, making Houtong widely known as its "hometown." Visitors can often observe these trees along local hiking trails.

Methodology

This study employs qualitative in-depth interviews with visitors, residents, and local stakeholders to analyze Houtong's tourism dynamics, revealing issues of spatial fragmentation and uneven visitor flows, and providing context-sensitive strategies for heritage revitalization and sustainable development.

In-depth Interviews with Visitors

Question	Visitor A (F, ~60)	Visitor B (F, ~28)
What motivated you to visit Houtong?	Read about Houtong in a book; found Cat Village special	Saw on YouTube; interested in mining history and cats
How long did you plan to stay in Houtong during this visit?	About 30 minutes; planned to visit Jiufen	About 30 minutes; planned to go to Mudan, then cycle to Sandiaoling
Do you feel that participating in tourism activities in Houtong was meaningful for you?	Found the area interesting with historical value	Found it interesting and historical, but mostly static; suggested adding interactive activities
Would you consider visiting Houtong again in the future?	Yes, liked the scenery	Yes, enjoyed the quiet and relaxing atmosphere

Table 1. In-depth Interviews with Visitors

Visitors

The interview findings reveal that the majority of visitors are still predominantly drawn by the "Cat Village" branding, with their activities largely concentrated around the train station area. This pattern has contributed to a disconnection among the site's cultural nodes, resulting in a fragmented spatial experience and a diminished engagement with the area's broader historical and cultural assets. Several interviewees recommended the implementation of guided tours centered on local mining history and intangible heritage, aiming to enrich the visitor experience by introducing Houtong's deeper cultural narratives beyond its feline identity.

In-depth Interviews with Residents

Question	Resident A (M, ~40)	Resident B (M, ~70)
How long have you lived in Houtong?	3 years	Around 30 years; previously ran a breakfast shop for miners
Impact of tourists on daily life?	Rarely interacts with tourists; only brings children to the park on weekends	More tourists on weekends, mostly coming to see cats, which helps local businesses; sees more benefits than drawbacks
Suggestions for facilities or spaces?	Thinks new facilities would not be profitable as it's quiet on weekdays	New facilities need coordination with local leaders and government, which is difficult; suggests adding play equipment for children

Table 2. In-depth Interviews with Residents

Residents

According to the results of resident interviews, locals generally hold an open and friendly attitude toward tourism and visitors. Most tourist activity is concentrated on weekends and does not significantly disrupt their daily lives. However, a major issue lies in the lack of public facilities, particularly spaces for community activities. The long-term absence of such spaces may gradually erode the community's sense of place, leading to population decline and a stagnant living environment. Without a vibrant local life, the area may eventually lose its appeal to tourists.

In-depth Interviews with Local Stakeholders

Question	(Owner A, M, ~80)
Type of business in Houtong?	Operates Houtong Miner History Museum
Impact of current tourism on your business?	Visitor numbers increased since the "Cat Lady" brought cats, but dislikes cats, seeing them as dirty; cat numbers have dropped by half in recent years
Do you wish current tourism to continue?	Established the museum with personal funds to preserve mining history; feels the government has ignored proposals like opening the Ruifan Main Mine
Desired facilities or spaces?	Wants historically meaningful sites preserved to keep miners' legacy alive; noted the official coal museum has inaccurate information and unqualified guides

Table 3. In-depth Interviews with Local Stakeholders

Local Stakeholders

From the public sector perspective, Houtong's fame as the "Cat Village" has overshadowed its mining heritage, leaving sites like the Miner History Museum marginalized. Built by former miners, the museum preserves authentic coal mining memories, yet official redevelopment projects often misrepresent history, frustrating local contributors and highlighting the need for accurate preservation and collaboration.

Proposed Strategies

"Paths are the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, or railroads. For many people, they are the most important and dominant elements. By moving through these paths, people observe the city, organize these environmental images, and form connections among them.".[11] According to Kevin Lynch, "paths" refer to physical, public spaces for movement, like streets, walkways, transit lines, canals, and railroads, showing their role as the hard infrastructure in a city. But paths also have a "soft" side. They connect culture and history to daily life, shaping how people interact with spaces and with each other as they move through the city. "Man needs to understand the basic structure of existential space in order to recognize himself as belonging to a cultural and social whole.".[12] On the "soft" side, paths involve considering the cultural significance of heritage spaces within the city and exploring how historical spaces and movement routes are structured and valued.As people create and use these paths, they simultaneously shape the surrounding environment and influence behaviors.

A well-structured cultural route consists of three key components: centers of daily life, chosen activities, and the connecting pathways. These are referred to as "nodes," "paths," and "activities," respectively. **Nodes**: Nodes are value cores in a region. They shape how paths connect and, through themed routes, reveal the unique identity of a place. **Path**: Not every path benefits all connected nodes. Good spatial planning and traffic flow are essential, but when a path reflects local culture and daily life, it truly brings value to the space. **Activities** :Without activities, a place declines. Residents maintain the environment,

while visitors bring energy and meaning. Activities not only sustain spaces but also create new collective memories for the community.

The relationship between cultural heritage and urban preservation can be systematically interpreted through the interrelated dimensions of "nodes," "paths," and "activities." Different nodes generate distinct path configurations, which, when integrated with corresponding activities, support a continuous process of spatial development and cultural reinforcement. This integrative framework not only revitalizes the fundamental elements of urban space but also contributes to the formation of a renewed sense of collective consciousness.[13]

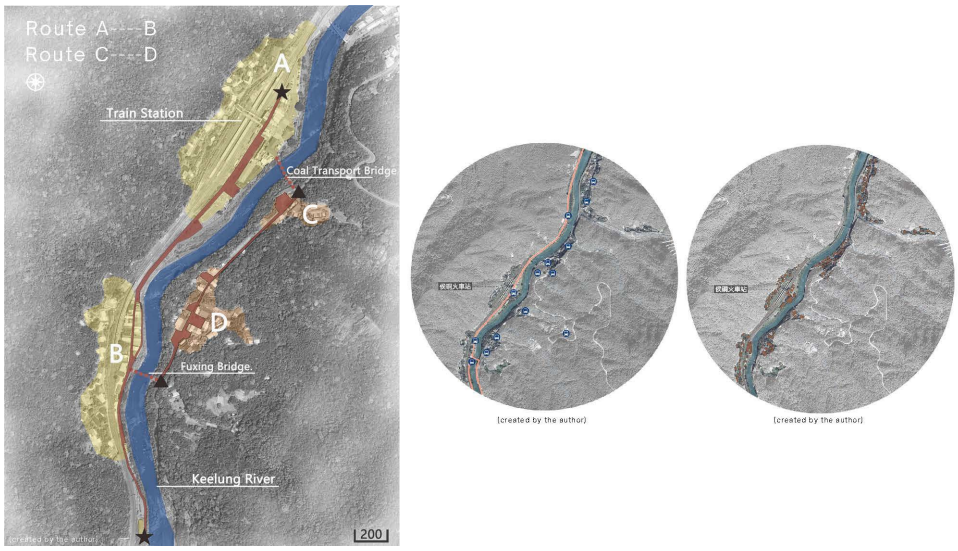

Figure 5. Spatial Distribution of Cultural Routes and Site Functions. (Source:Created by the author.)

Houtong's narrow and mountainous terrain has shaped its distinctive linear development pattern, with settlements and cultural landmarks distributed along the Keelung River valley. This geographic constraint has led to spatial fragmentation, where clusters of activity remain disconnected, especially beyond the station area.

