

AMPS Proceedings Series 30

# Cultures, Communities and Design





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## AMPS PROCEEDINGS SERIES 30

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### Cultures, Communities and Design: Connecting Planning, Landscapes, Architecture and People





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# INTRODUCTION

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## Cultures, Communities and Design: Connecting Planning, Landscapes, Architecture and People

'The Countryside' – a polemically generic term Rem Koolhaas has recently used to reposition debates about our cities to those of rural areas. While posited as 'new', it is, in reality, a well established mode of thinking. Through notions such as the peri-urban for example, geographers, sociologists, architects, urban designers and regional economists have all debated the urban-rural relationship for several decades. Under this framework we are obliged to consider the city and its architecture on its own terms, but also address the 'rural' in its particular context and, importantly, explore the parallels and mutual influences at play.

According to this logic, the social, cultural, planning and design issues relevant in our cities find parallels outside the city fringe. The Right to the City echoes concerns about land rights. Gentrification resembles the pressures on arable lands through urban expansion. The sustainability of our buildings and neighbourhoods is connected to debates on the sustainability of rural areas.

Calgary, the host city of the conference from which this publication stems, is a perfect example of all of this. It has heavy industry, a thriving business economy and a growing tourist sector. However, pockets of the city contend with poverty and gentrification. Others suffer disinvestment and require regeneration. Its architecture and public spaces are a combination of the 'spectacular' and the mundane. As a city, Calgary also 'pressures' its surrounding lands. These include the Rockies, the Banff nature reserve, and the First Nations lands of the Blackfoot, the Stoney Nakoda and the Tsuut'ina. As such, it is both a site of opportunity and development in its own right, and the cause of environmental concerns and social pressures, beyond its conceptual and geographic borders.

In responding to these questions the papers contained in this publication demonstrate the range of ways in which the relationship between the city and its surrounding areas impact people and environments in a multitude of ways, each one of which can be seen as an integrated interdisciplinary issue.



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# MEMORY, EMOTIONS AND EVERYDAY HERITAGE IN GOOD ARCHITECTURAL DESIGN PRACTICES

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## INTRODUCTION

The plural and changing conception of the heritage of the built environment in contrast to the eternal monument constitutes one of the great changes in its definition in the 21st century:

*This heritage cannot be defined in a univocal and stable way. You can only indicate the address at which you can be identified. Social plurality implies a great diversity in the concepts of heritage conceived by the entire community; at the same time, the instruments and methods developed for correct preservation must be adapted to the current changing situation, which is subject to a process of continuous evolution.*<sup>1</sup>

This heritage foundation points to the community and each of its members as responsible for identifying the values of said heritage; the spirit of the place, the attachment to the place, the emotion as well-known heritage values, call us to collect this new changing and interrelational situation in the methodological processes.<sup>2</sup>

These emotional assessment processes must inevitably go through experiencing them. This communication addresses our daily landscapes of domesticity, those non-exceptional landscapes, from the claim of their heritage value from the memory of the subject's own experience.

Loyalty to place runs through the history of human domesticity. The liturgical character of living is based on an intense vital and aesthetic experience of the space that we choose as a habitat, building a sensitive union with that chosen and domesticated nature.<sup>3</sup> These connections explain the preeminent role of the memory of those places that we inhabit on a daily basis, even though they do not have an apparent character. The exploration of this emotional facet of the daily experience between the person and the place<sup>4</sup> constitutes a new tool for the comprehensive characterization of the spatial experience. Despite being addressed more and more by various disciplines –sociology, psychology, geography and anthropology–, its study from architecture continues to be a little explored path. Architectural knowledge of living has traditionally been based on an irrefutable trust in reason and has almost completely excluded its emotional nature despite the fact that, since the beginning of the century, the discoveries from Neuroscience of the impossibility of authentic knowledge without the integration of reason-emotion,<sup>5</sup> endorse the need to characterize the environment from the emotions and the corporeal. The academic field, essentially the Anglo-Saxon, currently speaks of the existence of an Affective Turn in which a whole series of research fields converge that claim emotional factors in the social configuration of space.<sup>6</sup> Especially relevant for architecture, since it ensures its comprehensive characterization, diagnosis and regeneration.

Immersed in the force that the exploration of affect has recovered in the last two decades –the object of study of the philosophical tradition from Baruch Spinoza to Gilles Deleuze and Félix Guattari–, this communication focuses on the advances in scientific knowledge of tactics from the affective and from the emotions, passions and sensibilities to analyse a specific facet of domestic nature: that of the recognition of the landscapes of our memory in daily living.

For this, a methodology in two phases is proposed: a theoretical review and an analytical one. In the first place, in the theoretical phase, the advances produced in the scientific field of Environmental Psychology and Human Geography are analysed through the concept of attachment. In the analytical phase, the research focuses on the study of this concept in the processes of anchoring memory in the daily experiences of living.

## **THE CONCEPT OF ATTACHMENT IN ENVIRONMENTAL PSYCHOLOGY AND HUMAN GEOGRAPHY**

The study of emotional knowledge between person and place is a field in which multiple branches of knowledge such as History, Anthropology, Sociology, Architecture, Geography or Psychology concur. However, these last two and specifically two derived from them, Human Geography and Environmental Psychology, have been the disciplines that have had the longest journey. The advances and intersections between them are key in the search for a better understanding of people's emotional ties to place. Human Geography and Environmental Psychology are new directions that offer a very useful scientific perspective for the investigation of the emotional in the architectural knowledge of living.

Among the emotional models of these two disciplines, the concept of attachment has established itself as one of the most ubiquitous constructs studied when measuring the connection between people and place.<sup>7</sup>

The origin of the research around this concept is found in the 1970s, when Human Geography led the studies of the emotional connection of people with the place.<sup>8</sup> However, it was not until the 1980s that he focused attention on the dynamic qualities and evolution of places,<sup>9</sup> helping to shape a new direction in the investigation of place and its mobile nature.

In that same decade, Environmental Psychology assumed the main thrust of research, centering it on the concept of attachment to place: presenting, discussing and debating its base notions.<sup>10</sup> In more recent decades, Environmental Psychology continues to lead research on place attachment<sup>11</sup> although, as Leila Scannell and Robert Gifford point out, it has focused attention on the process by which places acquire meaning in people; the study of the place itself remains the domain of geographers; while that of the person is that of other disciplines such as Sociology and Anthropology.<sup>12</sup>

In recent years, this transdisciplinary framework of place attachment research has moved from a qualitative concern with measuring the emotional intensity that people have for places<sup>13</sup> to a new emerging stage of practical application.<sup>14</sup> One of the most emerging focuses on mobility, migration processes and domestic journeys of memory and their importance in the emotional experience in new domestic landscapes.

## **ATTACHMENT IN THE NATURE OF COMMUTING**

Place attachment has become an analytical tool used by psychologists and geographers to study the processes in which inhabitants undergo environmental changes and their agency to adapt, participate in, or resist these changes. Development-Induced Displacement and Resettlement (DIDR) directly affect more than 15 million people each year around the world,<sup>15</sup> whether they are forced evictions, housing eradications or socio-natural disasters.<sup>16</sup> His study has become the object of analysis by numerous researchers from different disciplines: the work of the psychiatrist Mindy Fullilove has



studied attachment in the context of serial forced displacement in the Afro-American community;<sup>17</sup> Environmental psychology studies by Héctor Berroeta, Laís Pinto de Carvalho, Andrés Di Masso and María Ignacia Ossul Vermehren for the case of housing policy in Chile have analyzed the adverse effects of the rehousing processes of certain sectors of the population towards social housing on the outskirts of the city during the nineties.<sup>18</sup>

Cases such as the above show the interest and originality of the study of the mobile nature of the experience of living through emotional knowledge and memory. As Scannell and Gifford<sup>19</sup> point out, experiences of a place are strongly informed by memories of that place –memory landscapes– and by comparisons with other places. Affect, cognition, and behaviour are infused as the dimensions of attachment processes present in them. This research delves into this field of knowledge from two approaches:

- on the one hand, the migratory processes in which the memory of the lost original nature stands as a construct of attachment to new places, those new found domestic natures;
- on the other hand, focusing on the domestic natures found in migratory processes, and how the proposals from the architecture of new urban factors of destination begin as alien, however, in the long term becoming determinants in the construction of new emotional ties.

To go through these two points of view, a methodology of two case studies is applied: the first case is representative of the first of the approaches; while the second responds to the second of them. The two cases correspond to different spatial fragments, but they share a common nature: they are places with no apparent character and anonymous, places in which the daily nature of their spaces has been shaped after the displacement processes of their citizens. The two cases stand as a crucible for the study of the processes of emotional displacement of the landscapes of memory. These two experiences emphasize the corporal facet, the temporal factors, the social dynamics and the cultural expectations through the particularity of the movement incorporated in the processes of change of place.

### **Case 1\_Daily landscapes of rural memory<sup>20</sup>**

Since the end of World War II, American cities have attracted large numbers of new residents from rural areas seeking employment opportunities in their main urban centres. Since the early 1980s, Atlanta, Denver, Houston, Las Vegas, Salt Lake City, and Phoenix have topped the lists of fastest growing urban areas in the United States.

The study of these experiences of living migrated from rural to urban culture, like the previous case, help to understand the construction of emotional links with places in light of the memory of past experiences. This first case study addresses the way in which inhabitants displaced from rural to urban areas face negative factors of the city by incorporating non-urban practices into their daily lives. As John A. Jakle argues, small-town rural places can offer a nurturing, family-like atmosphere where residents personalize their relationships and forge strong ties to the place.

In this framework of study, the geographer Jeffrey Smith has analysed the migratory processes of Hispanics from the north of New Mexico and the south of Colorado to the urban centres of Albuquerque, Phoenix, Denver, Pueblo, Española or Santa Fe.

Before the 1940s, these Hispanics were primarily self-sufficient farmers and ranchers. As Sarah Deutsch<sup>21</sup> documented, although many Hispanics took itinerant jobs in the potato and sugar beet industries of northern and central Colorado, they always ended up returning to their small village. However, in the 1940s, despite a deep attachment to home, Hispanic families began to move to regional urban centres that offered better-paying jobs, a trend that continued and became widespread in the mid-1960s.<sup>22</sup> Due to the deep feelings that Hispanics have for their family roots and for their people, many continue to own rural land, to which they return on weekends, holidays and vacations,

which denotes the maintenance of its rural ties. Smith has found in these migratory experiences a window in which to examine the links between rural and urban places. Hispanic culture is ideal for analysis because of the extraordinarily deep bonds Hispanics have with their hometown. These migrated domestic natures offer an opportunity to examine how the attachment to rural places is manifested in the new enclaves through various expressions of rural memory: painted murals, funerary preferences, popular music or even artistic recreations of ditches.

*Murals.* As Larry Ford and Ernest Griffin argue,<sup>23</sup> ethnic groups personify their landscapes, emphasizing their shared identity. The creation of public murals is one of those forms of personification of Hispanic populations. As Daniel Arreola explains,<sup>24</sup> in the absence of written records, the creation of murals in public spaces is a means of cultural empowerment that strengthens group memory.

Many rural Hispanic communities use this type of artistic representation both in private homes and in public spaces. These types of scenes have migrated with the inhabitants from rural villages to the urban of the host cities. Like a window that connects with that longed-for landscape, the murals thus act as a *trompe-l'œil*, capable of transferring that emotion, but also that daily rural landscape to the urban space. These are the cases, for example, of the murals of San Luis, Colorado, painted by the well-known regional artist and sculptor Carlos Sandoval (figure 1); or the Leopoldo Romero in the suburb of Atrisco, on Albuquerque's west side.



Figure 1. Mural by Carlos Sandoval in San Luis, Colorado, depicting various aspects of everyday life in the rural community. Photograph by Jeffrey S. Smith, 2000.

*Funeral preferences.* Graham Rowles and Malcolm Comeaux reflect on another way of valuing this mobile nature of dwelling:<sup>25</sup> that which occurs even after death. His studies show that, cross-culturally, people aspire to rest in places with which they have a special emotional bond, which in the case of the Hispanic population is usually the hometown. Through various interviews with local funeral homes, Smith<sup>26</sup> concludes that in both Española, Santa Fe, and Pueblo, Colorado, a high percentage of deceased are sent to their homelands.

*Folk music.* Music is one of the purest forms of cultural expression. Music plays an integral role in the expression of tastes, preferences, fears and fantasies. It serves as an effective means by which memories are consolidated in memory.

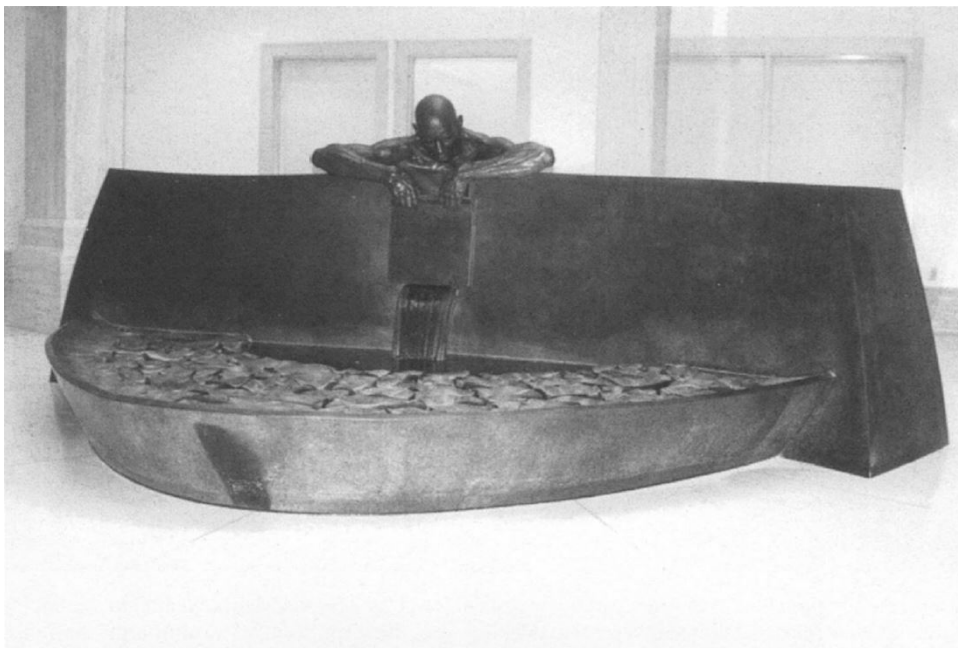
For many ethnic groups, music is a vital source of cultural identity. In traditional rural Hispanic communities, music accompanies local life. From melodious church hymns to ballads sung during parties and family celebrations, music elevates Hispanic culture. Hispanic rural communities have the custom of having small bands and groups in their rural towns that play music at festive moments. A particular musical type of this social group is common in them: the so-called corridos –popular

musical tales—. This type of music has moved today with migrants and intone the life of rural villages in the urban environment.

The public radio station KANW, in Albuquerque and Santa Fe, has echoed this situation and plays, with enormous audience success, songs that are representative of the music traditionally found in the towns of northern New Mexico.

*Ditches.* In the semi-arid climate of the southwestern United States, the water supply proved vital to the colonial Spanish. They quickly realized that ditch irrigation was one of the most effective means of diverting spring snowmelt and summer rains to farmland.<sup>27</sup> Today's crops are irrigated with the same ditches used by the Spanish ancestors. Thus, acequias have become an indispensable tool of agrarian life in rural Hispanic villages, allowing residents to cling tenaciously to an otherwise inhospitable environment.

These ditches have also somehow migrated from rural to urban with the displaced Hispanic population. In the urban areas of Española and Santa Fe, locals have commissioned artwork that reminds them of the role of acequias in Hispanic culture. This is the case, for example, of the Acequias Monument on the campus of Northern New Mexico Community College, in Española; or Tim Hooton's sculpture *Acequia* (Figure 2) in the governmental heart of the New Mexico Capitol Annex.



*Figure 2. Acequia, a sculpture completed in 2000 by Tim Hooton and on display in the New Mexico Capitol Annex. It represents a man who opens the door of a ditch. Photograph by Jeffrey S. Smith, 2000.*

Ultimately, the empirical evidence demonstrates that the mural paintings on the walls of the neighborhoods of the rural village ideal, the preference for burial in the hometown cemetery, the daily presence of local music in the new cities, and the recognition of rural ditches as a cultural element of the city, reinforce daily living by invoking the strong ties that Hispanics have for their small rural towns. These cultural expressions transfer their roots, reinforcing their identity in the new locations and giving them feelings of comfort, security and belonging.

Concrete creative expressions of a certain group constitute evidence of how memory can be incorporated into residential mobility processes. These types of practices can be applied to more complex urban experiences, in which an emotional approach to residential nature has a place.



## Case 2\_Non-exceptional landscapes of social neighborhoods<sup>28</sup>

These investigations are also pertinent in the European urban-architectural context. The second case study focuses on the period of rural exodus that occurred throughout Europe during the second half of the 20th century, which led to the proliferation of social neighborhoods in the urban peripheries under the standards of the Modern Movement. This period in Europe, like the previous cases, offers an opportunity to examine the emotional construction and deconstruction resulting from massive migratory movements.

In the case of Spain, since the early fifties, with the gradual international recognition of the Franco regime and the normalization of relations with the rest of the world, the country entered a period of progressive economic development. Many citizens left their homes in rural areas and moved to the cities in search of new job opportunities and better living conditions, giving rise to one of the periods of greatest migratory activity in the entire Spanish 20th century. Between 1940 and 1970 Madrid tripled its population and cities like Barcelona or Seville almost doubled it –Madrid went from 1,088,647 to 3,188,297 inhabitants, Barcelona from 1,081,175 to 1,745,142 and Seville from 312,123 to 548,072–.<sup>29</sup>

There is a vast scientific analysis of the social housing built in this period. Although these studies have been focused on analyzing its quality and aptitude parameters, assuming a substantial advance in a technical-objective sense,<sup>30</sup> they have barely explored its assessment from the emotional facet of knowledge. This research framework offers the opportunity to complete the technical studies with a new horizontal view from the emotional-patrimonial point of view in architecture, providing a new view from the mobile nature of housing. Through the analytical evaluation around affection and attachment and focusing on its methodological vector, the post-war social housing neighborhoods built between 1950 and 1970, allow us to characterize the emotional ties built in them after the arrival of the migrants, constituting a new social, architectural and heritage value.

In this context, the object of study is the neighborhood of El Carmen in Seville, which responds to the application in Seville of the *Francisco Franco Union Housing Plan*.<sup>31</sup> The body in charge of its materialization was the Home and Architecture Trade Union (OSHA), which became from then on the true protagonist of the construction of industrial estates throughout Spain.

The transdisciplinary study carried out by the Andalusian Institute of Historical Heritage in the \_re-Habitar project, and specifically, the profound anthropological work<sup>32</sup> in it, reveals a unique possibility of delving into the emotional facet of knowledge in the study of the social neighborhoods. Crossing the results of this work with the latest research on analytical studies of attachment to place, it can be determined that although the anthropological analysis does not specifically study the affection or attachment of neighbors, it can be implicitly deduced correspondences. From the conclusions of the Social History of the Neighborhood, it is concluded that the "transfers [were] traumatic to the neighborhood [as] a product of the neighborhood segregation of the historic neighborhoods." These migratory movements, as in the previous example, allow an analysis from the new trends of emotional knowledge. If the six types of places to which people feel attached according to recent research by geographer Jeffrey S. Smith are compared with the findings of the anthropological study on \_re-HABITAR in Neighborhood Discourse Domains, many implicit relationships can be found that they denote the propitiousness of the study. The following table compares the six Smith indicators with the direct conclusions of the anthropological study in the El Carmen neighbourhood:<sup>33</sup>

Jeffrey S. Smith Place Attachment Indicators	Anthropological studies in project _re-HABITAR (IAPH)
Secure places	Assimilation of the neighborhood to a large family: support network and neighborhood cooperation.
Socializing places	Small square and park as great centers of daily activity.
Transformative places	Urban equipment where important events take place: theater and school.
Restorative places	Urban planning with easy access to two specific daily activities: Triana and city-centre; For its part, the park between schools and the park on Calle Jarana also become key elements of contact between the neighborhood and nature.
Validating places	Spaces detected by anthropologists: Triana, Centro, plaza, AA.VV. Our Lady of Carmen.
Vanishing places	The anthropological study concludes that the collective imaginary of the neighborhood offers great speeches of resistance to processes of socio-environmental degradation of the neighborhood.

*Table 1.*

From this comparison it can be concluded that there are various urban-architectural components that have contributed and continue to contribute to the formation of emotional ties between the neighbors and the social neighbourhood. From the interviews carried out in the anthropological study to the so-called base neighborhood –the first to arrive in the neighborhood and who continue to live there today– it is found that the feeling of identity that was forged in the place alleviated the traumatic and difficult process of occupation of a neighborhood originally with many shortcomings and disconnections with the rest of the urban fabric of the city. Unlike the two previous case studies – where the memory of the past places was imposed on the urban reality of the places of destination– in the case of the occupation of the neighborhood of El Carmen, an introverted process was produced in which a new collective identity in a place with no previous memory (figure 3). The new residents of the Barrio de El Carmen came from diverse local realities –there were no displacements of entire groups– which meant that the displaced domestic memories were individual and not shared. The collective memory of the neighborhood, originally non-existent and even starting from these individual memories, had to crystallize from the urban factors of the neighborhood.



*Figure 3. Young people walking through the public spaces of the Barrio de El Carmen in Seville. Photography by Fernando Alda for the \_re-HABITAR project of the Andalusian Institute of Historical Heritage (IAPH).*

The neighborhood of El Carmen, like all the social neighborhoods of this period, constitutes a very interesting broth for the study of emotional knowledge in architecture and urban planning. The heritage value of this working-class residential fabric is increasingly recognized. However, its intangible value, which goes beyond urban planning and derives from the values of individuals who move, remains a field to be explored from the architectural field.

## **CONCLUSION**

This trip through America and Europe, embarked on the approaches of different scientific fields to the exploration of the emotional facet of knowledge, highlights the role that memory plays in the processes of relocation and human settlement, throwing a new original look at living and patrimonial valuation: that of the memory of its daily landscapes.

As is evident, various disciplines are beginning to instrumentalize the capacity of memory to transfer the original domestic nature until it is implanted in a present habitat. Its analytical and methodological vectors begin to take hold as an emerging field of knowledge in disciplines such as Environmental Psychology and Human Geography. Its practical applicability, however, remains an unknown path. Architecture, a discipline that has remained practically on the sidelines of these investigations, must enter this field and can contribute to this third vector through creative processes that contribute to the incorporation of this emotional facet. It can be confirmed that the research carried out in this direction is focused on collective landscapes; the intimate landscapes of living, however, remain an exciting field of study to be tackled.

## NOTES

<sup>1</sup> United Nations Organization, *Krakow Charter of 2000. Principles for the conservation and restoration of built heritage*. [https://en.unesco.org/sites/default/files/guatemala\\_carta\\_cracovia\\_2000\\_spa\\_orof.pdf](https://en.unesco.org/sites/default/files/guatemala_carta_cracovia_2000_spa_orof.pdf)

<sup>2</sup> International Council on Monuments and Sites, *Declaration of Quebec on the preservation of the spirit of the place*, 2008. From its original version “QUÉBEC DECLARATION ON THE PRESERVATION OF THE SPIRIT OF PLACE”, translation commissioned by the CMN, year 2013. Approved in Quebec, Canada, on October 4, 2008. <https://icomos.es/wp-content/uploads/2020/01/13.DECLARACION%20N-DE-QUEBEC.pdf>

<sup>3</sup> Mar Loren-Mendez, *La Casa en Frigiliana. Manifiesto rudofskiano de la domesticidad contemporánea*, Bernard Rudofsky. Desobediencia crítica a la Modernidad, ed. Mar Loren-Méndez y Yolanda Romero, 30-52 (Granada: Centro José Guerrero y Diputación de Granada, 2014).

<sup>4</sup> The contents developed around the State of the Question are based on the investigations: José María Galán. “The production of architectural presence” (Doctoral thesis in Architecture. Higher Technical School of Architecture, University of Seville, 2017). and Mar Loren-Méndez “Teacher Research Project” (documentation presented on December 3, 2019 for the competition for access to the University Professors body, Architectural Composition Area, Resolution of the University of Seville on July 29, 2019, BOE on August 7, 2019).

<sup>5</sup> See at this point the scientific production of Juhani Pallasmaa, Harry Francis Mallgrave, Iain McGilchrist, Bruno Zevi and Steen Eiler Rasmussen.

<sup>6</sup> The term was coined by Patricia Ticineto Clough and Jean Halley, *The Affective Turn: Theorizing the Social* (New York: Duke University Press Books, 2007) and endorsed in the collection of articles of Melissa Gregg y Gregory J. Seigworth.

<sup>7</sup> See the analytical methods proposed in B. Bynum Boley et al., “Measuring place attachment with the Abbreviated Place Attachment Scale (APAS)”, *Journal of Environmental Psychology* 74 (2021); Bernardo Hernández, M.Carmen Hidalgo and Cristina Ruiz, “Theoretical and methodological aspects of research on place attachment”, in *Place attachment: Advances in theory, methods and application*, Lynne Manzo and Patrick Devine-Wright, ed., (New York: Routledge, 2014), 125-137; Adam C. Landon et al., “Psychological Needs Satisfaction and Attachment to Natural Landscapes”, *Environment and Behavior* 23, vol. 1 (2020); Christopher M. Raymond et al., “The measurement of place attachment: Personal, community, and environmental connections”, *Journal of Environmental Psychology* 4, vol. 30, (2010): 422-434; and Leila Scannell and Robert Gifford, “Defining place attachment: A tripartite organizing framework”, *Journal of Environmental Psychology* 1, vol. 30 (2010): 1-10.

<sup>8</sup> Edward Relph, *Place and Placelessness*, (Londres: Pion Limited, 1976) and Yi-Fu Tuan, *Topophilia: A Study of Environmental Perceptions, Attitudes, and Values*, (Englewood Cliffs. NJ: Prentice Hall, 1974).

<sup>9</sup> See in this second period the scientific production of John Agnew, Mona Domosh, Doreen Massey, Robert Sack, Edward Soja and Nigel Thrift.

<sup>10</sup> See the investigations of Irwin Altman, *The Environment and Social Behavior: Privacy, Personal Space, Territory, Crowding* (Monterey, California: Brooks/Cole Publishing Company, 1975); Harold M Proshansky, “The City and Self-Identity”, *Environment and Behavior* 2, vol. 10 (1978): 147-169; Harold M. Prohansky et al., “Place-identity: Physical world socialization of the self”, *Journal of Environmental Psychology* 1, vol. 3 (1983):57-83; y Sally Shumaker y Ralph Bouncer Taylor, “Toward a Clarification of People-Place Relationships: A Model of Attachment to Place”, in *Environmental Psychology: Directions and Perspectives*, Nickolaus R. Feimer y E. Scott Geller, ed., (New York: Praeger, 1983), 219-251.

<sup>11</sup> See research over the past two decades in Irwin Altman and Setha M. Low, *Place Attachment* (New York: Plenum Press, 1992); Silvia Aricchio et al., “Loving, leaving, living: Evacuation site place attachment predicts natural hazard coping behaviour”, *Journal of Environmental Psychology* (vol. 70, 2020); Carren Clarke et al., “Place attachment, disruption and transformative adaptation”, *Journal of Environmental Psychology* (vol. 55, 2018): 81-89; Maria Lewicka, “Place attachment: How far have we come in the last 40 years?”, *Journal of Environmental Psychology* 3 (vol. 11, 2011); Per Gustafson, “Meanings of place: Everyday experience and theoretical conceptualizations”, *Journal of Environmental Psychology* 1, (vol. 21, 2001): 5-16; Bernardo Hernández, M.Carmen Hidalgo and Cristina Ruiz, “Theoretical and methodological aspects of research on place attachment”, in *Place attachment: Advances in theory, methods and application*, Lynne Manzo and Patrick Devine-Wright, ed., (New York: Routledge, 2014), 125-137; Leila Scannell and Robert Gifford, “Defining place attachment: A tripartite organizing framework”, *Journal of Environmental Psychology* 1 (vol.30, 2010): 1-10; Carena J. Van Riper et al., “The antecedents of place attachment in the context of an Australian national park”, *Journal of Environmental Psychology* (vol. 61, 2019): 1-9.

- <sup>12</sup> Referring to the triple “P” (Place, Person and Process) defined by Leila Scannell and Robert Gifford, “Defining place attachment: A tripartite organizing framework”, *Journal of Environmental Psychology*, 1, vol.30 (2010): 1 - 10.
- <sup>13</sup> See the works of Bernardo Hernández, M.Carmen Hidalgo y Cristina Ruiz, “Theoretical and methodological aspects of research on place attachment”, in *Place attachment: Advances in theory, methods and application*, Lynne Manzo y Patrick Devine-Wright, ed., (New York: Routledge, 2014), 125-137; Maria Lewicka, “Place attachment: How far have we come in the last 40 years?”, *Journal of Environmental Psychology* 3, vol. 11 (2011); Daniel R. Williams, “Beyond the Commodity Metaphor” (revisado: “Some Methodological Reflections on Place Attachment Research”, in *Place attachment: Advances in theory, methods and applications*, Lynne Manzo y Patrick Devine-Wright, ed., (Londres: Routledge, 2014), 89-99.
- <sup>14</sup> Leila Scannell and Robert Gifford, “Comparing the Theories of Interpersonal and Place Attachment, in *Place attachment: Advances in theory, methods and applications*, ed. Lynne L. Manzo y Patrick Devine-Wright (Londres: Routledge, 2014) , 23-36.
- <sup>15</sup> Natalie Bugalski and David Pred, *Reforming the World Bank Policy on Involuntary Resettlement* (Washington: Inclusive Development International, 2013).
- <sup>16</sup> Howell Baum, “Planning with half a mind: Why planners resist emotion”, *Planning Theory & Practice* 4, vol. 16 (2015): 498-516, DOI 10.1080/14649357.2015.1071870.
- <sup>17</sup> Mindy Fullilove, “Revisiting «The Frayed Knot»: What happens to place attachment in the context of serial forced displacement?”, in *Place attachment: Advances in theory, methods and applications*, ed. Lynne Manzo y Patrick Devine-Wright (Nueva York: Routledge, 2014), 177-192.
- <sup>18</sup> Studied extensively in the research of Michael Strong “Influence of memory on post-resettlement place attachment”, in *Explorations in place attachment*, Jeffrey S. Smith, ed. (New York: Routledge, 2018), 19-32; Isabel Brain Valenzuela et al., “Vivir en Campamentos: ¿Camino hacia la vivienda formal o estrategia de localización para enfrentar la vulnerabilidad?”, *EURE* 36, 109 (2010); Pía Mora et al., “Disyuntivas en la política habitacional chilena”, *NOTAS PÚBLICAS* 3 (diciembre, 2014).
- <sup>19</sup> Leila Scannell and Robert Gifford, “Defining place attachment: A tripartite organizing framework”, *Journal of Environmental Psychology* 1, vol. 30 (2010), DOI 10.1016/j.jenvp.2009.09.006.
- <sup>20</sup> The contents developed here are based on the research of Jeffrey S. Smith, “Rural Place Attachment in Hispano Urban Centers”, *Geographical Review* 3, (vol. 92, 2002): 432-451.
- <sup>21</sup> Sarah Deutsch, *No Separate Refuge: Culture, Class, and Gender on an Anglo-Hispanic American Southwest, 1880-1940* (New York: Oxford, 1987).
- <sup>22</sup> Richard Nostrand, *The Hispano Homeland* (Norman: University of Oklahoma, 1992).
- <sup>23</sup> Larry Ford and Ernst Griffin, “Chicano Park: Personalizing an Institutional Landscape”, *Landscape* 25, vol. 2 (1981), 42-48.
- <sup>24</sup> Daniel D. Arreola, “Mexican American Exterior Murals”, *Geographical Review* 74, vol. 4 (1984): 409-424.
- <sup>25</sup> Graham Rowles, “A Final Journey: Post-Death Removal of Human Remains. Tijdschrift voor Economische”, *Sociale Geografie* 78, vol. 2 (1987): 114-124.
- <sup>26</sup> Jeffrey Smith, “Anglo Intrusion on the Old Sangre de Cristo Land Grant”, *Professional Geographer* 51, vol. 2 (1999): 170-183.
- <sup>27</sup> Jeffrey Smith et al., “La Cultura de la Acequia Madre: Cleaning a Community Irrigation Ditch”, *North American Geographer* 3, 1 (2001): 5-28.
- <sup>28</sup> The investigations of this second case study are based on the investigations carried out by the Instituto Andaluz del Patrimonio Histórico (IAPH), “Investigación histórica y obsolescencia urbana, el caso de la Barriada del Carmen (Sevilla): Criterios de intervención a partir del Manual de Buenas Prácticas”, in Proyecto \_re-HABITAR, Patrimonio Contemporáneo y Tecnología (Sevilla: IAPH y Consejería de Cultura de la Junta de Andalucía, 2018); and Instituto Andaluz del Patrimonio Histórico (IAPH), \_re-HABITAR, Patrimonio Contemporáneo y Tecnología (Sevilla: IAPH y Consejería de Cultura de la Junta de Andalucía, 2018). Scientific and editorial coordination: José Luis Gómez Villa. Scientific coordination: Marta García de Casasola Gómez. Editorial coordination: Blanca del Espino Hidalgo. Historical studies on the proliferation of social neighborhoods in Spain start from the first; the second analyzes the anthropological study carried out in it.
- <sup>29</sup> Data consulted in the National Institute of Statistics of Spain (INE), “Alteraciones de los municipios en los Censos de Población desde 1842” (Consulted 10<sup>th</sup> may 2018).
- <sup>30</sup> Carlos García Vázquez and Elisa Valero Ramos, *Intervención en barriadas residenciales obsoletas: manual de buenas prácticas*, (Madrid: Abada Editores, 2016).
- <sup>31</sup> The Trade Union Housing Plan, together with the Social Housing Plans, was two emergency initiatives approved in 1954 that came before the National Housing Plan of 1955.