According to prior scholarship, the definition of cultural routes emphasizes several dimensions, including the continuous exchange of activities and ideas, the integrative value that exceeds the sum of individual elements, the role of routes in fostering regional dialogue, and their evolution beyond movement to encompass religious, commercial, and administrative functions, thereby reflecting the pluralistic value of cultural heritage.[14] This study proposes two cultural routes shaped by Houtong's mining past, linking overlooked heritage nodes into a connected network. Anchored by the Coal Transport and Fuxing Bridges, these routes aim to enhance spatial continuity, revitalize key sites, and balance historical interpretation with visitor experience.

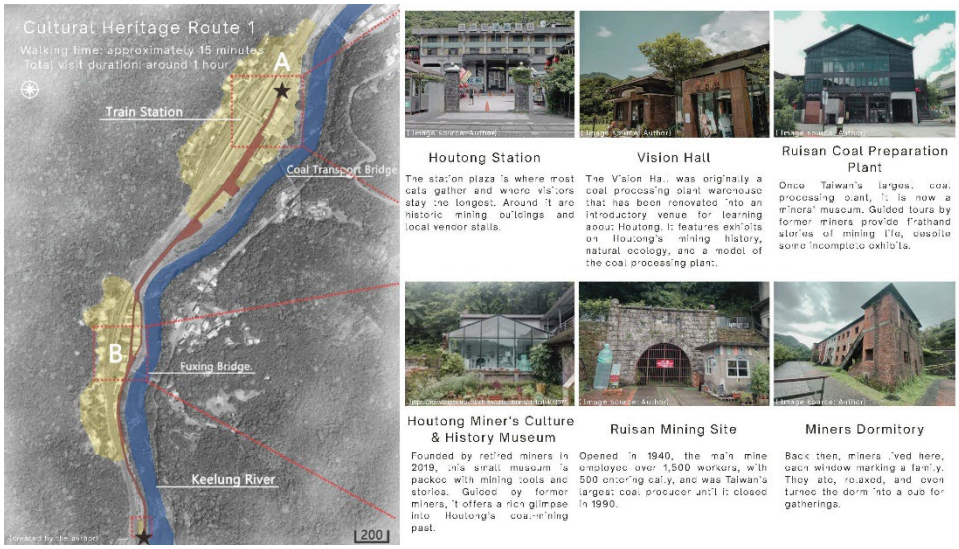

Figure 6. Mapping of Cultural Route (A–B) with Key Nodes. (Source:Created by the author.)

The first cultural route, with an approximate duration of 15 minutes, runs along the western side of the Keelung River. Within this area, the Vision Hall and the Ruisan Coal Preparation Plant, located in front of the station, serve as the primary attractions and constitute the main concentration of visitor activities. However, as illustrated in Figure 7, there are still several noteworthy nodes along this route that remain underexplored, with only a limited number of visitors willing to reach them on foot. This suggests that issues of accessibility and insufficient spatial vitality contribute to the disparity in visitor distribution, thereby hindering the effective integration of these nodes into the overall route experience.

Figure 7. Large-Scale Node Distribution and Improvement Strategies. (Source:Created by the author.)

In Area A, the open spaces are underutilized and lack soft activities that could attract visitors. Without these activities, it is difficult to enhance the tourism appeal of the area, creating a break in the cultural route and causing most visitors to remain only near the train station.

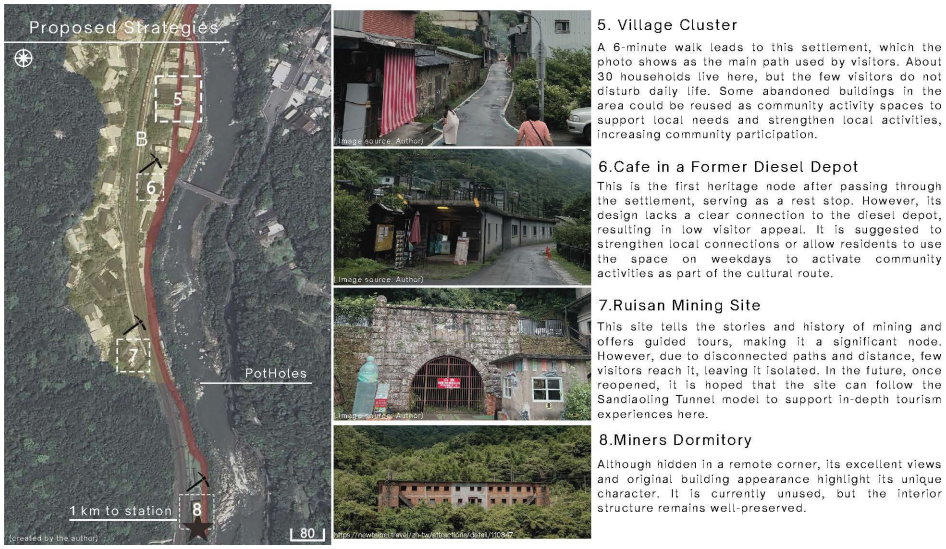

Figure 8. Large-Scale Node Distribution and Improvement Strategies. (Source:Created by the author.)

In Area B, the key node is the coal mining heritage site. However, due to long-term neglect and a lack of reuse strategies, this node has become isolated, reducing visitors' willingness to explore further. To revitalize this part of the route, it is essential to introduce activity spaces, open the gates of the Ruisan Coal Mine, or provide accommodation options to attract visitors and bring energy to the area.

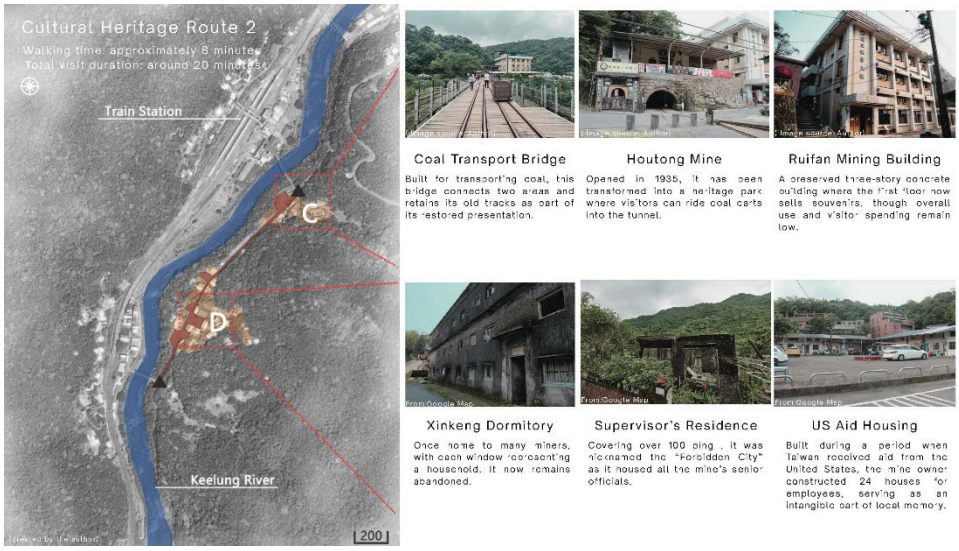

Figure 9. Mapping of Cultural Route (C–D) with Key Nodes. (Source:Created by the author.)

The second cultural route requires crossing the border Coal Transport Bridge to reach it. This route has seen little development or management, but it preserves its original architectural character. As a result, very few visitors walk this route.

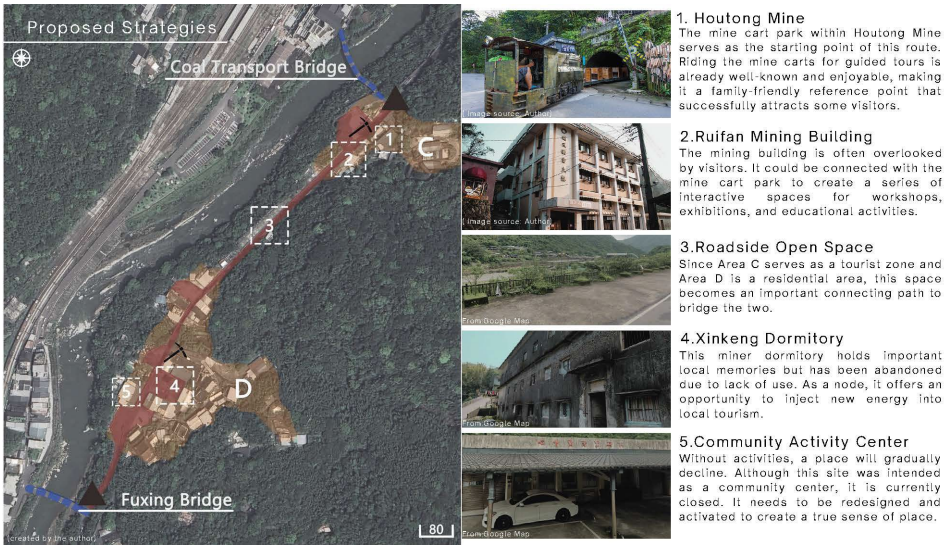

Figure 10. Large-Scale Node Distribution and Improvement Strategies. (Source:Created by the author.)

At a larger scale along the route, the study found that Areas C and D serve visitors and residents, respectively. Although these areas remain underused, they have preserved the original appearance of the buildings. The strategy here is to encourage shared use between residents and visitors, recognizing that injecting local vitality is essential to driving development in the area.

CONCLUSION

Houtong has gained visibility as the "Cat Village," yet its reliance on this single theme limits visitor experiences and sidelines its mining heritage. Facing stagnation, with an aging community and underused heritage sites, the area risks decline without intervention. Drawing on Butler's TALC model, this study proposes cultural routes to reconnect nodes, enhance pathways, and embed activities, shifting from static preservation to integrated revitalization. This strategy seeks to balance tourism and sustainability, extending Houtong's identity beyond cats to include its mining legacy, ecological landscape, and community life.

Node:Houtong contains a wealth of mining heritage sites and historical environments that encapsulate the region's collective memory and form a critical foundation for cultural preservation. However, in the absence of long-term, strategic management, many of these spaces have gradually fallen into neglect and spatial isolation. This study advocates for the revitalization of these heritage nodes by integrating them into a cultural route framework, transforming them into dynamic spaces that not only preserve memory but also invite return visits through renewed relevance and interaction.

Path:The linear and uneven topography of Houtong has confined most visitor circulation to the immediate station area, resulting in a fragmented spatial experience and the disconnection of valuable heritage points. To address this, the development of coherent pedestrian pathways—guided by landscape elements and contextual interpretation—is essential. Such a system would bridge currently isolated sites, offering visitors a continuous journey through the layered historical and cultural narratives embedded within the terrain.

Activity:The long-term vitality of a heritage destination depends not only on its physical assets but also on the quality and frequency of its cultural engagement. In Houtong's case, the absence of sustained activities has limited community participation and visitor interest. Therefore, this study proposes the implementation of an activity-driven approach, including thematic tours, local markets, and hands-on workshops that integrate cultural content into everyday life. These programs would reframe heritage

spaces as interactive, lived environments, fostering a more immersive and sustainable model of tourism and local revitalization.

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DEMOCRATISING HOUSING: THE SOCIO-SPATIAL EFFECTS OF PUBLIC REHOUSING IN LISBON METROPOLITAN AREA (1974–2024)

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INTRODUCTION

Rehousing policy is far more than a technical or administrative concern; it is a powerful instrument that shapes the very fabric of urban life, influencing not only the physical configuration of cities but also the social relations that unfold within them. In Portugal, the period following the democratic transition of 1974 marked a pivotal shift in the state's approach to urban development. Public rehousing interventions emerged as one of the primary tools for addressing the urgent housing needs generated by rapid urbanization and decolonization.

The initiatives aimed to promote social justice by providing low-income populations with dignified, secure housing while modernizing urban space.

Yet, the socio-spatial consequences of these policies reveal a more complex picture. While the eradication of precarious settlements and the provision of new housing stock represented clear achievements, the broader spatial and social outcomes often diverged from these intended goals. By prioritizing quantitative targets, cost-efficiency, and the rapid delivery of dwellings, these interventions frequently produced environments that limited social integration and perpetuated forms of territorial exclusion. These outcomes raise important questions about the relationship between urban form and social justice, suggesting that housing policies can simultaneously embody emancipatory ideals and reproduce structural inequalities.

This article critically examines the socio-spatial effects of public rehousing policies in Portugal, with a particular focus on the Lisbon Metropolitan Area (LMA) between 1974 and 2024. Drawing on critical urban theory we interrogate how the socio-spatial effects patterns of inclusion and exclusion. We argue that the spatial strategies underpinning these interventions have played an active role in reproducing urban inequalities. Through this lens, housing is understood not simply as a provision of shelter, but as a politically and socially charged process.

By combining morphological analysis with socio-demographic and historical perspectives, this study seeks to illuminate the ways in which public rehousing policies have simultaneously attempted to promote social justice and inadvertently entrenched spatial inequities. Ultimately, it contributes to broader debates on democratic urbanism and the right to the city, highlighting the ongoing need to rethink housing provision as a mechanism not only of shelter but of social inclusion, spatial justice, and urban citizenship.

HOUSING AS A SOCIO-SPATIAL PROCESS: HOW POLITICS SHAPES NEIGHBOURHOODS

Housing should not be seen as a neutral stage for urban life but as a space shaped by intersecting political, social, and economic influences. Grounded in critical urban theory — particularly Henri Lefebvre's notion of the "Right to the City"[1] and Marxist perspectives that connect urban form with socio-economic relations[2] — this analysis understands housing not simply as shelter, but as a political construct.

The spatial design and organisation of housing estates both influence and are influenced by social practices and broader political and economic dynamics.[3] Housing, therefore, does not passively host urban life; it actively shapes social relations, structuring inclusion, exclusion, access, and marginalization. Understanding the persistence of urban inequality in Portugal requires examining how the spatial strategies embedded in rehousing policies have materially contributed to both the physical and social marginalization of specific populations.

Conceptual framework

The notion of "social" is central to this analysis, situated at the intersection of urban, social, and political dimensions, refers to an integrated approach to the city and housing as collective goods and fundamental rights, inseparable from dynamics of power, inequality, and belonging.[4]

In the urban realm, it refers to the equitable production and organization of space, ensuring universal access to services, opportunities, and quality of life, in contrast to commodification and socio-spatial segregation. Socially, it addresses essential human needs, with housing — enshrined as a right in instruments such as the Universal Declaration of Human Rights[5] — conceived not merely as shelter but as a space of security, identity, and rootedness.[6] Politically, it has materialized through legislation and programs that either promote housing justice directly or mediate market forces.

Social housing policies are understood as instruments of the welfare state designed to correct market failures and foster inclusion through construction, rehabilitation, and affordable rental programs.[7] In Portugal, social housing has been legally defined since Ordinance No. 580/83 as a priority response for low-income households. Over time, it has evolved toward controlled-cost and affordable rental schemes, highlighting the importance of clarifying its definition and dismantling associated stigmas.[8] Treating social housing as a public good for all provides a methodological and conceptual starting point for rethinking urban policies beyond an assistance-oriented logic, positioning them as inclusive practices that affirm the right to the city.