<sup>32</sup> Instituto Andaluz del Patrimonio Histórico (IAPH). *\_re-HABITAR*, Patrimonio Contemporáneo y Tecnología, (Sevilla: IAPH y Consejería de Cultura de la Junta de Andalucía, 2018).

<sup>33</sup> See at the same time the projects Jeffrey S. Smith, *Explorations in place attachment* (New York: Routledge, 2018) and Raquel Almodóvar, “Estudio Antropológico. Memoria fase IV *\_re-HABITAR*”, in *\_re-HABITAR*, Instituto Andaluz del Patrimonio Histórico (Activos Digitales IAPH, 2018).

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# ALTERNATIVE HOUSING MODELS IN ACTION. PUBLIC-COMMUNITY ECOSYSTEMS FOR TERRITORIAL AND BUILDING STOCK REGENERATION FOR LIVING.

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## INTRODUCTION

### **New needs for access to building stock for living: public-community ecosystems.**

In recent decades, the deregulation of markets, the consequent commodification dynamics, and the financialization of real estate and territories are some of the main criticalities in Europe, exacerbating trends already underway since the 1980s. These create unprecedented socioeconomic inequalities and amplify exclusionary dynamics.<sup>1</sup> Many assets available to communities have undergone a long and paradoxical process of deconstructing their social, cultural, and political nature, transforming them into financial and liquid assets.<sup>2</sup>

Hence the emergence of new needs and prerogatives of access to assets and building stock, of primary importance access to housing and the “new housing question”,<sup>3</sup> which give rise to challenges posed by a mature society characterized by social fragmentation, a significant demographical shift, and a new need for community linked to dynamics of growing relational poverty.<sup>4</sup>

The research observes a new pluralism and renewed public-private ecosystems that work for the regeneration of land and building stock for living. In response to new needs these ecosystems produce a strand of practices that concretize values such as subsidiarity, democracy, and cooperation. They bring to light dynamics that unhinge the discipline of public-private collaboration based on the opposition between general interest and the economic convenience of the individual. Here, the private actor is collective and cooperative and is triggered by active communities committed to regaining rights and produce new simpoietic<sup>5</sup> models and settlement possibilities. In contrast, the public actor is aware of obsolete dynamics and the need for transition and enters into a transformative circuit of mutual learning with communities and other public actors to actualize its tools.

In particular, the research proposes an interpretation of communities as key ingredients<sup>6</sup> in the triggering of heritage regenerative processes, in the production of alternative housing models, and in the activation of the public actor in favor of a new centrality of the use value of heritage. Community-led action can trigger innovative approaches and new cultural visions capable of solving deep-rooted problems<sup>7</sup> starting from the actual utilization needs of the city, villages, and territory.

The research proposes a comparative method of analysis introducing and comparing two emblematic European cases, both inspired by the Canadian housing cooperatives: La Borda housing cooperative, in Barcelona's and the Kraftwerk residential cooperative in Zurich.

The chosen cases show different ecosystems and approaches to the production of alternatives. Barcelona and Zurich are two cities with common objectives: safeguarding their real estate assets and territories from long-term speculative logic, widening access to housing, and proposing new, more inclusive housing models<sup>8</sup> to relaunch a virtuous market.

On the other hand, they have been able to accept, with different processes and timelines, requests and projects deriving from civic actions from below, processing them proactively.

With many difficulties, typical of civic engagement and activism, and contradictions, due to the multifaceted and multi-actor nature of housing,<sup>9</sup> communities in chorus with public actors and other necessary stakeholders succeed in producing alternatives to the traditional housing market. The alternatives consist in:

- Alternatives to the housing production and development process, introducing housing within a social and solidarity market of actors;
- Architectural alternatives that stimulate new spatial typologies for private housing and the community, shared and collective structures, introducing flexible, gender-friendly, cluster apartments types;
- Alternatives to social fragmentation, producing new forms of community, new elective family forms, intergenerational social mixite.

## **LA BORDA HOUSING COOPERATIVE IN THE SANTS NEIGHBOURHOOD AND THE NEW POLICIES FOR THE RIGHT TO HOUSING IN BARCELONA.**

A severe housing crisis affected Catalunya and Barcelona from 1997 to 2007, as a consequence of a deregulated market favored by public policies and which led to a growing dynamic of housing exclusion from urban centers.<sup>10</sup>

In 2011, the Barcelona City Council, under the new Colau junta, produced a trend reversal<sup>11</sup> with the production of measures to support new and more inclusive housing projects.

The context of the crisis favored the emergence of new housing models and the participation of new actors where a renewed cooperative movement has been seen since 2011 that has already produced four generations of right to use cooperative housing with twenty-five new projects.

An emblematic case in this sense is the Sants neighborhood in Barcelona, with its community and cooperative network that has triggered a strong movement related to the urban renewal of the former industrial site of Can Batlló. They strongly promoted affordable housing development through an alternative, non-market-driven model.

The residential cooperative La Borda project arises in this context and is a development self-organized by the local community. The city perceives it as a pioneering and experimental project that has opened new paths for producing affordable and socially inclusive housing and possible public-cooperative relations.<sup>12</sup> La Borda has chosen and uses a legal and economic model uncommon in Spain, the right to use cooperative housing, together with an alternative process of funding. Together with Barcelona municipality, La Borda studied international models of housing alternatives, declined in several legal or economic frames, and produced affordability and social inclusion.<sup>13</sup> This comparative study helped build the right formula for the city. The cooperative models analyzed are mainly the Canadian cooperatives system with its 2.339 cooperativess with 96.742 houses that represent the one percent of the national housing total with a very rooted public-cooperative system; the Uruguayan and Danish cooperative movement and legal systems; the Mietshauser Syndikat in Germany and Radical Routes in Uk.<sup>14</sup>

Delving into the legal and economic model chosen by La Borda, the right to use cooperative housing, derived from the Danish Andel Model, was created with the social and political objective of preserving the long-term housing affordability and de-commodification of buildings by allowing a

mixed economic strategy in which the cooperative is the legal owner of the property, while the residents and members of the cooperative are collective shareholders and individual tenants.<sup>15</sup>

Building credit for the project's development is also crucial for understanding the project's sustainability. La Borda found strong and social partners interested in experimenting with alternative models of access to credit, not-for-profit, such as the solidarity financial services cooperative Coop57 and the 'social capital fund' and participatory bonds.

The architectural design of La Borda, by the architects' cooperative Lacol, works to produce affordability, prioritizing communal spaces over private ones, innovating the housing typology, making it flexible, and choosing a low-tech, self-build approach. The building program proposes modular housing units with a flexible structure and community spaces such as a kitchen-dining room, laundry room, multi-purpose space, guest rooms, care space, storage space on each floor, and terraces. The whole is articulated around a central courtyard, a sizeable relational space reminiscent of the 'corralas,' a typology of popular housing in central and southern Spain.

The community developed around the project comprises 28 intergenerational nuclei, some of whom come from the municipal social housing lists and some activists from the Can Batllò neighbourhood, like the architects Lacol. The residents participated in the design, construction, and self-promotion process of the building they now use and manage. They are organized into a general assembly and several working groups or commissions that manage the many tasks.

The success of this pioneering project was made possible by the commitment of the Barcelona City Council, which has prioritized affordable housing production over the last ten years.<sup>16</sup> The municipality's housing department created an internal infrastructure to react to the city's critical settlement situation, founding three new institutions and promoting a Right to Housing Plan. One of the most critical steps, also realized thanks to civic pressure, was to grant the use of public land to develop cooperative housing projects through direct contract or competition, as happened in 2015 for La Borda and 2016 for Princesa.<sup>17</sup>

The reception of right to use cooperative housing by municipal administrations allows for expanding the stock of affordable public housing in the municipal territory within a plan that favors a social and cooperative economy. Within the municipality's housing division, the presence of figures such as architect and professor J. M. Montaner and his team has allowed the development of an architectural evaluation committee. The latter set up architectural competitions to trigger an evolution of housing typology in response to new social needs and accessible trends without gender discrimination.

Following a great deal of civic pressure, the municipality also produced an important policy that makes parking spaces in social housing projects non-compulsory. This new parking regulation allowed for a ten percent cut in the construction cost of La Borda.<sup>18</sup>

La Borda is now a nationally and internationally recognized emblematic case, winner of numerous architectural and social awards. New local actors, such as La Dinamo, La Ciudad Invisible, Coop 57, and Lacol, produced, together with Barcelona's housing department, a local model for the right to use cooperative housing, retracing good practices and mistakes of La Borda.

From this pioneer building, new cooperative housing projects have already been realized in Barcelona, such as La Balma in Poblenou, Sotrac in Sants, Le Raval in Manresa, La Closca, and La Morada for the La Dinamo Foundation, but also internationally.

## **THE KRAFTWERK RESIDENTIAL COOPERATIVE, UTOPIA AND COOPERATIVE HISTORY IN ZURICH.**

In 1907, the first housing cooperatives were established in Zurich, building on various social experiences that were already firmly rooted. Switzerland's largest and historically most industrialized city was not subject to the social polarization and gentrification processes typical of other European

metropolises. Precisely because of a hundred year tradition of non-profit housing.<sup>19</sup> Zurich's cooperative movement, which found a new impetus in the 1990s, is one of the city's leading promoters of welfare, and housing cooperatives own approximately nine percent of the city's building land and eighteen percent of its housing stock, promoting its de-commodification in the long term.<sup>20</sup> These offer collective spaces of extraordinary architectural quality and rent in the city center at a third of the market price, supporting experimental forms of living together.<sup>21</sup>

In Zurich, in the aftermath of the crisis of the 1980s and 1990s, innovations in housing quality were mainly driven by two actors. On the one hand, the citizens, particularly the activists of the social left who opposed the interference of finance in the new urban development processes, triggered a new development of the city housing cooperatives. On the other hand, the public actor supported this process with a new production of instruments.<sup>22</sup>

It was in this context that a group of architects, philosophers, and artists, A. Hofer, C. Thiesen, M. Blum, H. Widmer, began the search for a different way of inhabiting the city, one that was more communitarian and capable of realizing a solidarity-based and sustainable economic system. In 1983, the philosopher Widmer published the book *Bolo Bolo*, which became a true cult, proposing a utopian, or pragmatopic,<sup>23</sup> housing model whose protagonists are intentional communities, the *bolo*. The book was a founding text for the Kraftwerk cooperative, one of the most emblematic cases of Zurich neo-cooperative with a strong solidaristic and inclusive basis. The cooperative has developed three large settlement projects, Kraftwerk 1 Hardturm, Heizenholz, and Zwicky South, with two-hundred-forty-eight units and approximately seven-hundreds inhabitants.

Kraftwerk 1 Hardturm is the pioneer project of the cooperative. It comprises four residential buildings with commercial, associative, and coworking spaces. At the same time, the resident community comprises households with a very varied composition, thirty-one percent of families, sixteen percent of couples, twenty-five percent of singles, and twenty-eight percent of shared housing by students, the elderly, and the disabled. Two overlapping distribution systems articulate its typological organization, the Le Corbusier type, i.e., duplex on the model of the Unité d'Habitation and the Loos type, i.e. a Cluster-Wohnungen of twelve rooms on staggered floors or the Wohnen Gemeinschaft with nine rooms.

The economic model of the Zurich cooperatives, taken up by Kraftwerk, privileges the use value over the commodity value of real estate, which means that the cooperative is the legal owner of the property. In contrast, the residents and members of the cooperative are collective shareholders (i.e., they pay an entry fee or membership fee) and individual tenants (the monthly fee for the use of their flat). It is thus a hybrid model between collective ownership and renting in which residents, as long as they are cooperative members, have the right to use the dwelling. This notion of use value has been institutionalized in Zurich's municipal governance for over a hundred years. This is the case's most remarkable and forward-looking aspect.

Cooperatives have preferential access to credit, supported by municipal legislation, which, through indirect measures dating back to the early 1900s, acts as a guarantor with local banks and allows cooperatives to expose themselves with only six percent of equity (as opposed to twenty percent) to access finance. The cooperatives have also produced two self-managed instruments, the cooperative savings bank and the solidarity fund that collects contributions to help residents in case of financial need.

From the point of view of internal governance, the Zurich cooperatives consider members as co-owners, co-managers, and users of the housing asset simultaneously. The statutes define the co-management rules, which generally respect the democratic principle 'one member, one vote'. The commitment to non-speculation is an integral part of the statute of every Zurich cooperative, "collective action for shared benefit rather than competition for individual gain".<sup>24</sup>



New architectural strategies have emerged in the experiences of neo-cooperativism, which produce innovative private-collective spatial configurations that meet the needs of a mature society. These include the reduction of the size of housing units and the increase of common spaces. The placement of intermittently used spaces outside the flat and Cluster-Wohnungen (micro-units assembled with large and shared spaces) combines conventional flats and triplex solutions.

At the neighborhood scale, cooperatives are proposed as new urban micro-centers that seek to bring urban qualities to new developments in the suburbs.

Models of social entrepreneurship and architectural innovation merge in Zurich to produce sustainable, non-profit residential alternatives. These affect design innovation that produces, on the one hand, affordability and, on the other high-quality architecture that reverses the neo-liberal paradigm, according to which housing built for low-income groups should be of lower architectural quality.<sup>25</sup>

Important to note is that the sustained growth of cooperatives over the last century in Zurich has only been possible thanks to the link with the municipal administration.<sup>26</sup> The city council has developed instruments to grant public land use, defiscalise building charges for community spaces, and introduce spatial and social innovations in the municipal regulation.

Around 2010, with the market deregulation, access to land for cooperatives in Zurich depended on the municipality's action, which activated leases granted for sixty-two years, extendable up to ninety.

In order to extend this possibility, the Special Area Plan or Gestaltungsplan, was produced, which is necessary to plan the re-zoning of large areas and useful to allocate public land for the development of cooperatives.

In addition, the city made it mandatory for assignees of public land to go through an architectural competition. The principles of the competition were developed in 1877 by the Swiss Association of Engineers and Architects, SIA, and are still valid today.

Another significant accomplishment of the city of Zurich was the acceptance of new typological models for living, such as the cluster apartments, the floor plan, the WG in its regulations, and the inclusion of new family models producing an epochal shift.<sup>27</sup>

In addition to Kraftwerk, the city is dotted with numerous other innovative and award-winning cooperatives such as Kalkbreite and Mehr als wohnen, Nena and Karthago.

The model produced in Zurich can be transferred to other places by reproducing the approach of the activists, citizens, municipal officials, cooperative organizations, and architects. They use legal, financial, and regulatory instruments and architectural imagination to promote a non-speculative form of housing development and new forms of co-existence.

## CONCLUSIONS AND NEW LEARNING

Through the analysis of the cases reported here, communities can be understood as a key ingredient in the production of new housing models and the public-community relationship as a fundamental element for the sustainability of such projects in the short and long term.

The article reveals how community-led housing models are generally pilot projects, which imply a great civic effort on the part of communities to counter the commodification of heritage and produce housing affordability, social inclusion, and new forms of shared living. These models, which aspire to generate not-for-profit real estate developments within the traditional market, stimulate the activation of the public actor and manage to include it in a mutual learning circuit to produce innovative and inclusive processes.

These processes value the built heritage as a pivotal node for constructing a more inclusive and economically accessible city. They do not focus on its economic value and trends that expel inhabitants in favor of the big finance groups, ex. Blackstone. These projects support local

communities in processes of social and civic valorization for the liberation of the heritage in the long term from the dynamics of the speculative market.

On the one hand, the intervention of the public actor turns out to be indispensable in activating these projects and in the possibility of their reproduction.<sup>28</sup> In fact, the cases analyzed highlight the capital importance of specific tools and practices produced by the public actors, such as the concession of public land for the development of cooperative housing, the implementation of policies that produce tax relief, and reduced charges for community-based projects, the facilitation of access to credit, and a push for architectural and typological quality of housing.

What emerges is how non-speculative processes produce innovation in the choice of legal and economic models in which use value prevails over market value, promoting affordability and low rent and expanding access to housing. These economic and legal models shift the value axes triggering more inclusive social behavior through the use value, civic use, and common goods.

It also emerges how there is room for typological and architectural innovation in the not-for-profit dynamics with the compulsory introduction of architecture competitions that innovate the residential typology to give space to a more collaborative living. Public-community processes also produce greater social inclusion - low-income groups, young people (an example is young architecture firms experimenting in pioneer projects)- and territorial with developing peripheral areas or derelict buildings.

Over the last fifteen years, the need for alternative housing models pushed local communities to produce new models for access to a more affordable and socially inclusive houses. Communities around Europe and the globe work together in a mutualistic way in order to transfer these functional models. Because of this, in the last decades, many international networks for community-led housing production have arisen and are working together to make it possible to enlarge the right to housing and produce fairer cities.

## NOTES

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- <sup>3</sup> Manuela Olagnero, *La questione abitativa e i suoi dilemmi*, (Meridiana, n. 62, 2008), 14-18.
- <sup>4</sup> Olagnero, 14-18
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- <sup>15</sup> Andrés, Cabré, 412-432
- <sup>16</sup> Mara Ferreri, Lorenzo Vidal, "Public-cooperative policy mechanisms for housing commons". *International Journal of Housing Policy*, (2021), doi: 10.1080/19491247.2021.1877888.
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## TOWARDS ETHICS-MAKING *OUTSIDE* THE PACIFIC

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### INTRODUCTION

In her essay *L(o)osing the Edge*, poet Teresia Teaiwa wrote of the importance of nurture:

We ground ourselves in the “Pacific” – large and fluid as that space is – we strive to make, keep, and nurture political, cultural, intellectual, emotional connections with each other and others.<sup>1</sup>

Nurture is needed in a Pacific marked with increasing flows of resources, labour and investments, which culminate as real estate developments that perpetuate centuries-old territorial dispossessions. This fuels tensions between white-settlers, non-white settlers, and Indigenous Peoples. Xenophobic spaces and the spatialisation of xenophobia ensue.

How to counter this violence? One impulse is to defer to Asia Pacific Economic Cooperation or United Nations scale plans to codify land and water usage, and inter-nations relations. However, global-scale plans often need funding agencies that expect financial returns, which reiterate political and economic structures of oppression. Given this susceptibility, this paper argues that resistances against extractive transpacific flows may politically need to be *outside* the official U.N.-type plans. Besides, no totalising blueprint is implementable when the Pacific is *more than its map*. The Pacific is *outside* itself.

Considering how land developments are both produced and shaped by spatial and material conditions, it seems apt for spatial designers (architects, planners, landscape architects and interior-designers) to be address this violence, and ponder how to dwell ethically in the Pacific. However, it is neither to prescribe what Pacific ethics must be spatial-territorially and judicially, nor to speak for the many Pacific Peoples. Instead, the paper aims to:

- **Introduce conceptual tools to initiate a reconfiguration of designers’ mode of thinking / practice.** It is for designers to develop bodies-minds<sup>2</sup> that are more compossible with the Pacific Peoples’ many struggles, if and when designers are invited. However, designers should refrain from masterminding what Pacific Peoples’ struggles must do. Tactics and interventions are only realisable in the *actual* event of the Pacific People *and* designers’ encounters. For this reason, these conceptual tools are constructed to have neither direct (utilitarian) applicability, nor espouse any specific urbanism. An ethical Pacific remains *outside* a plan’s predictable space and time. Nonetheless, one still strives *with* the large and fluid Pacific.

The paper’s aim will be explored through the following sections:

- **Interrogating Transpacific Flows** briefly explores how some land developments diminish historically disadvantaged peoples’ powers of resistance and creativity. This section also suggests transpacific-solidarity’s usefulness to struggles against extractive economies.

- **Conceptual Tool #1: Towards the Pacific's "Outside"** draws from philosopher Gilles Deleuze's notion of the "Outside". Evoking the Pacific's Outside forces a necessary engagement with unmappable cartographies, which thrusts thinking and action to embrace anxious forces, relations and experimentations as productive occurrences. Here, the designer's body-mind is contiguous with the continually transforming Pacific. The designer is pushed outside the figure who deliberates on *what must be*. This challenges our reliance on predetermined end-states and models, often predicated on good-bad binaries.

- **Conceptual Tool #2: Ethics as Inventing New Behaviours between Bodies** expands on the "Outside" to push ethics beyond an abidance to pre-set binary codes, and reconceives ethics as an invention of new behaviours between bodies that allow each body to increase its capacity to act, create and transform, despite the extractive economies. Politically speaking, resisting an immutable transpacific code of conduct can be considered as being attentive to the transforming and transformative Pacific and its peoples. Resistance and ethics is learning how to dwell *with* Pacific movements beyond the order of the *planned*.

## INTERROGATING TRANSPACIFIC FLOWS

In late 2019, my mother found a Singapore website selling Vancouver condominium units. Expectedly, xenophobic narratives of foreigners (Read: Chinese) displacing "locals" in a Sinicised Vancouver surfaced. Lacking in the media was how these sales resulted from one group of settlers (E.g., Non-Indigenous developers, designers and government agencies) selling Indigenous lands to another group of settlers (immigrants and speculators). One should note, Singapore is also a settler state where the Indigenous Malays are now a minority. This lens suggests finances used to buy Vancouver condominiums may come from developments that had historically divested Malays from their lands.

The illegal taking of the lands of two groups of Pacific Peoples set the structures that facilitates value-extraction from one Commonwealth territory in order to extract value from another. Planning and architecture contributed to the Empire's legal (*terra nullius*) and spatio-economic (real estate) structures. The East India and Hudson Bay Companies' ghosts haunt today's fluid transpacific flows.<sup>3</sup> As philosophers Michael Hardt and Antonio Negri in their book *Empire* noted, today's imperium is centreless empire that "encompasses a spatial totality" and operates on all registers of the social order.<sup>4</sup>

Now, if extractive economies are ever-mutating, the resistances may have to be equally flexible to trace and combat them. Rather than a finalised map for what a *just* Pacific must be; it might be more useful for designers to work with Pacific peoples to attend to emerging sites of struggles and develop alignments between these sites. These alignments may trace the same paths as the Transpacific flows.<sup>5</sup> (See Figure 1) For example, how can Singapore-Malay's sovereignty struggles connect with the Pacific Northwest's "Land Back" movement? How might this connection redraw the transpacific trade?

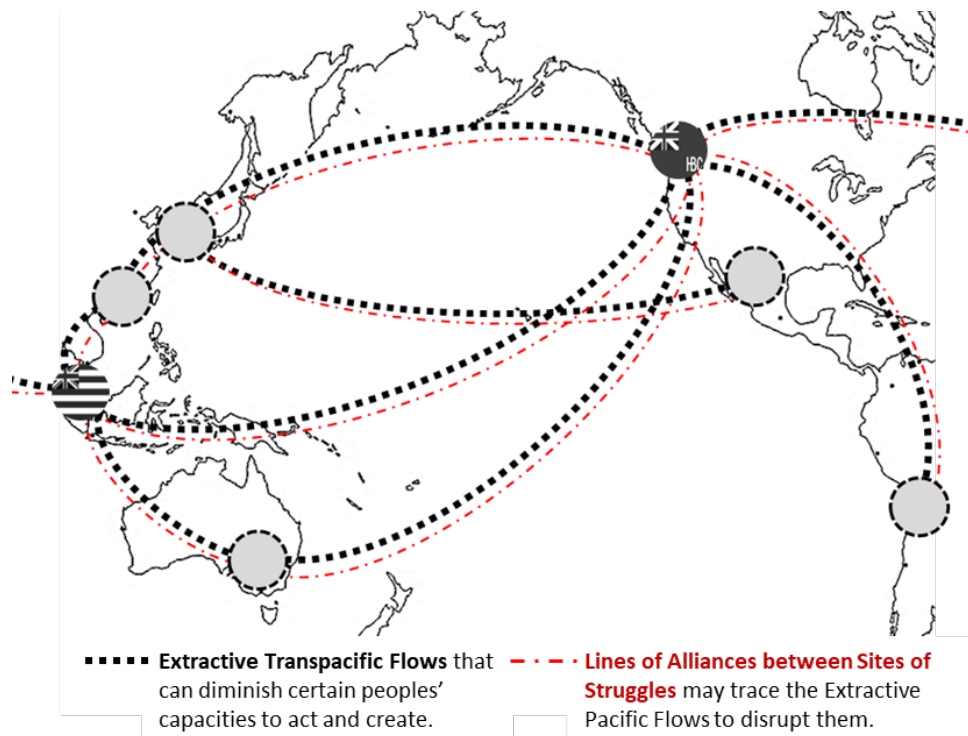


Figure 1. Alliances between struggles may trace the lines of extractive transpacific flows.

What can be unbuilt and rebuild to foster *other* paths of resistance? But given how market forces can easily repackage various urbanisms for further extraction, a refusal of idyllic urbanisms and even end-states may be necessary.<sup>6</sup> Cultivate a resistance *outside* that which is easily imageable.

### CONCEPTUAL TOOL #1: TOWARDS THE PACIFIC'S "OUTSIDE"

For many designers, the word "outside" typically denotes a spatial binary: A landscape is outside a house. Even a Mobius-strip is a discrete object outside and separated from the "empty space" around it. In these situations, the outside is the landscape or Mobius-strip's negative, its "other". Inside-outside binaries champion Cartesian representation, which makes things more plannable. However, to *think* the Pacific is to encounter its irreducibility to an object or "other" to be grasped entirely.

Imagine this scenario of encountering/thinking the Pacific's multiplicity, intensity and politics: At a sustainability conference, some urban designers encounter activists protesting against palm-oil plantations in Southeast Asia. Perhaps it was the activists' songs of home being deforested by slash-and-burn. Perhaps it was the heaviness of knowing design's oft-relied on "Three Pillars of Sustainability" only mitigates but cannot stop deforestation. Without the "Three Pillars" as model, the designers can no longer envision a sustainable *Pax Pacifica*. Must *Pax Pacifica* have an image? What to say to the activists' stare in the heartrate-rising midday heat? Here, the designers are washed into the anxious forces that criss-cross a Pacific reterritorialised by real estate and plantations. Simultaneously, the designers can also be flooded with the Pacific Peoples' songs for new potentials. What does this mean for designers in government-service and corporations? Become Bartlebys and refuse work? *What else?* How can this "What else" liberate? Can the designers' minds and bodies, *together with* the activists' songs inkling at yet-known potentials, stretch the span of the anxious Pacific in new ways? How may thinking move away from a reliance on the Three Pillars solution, and instead edge towards experiments to produce new ways to form problems and questions? A will to experiment on how to *move with* the Pacific's movements seems necessary to conceptualise spaces



and relations against extractions in an expanding Pacific. A move toward the *Outside* of the images of the future dictated by established models.

The Pacific's "Outside" is not a mappable Cartesian space. Rather, it *is* connections and tendencies splintering toward evermore spaces, relations and behaviours. The Pacific's outside is not its spatial binary/Other. Furthermore, to *think within* the Pacific stretches thinking beyond the limits of the designer's "I". Gilles Deleuze's writings on the notion of the Outside is useful to expand this "space": The Outside is not a fixed limit but a moving matter animated by peristaltic movements, folds and foldings that together make up an inside: they are not something other than the outside, but precisely the inside of the outside... The Unthought is therefore not external to thought but lies at its very heart.<sup>7</sup>

Thinking does not depend on a beautiful interiority that would reunite the visible and articulatable elements, but is carried under the intrusion of an outside that eats into the interval and forces or dismembers the internal.<sup>8</sup>

For Deleuze, this "Outside" is composed of "peristaltic movements" that collectively form what he calls the "Unthought". But this Unthought is not the absence of thinking. Rather, Deleuze considered this Unthought as the *actual* event of thinking. For Deleuze, thinking is not merely fitting what one encounters into pre-established categories. Reliance on pre-established categories is simply recognition. Instead, thinking emerges *in* those uncategorisable encounters which *moves* the body-mind (including synapses, twitches, etc.) toward creating new ways of articulating the experience.

Deleuze continued to note, thinking *is* also a "sense" that is undivorceable from the event of a body interacting and shifting with the often-uncomfortable forces that are moving through it. The body is *already always* contiguous with these forces. The "other" (ocean, soil, Peoples, etc.) is never an object of any one body's gaze. Rather, the intertwined bodies form another kind of perceptual field that may unsettle the cogito. A body in movement *is* thought. What amounts to "thinking" is produced in the event of bodies intermingling, experimentally, to develop new ways to *express* their shifting relations. Of course, there is no ideal relations that precede these immediate acts of relating. What is *expressed* has no prior image or model before the act of *expressing*. The "expressed" is also the "expressing". For Deleuze, thinking is being "expressed in the expressing". Ideas do not exist prior to their material-corporeal articulation/expression. Thinking is creative; it immanently creates possible worlds and ideas which "does not (actually) exist outside of that [the expressing event] which *expresses* it."<sup>9</sup>

Thinking goes beyond representation of given ideas. Thinking creates ideas as the body moves through the material world. Thus, one may say when a designer draws, writes, walks, communicates, emails – in short, material-corporeal acts – they are in a process of thinking-living. Similarly, one thinks-acts through the Pacific's materiality-corporeality.<sup>10</sup> Yet, the designer also senses the Pacific breaking the edges of drawings, texts, emails, and even the designer's concept of an altruistic self/profession. Thinking is not just *in* these peristaltic (often material-corporeal) movements; *thinking is these movements*. Thinking's space is *outside* that of any planned Pacific.

Insofar as thinking is an event of brains, bodies and forces moving with each other, *expressing* new articulations of their varying composition, then thinking *is* these peristaltic movements. Even the presumed stable mind (the "beautiful interiority"), along with any concepts and ideas it supposedly produces, is also *one with* these peristaltic movements. (See Figure 2)

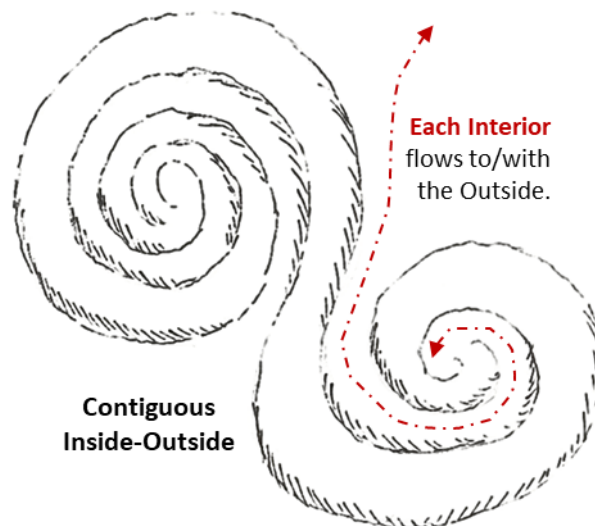


Figure 2. Concepts, spaces and even one's "mind" may appear distinct, but "distinction" are particular ways the "Outside" was looped to form "interiors". Each loop remains contiguous with the "Outside" and its peristaltic movements.