Methodology

The socio-spatial analysis approach examines the dynamic interplay between social structures and the spatial configurations in which they are embedded. Drawing on Lefebvre's conception of the production of space,[9] it recognizes that space is simultaneously a physical environment, a social construct, and a political instrument. This perspective aligns with Soja's notion of spatiality as a formative dimension of social life, highlighting the ways in which spatial arrangements both reflect and reproduce power relations.[10] Harvey's "right to the city"[11] further frames the analysis by emphasizing the political stakes of urban space, where questions of accessibility, integration, and equity are central.

The study employs a mixed-method approach, combining quantitative indicators with qualitative insights. These are examined alongside interrelated spatial dimensions, including urban form, dwelling typologies, population distribution, accessibility, and patterns of community cohesion or fragmentation. This multidimensional methodology enables the identification of spatial manifestations of exclusion, resilience, and opportunity, offering a critical lens for understanding urban inequalities and informing more inclusive planning strategies.

To understand how these socio-spatial processes have unfolded in practice, it is necessary to trace the evolution of rehousing policies in Portugal following the democratic transition.

Historical overview of the rehousing policies in democratic Portugal

Since the democratic transition in 1974, Portugal's rehousing policy has evolved through a series of landmark programmes. These policies include the *Serviço de Apoio Ambulatório Local* (SAAL); the *Comissão para o Alojamento de Refugiados* (CAR); the *Plano de Intervenção a Médio Prazo* (PIMP); the *Programa Especial de Realojamento* (PER); and finally the *1º Direito* programme — as illustrated in Figure 1 — each reflecting shifting political priorities and approaches to urban development.

The SAAL (1974–1976) emerged directly from the revolutionary climate, seeking to address acute housing needs through participatory design, self-management, and resident empowerment.[12] While symbolizing the radical democratic ethos of the period, SAAL's confrontational stance toward institutional norms limited its lifespan.[13] In the wake of decolonization, the CAR (1976–1982) was established to provide emergency housing for returnees and refugees. Unlike SAAL, CAR operated through a centralized, top-down model, prioritizing rapid delivery over participatory engagement,[14] yet marking an early state-led response to urgent humanitarian needs.[15]

Alongside these national initiatives, municipalities became key housing providers, often prioritizing quantity over quality. Their technocratic focus frequently produced peripheral estates isolated from urban life. By the late 1980s, the PIMP (1987–1993) signalled a new direction, emphasizing the integration of disadvantaged areas through municipal collaboration, investment in infrastructure, public space, and housing renovation. Despite financial and bureaucratic constraints, it introduced a more integrated, participatory model for urban development.[16]

The PER (1993–2018) represented the most extensive post-revolution housing effort, aiming to eradicate informal settlements. While it substantially increased housing supply, its reliance on mono-functional estates often deepened socio-spatial segregation by relocating vulnerable communities to peripheral areas.[17] In contrast, the *1º Direito* programme (2018) reflects a rights-based paradigm, offering municipalities financial and technical support to provide adequate housing for vulnerable populations, with a strong emphasis on rehabilitation over new construction. This shift signals a renewed focus on inclusivity, integration, and the substantive right to housing.[18]

Taken together, these successive programmes reveal the shifting logics that have guided Portugal's rehousing policies over the past five decades — from the radical participatory experiments of the post-revolutionary years, through technocratic and efficiency-driven approaches. While each programme responded to specific historical pressures and social demands, their cumulative legacy has been a housing system marked by both progress in eradicating precariousness and enduring challenges of segregation and inequality. This trajectory provides the necessary backdrop for understanding the socio-spatial effects of rehousing policies in practice.

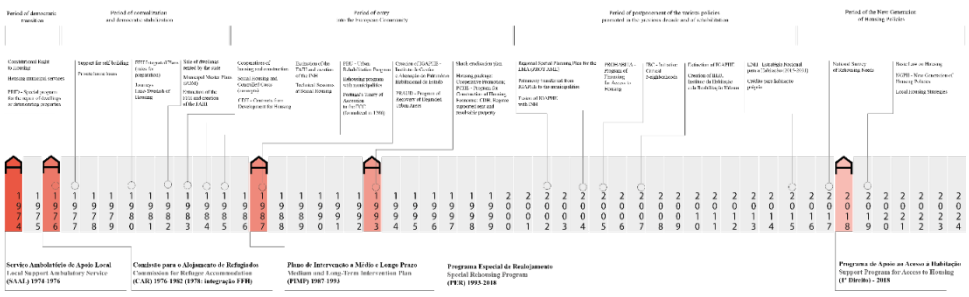

Figure 1. Housing policies timeline.

SOCIO-SPATIAL EFFECTS OF REHOUSING POLICIES: THE OUTURELA/PORTELA CASE

This section uses the Outurela/Portela neighbourhood to examine how rehousing policies have shaped the urban landscape and daily life. By following the development of housing projects, public spaces, and social dynamics, it reveals how planning decisions have influenced both the physical environment and the patterns of inclusion, exclusion, and community life that continue to characterize the area tod
The Outurela/Portela neighbourhood in the LMA serves as a revealing case study for examining the socio-spatial consequences of Portugal's state-led rehousing policies since the democratic transition of 1974. Comprising six major housing projects implemented across successive policy phases — as illustrated in Figure 2. This area embodies the evolution of social housing strategies and their complex interaction with urban space, social dynamics, and community life.

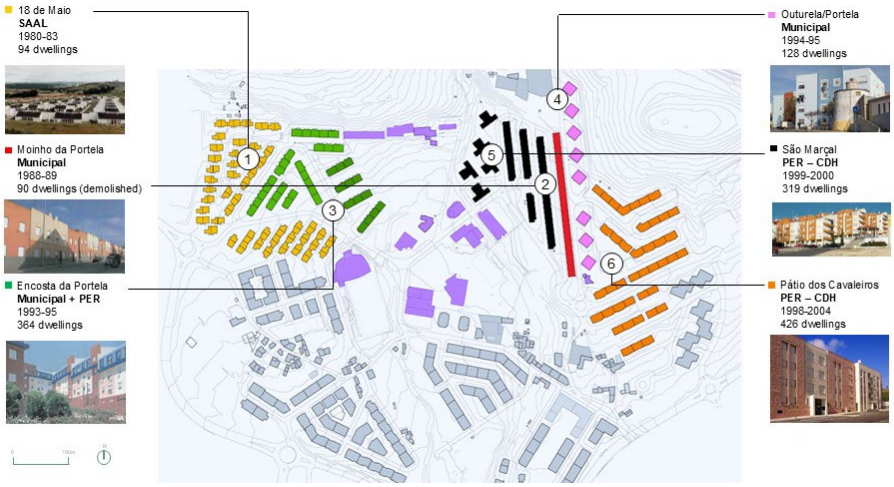

Figure 2. Outurela/Portela neighbourhoods.

Outurela and Portela were historically peripheral rural-industrial areas of Oeiras, marked by farmland, small factories, and informal settlements. In the 1970s, population growth driven first by rural migration and later by returnees from the former colonies gave rise to extensive shantytowns with precarious living conditions. The SAAL program, launched after 1974, represented the first significant state intervention. It sought to replace informal settlements with planned neighborhoods, guided by a participatory approach that empowered residents. Beyond housing provision, SAAL integrated schools, community facilities, and green spaces, while aiming to preserve residents' attachment to place. This early initiative illustrated a rights-based and integrative vision of urban planning.
Later programs — *Encosta da Portela*, *Outurela/Portela*, *São Marçal* and *Páteo dos Cavaleiros* — transformed the area, offering housing types from single-story homes with gardens to multi-family blocks, often with sports, playground, and cultural facilities. A 1990s urban plan further structured the district, integrating social housing with private developments and improving infrastructure. Today, the estate reflects community resilience and long-term planning, evolving from rural land and informal settlements into a well-organized urban neighborhood.