This query follows: How are concepts (and actions) produced amidst these peristaltic movements? One can acknowledge that peristaltic movements can slow down, allowing certain forces to congeal in more lasting relations. But congealment and speed depend on what forces are present and how these forces intersect. Sara Ahmed gave a useful spatial image for how forces intersect. Ahmed noted, when entering a room, one can "feel the atmosphere". However, how this atmosphere is felt "depends on the angle of our arrival". Moreover, the room is never neutral: "The atmosphere is already angled." The room *angles* you as well, and so forth. Yet, no one can know in advance how one's angled entry *meeting* the angled room and the angled bodies within will play out in terms of how everything will eventually interact, and what actions may follow.<sup>11</sup> However, knowing the angle of entry or intersection is crucial to begin to foster useful actions. This is not to hold absolute control of the outcome, but to ensure the necessary forces, especially spatio-political ones, are present to target the territorial extractivisms at hand. Nonetheless, this paper proposes it is possible to curate forces so that they can intersect in ways to slow down and form relations that can propel the bodies involved to *transform together* in ways these bodies have not before, something 'common' can be said to be taking shape between the bodies. A shared process of concept-making. This 'common' thing may take the form of shared actions or shared ideas or concepts. A common *outside* the established common-sense categories.

Thinking persists *because* of the anxieties from knowing living ethically in the Pacific is always *outside* of today's morality. Anxieties press thinking to renew connections, experiments and inventions. In an anxious Pacific, there is no choice but invention. No choice but to *incomplete* the incompletable plan.

## CONCEPTUAL TOOL #2: ETHICS AS INVENTING NEW BEHAVIOURS BETWEEN BODIES

For many fighting land dispossessions, there is no resolution until stolen territories are returned. However, this does not mean an absence of ethics in the striving against empire. This paper suggests a possibility of cultivating an ethical life even without a finalised Pacific-scale resolution culminating as moral-law. Moreover, any plans to totalise all codes of conduct between all Pacific peoples, settlers, earth and non-humans remains impossible. Deleuze's writings on ethics *outside* an immutable morality can be useful to advance this discussion:

The difference is that morality presents us with a set of constraining rules of a special sort, ones that judge actions and intentions by considering them in relation to transcendental values (that is good; that is bad...); ethics is a set of optional rules that assess what we do, what we say, in relation to the ways of existing involved.<sup>12</sup>

Ethics is a question of knowing whether relations (and which ones?) can compound directly to form a new, more “extensive” relation, or whether capacities can compound more directly to constitute a more “intense” capacity of power... How do individuals enter into composition with one another in order to form a higher individual, ad infinitum? How can a being take another being into its world, but while preserving or respecting the other’s own relations and world?<sup>13</sup>

Deleuze distinguished morality from ethics. Morality codifies behaviours according to Good-Bad binaries. (E.g., Obeying Bylaws is “Good”; disobedience is “Bad”.) Morality’s operative word is “No”. For example, by-laws often function through prohibition. Prohibition relies on predetermined relations and values between bodies. Unsanctioned, unexpected actions are considered “bad”. In contrast, ethics involves crafting new modes of living. *Being* ethical entails deciphering how to encounter other bodies to advance experimentations and inventions, which in turn foster new values, relations and even valuation-systems that can increase these bodies’ capacity to act and create. For Deleuze and Guattari, this includes “groping experiments” which are “not very respectable, rational or reasonable”; yet necessary for bodies to invent new movements and conducts with each other.<sup>14</sup> Being ethical is a creative, if not aesthetic, endeavour.<sup>15</sup>

To expand more on how bodies form caring relations with each other, one may explore the word “ethics” through its etymological cognate “ethology”, which pertains to how animals and humans form behaviours to aid each other. Philosopher Simone Bignall wrote,

Ethology indicates the “compossibility” of individuals whose natures agree, and who can unite to form a compatible association that will mutually enhance their respective capacities. An ethological interpretation therefore enables individuals to actively select their associations, or strive to make their existing associations compatible, in order to develop a richer unity with greater power.<sup>16</sup>

The virtuous<sup>17</sup> in the encounter of bodies is the way bodies invent new relations to advance each other’s power to create voices, new positions and spaces.<sup>18</sup> Virtue is the potentials growing amidst the encounters of bodies rather than value based on pre-established lineages and identities.

Looking at counter-colonial solidarity through a Spinozist lens, Bignall suggested, solidarity can be one of different bodies, activisms, cultures encountering and working together to produce joy or active affections, despite different affiliations, kinships, socioeconomics, territories and historical relations to empire. It is developing new socialibilities that enable “joyful compossibility”.<sup>19</sup> A solidarity from cultivating joyful encounters despite the Pacific’s expansive geography and demography.

Questions like “what or where is a transpacific ethics?” warrant responses like, “it is everywhere and nowhere, and always not-yet.” Working towards the “not-yet”, or *to potentiate potentialities*, may be one way to live ethically in the Pacific. Ethics is immanent to, and *moves with*, the moving relations amidst Pacific bodies, rather than imposed by a Pacific master-planner.

## CONCLUSION

Extractive flows are not the Pacific’s only fate. Resistance and ethics can be forged through modifying these flows, so that they bear different relations to Pacific Peoples and Lands. And, because these flows are amorphous, resistance and ethics cannot rest on any idyllic Pacific urbanism.<sup>20</sup> (See Figure 3)

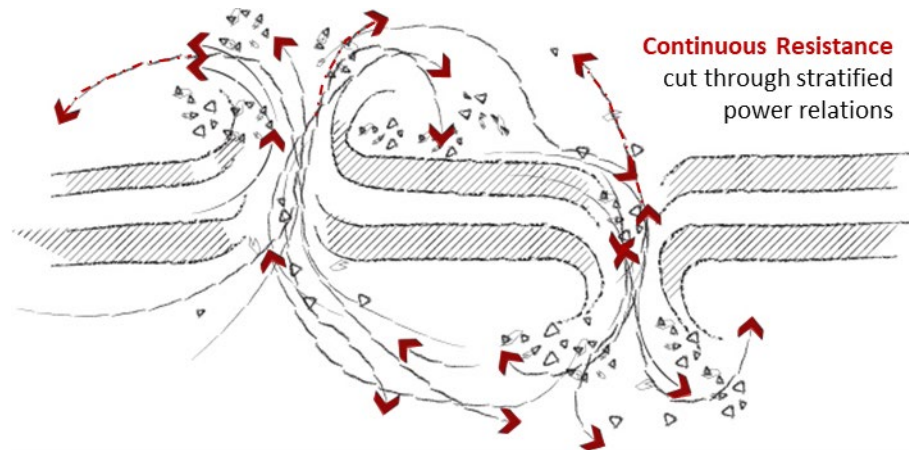


Figure 3. Resistance may entail resisting an idyllic Pacific realm. Resistance is a renewal of itself.

An ethics of the Pacific is always in-the-making. There are two ways to interpret this “in-the-making”:

- On the one hand, this ethics is always located *in* the actions of the Pacific Peoples (and designers) collectively working to make new relations, space and materials that fosters new modes of care for each other. Ethics emerges in the present.
- On the other hand, this ethics is also located *outside* of these *present* collective actions. How so? It is *outside* because it is not just *in* today’s actions, but also *in* future actions. The precise form of future actions cannot be predetermined until they take place. And, if ethics is always located in actions, and insofar as there are always future actions, then there is always an ethics outside of what today’s actions (and concepts) can visualise or spatialise. The Pacific’s ethics is both present and *carried to* a space-time *outside* of any plans. Ethics has a yet-articulatable potential beyond even what counts as ethical today. Ethics is always an ethics-to-come.

Between the Pacific Ocean, hinterlands, coastal-hubs and Peoples is an *Outside*. This Outside is the interiority of ethical spacing.

## NOTES

<sup>1</sup> Teaiwa's essay "L(osing the Edge" explored how in the process of writing about the Pacific and its many peoples and struggles, one can come to a realisation that the Pacific has no edge. The field of Pacific Cultural Studies, as well as the Geopolitical area-study of the Pacific, cannot be readily bound by edges. Teaiwa asked, "Is the edge always held at the edges of the Pacific? Is it possible to have an edge in the world's largest ocean?" Similarly, edges may seem to loosen when we write about the Pacific; certainly, when we write from inside the Pacific. When we write inside the Pacific, edges dissipate and the Pacific becomes its own "outside" – a space without proper edges, making the in-out demarcation difficult. Even as a theorist theorises a certain theoretical or geopolitical position, other positions (personal, pre-personal, inexact ones, etc.) open up. See Teresia Kieuea Teaiwa, "L(osing the Edge." *The Contemporary Pacific* 13, No.2 (Fall 2001): 343. doi.org/10.1353/cp.2001.0071.

<sup>2</sup> This paper uses the term "body" to include the "mind". This use follows Baruch Spinoza's notion of body-mind unity. In his posthumously published book *Ethics* (1677), Spinoza suggested the so-called mind's materiality make it inseparable from the body: "The object of the idea constituting the human mind is the body, or a certain mode of extension which actually exists, and nothing else." What Spinoza may have meant here is that the mind, and what amounts to thinking, is produced insofar only because the body exists as movements and relations (what Spinoza called "extensions") with other bodies. He further argued that the "man" is constituted not first from the mind, then followed by the body. Rather, "man consists of a mind and a body." As such, the "human mind is united to the body... No one will be to understand it (the mind) ... unless he first knows adequately the nature of our body." See Baruch Spinoza, *Ethics*, trans. Edwin Curley (London and New York: Penguin Books, 1996), Book II, Proposition 13's Correlate and Scholium.

<sup>3</sup> Many writers have written about the pervasiveness of extractive economies. For example, psychoanalyst-philosopher Félix Guattari suggested it is now an "integrated world capitalism", which can produce a "multiplication of antagonisms", but none of these antagonisms can be easily addressed through the "traditional dualist oppositions" that have guided more conventional politics and cartographies evoked in previous generations of resistance. Instead, opposition to extractive economies cannot rely just on traditional workers-unions, and local-vs-global politics. Guattari suggested, opposition may have to cultivate a "dissensus" that traverses a multiplicity of sites, struggles, fidelities and socio-economic strata. See Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Simon (New York: Continuum, 2000), 32–33.

<sup>4</sup> Michael Hardt and Antonio Negri, *Empire* (London and Cambridge, MA: Harvard University Press, 2000), xiv–xv.

<sup>5</sup> This paper suggests those alignments to build solidarity between different sites of resistance and struggles may trace the same paths as the paths made by extractive transpacific economies. This notion is partly drawn from Donna Haraway's "staying with the trouble". Haraway starts with the concept of "sympoiesis" which means "Making-with". "It is a word for world-with, in company." (58) One may read sympoiesis as a process where it is possible to work *with* the present or current systems, but not to comply with these systems. Instead, it is to use these systems as the materials to create new functions and bodies that may even counter these systems themselves. One may also extend this reading to mean resistances do not have to begin with some ideal imaginary realm as a "base" to combat the present extractive economies and spaces. Haraway goes on to suggest, "Sympoiesis is a carrier bag for ongoingness, a yoke for becoming with, for staying with the trouble of inheriting the damages and achievements of colonial and postcolonial natural cultural histories in telling the tale of still possible recuperation." See Donna Haraway, *Staying with the Trouble* (Durham and London: Duke University Press, 2016), 58, 125.

<sup>6</sup> Many writers have thoroughly addressed the politics of refusal. For a comprehensive review of the politics of refusal, see Carole McGranahan, "Theorizing Refusal: An Introduction." *Cultural Anthropology* 31, No.3 (August 2016): 319–332. doi.org/10.14506/ca31.3.01.

<sup>7</sup> Gilles Deleuze, *Foucault*, trans. Sean Hand (London and New York: Continuum, 1988), 96.

<sup>8</sup> Deleuze, *Foucault*, 87.

<sup>9</sup> Gilles Deleuze, *Logic of Sense*, trans. Mark Lester & Charles Stivale (London & New York: Continuum, 1990), 307.

<sup>10</sup> This paper's notion of thinking-acting through the Pacific's materiality-corporeality is partly drawn from geographer's concept of an "ecology of thought". Here, writing after Deleuze and Spinoza, Thrift proposed that thinking is actually *in* an "ecology of thought". However, this ecology is not distinct from the so-called thinking-subject. The thinking-subject is part of this ecology. Thinking has a materiality and corporeality. Thrift wrote, "what used to look like an internalisation of thought and subjectivity now appears as a gradual propagation of

organised functional properties across a set of malleable media." Thought is produced from an ecology of different bodies, rather than thought (the idea of the subject) preceding bodies. See Nigel Thrift, *Non-Representational Theory: Space | Politics | Affect* (London and New York: Routledge, 2008), 59.

<sup>11</sup> Sara Ahmed, "Happy Objects." In *The Affect Theory Reader*, eds. Gregory J. Seigworth and Melissa Gregg (Durham and London: Duke University Press, 2010), 37.

<sup>12</sup> Gilles Deleuze, *Negotiations*, trans. Martin Joughin (New York: Columbia University Press, 1995), 100.

<sup>13</sup> Gilles Deleuze, *Spinoza: Practical Philosophy*, trans. Robert Hurley (San Francisco: City Lights Books, 1988), 126.

<sup>14</sup> Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), 41.

<sup>15</sup> Deleuze, *Negotiations*, 100.

<sup>16</sup> Simone Bignall, "Postcolonial Agency and Poststructuralist Thought: Deleuze and Foucault on Desire and Power." *Angelaki: Journal of the Theoretical Humanities* 13, No.2 (April 2008): 140. doi.org/10.1080/09697250802156125.

<sup>17</sup> For Spinoza, being virtuous is a form of joy or blessedness. Blessedness is produced when a body expresses its nature and power to persevere and advance itself by being in relations with other bodies, but where these relations do not degrade each other's capacities to thrive. Insofar as Nature strives to persevere, and all bodies are part of Nature, when a body strives to also persevere, this body is in concert with Nature's nature. The body *understands* Nature, by being Nature. Knowing Nature's, and bodies that comprises Nature, powers to persevere (to find ways to act and create) is itself a virtue. This kind of joy, or blessedness, comes not as a result of being rewarded for following instructions or rules on how one must conduct virtuously. Virtue is not a specific code of conduct. To power to persevere, to act and create is itself a virtue, for Spinoza. "Blessedness is not the reward of virtue, but virtue itself." See Spinoza, *Ethics*. Book V, Proposition 42.

<sup>18</sup> Planning theorist Bjorn Sletto noted, one way spatial design professions like Planning can take into account of how different bodies could come into caring and ethical relationships with each other is to recognise and embrace what these relationships can eventuate as – the precise ethical relations – cannot be mapped in advance. One does not map care before actual caring. Thus, planners and designers can embrace the "unpredictable interjections" that can disturb the planners and designers' script and established identities. Relationships exceed, or go outside, the map or plan. Hence, the space planners and designers may anticipate is more "a space of thinking-action" that produces ethical encounters beyond the codified life. For Sletto, it is also to recognise that bodies can, independent on the planner's intentions, come into what Deleuze calls "Good Encounters" with each other; this involves one body transferring or working out a power (albeit "power" not in the legalistic meaning of dominance-over, but more a power to act) to another body, so that both bodies experience an increase power of acting. See Bjorn Sletto, "Disruptive Encounters and Affective Planning in Santo Domingo, Dominican Republic." *Planning Theory & Practice* 13, No.4 (December 2012), 593-627: 616-620. doi.org/10.1080/14649357.2012.731210.

<sup>19</sup> Bignall, "Postcolonial Agency and Poststructuralist Thought", 141.

<sup>20</sup> To not insist on some final idyllic realm that Pacific struggles will eventuate to is also to resist the idea that there is some sort of idyllic past of the Pacific. Sure, there was a time before European powers reached the Pacific. There was a time before Chinese maritime trades evolved into its present-state involving contested Pacific islands and real estate speculations. Sure, there may be a time when these dominating powers would have subsided. But it is not for designers (especially designers of settler descent) to prescribe when and how, or what image this "post-colonial" would take. The political project to not reconstruct the future as if it can be wholly known, is also one to not reconstruct the past as if the past has existed unproblematically. It is instead to open up the future. Philosopher Beth Lord's advice on how Nature could be approached serves as a useful analogy to how the future and past can be approached. Lord wrote, "This vision of a politics of the Earth is not a 'return to nature', or an attempt to reconstruct nature prior to human intervention. This position doesn't call for the removal of civil states or the reversal of human progress. Like all political structures, the 'terrestrial state' is an artificial public thing, a *res publica*, that must be established by its members and made to work through laws and institutions." For Lord, it is to recognise States or governments are themselves artificial and hence reconfigurable. And, more importantly, to cultivate joyful living through increasing one's capacities to act and create, rather than lament and fear due to the current ways of life that may very well be detrimental to the natural ecology and hence to us humans. See Beth Lord, "We are Nature", *Aeon*, <https://aeon.co/essays/even-the-anthropocene-is-nature-at-work-transforming-itself>

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# EXPLORATION FOR AN INCLUSIVE APPROACH FOR HISTORICAL SETTLEMENT CONSERVATION - A CASE OF AGRAHARAS, KERALA, INDIA

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## INTRODUCTION

Society describes a group of people who live in a defined geographical area interacting with one another and sharing a common culture. Culture is often defined as a group's shared norms (or acceptable behaviors), beliefs, practices, and guidelines for living and evolving human values. This includes all we bring under intangible culture conditioning the rules and input that make up a society function effectively in built environments called as settlements.

In the southernmost states of India, viz Kerala and Tamil Nadu exist a specific cultural as well as architectural entity known as "Agraharams",<sup>1</sup> which were the dwelling places of the Brahmin community involved in religious works associated with temples. Of these the unique Architecture of Agraharams of Kerala stand as a celebrated remnants of the glorious vernacular settlement that has evolved to satisfy the socio, cultural, religious needs of Brahmins. Presently they are a declining cultural layer resulting in loss of valuable heritage. These settlements which once embodied frugality and simplicity now seem to mirror the changing times. There is definitely a need to conserve and preserve the heritage of our historical possession as they are original, very distinct in its character, beauty, style and in its use. Such a concept has to be weaved into these Agraharam settlements for their preservation. But the participation of the community,<sup>2</sup> one among the stake holders is a must in ensuring a sustainable mode of conservation as they are not the recipients but plays a key role in shaping the place and its identity. This paper explores the gap in the establishment of certain regulations, including standards and procedures for reviewing and approving development of such traditional settlements in the high density developing urban areas.

## Cultural heritage

A society is a group of individuals with continuous social interaction who could be sharing identical geographical or social domain. The dominant culture in the society generally encompasses established religion, language, traditions, values and customs. It invariably becomes the norm for the society as a whole. Culture refers to the way we understand ourselves as well as members of a society including language, rituals, practices etc. It is a complete way of life of a human being. It is dynamic and changes keep happening. It can be transmitted socially from one generation to another. It is a total socially acquired life style. In a multicultural society dominant culture may be promoted either



deliberately or naturally. Presently cultural heritage is threatened in a big way due to rapid urbanization and modernization. Cultural heritage acts as a medium of evolving social values, and its conservation can help to manage rapid social changes and mitigate their negative effects.<sup>3</sup>

### **Agraharams**

The Architecture and spatial planning of each settlement depicts the celebration of life of mankind based on socio cultural, religious and functional needs. Agraharam is a vernacular settlement that has evolved to satisfy the socio, cultural, religious needs of a particular caste based group namely the Brahmins. A Brahmin is a member of the priestly class of the Indian sub-continent and belongs to the upper class of the society. Agraharams belongs to the vernacular type of settlements ethnic in nature as it relates to a sizable group of a set of people sharing a common and very distinctive religious, linguistic and cultural heritage. It is a settlement comprising two rows of houses facing each other and ends in a temple evolved to facilitate the work and lifestyle of a Tamil Brahmin household. The development of this linear housing cluster had its roots in various social and climatic aspects in addition to the obvious spiritual significance. Agraharam were typically designed to suit the joint family system and later divided onto the heirs. They are the manifestations of a settlement that evolved to satisfy the work and ways of life of a Brahmin community. The Agraharams were introvert settlements often open to the members of the particular caste group the Brahmins only. However, within the introvert settlements there were designed built and open spaces that catered well to the needs of the settlers. Hence Agraharams are reflection of a community and built by the people.

### **Urbanization & Heritage**

Residential typology has changed over time mainly due to the forces of urbanization which is a process that cannot be stopped. It occurs due to rise in natural population, increased migration from rural to urban areas and different needs and aspirations. Urbanization accelerates growth and is highly beneficial economically but poses threat by way of alteration to historical areas in the city. Urbanization often ignores preserving the heritage characteristics unique to a place resulting in loss of both tangible and intangible heritage aspects. Thus it becomes the responsibility of the stakeholders to preserve this uniqueness for the future generations. Development is inevitable but unplanned intrusions, misguided governance, lack of awareness all combine together to pose severe threat too. Thus there is an obvious reflection of scientific expertise versus social inclusivity, public benefit versus private rights, state intervention versus market forces, conservation versus development etc

### **Conservation**

Historical areas often reflect the evolution of a society and its identity. But there is a definite change in the attitudes of the people of different age groups presently due to modernization. Making heritage should be made more accessible on a wider social level platform which will enable its acceptance as a very viable option for the general public, politicians, decision-makers, contractors, developers and others in general. The substantial stock of built heritage to deal with, the economic dynamism in cities and the scarcity of financial resources in proportion to the size of the heritage stock, often lend severe challenges to the effort of conservation

### **Public Participation**

Commercial establishments pushing into historical settlements, old buildings replaced by modern constructions are signals of danger to heritage areas due to attitudinal difference in the present population. People centered approaches in conservation of heritage areas is definitely bringing in recognized benefits through chances for community engagement, more democratic and transparent in

government interventions. The advantages can be clearly seen by way of their coordinated efforts during planning stages, a sense of ownership, institutional capacities, social, capital, supportive, intermediary implementers etc.

## **RATIONALE**

Cultural heritage is clearly democratic. It is created by the people for the people and to the people. Culture is more of collaborative effort. Communities definitely are assets in terms of knowledge, skills etc. Any participatory approach in conservation can only enhance and accelerate these skills and in the long run help in co management benefitting the society.

## **METHOD**

The study began with an extensive literature review tracing the development of Agraharams the peculiar residential settlements of a particular group of people called Brahmins in the state of Kerala. The existing rules pertaining to preservation as well as conservation of heritage areas of the state was reviewed. Extensive case studies were followed by swot analysis to find the gaps in regulations as the existing rules were found to be insufficient to conserve the settlement and the livelihood of the community.

### **The living community - Brahmins**

The history of the Brahmin community in India begins with the Vedic religion of early Hinduism, now often referred to by Hindus as Sanatana Dharma the alternative name for Hinduism now. In Hinduism Brahmins were the class allowed to perform the duties of religious rites as priests and preaching Dharma. Brahmins believe in Sarvejana ssukhina bavattu meaning. Let the entire society be healthy and happy and Vasudaivakutumbakam meaning the Whole world is one family. Kerala which was known for their scattered homesteads, now became home to the linear housing cluster called Agraharams which was transplanted to a new climatic and geographic locale with only minor modifications. The Tamil Brahmins preferred this type of settlement as it provided the much needed privacy, protection from outsiders and to maintain their close knit community life style. The mass migration of Tamil Brahmins to Kerala 6 to 7 centuries ago led to the establishment of Agraharams in Kerala prevalently Palakkad in the North and Thiruvananthapuram in the South. Migration to Kerala was further accelerated as Maharajas of Travancore were connoisseurs of music and often invited musicians from Thanjavur in the state of Tamilnadu to perform and propagate fine arts and music. Considered purest of all castes and held in high regard by the Hindu community due to the thorough knowledge of all the four Vedas Tamil Brahmins soon took over as priests of all major temples under the aegis of Maharaja who provided them with land. Over the years they picked up their own individual culture and developed an identity of their own. On the basis of evidence they could have migrated anytime between 300-700 years ago.

### **Life of a Brahmin**

The basic aim of a Brahmin is to realize the God in oneself. Rituals are aimed at encouraging the “SATVIK” tendencies. Rituals form a part of the purification process and are strictly enforced

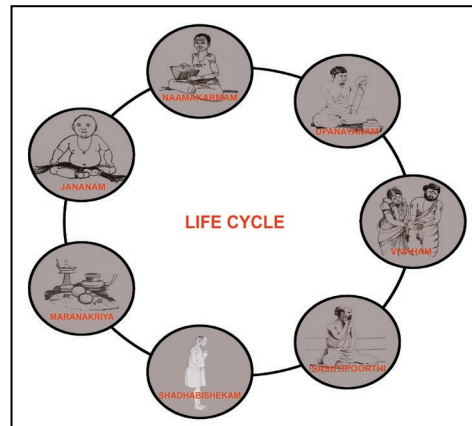


Figure 1. Source author

## Agraharams

Agrae vasathi hari hara, ethi agrahara', the Sanskrit definition of agrahara is understood as the unit which is housed with Hari (Lord Vishnu) and Hara (Lord Shiva) at the ends. Resembling a garland around a temple Traditional Hindu Architecture and town planning define an Agraharam to be two rows of houses running North South on either side of the road and at one end would be a temple to Lord Siva and at the other end a temple to Lord Vishnu. The Agraharams were constructed according to its own principles of Architecture. The architectural form and urban grain of these settlements are consistent from settlement to settlement. It constitutes several rows of buildings in deep narrow plots. The plots face onto an access street and have a narrow service lane at the rear. The layout of the Agraharams are in contrast to the traditional architectural style of Kerala. The early settlement pattern followed some parameters like social, association with temple and the patronage of the royal family. The Agraharams were built mainly on land donated by the royal family and land was further divided amongst the migrant Brahmins based on the social hierarchy existing within the caste group. The streets generally have temples placed at the two ends or at times a temple placed in the middle of the street also. The house controls its public/private interface with the access street through its open verandah called Thinnai. The house has a single main entrance door and the spaces behind open on to each other sequentially. The doors behind are also in the same axis as the front door. This axial arrangement actually evolves from the belief that all good and bad spirits pass through these openings in the dwellings.

## Settlement Planning Principles

The planning of an Agraharam is dictated by the temple which forms the focal point of the settlement. An Agraharam literally means a Theravu or Street terminated by the temples on either ends or temple placed centrally. The Theruvu or streets are aligned East West with the row houses clustering along the street in North South Orientation. Apart from the main streets the backyards are linked by narrow service lanes called the scavenger lanes. Agraharams are Expressions of a cultural identity rather than social status, characterized by symmetry, rhythm etc.

The buildings have no side clearances forming a continuous row on either side of the street usually leading to a temple. Streets become the most interactive space like social spaces for elders, ladies, venues for religious purposes, playing area for the children, selling area for the daily vendors etc. It becomes the most vibrant part of the settlement. The streets are all aligned along the east west direction and the streets forming the front yard of the houses aligned in North south direction. Most of

the houses in a typical Agraharam settlement have the features of two storied sloping roof. New buildings however do not follow the characteristics features of the typical houses. New houses have changed the sloping roof to flat or sloping concrete roofs. Generally the houses in the streets have a height of 4 metres to 5 metres if they are single storied and 7.5 to 8 metres if two storied. The slopes of the roofs are the same as traditional Kerala style houses at an angle of 45 degrees.



Figure 2. Source author

### Design of spaces in a typical unit of the settlement

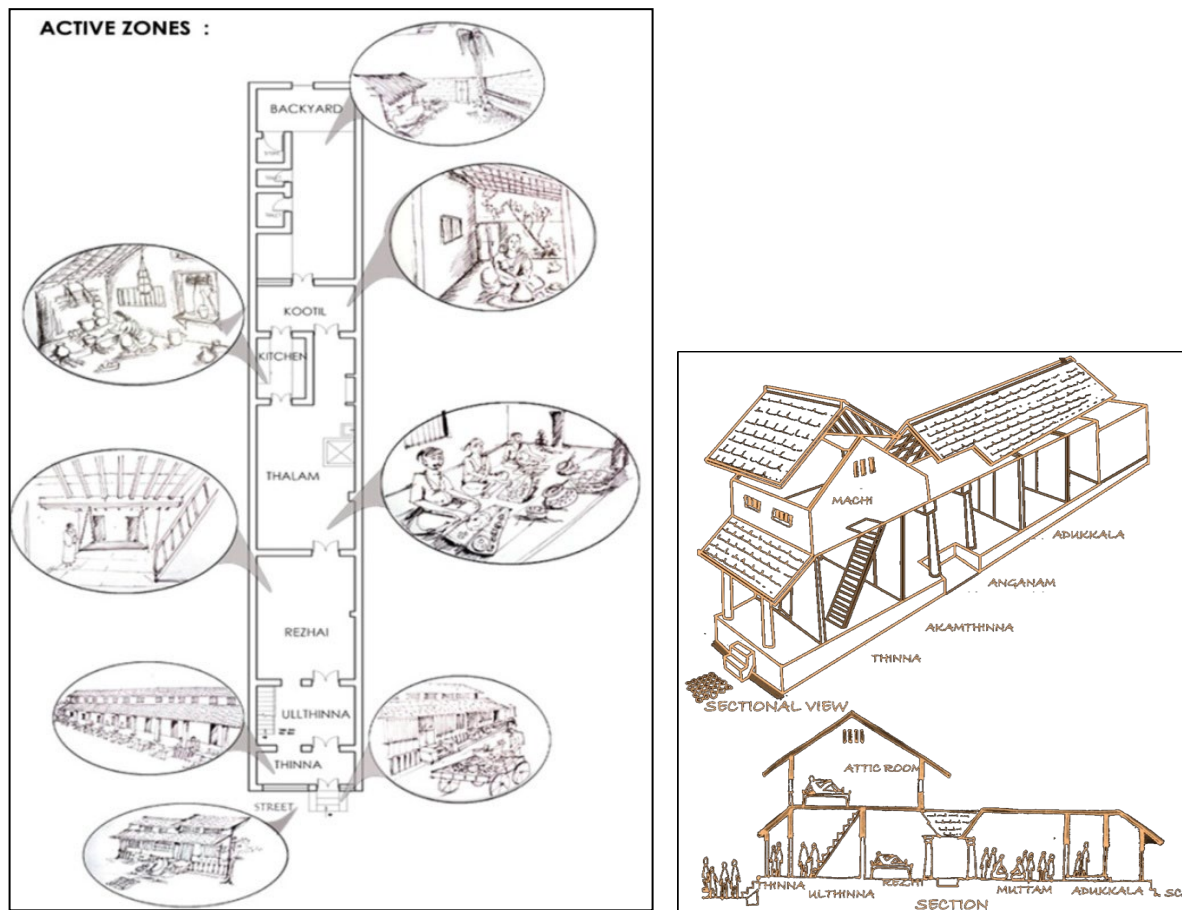


Figure 3. Source author

## Typology of Manas



Figure 4. Source Author

The most scholarly class of Brahmins occupied the **Muzhumana**, the larger Agraharams, the ordinary temple staffs occupied the **Aramana** and the **Mukulmana**, the lowest in the hierarchy occupied the **Kaalmana** reflecting the low social standing. Each type is determined by the total width of the houses where it abuts the street. Cross references reveal that the width of each type is measured in terms of the traditional measurement system of 'KOLS' and one Kol is 72 cms in length.