Neighbourhood-Scale Morphologies

At the neighbourhood level, Outurela/Portela occupies a peripheral position within the LMA. Limited access to public transport and dependence on road networks constrain mobility and linkages to employment and service hubs. Public amenities exist but are unevenly distributed and often poorly maintained, reducing their usability and capacity to foster social interaction. Although public spaces are

relatively abundant, their underutilization and perception as unsafe limit spontaneous engagement and collective activities. These spatial characteristics reveal how rehousing policies have inadvertently produced structural barriers to social inclusion. Peripheral siting, standardised layouts, and fragmented integration into the broader urban grid reinforce socio-spatial marginalisation, illustrating that the built environment itself actively mediates access, participation, and interaction.

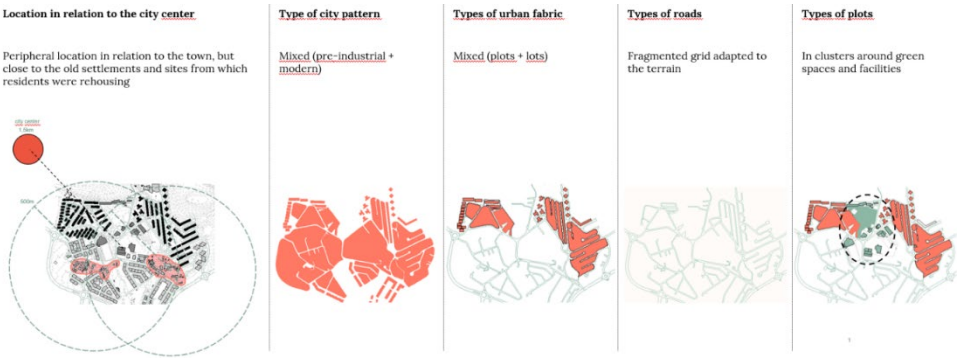

Figure 3. NEIGHBOURHOOD SPATIAL DATA.

Socio-Demographic Dynamics

Demographically, the area is characterised by a high proportion of residents of Cape Verdean and Angolan origin, alongside Portuguese nationals, with generally low-income levels, high unemployment rates, and limited educational attainment. The social dynamics are characterized by both resilience and fragmentation. On one hand, strong intra-group ties exist, fostering cultural solidarity and informal support networks that mitigate some vulnerabilities. However, these bonds often coincide with socio-spatial segregation, limiting cross-cultural interaction and broader community cohesion. The absence of inclusive communal spaces and underutilized public areas further weakens opportunities for collective engagement, reinforcing social isolation within residential clusters. This fragmentation is compounded by a lack of organised community initiatives, which hampers collective action and diminishes the neighbourhood's social capital.

Figure 4. SOCIO-DEMOGRAPHIC DATA.

Dwelling-Scale Typologies and Internal Spatial Organisation

At the dwelling scale, the predominant typology consists of multi-family apartment blocks of modest dimensions, originally designed according to standardised layouts. Construction quality varies, but in many cases, deterioration is visible due to ageing materials and insufficient maintenance. Internally, the

spatial organisation reflects a modernist model with clear functional separation between living, service, and private areas, though often lacking transitional spaces that mediate between interior and exterior life. Levels of appropriation and personalisation are high in some units – especially through small-scale renovations or decorative elements – while others remain in their original, standardised state, creating a mixed degree of homogeneity across the housing stock. Socially, the estate is characterized by a mix of culturally homogeneous subgroups alongside overall social diversity. Residents often maintain strong ties within their ethnic or socioeconomic communities, which supports cultural identity but can also limit broader social cohesion and integration across the neighbourhood. Social autonomy is constrained by limited interaction between residents and the wider urban context. The estate's social life is largely inward facing, with few opportunities or safe spaces for spontaneous engagement outside the community. This inward orientation fosters a semi-isolated social environment that restricts residents' full participation in the city's social fabric.

Figure 5. DWELLING SOCIO-SPATIAL DATA.

SOCIO-SPATIAL EFFECTS OF PUBLIC REHOUSING POLICIES: TOWARDS A MORE DEMOCRATIC HOUSING SYSTEM

The case of Outurela/Portela illustrates the enduring limitations of post-1974 social housing policy in Portugal when viewed through the lens of socio-spatial morphology. While the estates addressed the urgent quantitative imperative of eradicating precarious settlements,[19] their peripheral siting and clustered, mono-functional layouts have frequently reproduced the very forms of exclusion they sought to overcome. The adjacency to former informal settlements offered a measure of territorial continuity; however, the prevailing modernist-influenced urban patterns — characterised by fragmented integration into the broader grid, standardised building typologies, and the absence of transitional public-private interfaces — have curtailed opportunities for spontaneous sociability and active street life.[20] These spatial configurations underscore Lefebvre's assertion that the production of urban space must align with use value, rather than being subordinated to abstract, commodified logics of delivery or cost-efficiency imperatives.[21]

From a socio-demographic standpoint, these estates accommodate predominantly low-income, multi-ethnic populations, with a significant proportion of Portuguese, Cape Verdean, and Angolan residents.[22] Low educational attainment, high unemployment, and minimal household income intersect with degraded public spaces, inadequate infrastructure, and a scarcity of services, generating conditions of spatialised vulnerability. In this sense, the built environment operates not merely as a neutral container but as an active agent in reproducing "urban invisibility" and functional disconnection from the metropolitan core.[23] The state's emphasis on cost-efficiency and relocation over genuine integration has

yielded environments that are socially and culturally homogenised, lacking the specificity and adaptability required to reflect the lived cultures of their residents.

The evidence from Outurela/Portela thus points towards the necessity of reframing housing provision within a broader project of democratic housing and urbanism. A rights-based paradigm would reposition residents as co-producers of urban space, challenging the residual paternalism of top-down planning.[24] Integrated Urban Regeneration Plans — linking physical interventions with improvements in security, education, employment, health, and community mobilisation —– represent a promising framework for addressing entrenched socio-spatial exclusion.[25] Equally, the institutionalisation of participatory planning and community-led placemaking could revitalise underused spaces, foster cultural expression, and support endogenous economic activity.[26] Such measures are critical if social housing is to move beyond a paradigm of spatial containment towards one of urban inclusion, where the right to the city is not merely formalised in policy but materially inscribed in the everyday spatial practices of residents.[27]

Ultimately, moving towards a more democratic housing system requires acknowledging that the right to the city is not merely a formal legal principle but must be materially inscribed in everyday spatial practices. Housing policies must shift from a paradigm of **spatial containment** — aimed primarily at providing shelter and relocating vulnerable populations — towards a model of **urban inclusion**, where physical space, social infrastructure, and participatory governance converge to promote equity, accessibility, and the meaningful integration of diverse populations into metropolitan life. The case of Outurela/Portela demonstrates both the challenges and the possibilities inherent in this transformation, highlighting the critical role of socio-spatial design, policy coherence, and resident agency in shaping truly democratic urban environments.

CONCLUSION

Portugal's fifty-year trajectory in social housing reflects both its democratic ambitions and its enduring limitations. While housing policies have alleviated immediate needs by increasing stock and eradicating precarious settlements, their socio-spatial consequences have too often entrenched segregation, marginality, and social invisibility. The case of Outurela/Portela exemplifies these contradictions: although addressing urgent quantitative demands, its peripheral siting, standardized modernist layouts, and mono-functional design have reproduced exclusionary spatial patterns and curtailed opportunities for social integration, spontaneous interaction, and vibrant community life. This underscores Lefebvre's critical insight that the "production of space" must prioritize use value — rooted in lived experience and social practice — over abstract, commodified logics of delivery.