## ANALYSIS & INFERENCES

The SWOT analysis of Agrahara settlements<sup>4</sup> reveal that the strategic location of these settlements within urban cores pose threat due to commercial ingression. Changing lifestyle and needs of present generation adds to this. The regulations do not stop insensitive modern constructions in the vicinity of heritage. Majority of the households are joint family types with more than 4 members. At present 50 % of the houses are rented out for economic reasons and there still exists a strong preference of certain people to stay within the community itself. Muzhumanas have been subdivided into Ara Manas and Kaal Manas due to family partition and for economic reasons to generate a secondary income.

Most of the households belong to the middle class category with income ranging from Rs 20000 to 50000 monthly. 45% of the members are engaged in government or private sectors with a small proportion of about 20 % professionals and the rest unemployed. Women who are generally unemployed support to the family income through activities like conducting dance and music classes and selling traditional sweets and snacks. Lot of importance is given to education to children presently. They are sent to schools and colleges for higher education. Affordability and need for more privacy and individual spaces for activities have resulted in lot of alterations/renovations in the existing structure. It includes enclosing Puram Thinnai for two wheeler parking or putting up a small shop, courtyards covered or levelled, skylights added, additional rooms created, toilets added etc. Almost 95% of the houses have undergone alterations clearly showing the change in lifestyle and family needs. The residents prefer their houses to represent their cultural identity rather than being a

representation of their economic or social status. The houses were all built during the same time hence used similar materials like mud for walls, wooden/cement flooring, tiled roofing etc. The walls have been given cement coating periodically, flooring changed to cement and tiles and houses are mostly white washed showing less preference for color. The residents are convinced that the built environment satisfies their traditional way of life. The daily interaction between families contributes to the intense neighborhood feeling. A strong sense of community life is prevalent because of the proximity of the houses to one another and the vibrant street activity. The demand of a modern life style within the younger generation of the community is paving way for insensitive intrusive building renovations in Agraharams which is destroying the tangible and intangible heritage.

Lack of awareness of the historic importance of the structures and the unique construction techniques has resulted in the use of incompatible modern building materials. The modern interventions follow an architectural trend that is alien to the heritage charm of the place. The extensive changes in the land use pattern transform residential streets into commercial alley. Thus certain general guidelines have been proposed by the Art and heritage commission. These guidelines are definitely a basis for all conservation as well as modernization processes. A few steps have to be followed to conserve heritage along with development like identifying spots, setting up heritage cell, proper use of the existing heritage housing stock, incentives for residents who conserve their homes, generating employment opportunities etc.

### **Comparison of Agraharams in Thiruvananthapuram and Palakkad**

The acceptance of preserving the historic settlement in the town of Palakkad in North Kerala seems to be much more convincing than in Thiruvananthapuram in south Kerala. Reasons could be due to the fact that urbanization has not hit the Kalpathy settlement mainly due to its locational advantage. The general attitude of the community in preserving the heritage seems to be much stronger than in other parts of Kerala. The awareness programmes and meetings with stake holders seem to have worked very satisfactorily and residents feel more committed to conserve this unique typology.

### **CONCLUSIONS & DISCUSSIONS**

Decision making process can be influenced in many ways. One among them is termed as situated knowledge.<sup>5</sup> Residents the affected parties can have a better understanding of the problem than the people (interested parties) who are trying to resolve it. So they form the deliberating group with views probably opposing to each other. A range of potential solutions is possible as affected parties are closest to the problem.

Our societies are becoming increasingly globalized largely due to advances in communication and mobility. Market economies are encouraging new trade and consumption patterns. The policies of government intervention in planning and preservation are undergoing paradigm shifts and it is in this context that stake holder participation plays an important role. Local governments are the best-placed actors capable of ensuring coordination of other stakeholders which can be achieved through a combination of legal enforcement powers, economic tools and social engagement and outreach activities. Conservation of agrahara brings out a wide range of issues including the most difficult of all the feeling of gentrification by the community. Hence it becomes very pertinent to have an all-inclusive approach towards conservation of agraharam, the historic settlement, keeping community at the centre focus of all conservation procedures. Every decision taken about the conservation programme has to be done with the participatory approach considering the members of the community.

The Art and Heritage commission has come out with certain regulations which according to the affected parties are very cosmetic in nature and without understanding the needs or aspirations of the people. It is very important that locals /residents are convinced that they are important decision making actors in the whole process of conservation process. A very strong coordinated effort must be introduced between the stake holders and the local authorities. There must be absolute transparency in the conservation process especially when being introduced in a traditional settlement both financially as well as technically. It is very significant to identify the stakeholders who can play an important role in the management of the precinct through community group discussions. Several discussions and debates on developments and what the stake holders require and accept must be identified and considered. The pros and cons of all works that has already been done must be discussed and any corrective measures adopted by the local regulatory authorities must be discussed in detail. Experts must be invited and allowed to participate in the whole process continuously. There is a wide gap found in the preparation of the regulatory framework for conservation including standards and procedures for reviewing and approving development of such traditional settlements in the high density developing urban areas. This has to be understood and necessary amendments are to made in the procedure so that conservation of built heritage will be in harmony with the community life of the members. Approaches are needed that embrace diverse ways in conservation thinking and development. By thinking creatively and holistically it is possible to find ways and means that are sustainable and all inclusive, which is the need of the hour.

## NOTES

<sup>1</sup> “Agraivasathi agraphara”, Agraphara the settlement for Brahmins in S. India are constructed as row houses with temples of Lord Shiva and Lord Vishnu at the two ends.

<sup>2</sup> Community level participation was assessed during documentation of the agrapharam settlements by one to one personal interview which was held to find out the level of awareness about heritage among the stakeholders.

<sup>3</sup> Erica Avrami, Randall Mason, and Marta de la Torre. "Report on research." Values and Heritage Conservation: research report. Los Angeles: The Getty Conservation Institute (2000): 3-4.

<sup>4</sup> The swot analysis of this typology of settlement is conducted by one of the author and published in SOBHI State of Built Heritage of India- Case of the unprotected muted by INTACH New Delhi.

<sup>5</sup> Jenny Steele. "Participation and deliberation in environmental law: exploring a problem-solving approach." *Oxford Journal of Legal Studies* 21, no. 3 (2001)

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# **NARRATIVE AND SUSTAINABILITY: AN INTERPRETATION AND A CASE STUDY**

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## **INTRODUCTION**

The following paper explores and reflects upon the relationships between narrative and sustainability and proposes the use of an interpretation of narrative that encourages more sustainable ways of living. The paper shows aspects of research currently in progress. The whole world is currently facing many challenges, including climate change, biodiversity loss, scarcity of food and water, overpopulation, desertification, and land degradation, to name just a few. To address these challenges, several countries and the United Nations have organised conferences and written documents describing the importance of sustainable development, and proposed actions which should be taken to improve each of the main issues.<sup>1</sup> Indeed, the United Nations website provides a detailed description of seventeen Sustainable Development Goals<sup>2</sup> considered essential to the development of a better future. The work produced during several previous conferences has informed the definition of these goals. However, these goals can be addressed in multiple ways, and the concept of sustainability is open to many interpretations.

## **SUSTAINABLE APPROACHES TO LIVING**

### **Different Interpretations of Sustainability**

A consideration of the numerous definitions of sustainability, sustainable development, and sustainable design/architecture, as found in different publications, international reports, and documents, reveals that no single interpretation of sustainability exists. The word acquires different meanings within different fields, and even within the same area, there are various and sometimes even contrasting interpretations. The expression “sustainable development” was first introduced in 1987 in the Brundtland Report, also entitled “Our Common Future.” In this document, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,”<sup>3</sup> yet even this definition is open to interpretation, for example in relation to the meaning of “present needs.” Nowadays, it seems that in several design proposals for sustainable ways of living there is a skewed focus on pure function and practicality. However, to create urban, architectural, and interior spaces that provide meaningful experiences for the occupants and provide a human connection with place, there needs to be something other than functional considerations. Buildings and places can be functionally efficient but alienating and uninhabitable for many human beings, and this has been further highlighted during the

COVID19 pandemic. Not only are there different interpretations of sustainability and related definitions, but there is also increasing evidence that the interpretation and application of this concept should be informed by an analysis of the characteristics related to the specific local contexts where sustainable interventions should be developed and applied. This issue has also been explored in the publication “Sustainable Architectures: Cultures and Natures in Europe and North America.”<sup>4</sup> This means that even if there are some common principles underlying sustainable interventions, each place can be sustainable in a different way and according to its characteristics.

### **Past Visions of the Future**

Architects and designers have always tried to address some of the societal challenges of their age and developed and proposed new visions for society and the future. For example, Le Corbusier’s Radiant City/Ville Radieuse<sup>5</sup> presented a geometrically well-organised urban environment with high-rise residential towers, vast green spaces and clearly separated pedestrian and vehicular circulations. However, while some of the intentions behind his plan could have provided a few benefits, the overall vision lacked human scale and seemed alienating, largely because of the unnatural repetitions of precise and basic geometric shapes and its focus on functional aspects. Clearly, it is challenging to imagine a fulfilling or pleasant lifestyle in such an urban environment. Hence, it is possible to say that the narrative proposed by the Radiant City might be undesirable. The history of architecture and urban design features several utopian projects which, despite representing interesting speculative ideas, rarely presented desirable environments for people.

Past visions of the future are generally very different from present visions of the future. Many future visions imagined as desirable in the 1950s, 60s, 70s, 80s and 90s are no longer desirable today because needs and desires of people and society have changed. Moreover, a critical examination of projects showcased during the exhibition “Future City: Experiment and Utopia in Architecture 1956-2006,”<sup>6</sup> through the descriptions and representations in the related publication,<sup>7</sup> reveals that people’s spatial and perceptual experiences were not always the main priority.

### **THE IMPORTANCE OF A NARRATIVE APPROACH**

The concept of narrative has always been intertwined with humankind’s history. It is impossible to think about any relevant aspect, tangible or intangible, of any society without considering its narrative characteristics and implications. Again, the word “narrative” in relation to design is open to interpretation, but it is generally agreed that narrative and stories help give meaning to our lives. They are how we make sense of the world and our experiences within it; they help us teach and learn through transfer of knowledge in an easily relatable way. They allow us to process emotions and feel empathy for others, and they are a way in which we can express our personal and collective histories and identities. Therefore, narrative and stories are hugely important to humans on both personal and societal levels. Narrative also plays an essential role in architecture and related disciplines.<sup>8</sup> Places and buildings should be meaningful and enrich people’s daily lives, as well as significant or sporadic life events. It is no coincidence that some of the most remarkable architectures and places around the world, including fictional and unbuilt projects, are those that have strong narrative features which can deliver meanings and evoke emotions. Around our towns and cities there is frequently a lack of certain spatial and other design qualities, often due to concerns such as expediency and/or budget restrictions which limit the design process, resulting in places that can feel anonymous or lacking in narrative richness. Such areas are being built all over the world, including new conurbations that are emerging at a fast pace “without ever really acquiring the character of a city,” because they are “poorly suited to the realities of (...) life.”<sup>9</sup>

The impoverishment or lack of narrative qualities in several interventions might also be explained by the excessive emphasis that is nowadays placed on aspects such as efficiency and functionality, which if taken alone, cannot provide meaningful narratives related to fulfilling lifestyles and environments. The complexity of life and its multifaceted aspects and challenges cannot be understood and solved solely using scientific approaches, and therefore alternative approaches and ways of thinking based on narrative are essential. This is also highlighted in the article “What is the story of sustainability? A narrative analysis of diverse and contested understandings.”<sup>10</sup> Another factor might be the inheritance of cultural movements, including the modern movement.

“Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless.”<sup>11</sup> This is exactly the approach that has informed and shaped many utopian visions of the future mentioned in the previous section of this paper. As mentioned before, today’s sensitivities and future desires are different from those elaborated in the past, and new interventions show this new, preferred direction.

BedZED, completed in 2002, was the first UK large-scale mixed-use eco-village<sup>12</sup>. This pioneering project wanted to demonstrate that it is possible to create places where people can enjoy pleasant lifestyles and simultaneously have a more sustainable impact on the environment. Some of the aims of BedZED were to create a sustainable community, provide better and easier access to greenery, and public car-free spaces for walking and playing that also encourage interactions between residents.<sup>13</sup> Another relevant project is the one proposed by Diller Scofidio + Renfro for London Wall West.<sup>14</sup> Also, in this case, the design includes a variety of spatial situations that support various activities for individuals and groups of people.

### **Interpretations of Narrative in Relations to Sustainability**

The importance of the everyday places we encounter was highlighted further during the 2020-2021 pandemic. Lockdown restrictions meant we were confined mostly to our own homes, only venturing as far as local shops and high streets or socialising outdoors in local parks and squares. While there are those who are lucky enough to live in exciting residential developments, on or near vibrant streets, zones, or neighbourhoods (places which, during normal times, attract visitors from other areas), there are also those who do not, and who were unable to visit such areas freely. It is evident that behind existing private and public places and new sustainable interventions (though the reflection could be applied to any design intervention), there should be interesting narratives, and all of them should also support and trigger new narratives. In the context of this research, the word “narrative” is interpreted in a few different ways. The first interpretation relates to buildings and places (public and private) which can be interpreted as narrative items. Through their tangible and intangible features, they can communicate meanings connected to various narratives, including those which are historical (social, cultural, political, religious, etc.) or fictional (myths, legends, and fairy tales) in nature.

Moreover, they can also evoke emotions. Another interpretation connects narrative with lifestyles. Our daily life can be told as a story, and spaces and buildings are not a mere background, but active contributors that can support, improve, or negatively affect every single event. Buildings and places, and their arrangements, could suggest specific lifestyles, behaviours, and experiences.

### **Walking and Narrative Qualities of Spaces and Buildings**

This paper suggests that walking (or at least moving at a walking pace with the ability to change direction freely i.e., not inside a vehicle) is the best way to explore and experience spaces of different scales (including settlements, neighbourhoods, streets, buildings, parks, squares and interiors) and hence discover and appreciate the narratives that they hold. The slowness of walking provides us with the time to enjoy places and their multiple details. It is an action that allows us to use all our senses, in

contrast with the hurry that characterises our contemporary lifestyle and society, as also mentioned by David Le Breton.<sup>15</sup> Thus, it becomes ever more important that our local surroundings – those places that we walk through, in and around daily – provide a richness of experience (Figure 1) which in turn contributes to the creation of interesting daily narratives.



*Figure 1. Examples of buildings and places that provide a richness of experience, especially through the act of walking (images source: authors' personal archive)*

In the “Handbook of Design for Sustainability,” Christopher Day<sup>16</sup> writes about “soul-nourishing” spaces – which he proposes can be achieved through qualities created by community, conviviality, and sensory attractiveness – and their potentially positive influence on lifestyle choices and thus on environmental impact. Walking could represent a way to analyse and explore narrative qualities of buildings and places, a means to read and appreciate them, as well as being a vital characteristic of a more sustainable lifestyle, as opposed to driving. The quality of neighbourhoods, buildings and places, and their narrative features, could encourage people to walk more and enjoy this sustainable activity. Hence, walking and quality spaces and buildings and their narratives are strictly connected. The narrative behind sustainable settlements should promote better lifestyles and not simply focus on reducing consumption of resources. The previously mentioned new proposal for London Wall West, for example, aims at improving the quality of public spaces with new or improved footpaths, high walks, and green areas. In his seminal book “Cities for a Small Planet,” Richard Rogers proposes the concept of a “compact city” where different activities overlap and public spaces are designed with the pedestrian in mind, not the motorist.<sup>17</sup> Besides highlighting the importance of public spaces such as squares and parks, he also emphasises that “buildings enhance the public sphere in a variety of ways: they model the skyline, landmark the city, lead the eye to explore, celebrate the crossing of the street. But even at the most modest level, the way that the building’s details relate to the human scale or to the touch has an important impact on the streetscape.”<sup>18</sup> Hence, proper relationships between small details and totality are essential to trigger all these positive effects in people. The importance of walking, and the quality and human scale of spaces and distances are also mentioned in pivotal publications by Jan Gehl<sup>19</sup> and Jane Jacobs.<sup>20</sup>

### **CASE STUDY: HUDDERSFIELD**

The case study selected for this research is the town of Huddersfield, located in West Yorkshire, England. Huddersfield once enjoyed a period of wealth, especially during the industrial revolution. This is evident in the wonderful Victorian architecture, including covered arcades located in the town centre and historical mills close to rivers and canals. However, Huddersfield has recently experienced a decline, affecting cultural, economic, and social aspects. Similar examples of towns and cities

experiencing periods of decline can be found around the United Kingdom, in other European countries and on other continents. Besides a rich architectural heritage, Huddersfield presents several other valuable characteristics, including a compact and walkable town centre, a dramatic natural landscape surrounding the town and a hilly topography that helps create various spatial situations and interesting views (Figure 2). Hence, it is possible to state that the town has all elements that could support the development of new narratives. Currently, there are several ongoing initiatives aimed at regenerating the town centre. One of these initiatives is the Huddersfield Blueprint, a ten-year vision aimed at improving the town centre by the redevelopment of six key areas. The idea behind the blueprint is to deliver the following five key objectives: “A vibrant culture, art, leisure and nightlife offer, thriving businesses, a great place to live, improved access and enhanced public spaces.”<sup>21</sup>



Figure 2. (Left) View of the dramatic natural landscape surrounding the town; (Right) Example of Huddersfield's rich architectural heritage (images source: authors' personal archive)

### **(Re)Imagining Huddersfield's Narratives**

“(Re)Imagining Huddersfield through Culture-Led Regeneration Projects” is a research project constituted by a series of activities to generate and disseminate ideas and design proposals developed during research and teaching activities (in Architecture and Interior Design), and to formulate further reflections that could inform future developments. Some of the activities undertaken so far include an online seminar entitled “The role of architecture, interior design and culture in urban regeneration projects” held at the end of March 2022, an exhibition from the end of June to the beginning of July 2022 in Queensgate Market in Huddersfield, and a workshop run at the end of June 2022. Moreover, BA Architecture Year 1 students (from the University of Huddersfield) have been exploring culture-led regeneration projects in and around Huddersfield since 2017. So far, we have explored different structures and buildings through design studio briefs, including pods, pavilions, museums, and bookshops. In addition, second-year BA Interior Design students have designed small-scale experiential interventions to respond to and communicate information about specific elements of the context, heritage, and communities within the town of Huddersfield. One of the main ideas behind the research studies we are developing is that through different projects (mainly, but not limited to, culture-led interventions), it is possible to imagine a more enjoyable and sustainable lifestyle for Huddersfield's inhabitants by providing new architectural and spatial narratives.

The previously mentioned workshop encouraged students and residents to share their personal narratives, namely their personal experiences and memories connected to the town. They highlighted that the town feels divided – both physically and socially – leading to a feeling that it lacks a cohesive



sense of identity or pride for those that live there. Those involved in the discussions agreed that uncovering, celebrating, and capitalising on existing narratives (memories, histories, associations, legends, myths, historical figures, cultures, traditions, events, local crafts, etc.) through the design of new buildings and places or by readapting the existing ones could help re-connect the disparate areas and communities within the town, and thus co-create new, shared narratives. This could then give rise to a town centre in which people (both locals and visitors) would enjoy spending time, and spaces that people value enough to take better care of them and lead ultimately to more enjoyable and sustainable ways of living within the town.

### **Towards A New Narrative for the Town Centre**

The town centre, defined by the existing ring road, could, besides the transformation/regeneration of large areas, include smaller interventions (including the previously mentioned culture-led projects) scattered in various locations and should all be characterized by narrative qualities. All these interventions could be linked by various walking routes that include planting and green spaces. Incorporating the existing covered arcades (Figure 3) in these routes would provide sheltered, but not completely enclosed, areas; areas in which to pause, to sit, to socialise and to linger, unimpeded by the weather. This experience could inspire people to walk for the sake of walking and spend time in Huddersfield simply because it offers an enjoyable and rich experience. Along these routes, there could be a variety (in terms of size and atmosphere) of indoor and outdoor spaces and activities. Interesting landmarks such as architectural heritage should be celebrated. Buildings and places that have historical and architectural values can enrich public spaces and routes, and hence people's experiences.



*Figure 3. Huddersfield's historical arcades could be incorporated into interesting walking routes (images source: authors' personal archive)*

### **CONCLUSIONS AND FUTURE DEVELOPMENTS**

In this paper we have discussed the importance of narrative to humans: we use narrative as a way of creating meaning in our everyday lives and making connections with people and places. We have explored and reflected upon how, when people feel more connected to places (towns, cities, buildings, interiors) then spending time in such places can be enriching, and that this in turn can encourage more care towards those environments and thus encourage more sustainable ways of living within them. Therefore, to create urban, architectural, and interior spaces that provide meaningful experiences for the occupants and provide a human connection with place, there needs to be something other than

functional considerations. Buildings and places, both private and public, should have narrative qualities, namely they should communicate meanings and evoke emotions. Moreover, they should also support and improve existing lifestyles, and encourage new ones, and hence, they contribute to people's daily life narratives.

This study proposes an approach that connects various interpretations of narrative with sustainability as a means of reimagining the future of the post-industrial town of Huddersfield. The research is still in progress and will be further developed through other activities and publications.

## NOTES

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- <sup>3</sup> “Report of the World Commission on Environment and Development: Our Common Future,” United Nations, accessed June 24, 2022, <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>.
- <sup>4</sup> Simon Guy and Steven A. Moore, *Sustainable Architectures: Cultures and Natures in Europe and North America* (New York: Spon Press, Taylor and Francis Group, 2005).
- <sup>5</sup> Gili Merin, “AD Classics: Ville Radieuse / Le Corbusier,” ArchDaily, accessed August 19, 2022, <https://www.archdaily.com/411878/ad-classics-ville-radieuse-le-corbusier>.
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- <sup>7</sup> Jane Alison, Marie-Ange Brayer, Frederic Migayrou and Neil Spiller, *Future City: Experiment and Utopia in Architecture* (London: Thames and Hudson, 2007).
- <sup>8</sup> Danilo Di Mascio (ed), *Envisioning Architectural Narratives* (monograph of the 15<sup>th</sup> Biennial International Conference of the European Architectural Envisioning Association (EAEA), The University of Huddersfield, 2021), p. 584.
- <sup>9</sup> Adam Greenfield, “Where are the world’s newest cities...and why do they all look the same?” The Guardian, January 28, 2016, <https://www.theguardian.com/cities/2016/jan/28/where-world-newest-cities-look-same>.
- <sup>10</sup> Aliette K. Frank, “What is the Story with Sustainability? A Narrative Analysis of Diverse and Contested Understandings,” *Journal of Environmental Studies and Sciences* 7, 2 (2016): 310-323.
- <sup>11</sup> Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses*. 3rd ed. (Chichester, West Sussex, United Kingdom: Wiley, 2012), 22.
- <sup>12</sup> “The BedZED Story,” Bioregional, accessed 25 June, 2022, [https://storage.googleapis.com/www.bioregional.com/downloads/The-BedZED-Story\\_Bioregional\\_2017.pdf](https://storage.googleapis.com/www.bioregional.com/downloads/The-BedZED-Story_Bioregional_2017.pdf).
- <sup>13</sup> “The BedZED Story,”.
- <sup>14</sup> “The Future of London Wall West,” City of London, accessed June 26, 2022, [https://londonwallwest.co.uk/wp-content/uploads/2021/12/CityofLondon.LWW\\_Vision.Document.WEB\\_21.12.03.pdf](https://londonwallwest.co.uk/wp-content/uploads/2021/12/CityofLondon.LWW_Vision.Document.WEB_21.12.03.pdf).
- <sup>15</sup> David Le Breton, *Il mondo a piedi. Elogio della marcia* (Milano, Italy: Giangiacomo Feltrinelli Editore Milano, 2007).
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- <sup>17</sup> Richard Rogers and Philip Gumuchdjian, *Cities for a Small Planet* (London, United Kingdom: Faber, 1997).
- <sup>18</sup> Rogers and Gumuchdjian, 71.
- <sup>19</sup> Jan Gehl, *Cities for People* (Washington, D.C: Island P., 2010).
- <sup>20</sup> Jane Jacobs, *The Death and Life of Great American Cities*, 50th anniversary, 2011 Modern Library ed. (New York, United States: Modern Library, 2011).
- <sup>21</sup> “The Huddersfield Blueprint,” Kirklees Council, last modified 2020, <https://www.kirklees.gov.uk/beta/huddersfield-blueprint/index.aspx>.

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# REVEALING IOWA 80: HOW EXPERIENCE ECONOMY SHAPES THE WORLD'S LARGEST TRUCKSTOP

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## MAPPING THE ROUTE

The “learning from” manifestos, initiated by *Learning from Las Vegas* in 1968, discuss topics of the built environment often left out of academic investigation and dismissed from professional practice.<sup>1</sup> One way these “learning from” topics can be further explored and expanded upon is via the notion of experience economy, as presented in Joseph Pine II and James H. Gilmore's seminal essay of the same name. Pine and Gilmore state that over time, economic distinctions have moved from commodities to experiences,<sup>2</sup> where consumers have unquestionably grown to desire experiences, and businesses have increasingly responded by explicitly designing and promoting these experiences. Multiple authors have discussed how experience economy is directly tied to architecture and branding, including Anna Klingmann in her book, *Brandsapes: Architecture in the Experience Economy*. Klingmann describes her position as “primarily focus[ing] not on the architecture as object but on the architecture’s power to create affirmative spaces that prompt memories, discoveries, and desires.”<sup>3</sup> She also states that architecture “must also elicit relevant emotional experiences at different points of contact with its user, by creating an architectural presence that is felt, as well as seen,”<sup>4</sup> thus requiring architecture to embody more than just space and volume. Architecture must elicit a heightened emotional response that encompasses all four realms of an experience, forming the “sweet spot” as described by Pine and Gilmore. The book often references high-end companies such as Mercedes-Benz and BMW, brand-name architecture such as Koolhaas and Hadid, and historically significant buildings such as Faneuil Hall Marketplace in Boston as platforms for using architecture to market places.<sup>5</sup> The context offered in the book is impressive, though not surprising, as these companies all use allure, desire, and marketing to sell an image or implied experience. However, Klingmann’s research neglects the everyday experience happening in everyday spaces, which begs the question of how mundane acts such as pumping gas or eating at a restaurant might themselves become an experience. Expanding the current literature of experience economies to include such moments will highlight the untold narratives of the everyday.

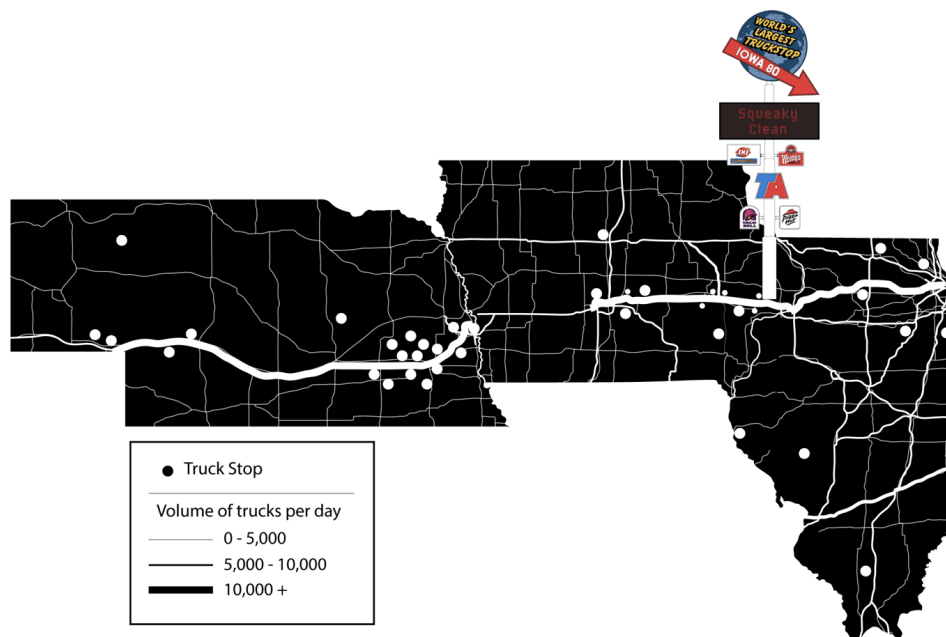
Adding to the “learning from” case studies, this notion of experience economy of the everyday presents new ways of viewing the World’s Largest Truckstop, Iowa 80, in Walcott, Iowa. Like Las Vegas, Iowa 80 creates a sweet spot of experiences revealed to guests over time while the stager sets the scene for an oversized memorable experience. As Delia Moon Meijer, Owner and Senior Vice President of the Iowa 80 Group, states, “Our best memories in our lives are when we are on a trip or a mission or an adventure. All our customers are on an adventure, so we get to be a part of all their best

memories.”<sup>6</sup> This summation encapsulates the concept of selling an everyday entertainment experience for the common act of an American road trip and the company’s role in executing it.

The Iowa 80 Truckstop began as a small building in 1968 before Interstate 80 was complete. Today, after 28 expansions and remodels spanning 225 acres (91 hectares) of development, Iowa 80 includes seven grab-and-go food options, a restaurant that seats 300 people, 42 gas islands, 16 diesel lanes, a fuel center, a 7-bay truck service center, and many other amenities.<sup>7</sup> With each alteration, the truck stop sought to maximize the necessary and common experience of pumping gas.

Iowa 80, like other truckstops, is integral to the interstate highway system's distribution and delivery, consumption and convenience, and logistics economies.<sup>8</sup> In the middle-U.S., operations are formed around conditions of remoteness that harness the interworking of the existing landscape, including spatial and societal values. Neil Brenner describes the operational landscape in the Great Plains as geographically harnessed to take advantage of its mild climatic conditions and proximity to larger markets.<sup>9</sup> Additionally, the middle-U.S. has the remoteness and allure needed to facilitate several of the "world's largest" artifacts, including the World's Largest Ball of Twine, the World's Largest Cow, and, with Iowa 80, the World's Largest Truckstop.

Iowa 80 caters to two primary everyday customers—or “guests,” to borrow a phrase from experience-economy pioneer Walt Disney: the trucker and the tourist. Through an imagined narrative of these two typical experiences, this research will analyze Iowa 80 by “revealing the experiences” sequentially as a stage before, during, and after as the guests experience them. In our narrative, “the trucker” will be a semi-truck driver hauling a cross-country container, while “the tourist” will describe an individual in a consumer vehicle on a cross-country summer trip. Both are heading west from Chicago on Interstate 80, the second-longest interstate highway in the United States (see Figure 1). As Pine and Gilmore state, “Each set of experiences are inherently personal, existing only in the mind of an individual who has been engaged on an emotional, physical, intellectual, or even spiritual level...each experience derives from the interactions between the staged event (like a theatrical play) and the individual’s state of mind.”<sup>10</sup>



*Figure 1. Iowa 80 is strategically located on Interstate 80 to accommodate a volume of 10,000+ trucks and 5,000 visitors per day. Notice the pacing of the truckstop locations roughly three hours apart. (Drawing by Olena Yarmolyuk.)*

## CUES ON THE BIG SLAB

An initial moment of the Experience Economy is cues and impressions. Each cue is a signal that must support the theme of the experience. Iowa 80 must introduce cues that affirm the nature of the experience to the guest.<sup>11</sup>

Late afternoon shadows stretch across the sun-bleached road. It looks like a midwestern thunderstorm is brewing, given the billowy clouds gathering along the flat Iowa horizon. It's a hot summer day, and the first guest—our trucker—notices an Iowa 80 billboard several miles outside of the city of Walcott advertising “900 truck parking spaces.” His attention piqued by the billboard, the trucker makes plans to stop, knowing that the World's Largest Truckstop can accommodate his truck for the night.

Truck drivers are allowed a maximum of 11 hours of drive time for every 24-hour period, which allows them to drive an estimated 500 miles.<sup>12</sup> Iowa 80 is essential because it is strategically located along the highway between major distribution cities. Like other truckstops, the World's Largest Truckstop provides truckers with a safe space to unwind and take care of their own needs and the needs of their trucks.

A little further up the road, the next guest—our tourist—sees another billboard. This one simply advertises “Gotta Stop” with the “World's Largest Truckstop” logo, which intrigues the tourist. She's never given the trucking lifestyle much thought, but the World's Largest Truckstop sounds like an interesting place to stop and refuel. As she drives, the tourist remembers the billboard and contemplates the need for such a large space as she catches herself paying more attention to the trucks sharing the road.

Each of these billboards provide specific cues, which generate impressions of the Iowa 80 truckstop prior to arrival. The cues and impression entice the trucker and the tourist with enough intrigue to make them stop, but leave aspects vague to create anticipation. Ultimately, upon arrival, the stage will be revealed to guests through a series of moments or experiences.

## STAGE THE “ARRIVAL” EXPERIENCE

Another aspect of experience economy is how everyday experiences are staged by a stager. Companies act as the stager to engage customers in a personal, memorable way.<sup>13</sup>

When traveling at 80 mph, the Iowa 80 truckstop emerges out of the cornfields less like a *Field of Dreams*-type mirage and more like an explosion of signage and amenities. Even from a distance, the trucker is greeted with a large building sign that can be seen from almost anywhere on the 75 acres (0.40 hectares) stretching  $\frac{3}{4}$  mile along the highway. Prior to entering the westbound truckstop offramp, he notices the sea of 900 truck parking spaces—the billboards were true! As he eases his truck into the parking lot, it becomes evident the World's Largest Truckstop was designed with ample space and large directional signage to allow him to comfortably find a spot.

The parking lot is intuitively mapped out, including the necessary 55-foot turning radius to accommodate an 18-wheel truck.<sup>14</sup> Large signs proudly advertise a Truck Service Center, Truckomat, and Dogomat—perfect for the trucker's friendly companion. This part of the Iowa 80 experience will be called the *back-of-house*, and describes 90% of the truckstop. It is dedicated to the logistics and operational needs of both the trucker and the truck (see Figure 2).



Figure 2. The 55-foot turning radius dictates the back-of-house space for parking and ease of access. (Drawing by Elena Garcia Tapia.)

The concept of revealing moments of the truckstop over a duration of time has been carefully orchestrated by the stager. Stagers are in charge of setting up an experience, which, according to Pine and Gilmore, “occurs when a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event.”<sup>15</sup> In this case, the stager includes the owner and manager of Iowa 80, as well as countless others responsible for designing and executing the moments for the trucker in the back-of-house, and the tourists in the *front-of-house*.

As the trucker is pulling into the back-of-house to refuel and rest, the tourist at the front-of-house is anxiously waiting to stretch her legs after her long journey. This is her first glimpse of just how enormous the truckstop really is, almost like a shopping mall complete with brightly colored signage advertising a plethora of amenities.

The main truckstop building aligns itself with the offramp, breaking down the scale of the highway, and providing the general public a known hierarchy between the road, parking, and a building arrangement resembling commercial stores. The front façade of the building, although noticeably oversized, feels almost residential in appearance. This is the entrance to the front-of-house, which refers to the remaining 10% of the truckstop, offering the tourist a smorgasbord of food options and road trip essentials (see Figure 2).

The stager carefully curates attractions and experiences along a specific tiled pathway that draws guests through 100,000 SF of interior space to consume all things truckstop-related (see Figure 3). This pathway extends the guests’ duration at the truckstop by continually revealing new moments and attractions, resulting in a more immersive experience.

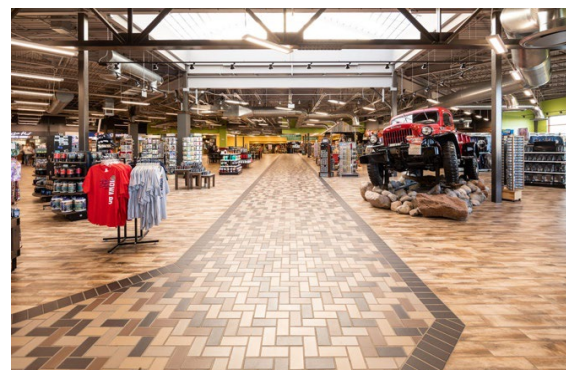


Figure 3. The Iowa 80 decal initiates the pathway through the 100,000 SF of interior space with adjacent attractions and memorabilia. (Images courtesy of Iowa 80 Group.)

## STAGE THE “IMMERSIVE” EXPERIENCE

“Here customers or participants are immersed in an environment, but they themselves have little or no effect on it—like a tourist who merely views the Grand Canyon from its rim or like a visitor to an art gallery.”<sup>16</sup>

After the trucker’s two 250-gallon tanks are topped off with fuel and his truck is parked in a stall for the night, he makes his way into the truckstop.

At many truckstops, truckers and tourists occupy the same space. However, at Iowa 80, special attention is given to distinguish the back-of-house from the front-of-house. The trucker entrance, for example, is designed with practicality and ease in mind. This helps to make the experience more personal for the busy trucker. This break also provides truckers with social opportunities that are often lacking on the road, including amenities such as restaurants, a movie theater, lounges and an embroidery shop. With regard to the Iowa 80 community, Adzowa Ester Gedjeah, a big rig trucker, says, “As truck drivers we make new friends...we try to be as they say ‘friendly with one another.’”<sup>17</sup> The truckstop helps create a social network that can be crucial to a trucker’s well-being.

Just as the trucker needs a restorative space after traveling long hours on the road, the tourist needs a similar experience. However, unlike the trucker, whose experience is more focused on rest and relaxation, the tourist experience is aimed at excitement and entertainment. The truckstop is carefully tailored to the tourist experience beyond a place to just refuel your vehicle: it is also a place to refuel your energy. Tourists are greeted by a large canopy and front door enticing them to enter, and the entry promenade feels welcoming, with pitched roofs and dormers. Signs advertise Wendy’s, Einstein Bros. Bagels, Pizza Hut, Taco Bell, Dairy Queen, and other amenities<sup>18</sup> (see Figure 4). The front-of-house is a cultural artifact that borrows from typical residential vernacular architecture by using an intersecting/overlaid hip roof, 45-degree dormers, and even a brown paint color reminiscent of a barn or residential farmhouse.<sup>19</sup> Once inside, the truckstop interior is vast, providing a sense of grandeur and excess—exciting features after being confined to the close quarters of a car.



*Figure 4. The pitched roof, along with the wood and stone exterior façade of the tourist entrance, adds a homey, residential element to the truckstop. (Drawing by Elena Garcia Tapia.)*

## TRANSFORMATIVE EXPERIENCES

Another aspect of the experience economy is transformation. This moves beyond an experience where companies guide customers to change.<sup>20</sup>

As it draws toward evening, the trucker realizes it’s been hours since he last ate. He’s ready for a meal, and in a place like the World’s Largest Truckstop, mealtime means one thing: options. The truckstop houses multiple food offerings, including a buffet-style restaurant for a sit-down experience. After spending weeks on the road, the trucker is excited for a home-style meal, so he heads toward the Iowa 80 Kitchen restaurant.



The World's Largest Truckstop aims to provide something for everyone, which creates a personal touch. This helps to establish and strengthen the experience. As Pine and Gilmore state, "Experiences are not exclusively about entertainment; companies stage an experience whenever they engage customers in a personal, memorable way."<sup>21</sup>

The trucker experience starts on the first floor, where immediate needs—such as restrooms and food services—are met. Green and white signage designed to emulate road signs directs truckers to the second floor, which provides a wide range of amenities, including practical services (e.g., clean showers, multiple food options, a laundry area), physically transformative services (e.g., dentist office, chiropractor), and mentally transformative services (e.g., church services, social areas).

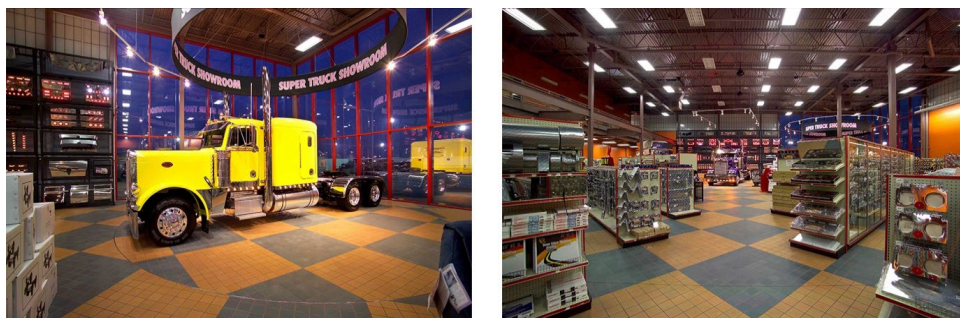
The tourist, meanwhile, is only stopping for a quick break before returning to the road, so she opts to buy snacks at the convenience store to tide her over as a makeshift dinner. Upon entering, it takes a moment to process the offered services. Even for a convenience store, the World's Largest Truckstop doesn't disappoint: shelves are stocked with extensive resources for tourists to refuel their bodies. From 15-inch (38 cm) "Super Giga Giant Beef Jerky Strips" to candies such as watermelon Sour Patch Kids and a choice of both Coke and Pepsi fountain drinks, the convenience store has it all.

The stager designed the experience so that tourists' minds are refueled by the absorption of the 100,000 SF of retail space. Because of the immense scale, space is distorted. Depth perception is challenged as the mind figures out a way to adjust to the unexpected vastness. Unexpected moments such as this challenge tourists to question their surroundings and their preconceived perceptions of space.

## OVERLAPPING EXPERIENCES

Another aspect of the experience economy is making the experience personal for the guest. This moves beyond the traditional standard goods, and customizable services allow guests to engage in personal experiences.<sup>22</sup>

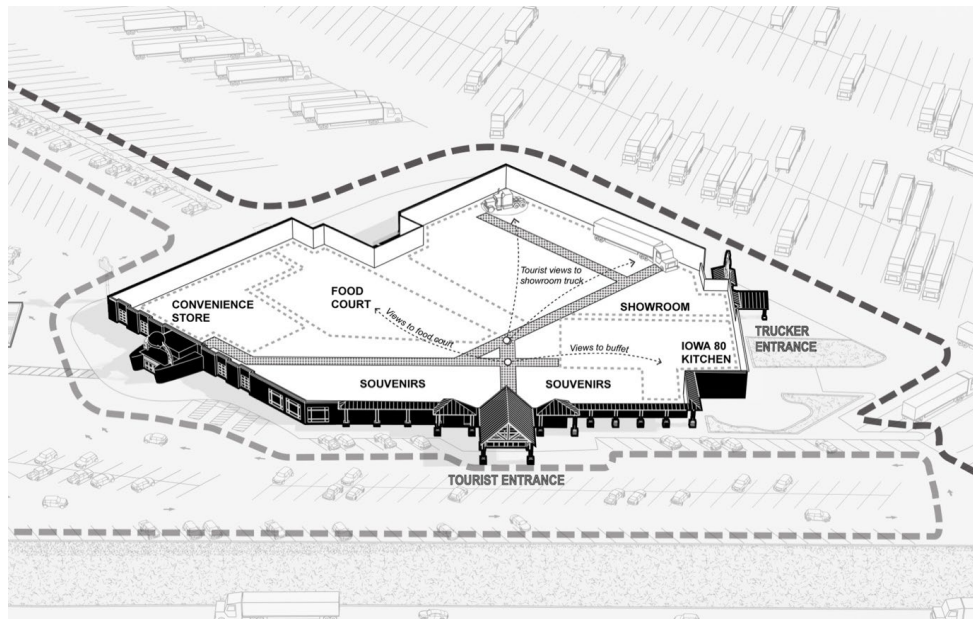
After selecting a variety of snacks, the tourist is about to head back to her car when a full-size truck cab on display in the Super Truck Showroom catches her eye (Figure 5). It's not your typical gas station attraction, so she decides to take a closer look. At the same time, having just finished a hearty dinner of the truckstop's famous meatloaf and mashed potatoes, the trucker is also enticed to pay a visit to the Super Truck Showroom, although not because of the truck on display.



*Figure 5. The full-size truck cab intrigues tourists and encourages them to engage with truckers while occupying the space. (Images courtesy of Iowa 80 Group.)*

The building is organized to provide only a few moments of conscious overlap between the trucker and the tourist. The tourist is initially led to the showroom by the welcoming tiled pathway, as shown in Figure 6. When tourists enter the showroom, they are introduced to the trucker world, and in this space they can fully comprehend the impact of Iowa 80. Throughout the rest of the building, tourists have seen elements of the trucker lifestyle through the lens of advertising: truck-themed trinkets and

signage that playfully references the lifestyle. However, once tourists enter the Showroom, they interact with actual trucking equipment and gear firsthand.



*Figure 6. The darkened tiled pathway organizes the interior space and provides alluring destination views that draw tourists through the spaces. (Drawing by Elena García Tapia.)*

In the showroom, the trucker and tourist's interactions become intertwined, and their experiences become shared. While truckers are swapping stories and buying customized products for their trucks, tourists are engaging with the truck cabin and experiencing the instruments and sleeping quarters used by truckers.

As an example of this, when walking the aisles, our tourist overhears our trucker debating specialty watermelon-shaped LED lights for his truck. Intrigued by the potential size of these lights, the tourist investigates closer, noticing the lights are actually only a few inches long. The tourist remarks that she's surprised by the size of the lights, given their name. The trucker, pleased by the contradiction, explains that the rounded shape of the lights provides better visibility, making it safer for both truck drivers and other cars on the road. He explains that these custom lights come in a range of colors, allowing truckers to showcase their personalities in addition to promoting safety. After her conversation with the trucker, the tourist feels like she's beginning to understand a little more about the trucking lifestyle, noting that it involves much more nuance than she'd imagined.

Typically, as one Con-way Trucker states, "To the general public we [truckers] are invisible unless something goes wrong,"<sup>23</sup> In the showroom, however, truckers are celebrated as celebrity guests. The Iowa 80 truckstop demystifies trucking and brings the two worlds together.

Meanwhile, after experiencing a glimpse into the back-of-house, tourists' perspectives are altered. Details that were missed on the journey to the Showroom suddenly reveal themselves on the way out: advertising for truck add-ons and specialty alterations that once sounded garbled now take on new meaning as tourists can call to mind images to match the lingo. Because this perspective was revealed over a duration of time, tourists feel as if they've fully absorbed the experience, which makes it more memorable.



## DEPARTING MEMORABILIA

“Certain goods have always been purchased primarily for the memories they convey. They purchase such memorabilia as a physical reminder of an experience.”<sup>24</sup>

While the aim of advertising for truckers and tourists differs, both are invited to leave with something to help them remember their stop. As the trucker proudly exits with his newly installed 3.5" watermelon LED lights and heads for the westbound I-80 on-ramp, he is rested and revived by his time at Iowa 80 (see Figure 7). With his new headlights, the truck's image becomes a new sign on the big slab. This sign—unlike the I-80 billboards—is more subtle, but equally powerful. The truck now conveys options and individuality to other truckers on the road. In addition, many truckers also leave with a newfound sense of community.

Meanwhile, after refueling and departing the truckstop, the tourist notices the price of the gas. On average, gas is \$.03 higher at the World's Largest Truckstop compared to other Walcott stations.<sup>25</sup> This additional cost is essentially an admission fee. While there are other gas stations nearby (even one across the street from the Iowa 80), customers routinely choose to stop at the World's Largest Truckstop over others, partly so they can partake in the experience and ambiance. As Pine and Gilmore state: If service businesses like airlines, banks, grocery stores, and insurance companies find no demand for memorabilia, it's because they do not stage engaging experiences. But if these businesses offered themed experiences layered with positive cues and devoid of negative cues, their guests would want and would pay for memorabilia to commemorate their experience.<sup>26</sup>



Figure 7. A departing message for truckers and tourists leaves them with an impression as they leave Iowa 80 and return to the big slab. (Image courtesy of Iowa 80 Group.)

## IMPRESSIONS

“Impressions are the takeaway of the experience; they fulfill the theme.”<sup>27</sup>

This essay explored complexities and often overlooked qualities of Iowa 80, the World's Largest Truckstop, through the lenses of the “learning from” approach and the experience economy, revealing everyday experiences from the tourist front-of-house and trucker back-of-house. It presented a highly calibrated set of branded spatial relationships from the billboard to the watermelon light, and revealed essential components of the experience economy, including cues, impressions, stage, stager, and memorabilia to portray a new understanding of a location that might not normally be considered worthy of architectural investigation. This understanding positions Iowa 80 as a sweet spot in the everyday experience economy, differentiating the truck stop from more indulgent experiences such as

Disney World and the Prada Epicenter stores by Koolhaas while also forming part of an operational landscape of the built environment that sustains city density and must not be ignored.

A significant number of everyday built environments, including supermarkets, pharmacies, and truckstops, are not designed by architects and therefore left out of academic investigation and dismissed from professional practice. However, most people occupy these spaces daily, especially in non-city locations, giving consumers a level of comfort and familiarity with these spaces. Iowa 80 is such a place, and is worth learning from by considering its function in the experience economy.

## NOTES

- <sup>1</sup> *Learning from Las Vegas* presented a new way of investigating how architecture responded to the rapid growth of the Las Vegas Strip, and this case study approach was applied several years later in *Stalking Detroit, The Harvard Guide to Shopping, Many Norths, and Countryside: A Report*, all of which create a robust anthology of research methods investigating buildings, streets, cities, and territories.
- <sup>2</sup> Joseph B. Pine II, James H. Gilmore, "Welcome to the Experience Economy," *Harvard Business Review*, July 29, 2022, <https://hbr.org/1998/07/welcome-to-the-experience-economy>.
- <sup>3</sup> Klingmann, Anna. *Brandscapes: Architecture in the Experience Economy* (MIT Press, 2010), 4.
- <sup>4</sup> Klingmann, Anna. *Brandscapes: Architecture in the Experience Economy* (MIT Press, 2010), 19.
- <sup>5</sup> Klingmann, Anna. *Brandscapes: Architecture in the Experience Economy* (MIT Press, 2010), 274.
- <sup>6</sup> "Iowa 80: Who We Are," Iowa 80 Truckstop, accessed July 29, 2022, [https://www.youtube.com/watch?v=x1xzCRso5\\_w](https://www.youtube.com/watch?v=x1xzCRso5_w).
- <sup>7</sup> "About Iowa 80" Iowa 80 Truckstop, accessed July 29, 2022. <https://iowa80truckstop.com/about-iowa-80/>.
- <sup>8</sup> Waldheim, Charles, and Alan Berger. "Logistics Landscape." *Landscape Journal* 27, no. 2 (2008): 219–46. <http://www.jstor.org/stable/43332450>.
- <sup>9</sup> Brenner, Neil. 2018. Urban Theory Lab, Harvard, Graduate School of Design. <http://www.urbantheorylab.net/>.
- <sup>10</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>11</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>12</sup> "Summary of Hours of Service Regulations," Federal Motor Carrier Safety Administration, accessed July 29, 2022, <https://www.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations>.
- <sup>13</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>14</sup> "Wide Turns" Federal Motor Carrier Safety Administration, accessed July 29, 2022, <https://www.fmcsa.dot.gov/es/node/72506>.
- <sup>15</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>16</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>17</sup> "The World's Largest Truck Stop | (History and Future of Hauling Freight)," Off the Cuff, accessed July 29, 2022, <https://offthecufftravel.com/i80truckstop>.
- <sup>18</sup> "About Iowa 80," accessed July 29, 2022, <https://iowa80truckstop.com/about-iowa-80/>.
- <sup>19</sup> Peter Rowe, *Making the Middle Landscape* (The MIT Press, 1991), 65-66.
- <sup>20</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>21</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>22</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>23</sup> Off the Cuff, "The World's Largest Truck Stop | (History and Future of Hauling Freight)."
- <sup>24</sup> Pine, Gilmore. "Welcome to the Experience Economy."
- <sup>25</sup> "Gas Buddy," accessed July 30, 2022, <https://www.gasbuddy.com/>.
- <sup>26</sup> Pine, Gilmore. "Welcome to the Experience Economy."
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# **MICRO PROJECT - MACRO SUBJECTS: WASTE AND REUSE AS STRATEGY FOR RENEWAL AT THE URBAN EDGE.**

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## **INTRODUCTION**

In the summer before Covid lockdowns, students and staff at the University of Hertfordshire (UH) were constructing an installation for the London Festival of Architecture (LFA). The university is in Hatfield; a London edge, with complexity of greenbelt, suburbia, New Town, sprawl and loss of centre.

An interactive bench was developed as a commentary about waste. The timber-based installation showcased what can be done with discarded materials. It was temporarily installed at London Bridge South Bank, a festival venue which welcomed many visitors.

In the installation's new home in Old Hatfield, where it has been donated to Gascoyne Cecil Estates, it is hoped it will continue to contribute to an ongoing discussion about repurposing how to reinvigorate existing places. In the Covid age, outdoor amenity is recognized as important.<sup>1</sup>. In an age of climate change, contributed to by manufacturing, responsible material use is also important. This micro-sized project seeks to address macro-issues.

Can a sustainable Live Project designed as an activist event for the LFA, be repurposed to make an urban impact in Old Hatfield? This paper investigates a case study, to answer this question. Important recurring themes are pedagogy, sustainability, and tactical engagement with space.

In this section, the three following topics will be explored as important context for the installation: pedagogic implications of live projects, sustainability in terms of waste reuse, and tactical urbanism.



Figure 1. Installation in process, London Festival of Architecture, 2019

## Live Project Pedagogy and Motivation

### Live Project

The installation is a 1:1 project, made by students, out of real materials. It can be classified as a live project according to Anderson:

*Live project* is the term widely used in the UK. *Designbuild* is a term commonly used in architectural education in North America to describe projects involving construction. .... Other terms include *service learning*, *design + make*, *1:1 projects* and *construction projects*<sup>2</sup>

She also states such projects '*are often connected with participatory, collaborative, inter-disciplinary, professional training, and construction / technology education.*'<sup>3</sup> The LFA project meets criteria of participation, collaboration, interdisciplinary and construction, as described in Section 3.

### Pedagogy

The project's process of development and construction is a form of architectural pedagogy. Though not a part of a specific module or developed in a class room, it meets requirements outlined below. It involved university staff and students – in addition to several other partners. As stated by Anderson:

*Even when physically or intellectually distant from the institution, the pedagogical purpose of live projects maintains the link to education. Live projects straddle pedagogy, research, practice and the community, enabling their mutual benefit.*<sup>4</sup>

In this instance, the project was made on University grounds. It was designed for remote installation, in London, to be a physical demonstration of the overuse of plastics, and hoped to make students and public aware of their own plastic use and perhaps modify behavior. It should be noted, that, while the project may not be able to change the production of plastics, it can contribute to education of sustainable making.

### Motivation

A pedagogic value of live projects is motivation for students- a result of working on a real project, and seeing results. Educators Biggs and Tang, state there are two main factors to motivate and make students want to learn. The first is that it must be important to them. The second is that they need to

expect success, as a result of engagement with the task.<sup>5</sup> Section 4 below discusses how these two factors have been met, by constructor students.



Figure 2. Brighton Waste House, image University of Brighton

### **Sustainability – Waste and Reuse**

A published exemplar project is The Brighton Waste House, by Duncan Baker-Brown, University of Brighton (Figure 2). Though permanent and a larger structure, it illustrates benefits of recycling materials and offers important lessons.

It is made up of over 85% waste material. This includes: discarded construction materials (bricks, ply, timber); chalk waste (rammed wall); old vinyl street banners (Vapour Control Layer); and airline toothbrushes, plastic razors, denim jeans, DVDs, video cassettes (Insulation).<sup>6</sup>

The project was significant, as it influenced Statutory Authority protocols and decision making. According to Martin Randall, Head of City Planning and Development, Brighton & Hove City Council:

*The City Council has drawn considerable inspiration and valuable guidance from working with Duncan and his work has advanced policy and practice for sustainable design across the city.*<sup>7</sup>

According to Baker-Brown the following lessons were learned. First, they should source materials, then think about application. This is inverse to the usual process of designing with the assumption materials will be available. Secondly, a building could be constructed with non-standard materials, by young people with without construction experience- as long as they are briefed properly and supported. Constructors included architecture and interior design students from the University, and student carpenters, electricians, plumbers, bricklayers, decorators etc., from City College Brighton and Hove. This project was developed with over 40 partners, including private, community and institutional.<sup>8</sup>

According to definitions outlined above, it could be classified a live project. An important legacy noted by Baker Brown is that now their: *‘Architecture students considered design projects tackling*



*issues associated with valuing waste as a resource, as well as broader issues relating to the Circular Economy.*<sup>9</sup>

Such findings parallel the experience of the largely recycled LFA installation, as described below.

## Tactical Urbanism

In its first instance, the LFA project was designed to inhabit a place temporarily and deliver a message about recycling. The future aim is to use it to transform and reuse a public space in Old Hatfield. The installation project meets criteria that classifies it as tactical urbanism (TU).

According to Donovan, in the 2014 special issue of the Journal of Urbanism, tactical urbanism – also known as DIY urbanism is a *‘new brand of citizen-led place-making activity’*.<sup>10</sup> He states they often are interventions to improve urban experience; deal with unaddressed local urban problems; and have low cost, innovative solutions.

The Street Plans Collaborative have published and provided input on a series of TU guides. They are an urban planning, design, and advocacy firm, consisting of urbanists, planners and architects.<sup>11</sup> In 2016 they, collaborated on the 5<sup>th</sup> Edition, which defined TU as:

*‘A city and/or citizens-led approach to neighborhood building using short-term, low-cost and scaleable interventions intended to catalyse long-term change.’*<sup>12</sup>

According to this, it can be also city led, but it refers to smaller, cost efficient interventions that can be precursors to larger, significant changes.

Restart, published in the 5<sup>th</sup> Edition guide, is an example of historic precinct renewal. The project is located in the historic city centre of L’Aquila, and completed in 2014:

*The aim of the project was to transform an underused area in a real public space, which can be used as a resting, meeting and sharing place for the inhabitants of the old town and the students of the Human Sciences Department.*<sup>13</sup>

Participants included VIVIAMOLAq architectural designers, citizens and university students. Inexpensive materials utilized included wood scaffolding planks and rubble contained within steel mesh. The site is in an earthquake zone, and rubble use is a cost effective, symbolic way to reuse building material. The result of the week-long construction programme was a series of benches, tables and fences, defining a public gathering area, see Figure 3.



Figure 3. Restart, L’Aquila, historic city centre, image VIVIAMOLAq

## METHODS

In this section, the process of the design is outlined step by step, then the methods of team building and physical design building will be discussed. In order to understand the methods utilized to accomplish the LFA project, it is useful to describe the process first: a live project, by its nature, is a



project that evolves as a result of its making – it is speculative, reactive and evolutionary. It could be argued that its method is its reactionary design process.

### Description of design process

First an outline design proposal was developed, for a London Festival of Architecture event, with the aim of obtaining approval by this organization. At this stage materials were speculative. Items proposed to be collected from the public included common items such as coffee cups and water bottles. Participants were the Team Leader, two members of staff, an academic at the University of Plymouth, and a Canadian architecture student.

After event approval was gained, the team developed the project. Material use clarified. Donated construction materials were identified, which the team collected. They then reworked designs, to suit available materials. The team expanded and evolved at different stages: interior design students at conceptual stages, and architecture students at construction stages- as due to course timings interior students were completing submissions. External professionals were invited to join by the team, to act as material assembly advisors.

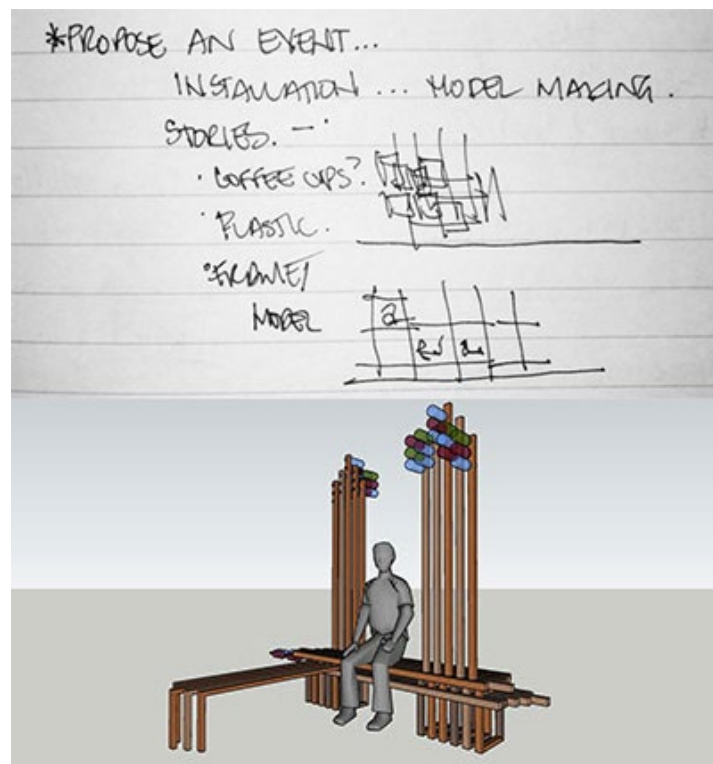


Figure 4. Above: Concept sketch, Below: Initial model, images UH team

Designs went through several iterations, and were tested against buildability and safety, as the LFA is a public event. It was first tested via sketching, computer model and physical models. Then it was made at 1:1. It was a prototype in evolution, rather than a series of separate prototypes. While being constructed, assembly methods were trialled, accepted or rejected. As a result, it was continually reconfigured, with collaborative input from students, staff and advisors.

Once complete, it was transported to the London site. Here, the UH team was joined by a University of Plymouth team. In a final activist event students collected and treated bottles, and assembled an alternative experimental display for the public.



Figure 5. Above: Sourcing materials, Below: Developed model, images UH team

Team Building and Design Building

Two key methods were utilized to develop and complete the project. The first relates to the people involved: students were key players, as well as staff, professional contributors and the public. The latter donating the active element- bottles. The second relates to the physical nature of its design, the material of construction and aspects of its placement. To label them, methods have been Team Building and Design Building.

Team Building

The project involved the collaboration and co-production of many different actors, involving academic staff, students, and private companies over the two years it was in UH hands. These came from different disciplines and geographic locations. The table below outlines their input.

TEAM MEMBERS	INPUT	
University lecturers	Collaboration, brainstorming and guidance; then critique and re-direction	
Student designers	Design options brief/ classroom; then ‘on the ground’ construction solutions – working with staff members and external consultants	
Expert advisors	Staff members from other fields; experts from other universities; specialists from industry	
Funders	Initial seed and research funding; for skills; for labour; and materials	
Public	Contribution of materials; information exchange at event; bench sitters	

Table 1. Team members and input

All were encouraged to contribute to answers, and if additional expertise needed, reach out to networks to source those who could. The team operated in person, and also via drawings, email, social media messaging, phone, and online meeting.

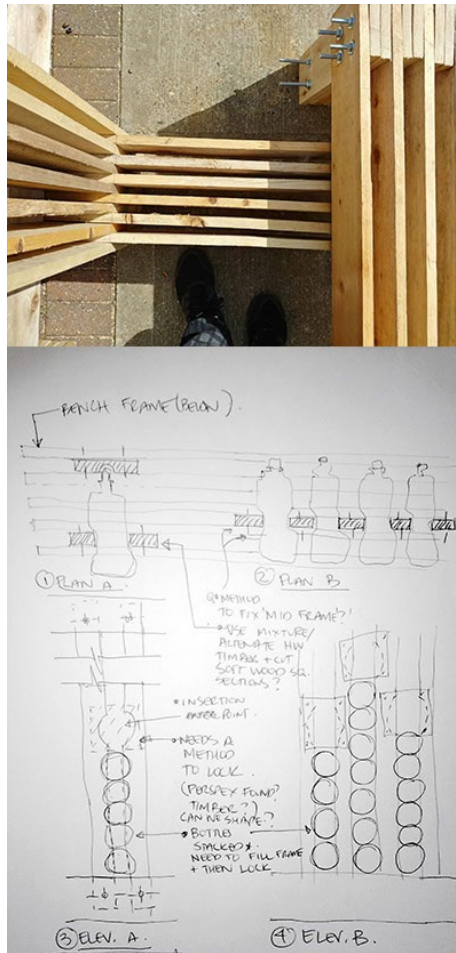


Figure 6. Above: 1:1 testing, Below: Construction sketch, images UH team

## Design Building

Students and staff worked together to consider how to repurpose found materials. There were several evolutions, from early concept stages, to resolved built stages. Methods of moving towards a final object were a mixture of planning ahead, evolutionary, and reactive.