From a socio-demographic perspective, the estates largely house low-income, multi-ethnic populations who face intersecting vulnerabilities such as limited education, unemployment, and inadequate access to services. The built environment in this context acts not as a neutral container but as an active agent perpetuating socio-spatial disconnection from the metropolitan core and reinforcing cultural homogenization that fails to reflect residents' diverse identities and needs. The persistent emphasis on cost-efficiency and relocation rather than genuine social integration has thus produced environments that undermine the very right to the city they were intended to guarantee.

Moving forward, housing must be reimagined not merely as physical infrastructure but as a democratic space co-produced by the state and its inhabitants — one that is firmly grounded in social justice and committed to inclusion. The Outurela/Portela experience serves both as a cautionary tale and a critical point of reflection, urging a paradigm shift toward democratic urbanism. This requires integrated regeneration strategies that combine physical renewal with investments in security, education, employment, health, and community mobilisation, thereby addressing the root causes of socio-spatial exclusion. Crucially, institutionalizing participatory planning and fostering community-led

placemaking can activate neglected spaces, nurture cultural expression, and support endogenous economic activity.

The challenge now lies in operationalizing a housing paradigm that harmonizes technical competence with political will — a model that affirms housing as a fundamental right and a transformative tool for urban equity. Only through such holistic, inclusive approaches can social housing transcend spatial containment and materially realize the right to the city in the everyday lives of residents, fostering urban environments where diversity, interaction, and opportunity thrive.

NOTES

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IS CAIRO A RUNNABLE CITY? SPATIOTEMPORAL ANALYSIS OF THE URBAN CORE OF COMPACT CITIES

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INTRODUCTION

Cities are complex systems resulting from heterogeneous elements interacting with human movement and vehicular mobility through time.[1] In contemporary planning literature, pedestrian behaviour and particularly walkability have emerged as desirable traits in cities pursuing more sustainable mobility and healthier communities.[2] However, the urban morphology of many compact cities does not facilitate residents' physical interaction with their urban environment, making recreational running nearly impossible even at weekends.[3]

This limitation results from multiple interconnected factors including social barriers, safety concerns, urban fabric characteristics, and spatial configurations. Pedestrian movement is often minimised as roads become dominated by automotive traffic, creating hostile environments for recreational activity.[4] Despite these constraints, urban running has experienced steady growth worldwide, offering substantial health benefits as an accessible, equipment-free activity.[5] The built environment emerges as a crucial factor influencing both the willingness to run and the engagement of novice runners.[6]

Running in streets has completely different dynamics compared to running on a treadmill. Seeing runners in the street has many benefits: it raises awareness amongst automotive riders about running and staying active, educating car drivers with the etiquette of not only accommodating pedestrians, but making them a priority. It gives motivation for other runners and most importantly those who are afraid to try out. The built environment emerges as a crucial factor influencing both the willingness to run and the engagement of novice runners.[7]

Urban environments increasingly serve as laboratories for understanding the relationship between built space and public health outcomes. As cities grapple with rising rates of non-communicable diseases and sedentary lifestyles, the concept of "healthy cities" has gained prominence.[8] Running, as one of the most accessible forms of physical activity, offers a unique lens through which to examine urban spatial dynamics, requiring direct engagement with urban infrastructure, street networks, and public spaces. [9] The "runnable city" thus becomes a measure of how successfully urban environments support spontaneous, everyday physical activity amongst residents, see Figure 1. However, it becomes more complex and problematic when we focus on compact cities especially in the Global South.

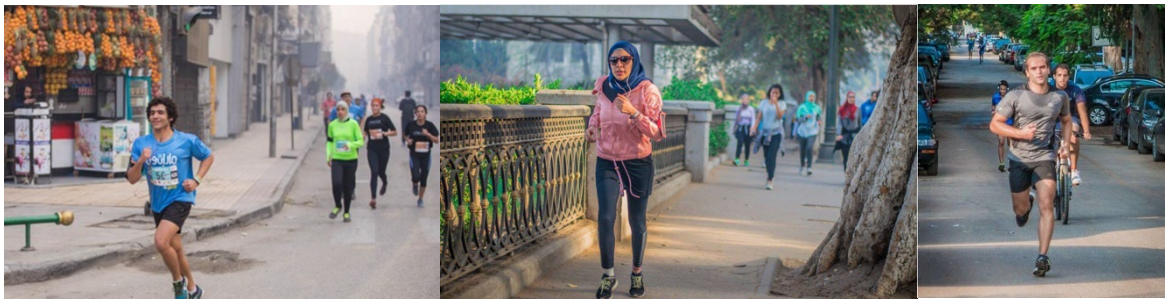

Figure 1. Running in Cairo, downtown street, Dokki district, AND Maadi residential district

Compact cities, often celebrated in planning discourse for their density, mixed land uses, and walkability, are typically positioned as models of sustainable urban development.[10] By concentrating populations and activities, compact urban forms are argued to reduce car dependency, shorten travel distances, and enhance opportunities for active mobility such as walking and cycling.[11] However, this same density can create paradoxical effects: overcrowded streets, traffic congestion, and contested public spaces that limit opportunities for recreation.[12] In many Global South contexts, including Cairo, the benefits of compactness are undermined by inadequate pedestrian infrastructure, poor air quality, and insufficient green networks.[13] Thus, while compact cities theoretically support active lifestyles, their lived reality often reveals structural barriers that prevent residents from enjoying the health and social benefits of urban density.[14]

Characteristics of Runnable Cities

A runnable city is characterised by interconnected elements facilitating safe, accessible running experiences: continuous pedestrian pathways, separation from vehicular traffic, comprehensive lighting, air quality management, green space integration, and gender-sensitive design.[15] International exemplars like San Francisco (Golden Gate Park's trail network), Vancouver (17-mile Seawall Trail), and London (40% green space across 3,000 parks) demonstrate successful integration of natural geography, dedicated pathways, and distributed accessibility.[16]

Cairo presents a markedly different urban reality. Unlike exemplar cities with extensive park networks, Cairo's environment reflects complex challenges facing dense metropolitan areas in emerging economies. Where international cities enable flexible running schedules throughout the day, Cairo confines 87% of running activity to early morning hours due to traffic, safety, and air quality constraints.[17] As one of Africa's largest metropolitan areas with over 20 million inhabitants, Cairo's dense urban fabric theoretically supports pedestrian activity, yet contemporary realities, traffic congestion, air pollution, and social safety concerns—complicate residents' ability to engage with urban space through physical activity.

Recent infrastructure developments, including new highways and elevated bridges, have fragmented the urban fabric prioritising vehicular mobility over pedestrian accessibility, see Figure 2. Over the last 10 years, the government invested $2.64 billion USD to build 945 bridges.[18] As two residents noted: "The streets that were once calm with green spaces in between turned into a highway" [Female, ca 50, Merghani Street resident] and "I used to take it as an exercise and walk to the convenient store which is across the road, now I can't due to this Mega Bridge" [Male, ca 75, Heliopolis resident].

Figure 2. New Mega Bridges into Cairo urban fabric, Tereat ElZomor Bridge AND The Intersection bridge of Moustorod axis & Gesr ElSuez. (source: www.reditt.com and www.egyptianstreets.com)

The relationship between urban design and physical activity has become central to contemporary planning literature. Gehl's work on "cities for people" emphasises how spatial design fundamentally shapes human behaviour, whilst Giles-Corti and colleagues' research reveals that street connectivity, land use diversity, and residential density significantly influence physical activity levels.[19] The concept of "spatial confidence," building on Grønli's framework of sensorial experiences, demonstrates how environmental characteristics either support or undermine residents' confidence in using urban space recreationally.[20]

Gender dimensions prove particularly significant in Cairo's context, where research reveals how harassment, social surveillance, and cultural norms create barriers to women's engagement with public space.[21] Studies show runners' routes correlate positively with green space quality, whilst avoiding areas with poor lighting, busy traffic, and shared pedestrian-bicycle paths.[22] Unlike global trends toward run-commuting, Cairo demonstrates "commute to run" patterns, where residents travel to access suitable running locations before returning home. This paper investigates how Cairo's urban spatial configuration influences running culture and broader patterns of physical activity amongst residents.