There are two outputs. The first is the construction of the object – a receiver of anticipated plastic bottles. The second is the activist event where bottles are collected from the public by students, and inserted into the object. Placement in a busy public location, and the interaction with the public through the collection and display of their waste, was part of an activist intention: making a demonstration project with the hope of informing about sustainability through example.

An important part of the project, and a major contributor to the form is how the team designed construction details for donated materials. This was done via construction sketch, and by testing at 1:1. They were made as reusable parts, which aligns with an intention to continue the cycle of re-use. The intention is that they would be easily moveable from site to site, and avoid a disposable one-off project. Components needed to be easily disassembled into their disparate materials. In the end, the following materials were utilized: repurposed scaffolding boards and hardwood timber battens;

repurposed plastic bottles; repurposed coloured acrylic sheets, donated existing coach bolts, some new ironmongery. See table 2 for a summary of the Design Building.

DESIGN PROBLEMS	DESIGN TESTING AND DEVELOPMENT	
Design for real materials	Draw, model, and test build	
Material sourcing	Find materials with resemblance to initial designs; Problem solve/ adapt with available materials	
Suitability for transport	Check module, size, weight; rework as needed	
Final siting/ event	Source and finalize place for event= suitable public footfall; Develop form suitable for stability on site (grass).	

*Table 2. Key aspects of Design Building*



*Figure 7. Complete measuring device installation, London, 2019*

## RESULTS

The result of the planning and designing was a final physical installation. It was built on campus and transported to London temporarily for a festival. The final form was a collection of components: four benches and a large display frame.

The components consisted of separate modules constructed from mainly recycled materials. They were developed to connect together into one combined bench-frame, when installed. The components were designed to a scale that allowed for ease of transport – lifted by hand and moved in a standard large van.

The large frame displayed bottles collected from the public during the event. It acted as a measuring device to illustrate amount of plastic waste generated. In this instance, the display revealed what was collected one sunny afternoon, over two hours.

The project began in Summer 2018, and found its new home in Winter 2020, as outlined in Table 3. Over its development, there were 19 different interested members/ groups who participated, see Table 4.

DATE	TIMELINE	
2018	<b>During Summer Semester</b>	
“	brainstorming about potential Live Project in curriculum + for Summer school	
“	fact-finding trip to Canada Dalhousie University FreeLabs (Live Projects)	
2018/2019	<b>Sequence Over Academic Year:</b>	
“	Develop brief	
“	Develop design	
“	Dind materials	
“	Select LFA site: next to London Bridge	
“	Redesign and develop details	
“	Construct at UH	
“	Transport: install in London	
“	LFA Event with Public, UH + Plymouth University	
“	Strike + transport: store at UH in Hatfield	
2020	<b>Autumn/Winter Semester</b>	
“	Rehoming: search for final location	
“	Transport + store: Old Hatfield	

Table 3. Timeline

No.	WHO: INDIVIDUALS / ASSOCIATED GROUPS	
<b>UH Staff</b>		
1	Project Lead: Architect, I. Hay	
2	2no. Lecturers: Interiors and Architecture	
3	Product Design member of staff: detailed design and construction stage	
4	Structural Engineering member of staff: detailed design and construction stage	
5	Workshop support: construction stage	
<b>UH Students</b> [diverse backgrounds + majority female]		
6	Interiors: 4no. at sketch design option stage	
7	Architecture: 3+ no. at construction stage	
<b>Industry</b>		
8	CAUKIN Studio	
9	Studio Schubert	
10	Texere Studio	
<b>Funding/ Donation Institutions / Companies</b>		
11	Canada-UK Foundation	
12	London Festival of Architecture	
13	Murphy Group	
14	Potters Fields Park	
15	University of Hertfordshire	
<b>Other University Collaboration</b>		
16	Dalhousie University, Canada	
17	University of Plymouth, UK	
<b>Clients</b>		
18	London Public (speculative client)	
19	Gascoyne Cecil Estates (final custodian)	

Table 4. Final Participant List



## DISCUSSION

Three themes have come out of the construction and installation of the project: student impressions, recycling and re-siting, and future tactical moves.

### Impressions of Student-Constructors

At the one year anniversary of the Festival Event, student-constructors were requested by the Team Leader to share their reflections on building the project. They emailed their thoughts in June 2020.

Though a small sample, it is useful to understand what they thought were lasting results. There are some recurring themes: motivation, construction skills and personal skills.

The project motivated them to learn while doing. As introduced in Section 1, for students to be motivated to learn, tasks should both be important and expected to be successful. This was evidenced in feedback. They enjoyed making a real object, and see results of their efforts –rather than a paper/theoretical exercise. This was seen to be an important step in their education towards designing real buildings. It seemed working with like-minded individuals in a well-functioning group encouraged their progress and may have helped them to expect success. They said they were motivated by feedback from the mixed team and public, and the experience and validation from expert tutors and professionals. Finally, they reported they felt that the project was successful.

Students reported learning three construction skills. First, they practiced how to maximize materials and minimize waste. Second, they tried design by making, a different process to design by drawing, which they have done previously. Third, they experienced construction and delivery stages of projects, which they had not been exposed to before.

Important personal skills were practiced, relevant to their university and architectural future. The following were identified: organization for deadlines, team communication, and confidence to seek out and use facilities as needed (eg. university construction workshops).



*Figure 8. Students inserting bottles in frame*

## Recycling and Re-siting

The project, designed as a series of sustainable components to be installed and removed as needed, allows for a life beyond the initial event. The journey has been from university to London and back, and then on to Old Hatfield to new keepers Gascoyne Cecil Estates. Regarding future use, the Gascoyne contact noted that it ‘makes most sense’ to be located in Salisbury Square (Figure 9), where it could help rejuvenate public realm.

This square has a number of historic problems, identified from Gascoyne’s studies- part of plans to attempt urban improvement. Once a busy centre of Old Hatfield, activity has moved away, turning it into a periphery space. According to the public, from a 2008 Charrette, *‘The public spaces, ... are ill-managed, unfriendly and consequently underused. ...Salisbury Square... is impractical for a number of uses ...’*.<sup>14</sup> The Gascoyne team had identified that the main road that that used to lead into the town, now bypasses it due to a sequence of urban moves from the late 19<sup>th</sup> Century to present. A key urban factor in the severing of the high street, was New Town development and associated roundabout bypasses. As a result, Salisbury square - part of the historic heart- is cut off.<sup>15</sup>

In 2019, conclusions came out of a Public Survey held by Gascoyne, identifying what is needed and wanted in this square, which may be relevant to re-use of the installation. One of the more popular statements is to: *‘Remove some of the green space, and replace it with a mixed use hard surface which can be used flexibly for markets, events and exhibitions.’* Other solutions are: add more retail space facing the square, add a road into the square, and add parking.<sup>16</sup>

## Tactical Urbanism – new installation proposal

Sifting through feedback and conclusions from above, a logical re-use is to deploy bench and frame as part of a pop-up event. This would address two issues, to recycle the installation and also rejuvenate (recycle) Salisbury Square.

According to the current Planning scheme, submitted to Welwyn Hatfield Borough Council December 2021, there are new links proposed to local roads, but still no through road to increase footfall. Parking and bike racks are included.<sup>17</sup>

A tactical move, via a micro-project, would be to provide activity and destination in the Square, as exemplified in Restart, Italy. The current project could be transformed, and become a prototype Bench and Market installation. The ‘bottle’ frame could be adapted to become retail market ‘installations’– effectively market stalls. Perhaps cycle and pedestrian routes could be also addressed in a tactical urban way, eg. via temporary signage/events. This would address Gascoyne’s Survey Conclusions, by providing retail facing/in the square, and utilizing the space as a market.

There is possibility of the interventions being more permanent if locally successful. If the tactical market increases footfall and proves to be useful to the community, it may influence future planning. As with Brighton Waste House, the moves could be embraced, even adopted elsewhere in the council for regeneration.

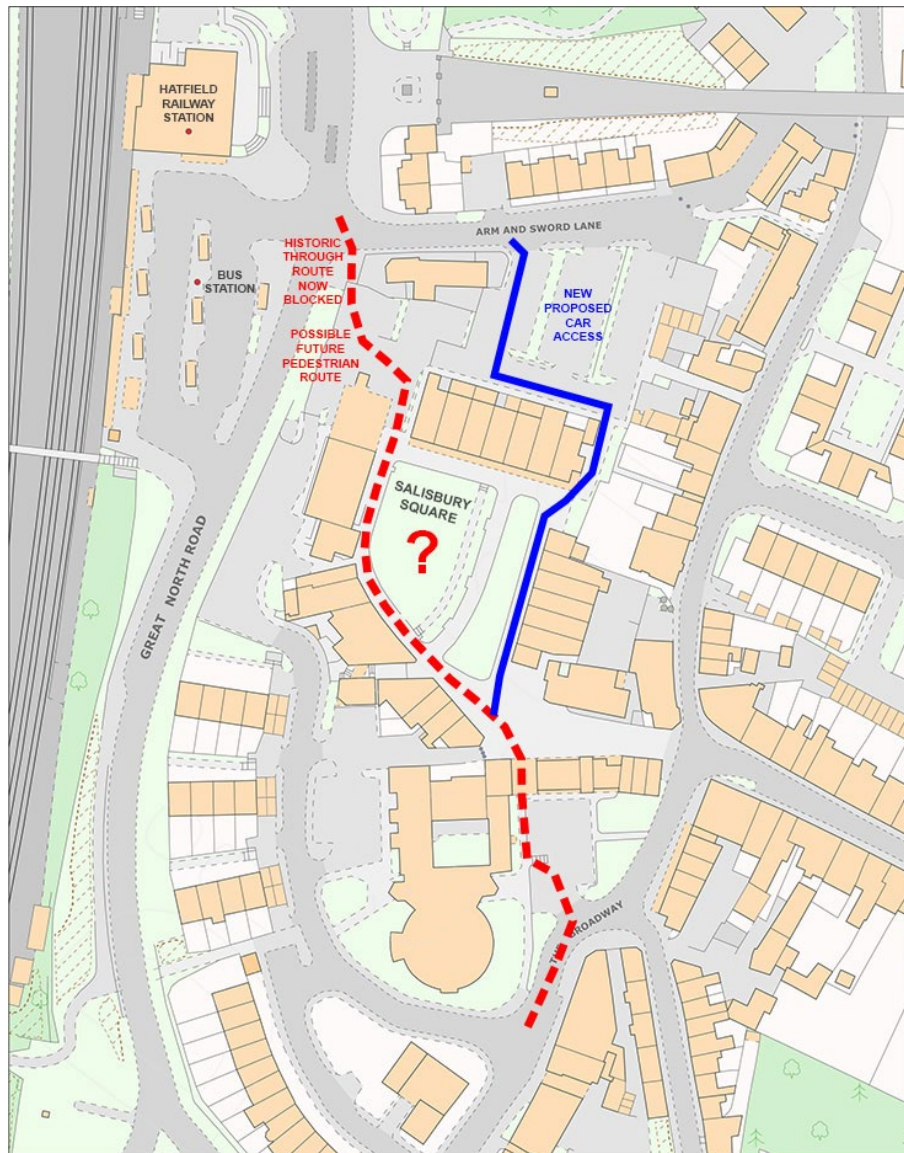


Figure 9. Salisbury Square and routes, Old Hatfield, base map Digimap

## CONCLUSION

Ultimately, a live project can be used actively, to exemplify importance of recycling. It can also help to inform about the potential for urban spaces. Three main conclusions from this project are: that it has value operating beyond the typical classroom, it can be done sustainably, and it can be considered as a piece of tactical urbanism.

Upon consideration of precedents and the final installation, it is possible to utilize installation projects as a pedagogic tool, to inspire and encourage new thinking in students, and hopefully public. These projects can and should be done sustainably, repurposing existing materials. As a means of tactical urbanism, they can be utilized to contribute to creation of temporary and new spaces. With intentional insertion, place making ideas can be tested in an existing environment. If successful, projects could become permanent interventions and influence future council policy.

Future research to explore, relating to activist and tactical urban micro-projects includes investigating pedagogic impacts, exploring material recycling and lifecycle, documenting systems of material junctions (allowing for repurposing), and analysing potential impacts on place. The result, with



further evidence from other micro-projects, could be a new 'Manual for Activist Live Project Pedagogy'.

Regarding next steps of the repurposed installation in its new home, initial discussions with interested parties- academic, professional, owners and public- is needed to understand the brief more fully. And, of course, potential additional waste and found materials for construction will need to be identified for the next tectonic evolution.

## NOTES

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# NEW COMMUNITIES AND NEW VALUES? EXPLORING THE ROLE OF GREEN SPACES IN LOW CARBON NEIGHBOURHOODS

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## INTRODUCTION

Concern for climate change and the need for urgent action is growing across UK society. In 2019, the UK Government set a legally binding target of net zero carbon emissions by 2050, requiring decarbonisation across all sectors. As significant contributors to global CO<sub>2</sub> and other GHG emissions, it is recognised that the energy and buildings sectors must find ways to decarbonise.<sup>1</sup> Alongside this, policy ambitions to “green” the economy,<sup>2</sup> and to “build back better”<sup>3</sup> link climate change mitigation with economic development – proposing scale-up of renewable energy and transformation of the building sector.<sup>4</sup> Active Homes are energy efficient (in build fabrics, design and energy system), have renewable energy production and storage, with the capacity to be smart and digitally interconnect with other Active Homes and across vectors (i.e. transport).<sup>5</sup> The novel energy configurations designed into Active Homes, and their possible future role as energy infrastructure<sup>6</sup> means that real-life examples are limited to a small, number of demonstrator projects. Such projects aim to prove that Active Homes can deliver on their projected technical performance, provide homes and neighbourhoods that are “liveable and sustainable places”,<sup>7</sup> and which can be scaled up.<sup>8</sup> This requires that Active Home neighbourhoods enable place-making processes<sup>9</sup> including perception of a sense of community.<sup>10</sup> Research has demonstrated that public green spaces can contribute to both place-making and sense of community.<sup>11</sup> Such spaces are incorporated into Active Home neighbourhoods to facilitate such processes.

Living Well in Low Carbon Homes (LWLCH) is a social science work package within the Active Building Centre Research Programme. LWLCH explores a range of perspectives and experiences involving the design, realisation and occupancy of five Active Home neighbourhoods. In this paper we draw on interviews with developers involved in the design and realisation of Active Homes to explore how ambitions for new Active Homes to contribute to UK-wide decarbonisation and form socially valued and sustainable neighbourhoods inform neighbourhood design decisions. In addition, we draw on qualitative longitudinal (QLL) interviews with Active Home residents, exploring both their expectations, and later experiences of living in Active Home neighbourhoods, to elucidate their perceptions of place and community.

## DESIGNING SOCIALLY VALUABLE PLACES

Place is a fundamental principle of geography and an important concept in urban design and architecture, amongst others.<sup>12</sup> A socio-physical construct, place can be understood as an assemblage of both physical and socially constituted dimensions.<sup>13</sup> Place-making is a spatio-temporal process involving the activities, or the living and “doings” of people who encounter spaces with both subjective and shared histories, cultures, experiences and imaginings.<sup>14</sup> During such ‘doings’, value and meaning are attributed to space and a “sense of place” is formed.<sup>15</sup> Thus, place-making is a dynamic, subjective and relational process where place is constantly contested, re-made and re-shaped.<sup>16</sup> A two-way process, it is also recognised that places influence people’s living and doing<sup>17</sup> giving “shape to our daily lives”.<sup>18</sup> Indeed, the places we “live, work and play” in their physicality and perception, influence multiple dimensions of our lives, including “our personal and communal happiness, identity and sense of belonging”.<sup>19</sup> In this way, place and society are inseparable, as they are mutually constitutive.<sup>20</sup> In the design of neighbourhoods, the interplay between people and the environment is a key consideration.<sup>21</sup> Moreover, in the design of Active neighbourhoods, there is opportunity to address complex and intertwined societal problems while also creating “better places for people”.<sup>22</sup>

An important element in the place-making of neighbourhoods, is occupants’ perception of a sense of community,<sup>23</sup> formed through the “social bonds within and between people and place, as well as the physical, symbolic, political and cultural implications of ‘community’”.<sup>24</sup> A sense of community can hold several benefits for community members and the longer-term sustainability of neighbourhoods.<sup>25</sup> Research has demonstrated that a sense of community can benefit people’s health and wellbeing, reduce social isolation, increase perceptions of safety, and generate a sense of neighbourhood satisfaction.<sup>26</sup> It can also enable a sense of belonging and emotional attachment to place<sup>27</sup> encouraging neighbourhood stewardship and civic ethos.<sup>28</sup> For the long-term sustainability of place, research points to the importance of shared learning and collective experiences of place<sup>29</sup> whereby places are made and shaped over time by an interplay between place and occupants.

Public and open spaces, particularly those considered ‘green’ due to the inclusion of plants and trees or access to natural environments and nature, can create opportunities for community interaction and social activity,<sup>30</sup> enabling collective experience and shared learning to take place.<sup>31</sup> In addition, they can provide additional intrinsic benefits for health and wellbeing associated with enhanced human-nature connections,<sup>32</sup> even encouraging the uptake of more altruistic behaviours, including those that are sensitive to environmental concerns.<sup>33</sup> Thus, public green spaces are often included in neighbourhood design to encourage and strengthen a sense of community.

The remainder of the paper is organised as follows, first we briefly outline our LWLCH methodology. Following this, we draw on our research findings to elucidate how Active Home developers perceive place and community as important elements in the success of their neighbourhoods, enabled through the inclusion of public green spaces. We also draw on resident interviews to reveal both their expectations and then experiences of their neighbourhood and community, and the role of public green spaces in this.

## UNDERSTANDING IDEOLOGIES, EXPECTATIONS AND EXPERIENCES

Our LWLCH research aims to understand the motivations of Active Home stakeholders (including developers), the perspectives of existing communities, and the perspectives and experiences of people moving into Active Home neighbourhoods. Our methods include qualitative research interviews with both stakeholders and residents. Stakeholder interviews (n=29) aim to understand ambitions for Active homes and neighbourhoods, including ideologies underpinning the neighbourhood design and reasons behind certain design decisions, such as the inclusion of green spaces.

Qualitative longitudinal interviews (QLL) with residents (n=37) allow us to explore in-depth their expectations for, and later experiences of, living in Active Home neighbourhoods. We initially interview residents a few weeks prior to moving into their Active Home and twice within the first year of occupation. Due to the Covid-19 pandemic, the majority of the interviews have been conducted remotely using video conferencing software or telephone. Interviews are audio recorded and transcribed verbatim, and transcripts are coded thematically using NVivo software.

Our LWLCH research incorporates five Active Home neighbourhoods set in different locations across South Wales, UK. The case sites are diverse in a number of ways, from the material design and energy configurations within the homes, to the overall neighbourhood design and incorporation of public green spaces. Three of the developments are now occupied by residents and public green spaces have been designed as: turfed seating areas, seating areas with biodiverse sensitive planting, and community allotments. Case sites currently under construction include designs for communal garden spaces with biodiverse and ecologically sensitive planting and a community led urban farm respectively. The findings presented relate to the three occupied case sites only.

## **DESIGNING-IN COMMUNITY TO ACTIVE HOME NEIGHBOURHOODS**

In this section we draw on insights and extracts from developer and resident interviews around their ambition to create low carbon, sustainable and socially valuable neighbourhoods. To ensure anonymity, developers are referred to numerically, residents have been assigned pseudonyms.

### **Creating community places**

The opportunity presented in the design of Active Home neighbourhoods to address a number of societal issues was recognised across all of our developer interviews. In addition to reducing carbon emissions, developers spoke about expectations that their developments would improve on the quality offered in current housing, in terms of building materials, and all aspects of the design of the homes and neighbourhoods. This improvement of quality combined with ambitions to address climate change was something that developers felt would become more valued over time, but had to be “driven by the market and people” (Expert 9), so “It does feel like something which will take off across society more and more as we move forward as people become, I think buying a house, you naturally will become more climate aware” (Expert 9).

Across the developer interviews, the importance of designing homes and neighbourhoods that people would value long-term was key. Thus, it was considered important that residents develop emotional connections with the neighbourhood. Including public green spaces within the neighbourhood design was perceived as offering an opportunity for residents to develop long-term connections to the neighbourhood:

“I love to see more green, more trees, you know, more the natural environment around me, and community. So community’s really important because whilst there’s no guarantee you’ll always get it right, if you try to create a community, people will value where they live for a longer period of time” (Expert 4)

Indeed, for several residents, the inclusion of public green space in the neighbourhood design was bound up with their expectations of what a low carbon or eco neighbourhoods should look like and the values it should symbolise. For some residents, like Julie, this included the creation of community, brought together through more than simply living in the same location, but through perceived shared values around climate change and cooperatively managing the public green space:

“Have a community...which is why the development sounds so wonderful to me, because there’s an opportunity to create a community there. It’s not just about somewhere to live.” (Julie, pre-occupancy)

Public green spaces were imagined by developers as providing opportunities for residents to connect with nature, which would hold benefits to their health and wellbeing. Moreover, connections with nature were perceived by some developers as synergising with the sustainable ideology of their development, thus raising the environmental consciousness of residents. Developers also spoke about how such spaces provided opportunities for social connections between neighbours. This could be achieved through increased interaction and also through the planning and undertaking of community-led activities in the spaces (such as food growing).

Despite developers emphasising the importance of including public green spaces, these were often the last area of the developments to be completed or were scaled back. In addition, where some were completed, they did not resemble what had been envisaged or could not be maintained. Several residents expressed disappointment about this, especially when the inclusion of public green space resonated with expectations for a more sustainable lifestyle. For some, tending and maintaining the public green spaces as a community was something perceived as strengthen neighbourly bonds. As Amy's quote below outlines, her neighbourhood had been promoted as a 'garden village'. However, while vegetation had been planted, a combination of poor soil and no watering infrastructure meant they could not thrive, meaning the garden village was not realised as imagined. Furthermore, the 'community garden space' Amy refers to remains undeveloped:

"For some reason, even though this is considered a garden village, the whole point of this was that it's a shared community garden space, and also individual gardens. None of us have got outside taps. So, we're all really struggling to keep the gardens going. And that's one of the things I mentioned that we're all a bit disappointed by." (Amy, post-occupancy)

Although the green spaces at Amy's neighbourhood incurred problems in their maintenance or remain incomplete, Amy also explained how the spaces had encouraged some community interaction, but this occurred via social media. Despite the 'community garden' remaining incomplete, residents still conversed with each other and a gardener (currently employed by the developer) about their own private green spaces, as well as the planned public space, asking questions and exchanging knowledge.

Other aspects of the neighbourhood design were valued by residents, for example, cul-de-sac or crescent shaped streets. As Ben suggests, these features enabled neighbours to view each other and communicate more freely, encouraging social encounters, generating familiarity and a sense of security and safety. In addition, accessibility considerations for residents with mobility issues had enabled some participants to gain new privacy and freedom, enabling independent navigation of the neighbourhood.

"You do feel like because of the crescent you... your house is... feels like a, in a bubble. It feels...quite close to everybody else. So, it feels nice that you... like if anything happened... like if you ever had a burglar, you feel like because of the way it's designed, somebody would see it, and somebody would be able to like support you or whatever." (Ben, post-occupancy)

Many residents spoke of appreciating how their neighbourhood design had retained existing natural features, for example preserving existing mature trees, or enabled views to nearby open green spaces (for example, woodland and mountain trails). This meant that residents were still able to access nature, and to encounter other residents. As Neil highlights, positive associations with place and community were talked about together where access to green spaces and nature made him feel "peaceful" and his community was perceived as "friendly":

"It's peaceful. We've got, behind our house we have the trees, we have squirrels running across the top of the fence and you don't... and we've got the park, which is 10 minutes up the road. But the noise, it's quiet, it's peaceful, it's friendly, the people who've moved here." (Neil, post-occupancy)

In the next section, we explore some contestations that have arisen around the use of public green spaces in Active Home neighbourhoods.

### **Contested green spaces**

Questions over ownership, use and also management of community spaces were raised by several participants, where there was confusion, some tensions arose. As Lisa explains, confusion over who owned, and thus, who it was perceived had the right to use the public green space in her neighbourhood led to her young son being reprimanded by a neighbour. In other case sites, residents spoke about a reluctance to access public green spaces where they were located close to other people's homes in case they were watched or reprimanded by those living in closer proximity, meaning these spaces were not inclusively accessed by all community members.

"There's like a little communal space down towards the end of the street. We did have an issue with that, my boy went out to play with the little boy couple of doors down [...] I said, "why don't you go sit up there?" cos there's like a little table and bench there and that. But apparently the guy on the end of the street come out shouting at them, so that really upset my boy and he hasn't been out since. [...] The guy said they were in his garden." (Lisa, post-occupancy)

At Andrea's neighbourhood, residents explained how a neighbour had asked to use the public green space to host a family party. However, this request was unwelcomed by some, and led to an online "disagreement" between community members about how the space should be used:

"There was a bit of an argument on the online thing, because one of the residents, she wanted to have a party out on the green. And it was opposed because who knows what damage it might do? [...] So, there was a bit of a, a, it wasn't nasty or anything, but there was [...] a bit of a disagreement." (Andrea, Post-occupancy)

Connecting with these questions over ownership and the right to access, is that the public green spaces that had been completed, had no designated purpose, or means of encouraging social activity. Some participants suggested it may be helpful to have a clearer purpose for the spaces communicated to all neighbours.

Despite delays in the realisation of public green spaces across our case sites, or some instances of community disagreement, most residents still described a sense of community in their neighbourhoods. After 12 months of living in their new homes, most participants indicated that they would like to remain living there for the longer-term.

### **CONCLUSION**

The role of community in place-making – developing connection and attributing value to spaces<sup>34</sup> – was identified by developers as an important element in the longer-term success of Active Home neighbourhoods. This is in line with literature that suggests places where a sense of community is felt by residents are perceived as safer, where residents feel they belong, and are likely to be stewarded and valued for longer by community members.<sup>35</sup> Again, in line with other research<sup>36</sup> the inclusion of public green spaces in Active Home neighbourhoods was considered an important feature in enabling place-making and a sense of community. For many residents, the inclusion of such spaces in the neighbourhood design was felt to synergise with their expectations of low carbon or eco neighbourhoods, and was welcomed. This highlights the importance of "physical, symbolic, political and cultural implications" in processes of community development and place making.<sup>37</sup> However, across our case sites, public green spaces remained incomplete, had been scaled back or limited infrastructure hindered maintenance. When public green spaces had been completed, resident experiences were mixed.



Positive experiences were expressed where residents could encounter other community members and nature. In such instances, and in line with other research<sup>38</sup> residents spoke of experiencing feelings of peace, safety and security. Moreover, being able to familiarise themselves with their neighbours, even through ad-hoc interactions in passing, or through observing neighbours' day-to-day comings and goings, also contributed to these experiences.

Delays in the development of public green spaces meant that, initially purposeful interactions were initiated through social media. Residents spoke of how these conversations included sharing knowledge about tending green spaces, such interactions contribute to shared experiences of place and transformative learning, which also contributes to a sense of community and processes of place-making.<sup>39</sup> However, other interactions once public green spaces were completed involved negotiating through disagreements caused by various ambiguities. As a sense of community includes perceptions by community members of "common shared norms" and "shared values",<sup>40</sup> disagreements about public green spaces could limit community cohesion and how place is valued.<sup>41</sup> Connected to this, some residents expressed reluctance to access public green spaces due to the proximity to other homes, concerns for privacy and imagined possible confrontations. Developing public green spaces with purpose that stimulate social interaction and activities<sup>42</sup> may address such concerns, encouraging more inclusive use and enable stronger connections to place and community.

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# **THE STREET, THE PLACE WHERE THE LIFE IS. A RUDOFISKIAN THOUGHT ABOUT THE MEDITERRANEAN INFLUENCE ON THE CITY, THE STREET AND THE SOCIETY**

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## **INTRODUCTION**

Since the first urban organisations, human beings have paid special attention to the free spaces generated by the different buildings that configure the urban mesh. A space where the daily life of societies that inhabit it takes place. This is why it is necessary to constantly look to the past with the intention of understanding those good practices that were carried out in order to improve the urban fabric of our cities and their relationship with those who inhabit them.

This paper identifies and analyses those concepts within Bernard Rudofsky's work on vernacular architecture and its relationship to public space. On the street as a stage for everyday life and as a reference to confront the new urban and architectural challenges. All of this with the aim of defending the importance of studying these practical examples for the development of new cities today.

## **THE CITIES OF THE OLD WORLD. FULL AND EMPTY SPACES. OPEN AND CLOSED SPACES**

Since the emergence of the first urban organisations, the street has always constituted an important element of the urban fabric. The public space has always been at the service of the prevailing society and culture of the place and time in history where it was located. As the place where life is, the street has played a special role in different urban organisations throughout history.

Since the Greek polis, where it was sought a rational and orderly distribution of the cities through the use of *hypodamic* plans capable of structuring the territory in a concatenation of streets and regular plots in which the different uses would be distributed, the street has constituted an important part of these urban foundations. The street, as an empty element within the urban territory, has always been used as a stage for everyday life. As the basis of the socio-cultural development of the time and a witness to the different changes that these societies have been developing.

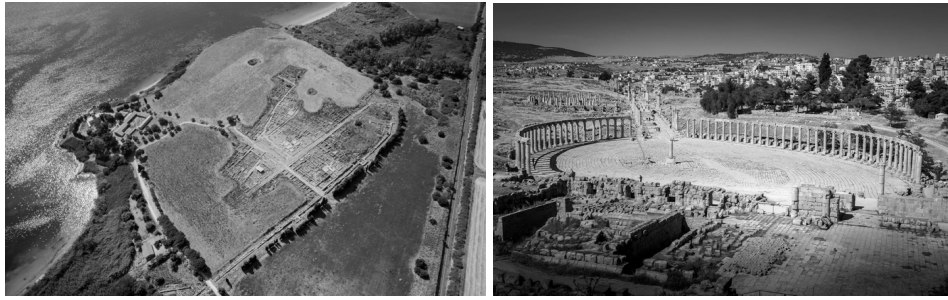


Figure 1. Left: Megara Hyblea 728 BC by unknown author. Right: Jerash 63 BC by unknown author.

In cities such as Megara Hyblea (Syclia), founded in 728 BC, it is possible to understand the importance of the public space. In it, two large streets cross the urban mesh -the known *cardo maximus* and *decumānus maximus*-, converging in a great multi-purpose space for social, cultural and political meetings, the Agora.

Years later, during the Hellenistic period, cities were transformed in order to adapt the new cultural and socio-economic changes that were taking place. Gradually, public spaces acquired a notable importance within the urban layout. Once again, through a regular urban layout, the city was shaping its own mesh, paying special attention to the street as a meeting point. Architectural elements such as the portico talks of a special interest in the use of this public space. Likewise, the adaptation of the street to the different climatic conditions, tell us about the use of the street beyond as a transit element itself.

Based simply on this brief reflection on the ancient city, it is easy to see how the street in particular and the public space in general, has constituted an important part of cities in terms of its use and relationship with society and its culture.

## BERNARD RUDOFSKY: HIS WORKS AND THE STREET. THE STREET AND THE MEDITERRANEAN

Although his figure is better known today than it was few years ago, Bernard Rudofsky (1905-1988) is still an unknown to grand part of society, even within the discipline of architecture. However, as we delve into the study of vernacular architecture as an analysis of the socio-cultural evolution of a place as well as its role as a witness to architectural evolution itself, serving as a reflection of the different ways of life on which the societies that inhabit them are based -with the Mediterranean always as the backbone- it is very likely that we will come across many of the works carried out by this multifaceted -and controversial- Viennese architect.

Bernard Rudofsky developed a special relationship with the Mediterranean from his first encounters during his academic summer trips. A place where he was able to discover what he will consider to be the true way of life, the most human<sup>1</sup>. A place where he finds the true utopian vocation to live a full life, a place of integration, diversity and identity without genealogy, a place where the concept of "utopia" can be present anywhere, as long as a series of circumstances are met.<sup>2</sup>

Within this praise of the Mediterranean that stands out in Rudofsky's work, we are able to observe how there is a special interest in the street, the public space as the main stage for what happens in a society. A space as a witness to the changes and evolutions that develop over time.

The leitmotiv of much of his theoretical and practical production undoubtedly lies in vernacular architecture and the concepts of non-formal architecture as a result of tradition. The natural and anonymous evolution given in a specific circumstances and in a specific place. All of this is highlighted as an excellent point of reference for the new architectural praxis.

In 1960, the director of the Department of Architecture and Design at the Museum of Modern Art of New York, Arthur Dexler, invited Rudofsky to curate a quartet of travelling exhibitions with photography as the main vehicle of communication. However, Rudofsky used this invitation to raise awareness of the themes he was working on, such as the valuing of the vernacular and non-formal architecture over the false progress that was being made in the name of Modernism. Thus, under four revealing titles, *Roads* (1961), *Stairs* (1963), *Architecture Without Architects* (1964) and *Streets, Arcades and Galleries* (1976), he proposed to Dexler exhibitions capable of transgressing the mere fact of establishing photography as a pedagogical method.<sup>3</sup> A proposal that would undoubtedly be automatically rejected by one of the most important American institutions of architecture such as the *American Institute of Architects*.

In all of his works related to vernacular architecture, Rudofsky gives a special place to the street and public space, either as a main subject or as a result of vernacular reflection. Of his two main works on vernacular architecture, in the catalogue of the same name for his itinerant exhibition *Architecture Without Architects* (AWA) in 1964 brings together all the illustrations shown together with a simple, close and critical literature, thanks to which he justifies and locates each of the photographs he presents. Within this catalogue and under the titles Porticoes, Covered Streets and Semi-Covered Streets, Rudofsky brings us references to these public spaces located in the identity and culture of the Mediterranean.



Figure 2. From left to right: Portico at Rivoli street (Paris) from AWA, Street corner in Apulia (Italy) from SFP and Peristyle without roof of Diocleciano Palace (Croatia) from TPB

Years later, in 1977, he published *The Prodigious Builders* (TPB) as a continuity about the vernacular architecture where, as in his first work, he recollected the street and its different aspects under titles as *The disappearing vernacular style*, *An oblique appreciation of the vernacular style* and *The importance of detail*. Titles which clearly intensify the interest in the vernacular, its valuation and appreciation with respect to the ensemble in which it is found. All of this is accompanied by images with a great visual and conceptual charge, allowing for the creation of a graphic discourse that is totally independent from the literature. Once again, most of the images that justify the reflections he dictated on the street and the public space are located in the Mediterranean, being once again the place par excellence where Rudofsky finds the reference.



Such is this fascination with the street as an instrument through which societies are able to stage the culture in which they find themselves that, in 1969, between the two previous publications, he published *Streets For People. A Primer for Americans* (SFP). A complete and extensive "manual" in which he analyses in detail those vernacular aspects of the street responsible for serving as the main stage of the different societies throughout the ages, always establishing a comparative with satirical overtones with respect to this public element within the society that worst represents from his point of view the treatment of public space within the city, American society.

### THE INTEREST FOR THE MEDITERRANEAN STREET

From his interest in the street and the public space, his fascination for the cultural heritage located in the Mediterranean area is remarkable. An heritage coming from the first Western civilizations that were able to establish the public space as the setting for their daily life, being able to adapt it to the needs and situations of the moment.

After the analysis and study of each reference located in this compendium of public spaces, disseminated in each of the main works published by Rudofsky on vernacular architecture and the Mediterranean, a series of concepts are proposed with the intention of serving as a motivational container for the assessment highlighted by Rudofsky in each of the examples he presents.

Protection / Movement / Versatility / Appropriation / Identity

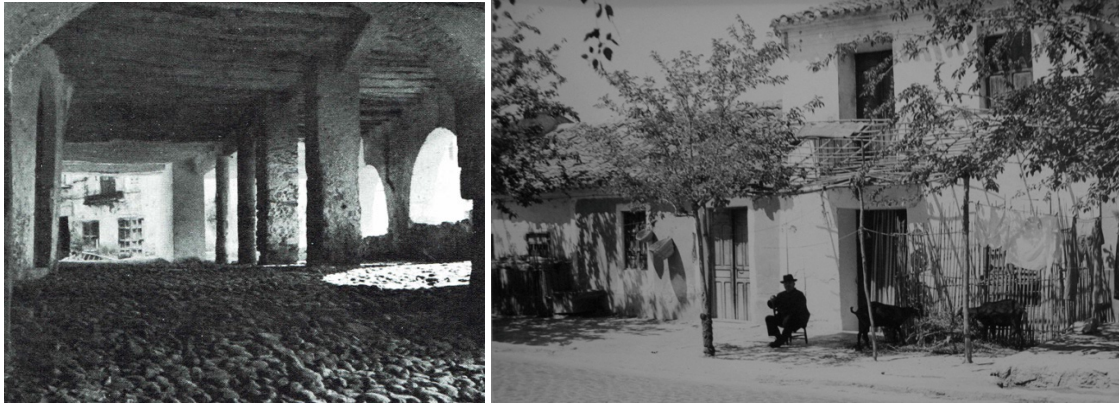
#### Protection

One of the main outstanding features in the sequence of examples of streets and public spaces presented by Rudofsky is the care and shelter of the pedestrian. It is not only happen of areas with high temperature climates, the protection of public space in order to be able to continue to serve its inhabitants is one of the essential concepts of Mediterranean culture in terms of the care and transformation of the street.



Figure 3. Left: Commercial street in Seville (Spain) from TPB. Right: Suq at Fez (Morocco) from SFP.

For Rudofsky, the Mediterranean street has always been presented as an extension of domestic space. As an extension of the private space itself, opening up to the outside, to society and to the city itself. For this reason, the fact of protecting and conditioning these elements of the cities through added interventions or thanks to the architectural configuration of the environment itself, has made it possible to provide the public space with the capacity to serve as a stage for everyday life despite the inclemency of the weather.



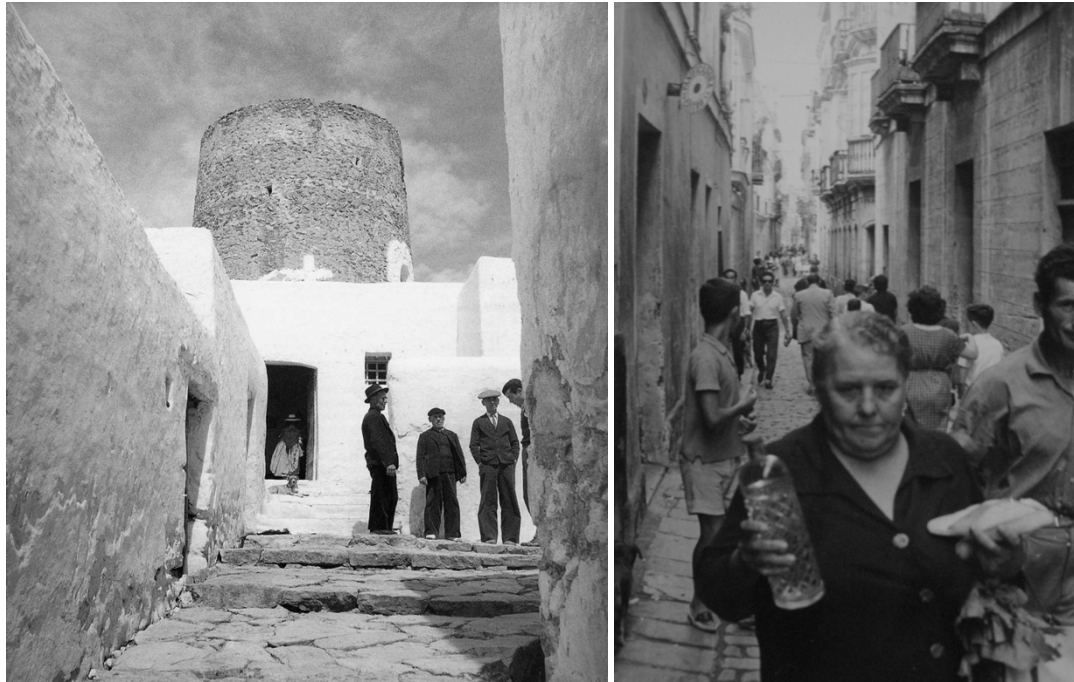
*Figure 4. Left: Street of Benabarre (Spain) from AWA. Right: Valencian garden by Ramon Masats, 1965.*

This concept is not only recognisable in Rudofsky's photography, a photography that according to him<sup>4</sup> is presented as a mere communicating element of a specific scenario and moment, but it is also possible to recognise these characteristics in the work of photographers of the same period of time. This is the case of Ramón Masats, who captured a reality that shares formal and conceptual issues with Rudofsky's photographic work, simply by taking the state of a specific reality.

### **Movement**

Cities can be measured through economical, dimensional and even commercial or industrial aspects. However, the social aspects that determine the socio-cultural character of a city are far from the commonplace or what we can observe directly. Of all these aspects, which we could call indirect, movement is one of the characteristics by which we can recognise and characterise a city.

The movement of cities tell us about our rhythm and of respect for each other and for the city. A remarkable aspect under this concept within the examples given by Rudofsky would be the capacity of these spaces to allow the coexistence of the different rhythms and movements that happen in cities without the need to disrupt the rest of the elements.



*Figure 5. Left: Street in Eivissa by Joaquim Gomis, 1967. Right: Santa Maria's neighborhood in Cadiz (Spain) by Ramon Masats, 1960.*

If we had to describe Rudofsky's photography quickly and concisely, we could do so as a perception of a purely notarial and spontaneous image.<sup>5</sup> A photograph that, however, far from seeking technical and compositional intentionality, is capable of establishing a narrative discourse on its own.

Nevertheless, within the lack of intentionality or technical criteria in Rudofsky's photography, his photographic work is able to dialogue with the work of photographers such as Joaquim Gomis or Ramon Masats in a similar scenario. Once we separate the evident artistic composition and framing of their photographs, we are able to perceive those issues that stand out in the Mediterranean street in the same way as we can perceive in Rudofsky's photographs. Images that, in addition to a context, a time and a place, evoke a movement. A unique rhythm of its own reflected in each instant.

### **Versatility**

For Rudofsky, the street as a container of everyday life, must be capable of accommodating the uses and needs that each society and each period of time require according to each socio-cultural context that defines them. A culture linked to traditions and customs. For this reason, the street and the public space that Rudofsky highlights are configured in the most specific way that the society which inhabits it requires, giving explicit service to the needs that arise.

Sometimes the street is presented as a blank canvas capable of accommodating the different changes that happen along the day, so at any given moment this configuration models and establishes the specific aspect of the scene where everyday life takes place.





Figure 6. Left: Via Cassari in Palermo (Italy) from SFP. Right: Roofs in Alpujarras (Spain) by Bernard Rudofsky.



Figure 7. Left: Inhabitants of Trastevere eating in the street (Italy) from SFP. Right: The main square as the setting for religious ceremonies in Albarracín (Spain) from TPB.

On other occasions, it is the city itself and its architectural elements which are responsible for configuring these scenes of everyday life capable of meeting the specific needs of the societies that inhabit them. Thus, porticoes, arcades and large squares were presented as elements of shelter, protection or large halls in which to develop everyday life. For this reason, as well as this configurative need, the public space must be sufficiently aseptic to be able to accommodate the different cultural changes that societies develop over the ages. I feel these, with their traditions and customs, are responsible for providing the precise aesthetics.



## Appropriation

Within the cultural and social area that Rudofsky highlights in his examples with the Mediterranean as the main context, the street as a public and open space ends up being observed in society from a perspective of possession. For a large part of its inhabitants, the street and public space is understood as an extension of the domestic space, which is why it will be their duty to maintain and care for it. As a benefit, they will take it as their own for their use and enjoyment.



*Figure 8. From left to right: Womenfolk cleaning street in Andalusia (Spain), Street in Vicenza (Italy) and Dead-end street in Apulia (Italy), from SFP.*

In Andalusia, heir to a rich Mediterranean culture, the duty of the inhabitant in the public space close to his home is endemic in society. Keeping it clean and tidy will allow them to enjoy it without any inconvenience. For Rudofsky, this protective and possessive character tells us much more about the education and collective conscience of society than any other aspect that tries to reflect the value of a place.



*Figure 9. Left: Girl washing (Spain) by Bernard Rudofsky. Right: Street in Martina Franca (Italy) from SFP.*

In addition to these concepts of appropriation linked to the use or extension of domestic space, another example of this characteristic of the street can be seen in the free actions that societies develop in it. A free society is one that is capable of occupying the street without feeling displaced, without looking elsewhere for complete satisfaction. Therefore, it should not be governments or planning committees that dictate the conditions of use of the street and public space, but the societies themselves who define them through their traditions and customs.

### Identity

If we analyse each of the above concepts in a specific society, we would be able to draw the identity of the place itself. Therefore, the street and the public space, as Rudofsky suggests, are the ones in charge of describing the identity of the society that inhabits them. Just as individually, as a society we project an identity that defines us as an unity. Therefore, in the same way, the street and the public space must be capable of accommodating all those elements that define this identity.



Figure 10. Left: Paper decoration in Mallorca (Spain) from SFP. Right: Windows in Arcos de la Frontera (Spain) from TPB.



Figure 11. Left: Street in Ubrique (Spain) by Ramon Masats, 1960. Right: Parade in Hoboken (EEUU) by Robert Frank, 1965.

As in Rudofsky's photography, this concept of identity more than any other, we are able to see it again in works such as those of Roberto Masats. Photographs that show us a reality behind the composition itself. Regardless of whether we understand the culture or customs that shown to us. Something contrary to what happens to us if we analyse some of Robert Frank's works, although an identity is defined, what for Rudofsky could be considered an identity empty of intention and social link is defined.

## CONCLUSION

Although it would be possible to expand the catalogue of concepts capable of defining the valuation of public space within the vernacular references around the Mediterranean that Bernard Rudofsky brings us in many of his works. The main objective of this contribution lies in the relationship between these valuations and their implication in architectural practice.

This work of analysis and study of vernacular concepts in everyday elements of our cities can provide us with the necessary keys to order and configure new urban organisations. Searching for vernacular concepts in cultures such as the Mediterranean will allow us to feed the cultural heritage of the vernacular in places where it has barely existed. Developing that which best fits the society and the place. Creating a new heritage to take as a reference.

Thanks to disciplines such as history of architecture, anthropology, ethnography and sociology, it is possible make important contributions to the development of new architectural practices. The analysis and interpretation of changes and evolutions in different societies and periods of time, allow us to understand the motivations and needs that drove these changes, as well as to understand what other aspects were accepted from the beginning. For this reason, the studies about Material Culture where the vernacular and non-formal architecture should belong to- are extremely important in order to register and keep traditions and motivation that justify the way as we understand the basic concept of architecture.

Whether or not there is a clear or direct reference to this vernacular knowledge of architecture, through current architectural practices, we can find a certain relationship of interpretation and motivation of these vernacular concepts. This is what happens in the case of the green axes and superblocks in the city of Barcelona (Spain).<sup>6</sup> After reflecting on the constant and progressive appropriation of public space by vehicles, as well as the tendency to develop "hard" outdoor spaces of poor quality, the city council decided, together with citizen participation, to recover this space by handing it over to those to whom it belongs, the pedestrian. Couldn't we interpret this new use of the street within the vernacular concepts of the Mediterranean street highlighted by Rudofsky? Let us not forget that the best proof that something works is that which arises from collective need and the adaptation of the given.



## NOTES

- <sup>1</sup> Antonio Pizza, "Ideas Sobre Casas Mediterráneas En España. La Contribución de Rudofsky Entre Sert y Coderch", in *The Mediterranean Question* (Lisboa: IST Press, 2016).
- <sup>2</sup> Ugo Rossi, "The Mediterranean Is Not a Myth. Bernard Rudofsky's Mediterranean Eutopias", In *Immaginare Il Mediterraneo. Architettura Arti Fotografia. Volumen 4*, ed. Andrea Maglio, Fabio Mangone, and Antonio Pizza (Università degli Studi di Napoli "Federico II", Universitat Politècnica de Catalunya, Ordine degli Architetti P.P.C. di Napoli e Provincia, 2017).
- <sup>3</sup> Mar Loren-Méndez, "Uprooting Andalusian Traditional Architecture. Bernard Rudofsky's Subversive Discourse.", *Whose Tradition? Biennial Conference International Association for the Study of Traditional Environment*. (International Association for the Study of Traditional Environments (IASTE), 2014):34–35. <https://doi.org/10.2307/24347588>.
- <sup>4</sup> Bernard Rudofsky, *Arquitectura Sin Arquitectos. Breve Introducción a La Arquitectura Sin Genealogía*. (Logroño: Pepitas de calabaza s.l., 2020).
- <sup>5</sup> AAVV, *Bernard Rudofsky. Desobediencia Crítica a La Modernidad*. (Granada, España: Centro José Guerrero, 2014).
- <sup>6</sup> "Superilles", Ajuntament de Barcelona, accessed July, 2022, <https://ajuntament.barcelona.cat/superilles/es/>

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# A TOUR OF THE MONUMENTS OF THE JINWEN TRAIN LINE: INFRASTRUCTURAL TRANSFORMATIONS AND ENTROPOLOGY IN WENZHOU URBAN FRINGES

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## INTRODUCTION

During his exploration of New Jersey, land artist Robert Smithson granted respectability to the suburban vernacular landscape. In "A Tour of the Monuments of Passaic,"<sup>1</sup> he makes the informal landscape along the Passaic River legible by emphasizing the infrastructural elements: bridges, culverts, and derricks become through Smithson's eyes "monuments" in their own right. The artist who read Rome as "a big scrap heap of antiquities"<sup>2</sup> found in the urban fringes the ruins of America. In the backyard of New York, beyond the land art project, Smithson was reading in the margins, the life of its core, and drafting a taphonomy of the urban landscape, not dissimilar to the way Foucault was looking at society through the focus of its margins, relegated to the stretched wastelands or at the gates of the cities.

## Margins

In the mountainous area of Wenzhou, the construction of the first train line in the 1990s has been decisive in the opening up of the region, linking the coastal city to Jinhua, Hangzhou, and Shanghai. However, the rapid development of high-speed trains and urban transportation rendered this train line obsolete. This paper focuses on a field study of the abandoned part of the Jinwen train line space before its destruction, which led to an analysis of the relationship between the train line and the urban development's mutation. Through our exploration of the train line, we discovered the backside of the urbanization process: infrastructures, spontaneous agriculture, illegal settlements, and workers' barracks inhabited by the margins of the society: rail track workers, migrants, displaced populations, and homeless people.

Despite the city's growth beyond the fringes where the train line was built, the territory around the train line maintained its marginal qualities, witness to the urban transformation while preserving rural uses and spontaneous practices.

Witnessing the destruction of complex societies and milieus, Claude Levi-Strauss coined the term "entropology" as the "study of this process of disintegration in its most highly evolved form."<sup>3</sup> Through our study of the train line, we are looking at the neglected side of the orderly ambition of the urbanization process to better understand the entropic processes at work in a cultural landscape's destruction.

## Infrastructures

Influenced by the French historical school of the Annales and the Vidalian geographic trend, Sandrine Robert has described the relationship between infrastructural networks and the geographical space according to four criteria.<sup>4</sup> The flow (the content), the path, the trace or the footprint, and the construction. I would add to these criteria the support of the infrastructure, the geographical milieu, and the interaction/relation between the construction and the milieu.

Following this geographical interpretation of infrastructures, this paper will first look at the flow, the path, and the historical and geographical significance of the train line on a regional scale. The second part will focus on the train line footprint within the Wenzhou urban environment, the infrastructure construction, and its architecture to understand the train line as an urban object and its relation to the urban transformation. The paper will conclude with a detailed analysis of the urban and social change around the train line focusing on two sites: the area around the central train station and the harbor area at the line's terminus.

## REGIONAL CONTEXT

Wenzhou is located within a mountainous area. In the early 1980s, its transportation system was primarily water, with the Wenruitang river inland and several sailing lines connecting the city to other coastal cities such as Fuzhou or Shanghai. Without any train line and a limited road system, mostly mountain roads, the harbor in Wenzhou was the primary means of transportation and played an essential role in the commercial development of Wenzhou during its long history.<sup>5</sup> For instance, Wenzhou harbor was already one of China's important foreign trade ports as early as the Tang Dynasty. In 842 AD, China and Japan started to use Wenzhou as a specific trade route to export and import goods like Buddha statues, Buddhist paintings, cotton, silk, medicines, mercury, tin, and other metals.<sup>6</sup> Gradually, Wenzhou conducted trade with neighboring countries and then with Europe and the United States, reflecting the gradual transformation of Wenzhou's self-sufficient natural economic model into a global economic system. However, before 1998, the train line in Zhejiang province only linked Jinhua to Hangzhou, Shanghai, to the north of China, and Jiangxi province to the south; Wenzhou was separated from this national transportation system by the mountain massif in the east.

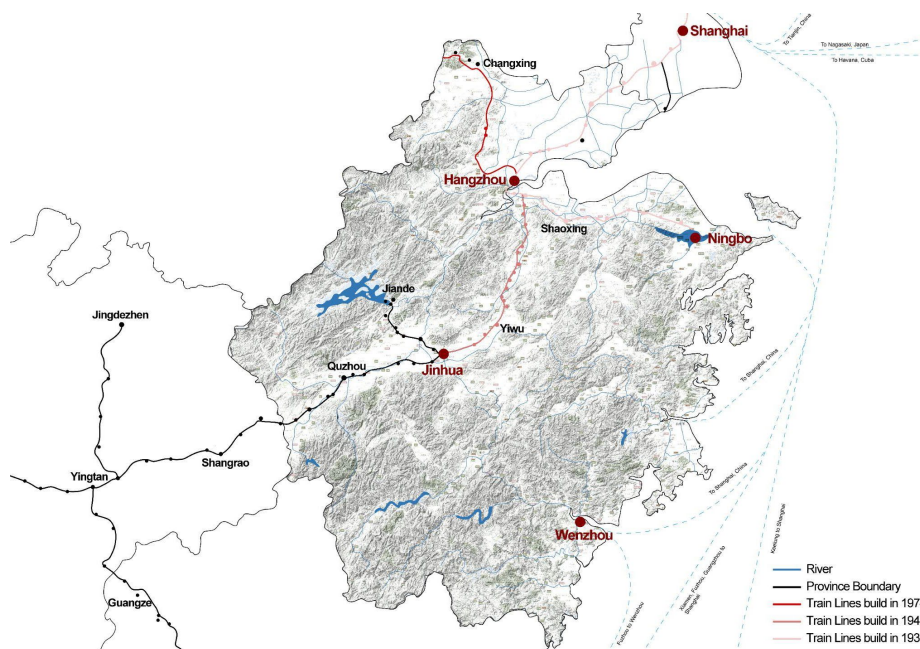


Figure 1. Main transportation infrastructures in Zhejiang in 1990 (Map by Xiaotong Shi)

Fortunately, after 1998, Jinwen Railway was opened to traffic, becoming the first train line linking Wenzhou to the rest of China. It runs through the southwestern mountainous area of Zhejiang Province, providing access to many cities. Then in 2020, the Jinwen high-speed railway was built as part of the regional development of the train network, and the old Jinwen railway was turned into a freight line. Jinwen Railway is not only the first railway in Wenzhou but also the first railway in China to be jointly built by the local government, the Ministry of Railways, and private capital from Hong Kong. It was proposed by Wenzhou entrepreneur Nan Huaijin who raised over forty-five million dollars for the construction. This reflected the importance of private entrepreneurship in the Wenzhou model, where part of the private benefit, including the one done by the expatriates, was reinvested in Wenzhou public projects such as infrastructure. Another example is the construction of the Wenzhou airport at the same time<sup>7</sup>. While Nan Huaijin was born in Wenzhou, he did business globally before settling in Suzhou, China, in his later years.

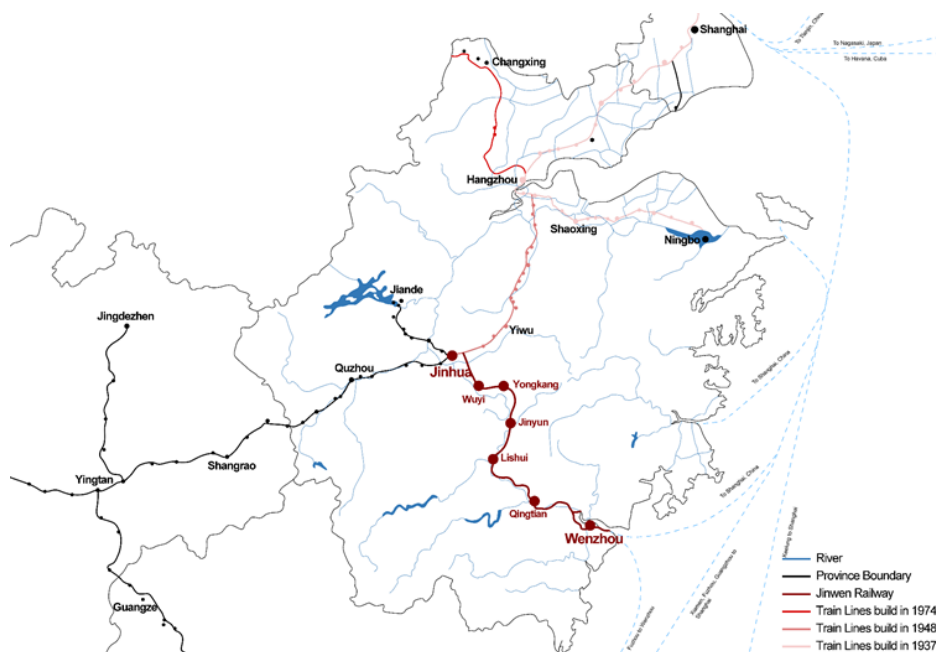


Figure 2. Main transportation infrastructures in Zhejiang in 2000 (Map by Xiaotong Shi)

On May 19, 1989, to invest in the construction of the Jinwen Railway, Nan Huaijin established and registered Lorus Holding Ltd. in Hong Kong as the company's chairman. Then on October 22, 1989, the investment plan was set up as a joint venture company between Zhejiang Province and Hong Kong (Nan Huaijin). Three years later, the joint venture company was officially established, with Nan Huaijin contributing eighty percent of the shares and serving as the chairman and general manager of the company. However, in 1997, before the railway opened to traffic, Nan Huaijin transferred all his shares in the joint venture company to the local government. In 1998, the first train of the Jinwen Railway departed at Wenzhou Railway Station and successfully arrived at Hangzhou East Station, with an average speed of 53 kilometers per hour.<sup>8</sup>

Jinwen Railway is 252 km long and has 26 stations, 136 bridges, 97 Tunnels, and 890 culverts. The region accounts for fifty-seven percent of the land area and forty-nine percent of the population in Zhejiang Province.<sup>9</sup> The topography is complex, especially the Lishui section, which is mountainous, with many rivers to cross. The construction lasted five years and cost nearly 3 billion yuan. However, just one year later, its passenger transportation developed rapidly, receiving over four million passengers, and twelve pairs of trains were operating daily in 1998.<sup>10</sup>

## URBAN FOOTPRINT

Wenzhou urban area comprises the four districts of Lucheng (the historical core), Longwan, Ouhai, and Dongtou. The Oujiang River is located north of Wenzhou city and flows into the East China Sea in a north-south direction, with many east-west tributaries, and connects Wenzhou to the city of Rui'an<sup>11</sup> in the south. Given its remarkably developed water network, Wenzhou's primary transportation system was inland navigation, with many wharves punctuating the city fabric. Jinwen Railway enters Wenzhou city from the northwest, runs east-west in the inner part of the city, and then extends northeast to the edge of the Oujiang River, where the new harbor was built in the 1990s.

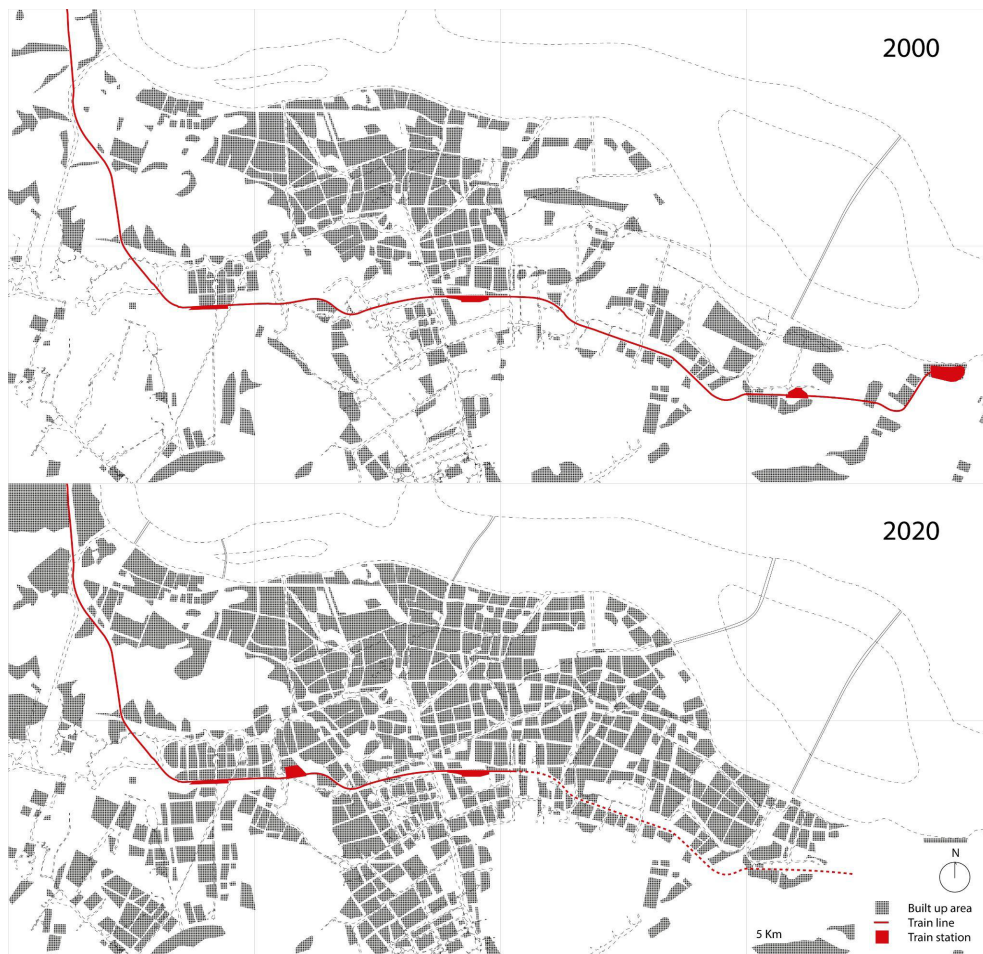


Figure 3. Jinwen train line and the Urban footprint 2000-2022 (Map by Jiayin Yang)

In 2000, shortly after the Jinwen Railway's opening, Wenzhou's urban area was confined between the Oujiang river on the north and the Jinwen train line on the south, forming the southern boundary of the urban footprint. In 1992, when the train-line construction started, the city footprint was less than thirty square kilometers,<sup>12</sup> and the train line was planned within the rural area. In 2000, at its completion, the built-up area of Wenzhou was approximately 108 square kilometers,<sup>13</sup> and the train line was located at the edge of the city footprint. Many high-density rural villages in the south and some modern residential areas in the north constituted the Wenzhou territorial fabric. Farmland surrounded the villages, and a few residual agricultural pockets remained in the city's north. Most of the land along the Jinwen Railway was agricultural, with a few industrial areas scattered along the western side of the railway near the city.