UNDERSTANDING CAIRO'S URBAN RUNNING FABRIC

Cairo presents a unique case in urban running infrastructure that distinguishes it from internationally recognised runnable cities. Despite the city's relatively flat topography, which theoretically supports pedestrian activity, running routes are not pedestrian-only spaces. In established runnable cities, parks serve as dedicated spaces for runners, hosting organised events such as *Parkrun*, free 5K runs held every Saturday in urban parks. Additionally, formal running events typically take place within park settings that provide safe, car-free environments for recreational activity. Cairo's park infrastructure differs significantly from this model. Whilst the city holds numerous parks, the most prominent running locations include Al-Azhar Park, Child Park and International Park (both in Nasr City), and Merryland Park in Heliopolis. However, residents typically run around rather than within these spaces.[23] This spatial arrangement reflects broader challenges in Cairo's recreational infrastructure, where parks function as bounded green spaces rather than integrated components of a pedestrian network, see Figure 3.

Figure 3. Cairo Parks where access requires a ticket.

This study adopts a mixed-methods approach combining spatial mapping, surveys, and observations to analyse running patterns in Cairo. GIS analysis identified key infrastructure, parks, corniche routes, clubs, and street networks, focusing on accessibility, pathway continuity, lighting, and traffic, with the Nile Corniche highlighted as the primary corridor. Three surveys conducted between 2022–2025 (n=40, 46, 39) examined demographics, spatial preferences, temporal behaviour, and residential–destination patterns, revealing displacement and accessibility dynamics. Complementary observational studies at the Corniche, Al-Azhar Park, clubs, and residential streets documented demographics, activity patterns, and infrastructure use. The research also explored the role of Cairo's running clubs in providing peer support, safety networks, and inclusive spaces, particularly for women runners.

CAIRO URBAN RUNNABILITY INDEX (CURI)

Building on recent advances in runnability assessment, including Gao et al.'s quantitative framework for evaluating street-level jogging conditions using big data,[24] this research proposes a Cairo Urban Runnability Index (CURI) adapted to local urban conditions and social dynamics. Unlike technical assessments based primarily on infrastructure metrics, the CURI integrates spatial confidence indicators derived from resident experiences alongside physical environmental factors.[25] The CURI framework considers Cairo-specific variables including:

- Temporal accessibility patterns (morning-hour restrictions)
- Gender safety perceptions
- Spatial displacement behaviours (commute-to-run patterns)
- Availability of pedestrian-accessible spaces within urban parks

Dependent Variables for CURI

Based on three complementary surveys conducted between 2022-2025, this research identifies key dependent variables that capture Cairo’s unique running environment:

Running Confidence Level-RCL

It refers to the self-perceived comfort, trust, and willingness of a runner to engage in running activities at varying distances from their home-base. It encompasses spatial familiarity, perceived safety, access to facilities, and logistical independence. High RCL indicates a runner's confidence in commuting, by foot, public transport, or car, to unfamiliar or distant environments to run. Where low RCL suggests a preference for running within close proximity to the home environment. There are several factors that affect the RCL, most importantly the journey between Origin (home) and Destination (Run location), Gender, and clubs' membership, see Figure 4.

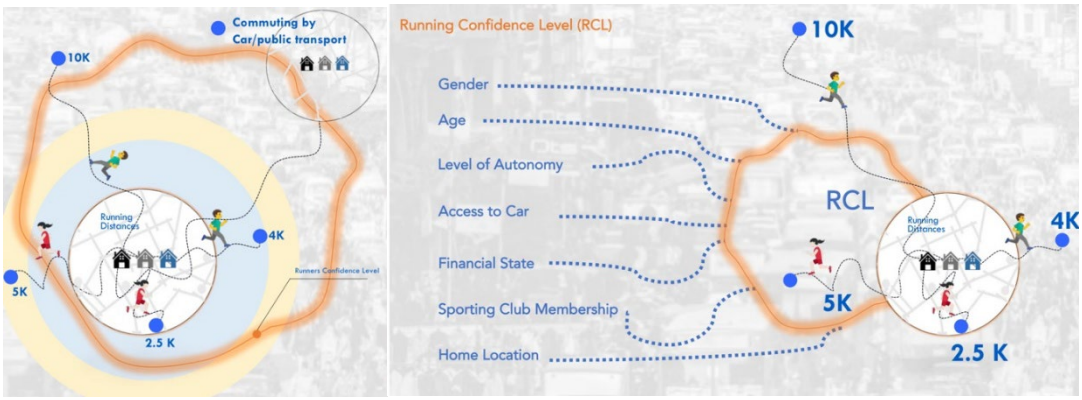

Figure 4. Cairo Parks where access requires a ticket.

Spatial Confidence Variables:

- Residential-Destination Displacement Rate (RDD): Measures the percentage of runners travelling outside their residential neighbourhood (Cairo demonstrates 48.65% displacement rate)
- Destination Preference Concentration (DPC): Quantifies the dominance of specific running locations (Zamalek attracts 48.65% of runners despite only 10.81% residential representation)

Temporal Accessibility Variables:

- Morning Concentration Index (MCI): Captures running activity restricted to early hours (87.18% in 2022, 86.85% by 2025)
- Temporal Flexibility Indicator (TFI): Measures distribution shifts within acceptable running hours

Demographic Inclusion Variables:

- Gender Participation Stability (GPS): Tracks female participation fluctuations (48.7% → 35.9% → 51.35%)
- Age Diversity Index (ADI): Assesses demographic concentration (40-59 years comprising 43.24% of participants)

Geographic Accessibility Variables:

- Neighbourhood Activation Rate (NAR): Binary scoring for areas generating running activity
- Regional Hub Performance (RHP): Measures secondary destination functionality

Draft CURI Equation

$$\mathbf{CURI = (0.25 \times RDD^{-1}) + (0.20 \times DPC^{-1}) + (0.20 \times MCI^{-1}) + (0.15 \times TFI) + (0.10 \times GPS) + (0.05 \times ADI) + (0.05 \times NAR)}$$

Where variables are RDD (Residential–Destination Displacement Rate), DPC (Destination Preference Concentration), MCI (Morning Concentration Index), TFI (Temporal Flexibility Indicator), GPS (Gender Participation Stability), ADI (Age Diversity Index), NAR (Neighbourhood Activation Rate), RHP (Regional Hub Performance).

Variables with $^{-1}$ are inversely weighted (lower displacement, concentration, and temporal restriction indicate higher runnability). Preliminary CURI calculations reveal significant variations across Cairo's districts, with the Nile Corniche achieving the highest ratings due to dedicated pedestrian pathways and natural surveillance, whilst traditional urban core areas score poorly despite their connectivity and historical significance.

FINDINGS: CAIRO'S RUNNING LANDSCAPE

The RCI survey reveals critical insights into the relationship between residential location and running destination choices, demonstrating significant spatial displacement patterns in Cairo's running culture. Analysis shows that 48.65% of survey respondents live in Maadi, yet 48.65% select Zamalek as their first choice despite only 10.81% living there.[26] This data reveals that nearly half of runners travel outside their residential neighbourhood to access preferred running locations, with Zamalek serving as the primary destination for runners living elsewhere. The residential distribution shows concentration in affluent districts: Maadi (48.65%), New Cairo (16.22%), 6th of October (10.81%), and Zamalek (10.81%), whilst traditional inner urban areas show minimal residential representation. [27]

Key findings include:

- Spatial Displacement: Even residents of relatively well-resourced neighbourhoods seek alternative running locations
- Zamalek Dominance: Functions as Cairo's premier running space despite limited residential representation

• Regional Hubs: Heliopolis serves eastern Cairo residents (8.11% residential vs 18.92% second choice)
• Urban Core Absence: Downtown, Nasr City, and Abbasiya show zero selection as running destinations

Temporal Patterns and Shifting Distribution

Longitudinal analysis reveals evolving temporal patterns whilst maintaining overwhelming concentration in early morning hours. In 2022, 87.18% of respondents ran during early morning hours (5:00-8:59 AM), slightly decreasing to 86.85% by 2025.[28] However, internal distribution within morning hours shows significant shifts:

• Sunrise period (5:00-6:59 AM): Decreased from 53.85% to 44.74%
• Early morning work hours (7:00-8:59 AM): Increased from 33.33% to 42.11%
• Afternoon running (5:00-7:59 PM): Increased from 5.13% to 7.89%
• Evening running (8:00-11:59 PM): Remained steady at approximately 5%

The persistence of extreme temporal concentration demonstrates that fundamental urban challenges, including traffic congestion, air quality, temperature, and safety concerns, continue to limit runners' temporal flexibility.

Demographic Evolution and Gender Dynamics

Comparative analysis across the three surveys reveals fluctuating demographic patterns with concerning implications for inclusivity. Female participation shows volatility: 48.7% (2022) → 35.9% (2025) → 51.35% (RCI), suggesting women's participation remains vulnerable to changing urban conditions and safety dynamics.[28]

Age distribution patterns show persistent concentration in middle-age groups, with the RCI survey demonstrating notable representation: female runners aged 40-49 (21.62%) and male runners aged 50-59 (21.62%) as leading demographic segments.[29] The demographic composition drawing from predominantly affluent residential areas suggests that running culture in Cairo remains largely accessible to higher-income residents.

ANALYSIS: RUNNABILITY AND URBAN SPATIAL JUSTICE

The Corniche as Urban Linear Park

Cairo's Nile Corniche functions as the city's de facto linear park, concentrating most recreational running activity along its waterfront. It offers several hallmarks of runnable design—continuous pedestrian pathways, separation from traffic, aesthetic amenities, and natural surveillance through mixed uses.[30] However, its dominance also exposes the absence of a wider, distributed recreational network. For residents far from the river, accessibility is limited, producing what can be described as "recreational apartheid" that reinforces spatial inequalities in health and well-being, see Figure 5.

Figure 5. Corniche Nile beautiful runs by sunrise and sunset and the power of running communities supporting each other.

Temporal Segregation and Urban Rhythm

Running in Cairo is overwhelmingly confined to early morning hours (87%), driven by traffic, harassment, and pollution. [31] This *temporal segregation* creates a city that is runnable only at specific times, undermining the temporal democracy associated with healthy cities. These restrictions also have gendered effects: women in particular face reduced flexibility in when and where they can safely run, reinforcing unequal access to urban space.

Infrastructure as Social Justice

Investment in road and bridge infrastructure $2.64 billion for 945 bridges over ten years, has prioritised cars over pedestrians, fragmenting the urban fabric.[32] Well-maintained Corniche segments in affluent districts stand in stark contrast to neglected infrastructure in working-class areas. This uneven distribution is more than technical; it is a matter of spatial justice, determining who can claim the right to healthy, active urban living. As one runner observed, street running itself carries symbolic value, signalling to drivers that pedestrians deserve visibility, priority, and respect.

Adaptive Strategies and Community Resilience

In response to systemic barriers, Cairo's runners have developed adaptive practices: forming running clubs, sharing routes, and creating peer safety networks. These grassroots strategies provide vital support, particularly for women, while fostering solidarity and community. Yet, while they illustrate resilience, such informal solutions cannot replace systematic investment in equitable infrastructure.

Discussion and Implications

Findings from Cairo confirm and extend international theories of spatial confidence and urban mobility.[33] Nearly half of runners travel outside their residential areas, creating confidence deserts in traditional urban cores where harassment, safety concerns, and poor infrastructure deter activity. The extreme morning concentration far exceeds patterns in cities like London or Vancouver, underscoring structural rather than temporary barriers.[34]

The Corniche's success validates Gehl's principles of pedestrian continuity and natural surveillance, but its singularity highlights Cairo's dependence on one corridor.[35] The result is a fragmented recreational geography, where running remains accessible mainly to affluent districts and at constrained times.

CONCLUSION, LIMITATIONS, AND FUTURE WORK

This study demonstrates that Cairo, despite its vibrant running community and rich urban fabric, cannot yet be considered a runnable city. The Nile Corniche stands out as the city's only consistently runnable corridor, embodying principles of continuity, separation from traffic, and natural surveillance. Yet, its singular dominance highlights the absence of a distributed network of safe and inclusive running spaces. Beyond this exception, Cairo's recreational infrastructure is fragmented, unevenly distributed, and socially exclusive. The overwhelming reliance on early-morning hours exposes how *temporal segregation*, gendered safety concerns, and environmental constraints curtail equal access to public space. Moreover, heavy investment in road and bridge construction has privileged cars over pedestrians, producing what this research terms *"recreational apartheid"*, a pattern where opportunities for healthy urban living are unequally distributed.

At the same time, Cairo's runners demonstrate remarkable resilience. Through clubs, peer networks, and informal safety systems, they carve out spaces of inclusion and solidarity where formal planning fails. These adaptive strategies show both the social value of running and the capacity of communities to self-organise. However, grassroots resilience cannot substitute for systemic reform. For Cairo to become truly runnable, urban development must shift from car-centred priorities to people-centred

planning: distributed pedestrian pathways, integrated park systems, gender-sensitive design, and policies that recognise recreational mobility as a right tied to public health and spatial justice.
Methodologically, this research contributes to urban planning debates in Global South contexts by proposing the **Cairo Urban Runnability Index (CURI)**, which integrates temporal accessibility, gender perceptions of safety, and spatial displacement behaviours into assessment tools. The framework extends existing international models, demonstrating that while spatial confidence theories hold across contexts, their manifestations vary under the conditions of dense, car-dominated cities with limited formal provision for recreation.

Study Limitations

This study acknowledges several limitations. First, there is potential selection bias, as survey participants were self-identified runners, which may underrepresent non-runners or less active populations. Second, safety concerns constrained nighttime observations, limiting the analysis of evening running patterns. Third, the sample is weighted toward affluent districts, which may not fully capture the challenges faced in working-class neighbourhoods where infrastructure deficits are most acute. Finally, the research focuses primarily on recreational rather than utilitarian running, excluding potential intersections with commuting and everyday mobility.

Future Research

Future work should expand demographic diversity to include a broader range of socio-economic groups and neighbourhoods, offering a more representative picture of Cairo's runnability. Comparative studies across other Global South metropolitan areas could test the applicability of the CURI framework and examine how different cultural, political, and infrastructural conditions shape recreational mobility. Further research should also explore how community-based innovations, such as running clubs and peer safety networks, might be scaled and formalised without losing their adaptive flexibility. Ultimately, the challenge lies in translating empirical evidence into urban policy that balances economic development with health equity and spatial justice.
Answer to the research question: *Cairo is not yet a runnable city. It contains runnable fragments, but systemic inequalities, temporal restrictions, and gendered barriers prevent it from achieving the accessibility, inclusivity, and justice that define true urban runnability*

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