*Figure 4. Jinwen train line and its environment 2000-2020 (Map by Jiayin Yang)*

In 2020, Wenzhou had a built-up area of 275 square kilometers. The city of Wenzhou expanded east and west along the Oujiang River and south along the Wenruitang River. Jinwen railway runs now through Wenzhou urban area and no longer serves as a city boundary. Many traditional houses and settlements were demolished within the Wenzhou urban area, and many modern residential high-rise areas were built. The part of the Jinwen Railway east of Wenzhou Station has been abandoned, and the tracks are gradually removed. Industrial clusters have been established on Wenzhou's east and west sides, and a freight terminal has been built in the industrial area on the city's west side. Given the scale of the urban development, many existing facilities were removed, creating large areas of empty wasteland waiting to be redeveloped.



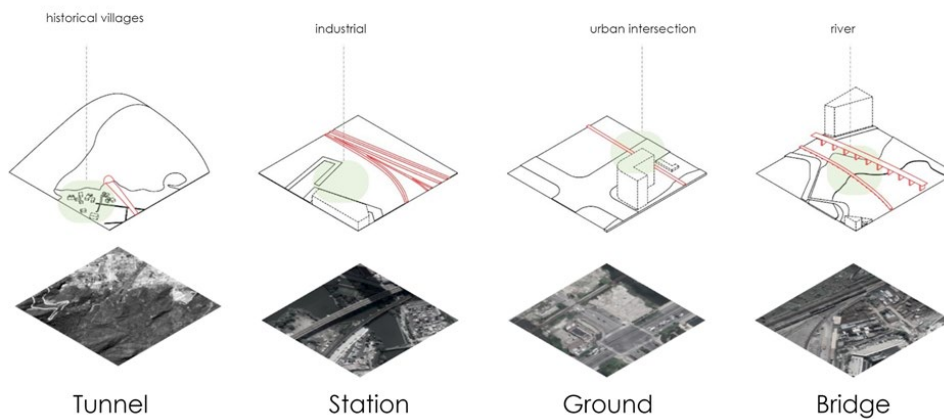


Figure 5. Relation between the train line and the ground (Map by Jiayin Yang)

There are many hills and rivers in Wenzhou, and due to its unique topography, the Jinwen train line has bridges, tunnels, and elevated and ordinary railway types. There are mountains on both the east and west sides of Wenzhou, so the Jinwen railway takes the form of tunnels mainly on the east side of Wenzhou. To avoid interfering with the city's surface traffic and to cross large wetland areas, the train line is partially elevated. The railway intersects the road network at the same level in many spots. Jinwen Railway also has some branches serving the industrial area on the west side of Wenzhou and has a freight train station. Wenzhou has a well-developed manufacturing industry, and the Jinwen Railway plays a considerable role in freight transport. At the terminal section of the Jinwen Railway, there is a connection to the Oujiangkou terminal, where intermodal transportation by land and water can be connected. There is also Wenzhou Longwan International Airport near the Oujiang jetty. The new S1 (light rail) train line has almost the same footprint as the Jinwen Railway while following a similar path to connect the city of Wenzhou in an east-west direction. It connects to Wenzhou South Station (a high-speed railway station) in the west and Wenzhou Longwan Airport in the east. However, the S1 line is a passenger rail line and does not have a freight function.

## URBAN MUTATIONS

The first case study, south of the central train station, is located within the middle of the urban section of the Jinwen Railway. The area has gradually developed from rural to urban, from an agricultural landscape scattered with historical villages to high-rise buildings endless fields. At the beginning of the railway planning, the train line was built outside the urban area. The train line and the central train station weren't planned according to the historical urban structure<sup>14</sup> but as part of a new urban plan. For instance, the main train station was built at the end of the Chezhan Dadao (Train Station Avenue), creating a new north-south axis along which the city will develop. This North-South urbanization will gradually demolish the agricultural landscape and its historical settlements between the urban center and the train station, and its inhabitants to be expropriated. The local area survey shows that the newly built district was planned according to the new urban population needs with high-rise residential areas, commercial areas, public parks, etc. In the space between the train line and the newly built blocks, the former villagers, now residents in the towers, have recreated spontaneous agriculture, not

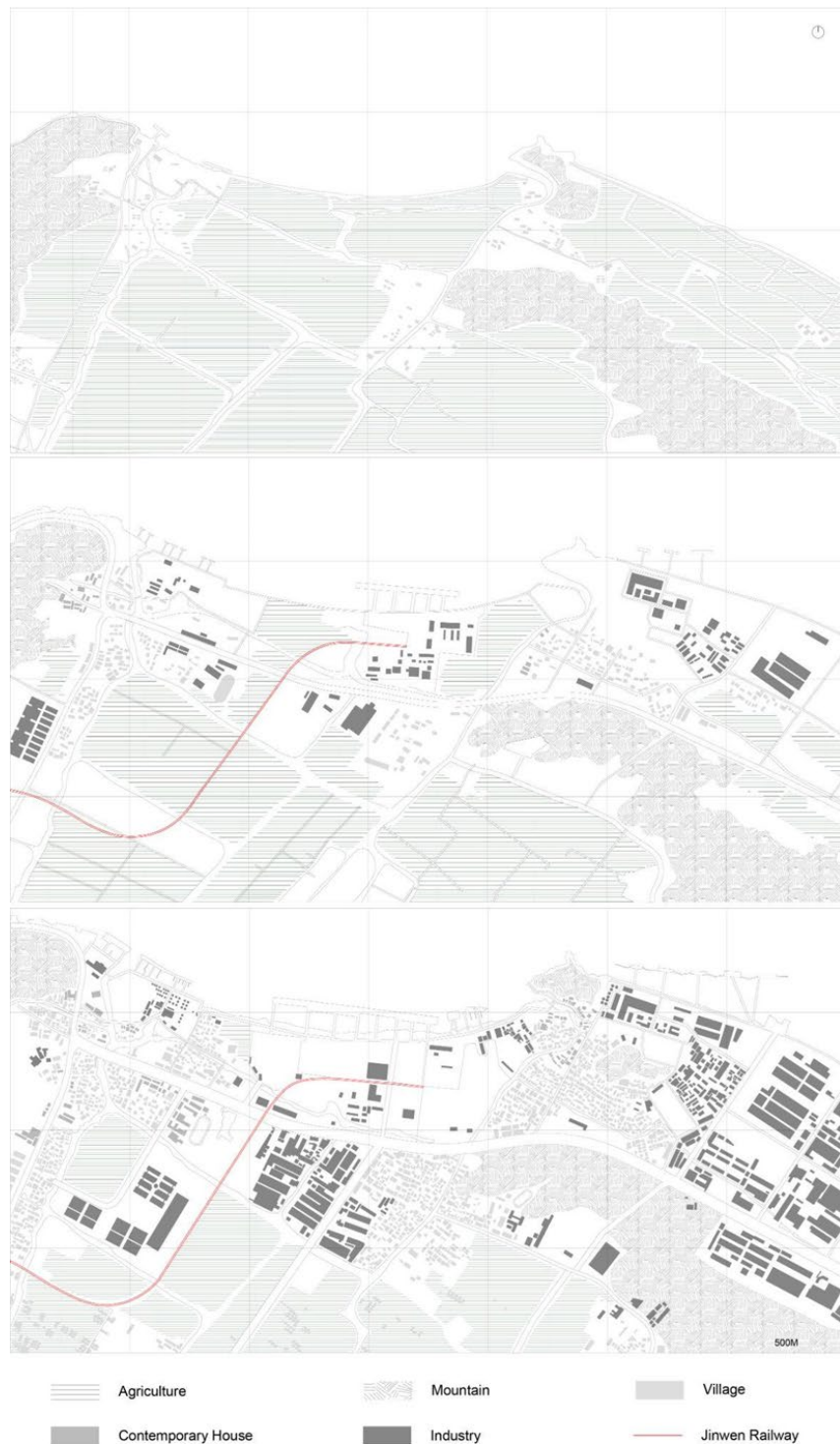


for their alimentary needs but to find back their rural way of life. Through feedback from the local residents, we found that the construction of the Jinwen railway has also brought many problems to the villagers. Not only the construction of the train line has led to the demolition of some villages, but the government has not taken suitable measures to resettle these villagers, only providing some temporary housing and limited compensation. This temporary housing was poorly built and located next to the train line, creating an environment full of constant transportation noise.



*Figure 6. Territorial Evolution around the Wenzhou Train Station (2004 -2018-2021)  
(map by Lihong Xing)*

The second case study, the Longwan wharf, is the terminal of the Jinwen railway, where cargo ships and container ships anchor. This situation is quite different from the former one. The transition was from an agricultural to a logistic and industrial landscape. Located in the Longwan area, which became part of Wenzhou City in 1984, it is isolated from the historical Lucheng district in the west. The harbor was built between 1987 and 1988.<sup>15</sup> Around the harbor area and the terminus station, several industrial zones developed, attracting a population of migrant workers living in precarious conditions. However, the facilities gradually improved in the last decade, including creating residential districts.



*Figure 7. Territorial Evolution around the Jinwen train Line Terminus (1960-2000-2010)  
(map by Lihong Xing)*

The population influx created the need for schools, commercial areas, and other multi-functional complexes.

The development of the Jinwen Railway shows the gradual transformation of the Wenzhou urban fringes from agricultural use to industrial production. In these changes, a new population of migrant workers coexisted with the existing population of former villagers trying to preserve their culture by

spontaneously using leftover spaces. In addition, the Jinwen railway facilitated the mobility of these populations. As a bridge between Wenzhou and the Zhejiang province, the Jinwen railway not only stimulated the circulation of people but also promoted the development of the local economy and regional construction.

## CONCLUSION

Despite its short life, the Jinwen train line is already obsolete. Given its historical significance in Wenzhou history, the opening up of the city, and the privately driven development, it might be considered to have some heritage status. The fast urban development, the arrival of the high-speed train line in late 2000, and the light rail in late 2010 reduced the line use for freight or local service in rural areas. The recent dismantlement of the harbor made the segment between the central station and the terminus obsolete. This led to its demolition and its replacement with a linear park as it has been in fashion from the Paris Coulée Verte in the 1990s to the more recently Seoul Sky Garden and the now New York High Line in the 2000s.

Beyond the status of the infrastructure construction itself, we might question the future of the urban-rural connection now that regional and urban transit are disconnected. In addition to the disappearance of the rural culture during the short history of the train line, with the demolition of the train line, we are witnessing the loss of these fringe spaces where traditional, spontaneous, and marginal life can thrive. From a geographical perspective, infrastructures should be considered eco-techno-symbolic milieus rather than merely technical objects. This should lead us to reconsider infrastructures, not only their disruptive impact but also the possibilities they create, particularly in a Chinese context where the current wave of infrastructure construction is unprecedented in human history. As Bruno Latour reminds us, technology is society made durable,<sup>16</sup> and if infrastructures allow movement, they are anchored in a static space.<sup>17</sup>

## NOTES

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- <sup>3</sup> Claude Lévi-Strauss, *Triste Tropiques*, Paris : Plon, 1955. 496
- <sup>4</sup> Sandrine Robert, "Comment les Formes se Transmettent-elles ? ", *Etudes Rurales*, Editions de L'Ecole Pratique des Hautes Etudes, 2004, 115-132
- <sup>5</sup> Sainan Lin, and Zhigang Li. "City Profile: Wenzhou - A Model City of Transitional China." *Cities* 95. 2019: 102393. <https://doi.org/10.1016/j.cities.2019.102393>. 3
- <sup>6</sup> Wenzhou Propaganda Network, *A brief Discussion on the Historical Changes of Wenzhou Port Trade*, Wenzhou: Wenzhou Propaganda Network
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- <sup>10</sup> Huapu Lu, Hongfeng Chen, Hong Yuan, et al. *Comprehensive transportation hub planning: basic theory and planning practice in Wenzhou*. (Beijing: People's Communications Press, 2001 (In Chinese).
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- <sup>12</sup> "In the past 40 years, the urban built-up area has increased by 26.5 times", Wenzhou City Website, accessed July 19, 2022. <http://home.66wz.com/system/2018/10/24/105122357.shtml> (In Chinese).
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- <sup>14</sup> Lin and Li, 2.
- <sup>15</sup> Lagui Huang, "Wenzhou will build two 10,000-ton berths" *Port & Water Transport Engineering* (02), 9. 1987 doi:10.16233/coki.issn1002-4972.1987.02.003. (In Chinese)
- <sup>16</sup> Bruno Latour, "Technology is society made durable," in *Sociology of Monsters: Essays on Power, Technology and Domination*, ed. John Law (London: Routledge, 1991), 103-131
- <sup>17</sup> Bruno Latour, "Les Moteurs Immobiles de la Mobilité, " in *De l'Histoire des transports à l'Histoire de la Mobilité ?*, Eds. Mathieu Flonneau, Vincent Guigueno (Rennes : Presses Universitaires de Rennes, 2009), 7-10

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# THE IMPACT A 'K' SHAPED COVID 19 RECOVERY ON SOCIAL HOUSING IN NEW ZEALAND.

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## INTRODUCTION

The COVID-19 pandemic presented governments with conflicting responsibilities. First is the duty to create a safe and healthy environment for its citizens. The second is the duty to protect and grow businesses and livelihoods, the third is to protect its people's civic liberty and freedom, and finally, the duty to ensure equity and fairness in the treatment of its population.<sup>1</sup>

In New Zealand, as in other countries, creating a safe and healthy environment during a pandemic meant business shutdowns, loss of livelihoods, and limiting freedom. Some tools adopted to slow the spread of the virus impacted already marginalised groups more than the rest of the population, causing a K-shaped recovery. As a "K" letter shape denotes, the COVID-19 K-shaped recovery occurs when specific groups in the economy rebound and grow while others lag or decline. A K-shaped recovery leads to changes in the structure of society as economic outcomes and relations change. This article explores how the COVID-19 K-shaped recovery has impacted social housing in New Zealand.

## Covid Strategies

With the discovery of COVID, governments worldwide have had to act quickly to protect the safety and well-being of their citizens and residents. Governments tend to adopt one or more of four key strategies, which vary in their goals and level of restriction. The strategies are 1. Elimination, 2. Suppression, 3. Mitigation, and 4. Herd immunity. We discuss each of these next.

### Elimination

When applying an elimination strategy, the incidence of a disease is reduced to zero in a defined geographical area.<sup>2</sup> Global elimination occurs when all countries have eliminated the virus. Elimination involves border control to keep the virus out, case and contact management to stamp out transmission, and surveillance and testing to identify any outbreaks.<sup>3</sup> Isolation and quarantine adherence are critical to the success of this policy.

### Suppression

When applying a suppression policy, governments aim to keep the number of cases very low for as long as possible. Suppression delays the outbreak from happening to allow enough time for the development of vaccines or treatments.<sup>4</sup> As COVID transmits between individuals in close physical contact, suppression involves strict regulation of people's movement, gatherings, and involvement with one another. This approach requires the isolation of infected people. There will continue to be



cases of infection under a suppression strategy. The suppression approach relies on quickly identifying and isolating infectious people and their contacts to prevent further spread. COVID tracer devices and frequent testing are critical. Further, the effects of this strategy will only remain while the suppression measures remain in place.

### Mitigation

A mitigation strategy allows governments to control the disease and mitigate the detrimental public health impact. They aim to slow the virus's spread by applying preventive measures that include physical distancing, mask-wearing, hand hygiene, and cleaning of high-touch surfaces can help to mitigate the spread of COVID-19.<sup>5</sup> In addition, implementing more robust measures such as border controls and lockdowns assists when case numbers increase significantly.

### Herd immunity

A strategy of herd immunity allows the virus to spread to reach the point where a large portion of a community (the herd) becomes immune to the virus. There are two ways to obtain COVID herd immunity: vaccines or infection.<sup>6</sup> When herd immunity is achieved, the virus spread from person to person becomes less likely. As a result, the whole community becomes protected — not just those who are immune. Critics of this approach argue that herd immunity may take time to build up, and there may be severe outcomes for some infected people.

### New Zealand COVID Strategy

At the start of the COVID-19 pandemic, before the development of vaccines or specific treatments, New Zealand, like most countries in the world, established a nonpharmaceutical approach to prevent the virus from spreading.<sup>7</sup> This was important as New Zealand has one of the lowest numbers of intensive care beds per capita of the Organisation for Economic Co-operation and Development (OECD) nations at four per 100 000 people which can be compared to the UK which has 7.3.<sup>8</sup>

### Initial elimination strategy

In March 2020, when New Zealand had just over 100 COVID-19 cases and no deaths,<sup>9</sup> New Zealand applied an elimination strategy to "go early and go hard". To achieve this, New Zealand introduced some of the world's most rigid restrictions, including stringent public health measures, strict lockdowns, closely managed quarantine requirements, social distancing, vaccination, and movement restrictions. New Zealand's strategy enabled it to manage the community transmission of COVID-19 while the country improved contact tracing and large-scale testing and developed and tested new vaccines. As a result, New Zealand suffered fewer infections and deaths than the rest of the world.<sup>10</sup> New Zealanders began to celebrate elimination success when by late July 2020, they had experienced no instances of community-based transmission for more than 80 days.<sup>11</sup>

### Shift to a suppression strategy

New Zealand detected its first known outbreak of the COVID Delta-variant in August 2021.<sup>12</sup> Stamping out this outbreak using elimination methods proved unsuccessful. Once it arrived, it spread through New Zealand's marginalized communities within its cities. New Zealand's suppression approach was much stricter than most OECD countries. In addition to applying tight restrictions on its external borders and active contact tracing, New Zealand introduced the COVID-19 Protection Framework, or "traffic light system." This system-imposed vaccine mandates for occupational groups and prevented unvaccinated people from entering indoor social settings, such as gyms, restaurants and hairdressers.<sup>13</sup>

Adopting COVID suppression measures prevented too many people from having the disease simultaneously and allowed the health system to better cope with the people requiring care.<sup>14</sup> The risk was that this strategy would stop the pandemic for now, but that New Zealand would experience a lethal wave when the borders eventually opened. Finding a managed exit strategy became important.

### **Move to mitigation**

Following months of back-and-forth between virus-free life and lockdowns, New Zealand phased out its pursuit of the elimination of covid-19. Instead, it identified ways to allow the country to live with the coronavirus, mitigating the effect of the virus by flattening the curve and minimizing the risk of health service overload and social and economic disruptions. This move, in effect, acknowledged that the virus would be endemic.<sup>15</sup> The New Zealand government changed its strategy due to its inability to eliminate COVID, the lower severity of newer variants, the relatively high vaccination coverage of the population and the economic costs of elimination. From a public health perspective, it was better to have the virus spread in a controlled manner.

### **The impact of new COVID-19 variants**

A virus will replicate itself, and when doing so, it changes, which causes “mutations” to develop. Mutations may lead to altered virus transmission rates, virus severity, the effectiveness of vaccines to prevent infection, or the outcome of treatments, diagnostic tools, or other public health and social measures.<sup>16</sup> A virus with one or several new mutations is called a “variant” of the original virus. The virus that causes COVID-19 has undergone genetic mutations over time, leading to the development of new variants.<sup>17</sup>

The World Health Organization has identified five main variants of concern for COVID-19, including Alpha (B.1.1.7), Beta (B.1.31), Gamma (P.1), Delta (B.1.617.2) and Omicron (B.1.1.529 and subsequent variants).<sup>18</sup> In New Zealand, so far, the Delta and Omicron variants have had the most impact. New Zealand first detected the Delta variant in August 2021 with those infected having a high risk of needing hospital care.

New Zealand first detected Omicron in a test on an international visitor staying in managed isolation in December 2021 and the first community case in January 2022. Omicron is much more transmissible than previous variants of the COVID-19 virus; however, whilst still causing illness, a person is less likely to be severely ill if they contract Omicron than the earlier Delta.

New Zealand has a total population of 5 million people. The high infection rate of Omicron has pushed cumulative numbers of COVID cases to over 1.28 million and deaths to 1,350. New Zealand's death rate is comparable to other countries during an Omicron wave.<sup>19</sup> This statistic raises questions about whether the cost of the earlier elimination strategy was worth it in the end.

### **Social determinants**

Inequalities in social conditions can mean unequal health outcomes for different social groups and most significantly impact the health outcomes for the most vulnerable populations. The most at risk from COVID were those with a history of alcohol and drug dependencies, mental health problems, sufferers of long-term poverty, and overcrowded and transitional living conditions.<sup>20</sup> Lockdowns provide limited protection in an environment where people primarily work jobs that could not be done from home and in an economic situation where they had no choice but to work and where social distancing and self-isolation were difficult. Families who lose income are less able to afford the basics, including food and heating, less likely to access health care or education, and more at risk of violence and abuse. In addition, with severe staff shortages, either short-term due to illness or long-

term due to the availability of skilled workers, the reach and quality of support services may also diminish.<sup>21</sup>

In times of isolation, many people found themselves in restricted household groups with reduced opportunities for social interaction. Self-isolation meant overcrowded housing arrangements for some and solitary confinement for others. Their everyday work, education, recreational groups and activities, community spaces, sports groups, churches, and other community groups were closed – sometimes for good.<sup>22</sup> These factors bring higher risk to their physical and mental health and social relationships and increased risk of violence or other forms of social harm.

## **ECONOMIC STRATEGY**

In terms of money spent relative to GDP in response to Covid, the New Zealand government delivered one of the most substantial fiscal and monetary policy responses in the OECD. This fast response facilitated the most vigorous economic recovery, the fastest asset price inflation, and the lowest unemployment rate in the OECD.<sup>23</sup> However, Hickey suggests that New Zealand's economic response to Covid was among the worst in the OECD regarding increasing wealth inequality and misusing taxpayer funds. It sowed the seeds for a K-shaped Covid recovery. The economic strategy saved jobs but significantly increased housing unaffordability as the surplus cash fuelled an asset price bubble.<sup>24</sup>

When the Covid-19 pandemic first hit New Zealand in March 2020, the New Zealand government immediately adopted measures to facilitate a quick post-Covid economic recovery, including a NZ\$50 billion pandemic response package, record-low borrowing rates, mortgage payment holidays for homeowners and a NZ\$100 billion quantitative easing programme – printing money to buy back government bonds.<sup>25</sup>

A wage subsidy was rolled out quickly to business owners to offset the wages of the employees they would otherwise have made redundant; wage subsidies were not paid directly to workers. The government paid businesses \$19 billion in wage subsidies. Cheaper mortgages allowed the wealthier population to build up portfolios of rental investment properties.<sup>26</sup> While in contrast, rapidly rising house prices locked out first-home buyers and low-income earners. Further, most itinerant labourers, piecemeal workers, and part-time and extra-hour workers suffered from job losses or reduced wages. Hickey<sup>27</sup> estimates that the wealth of asset owners increased by \$1 trillion during the COVID response. In comparison, those on low incomes went backwards and borrowed \$400 million from the Government-owned Ministry of Social Development.

## **Labour shortages**

Since COVID arrived at the border New Zealand has experienced skills and labour shortages at unprecedented levels. Many factors have fueled recent labour shortages in New Zealand, with unemployment rates now at their lowest recorded level at 3.4 percent (September 2021), since December 2007.<sup>28</sup> New Zealand has always had a high dependence on immigrant workers. However, New Zealand's border restrictions illuminated the risks of this dependence. Net migration decreased, reducing the total labour force inflow.<sup>29</sup> Job turnover has also increased as the increased opportunities available mean people are changing their jobs. In addition, lockdowns have seen large numbers re-evaluate their priorities leading to the 'great resignation'. The borders reopening for travellers with New Zealand passports has resulted in many young people leaving their jobs to travel overseas. Health workers, particularly mental health and support workers are in short supply. The building and construction industry is desperate for staff.<sup>30</sup> The cost of labour has increased dramatically, which has resulted in increased inflation and increased numbers of people requiring housing assistance. In

addition, Statistics New Zealand (2020) reported significant building issues fuelled by Covid19-related shortages of labour and building supplies and decreased productivity due to lockdowns.

## **HOUSING STRATEGY**

Homeownership has traditionally been an important milestone in the lives of New Zealanders; however, it has become increasingly unaffordable for many. Homeownership peaked in the 1990s at 74 percent, but by 2018 this had reduced to 64.60 percent.<sup>31</sup> This percentage has likely fallen further since the last census. Rising interest rates, credit availability, and a post-Covid property boom added another 40 per cent to the price of real estate in New Zealand.<sup>32</sup> As a result, New Zealand rose to have one of the most unaffordable house prices among OECD nations.

Rents also increased, spurred by the rising cost of real estate, housing shortage and growing population. Although the Government delivered some increases to benefits, these increases were insufficient to cover rent and other increases in the cost of living.<sup>33</sup>

The Government provides a range of options to help those who cannot pay their rent or have nowhere to live. This assistance includes 1) Emergency Housing, 2) Transitional Housing, 3) Long term supported accommodation, 3) Social Housing, and 4) Help with housing costs.

### **Emergency housing**

Emergency housing is for those with immediate housing needs for less than seven nights. The New Zealand Emergency Housing Special Needs Grant pays for the cost of temporary accommodation provided by commercial and community providers at places such as private rentals and hostels. The goal is to meet people's immediate housing needs. The distinguishing feature of this assistance is that it is a payment for accommodation on a short-term basis, and therefore no support services are provided. Government spending on Emergency Housing Special Needs Grants doubled between 2019 and 2020 and rose 50 per cent in 2021.<sup>34</sup> People may move to transitional housing at the end of the seven-day stay.

### **Transitional housing**

Transitional housing provides supported short-term accommodation for up to 12 weeks. Trained staff provide the support to address the immediate needs of those using this service. These support services can include financial mentoring and links with additional services and support organisations. The goal is to provide the support needed to secure long-term sustainable accommodation. When long-term accommodation is secured, the support is continued for a further 12 weeks to ensure the sustainability of that accommodation.

### **Public or social housing**

The Government provides longer-term housing for those with severe housing needs and meet strict criteria. Waiting lists are long, with people with the greatest needs being placed first.

### **Help with housing costs.**

When people have accommodation but struggle to meet their housing costs, grants are available to assist them in remaining in their homes.

### **Impact of COVID19 on housing**

COVID has severely challenged this logical housing strategy. The line between emergency and transitional housing has become indistinguishable despite one being a grant and the other the delivery of a service. Because the border had been closed to visitors, motels and hotels had spare capacity. The New Zealand government stopped funding private rentals as emergency housing and commissioned motels and hotels instead. Although meant for short stays, many people stay in emergency accommodation for many months because they have nowhere else to go.<sup>35</sup> While the Government spent substantial amounts on short-term emergency accommodation for those in need, it directed very little into building permanent new homes. Transitional houses are full. Motels can be unsafe and unsanitary, and violence and crime are common. Patterson<sup>36</sup> reports the experiences of those in emergency accommodation as intimidating and terrifying, with young families living next to gang members. Emergency accommodation is often unsuitable for long-term tenancies as it is usually for larger families with higher needs, including the need for space for their belongings. A one-room motel cannot provide this. The long-term physical and psychological toll of living in this environment is yet to be fully quantified.

The demands on transitional housing have increased, and the most significant barrier to moving people on from transitional housing is the lack of affordable housing alternatives. Staff shortages have stretched support services offered in transitional housing. Waiting lists for social housing have grown. Private rents and home ownership have become unaffordable. The Government paid private landlords above-market rates for housing.<sup>37</sup> Private rentals, which were getting \$1400 a week in income, were rented to the Government for \$3900 a week.<sup>38</sup>

The Government needs to plan for when the borders open, tourists return, and motels revert to everyday business—the homeless risk being displaced from motels by returning tourists.<sup>39</sup> Motels, however, are better than families living in parked cars, caravans or on the streets. There are also further opportunities to assist New Zealanders in purchasing their first home. A long-term solution to New Zealand's housing problem has yet to be reached.

### **CONCLUSION**

Despite its efforts, the New Zealand Government's response to COVID-19 has unevenly impacted the well-being of its citizens. As a result, its response has dramatically increased inequality, unaffordable housing, child poverty and inflation.

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# WHY AND HOW TO TEACH DESIGN TO NON-DESIGNERS

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## INTRODUCTION

Design may be defined as a process in which the roles of the designer and the maker are separated. Such separation is enabled by effective communication (e.g. in the form of a sketch, plan, notes, etc.). The beginnings of such a widely defined design can be marked quite early - a good case in point here may be the unification of archery arrows introduced by the first Emperor of China about 200 BC.<sup>1</sup> Moreover, by allowing not only the participation of the medium but also a direct message in the criterion of communication, the definition presented above may take into account most of the artefacts of material culture. Therefore, in practice, historians associate the beginnings of modern design with fundamental social changes, i.e. with the industrial revolution and mass production.<sup>2</sup>

The place of design in the new manufacturing practice carried out in factories, unlike it was before (where its place was in manufactories or workshops) may suggest that the original intellectual background of contemporary design was related to the fusion of craftsmanship and art. However, the analysis of the profile of key design schools shows that from the very beginning, design education programs did not focus on the improvement of mass products, but went much further, even as far as animating and handling various social changes. One of the oldest schools, the New York School of Design for Women, Cooper Union for Advancement of Science and Art and Glasgow School of Art introduced the progressive concepts of women emancipation and empowerment through openness and inclusion.<sup>3</sup> Parsons School of Design promoted equality and elitism by reducing hierarchy.<sup>4</sup> The Bauhaus focused on democratization through the best possible solutions.<sup>5</sup> Hochschule für Gestaltung Ulm promoted social responsibility that had a particular context, including prevention from the emergence of such phenomena as Nazism.<sup>6</sup> Malmö Höskola, K3 (Malmö University, K3) proposed a deeper context for human-centred design, combining democratic values with social design. Code has been defined not only as the basic material of a digital product, but, interestingly, as a carrier of ethical values.<sup>7</sup>

Although most of the above-mentioned schools were inspired by the achievements of the previous ones, in order to maintain their own identity, each of them defined the way of thinking about design in a slightly different way. What is interesting, however, is that these schools show several fundamental similarities regarding the method of teaching design itself: a) interdisciplinarity which is represented in real life (apart from outstanding designers from the 'canonical' fields of design, one may think of Hannah Arendt, Erich Fromm, Karen Horney, or Margaret Mead); b) openness (orientation towards different perspectives); c) interest in a wide range of social areas; d) cooperation instead of competition between students; e) partnership in relations with instructors; f) the priority of curiosity

and experiment.<sup>8</sup> The listed attributes are key components of liberal and progressive pedagogy, operating on the principles of prefigurative culture, in which the main goal is to adapt to changes.<sup>9</sup> It is worth emphasizing that it is the younger generations that by definition must question the existing order, who always play a key role in the process of animating change.

It is difficult to deny the advantages of using such pedagogy for teaching in general. Can design have a similar or even wider application? The idea of teaching design to non-designers is not new - it goes back, among others, to the Government School of Design (the later Royal College of Art), where an art and design teacher education program was implemented.<sup>10</sup> The potential of moderating social processes with the use of design tools is used in many fields<sup>11</sup> and also leads to the emergence of new areas, e.g. participatory design,<sup>12</sup> social design<sup>13</sup> or legal design.<sup>14</sup> The above mechanism of borrowing tools or methods from the domain of design comes from their effectiveness, which in turn is the result of reflection and in-depth analysis, e.g. of the framing problem<sup>15</sup> or redefining problems.<sup>16</sup> Therefore, design becomes a promising framework in tackling complex social problems for which science, economy or politics have not found satisfactory solutions. Therefore, a natural postulate is to include design education in the basic education unrelated to design. However, despite the significant historical achievements, the current state of design education raises doubts in the design community itself. Therefore, before answering the question of how to integrate design education with the general education system, it is worth analysing the existing solutions.

### **The current situation in design education - statement of the problem**

Nowadays, the design education system is faced with the challenge of redefining the scopes, possibilities and methods of educating future designers.<sup>17</sup> The complexity of the world around us, both in the technological and geopolitical dimensions, as well as goals connected with climate protection and public health create completely new challenges for the practice of design. "Our concern is that design education has not kept up with the new demands of the 21st century".<sup>18</sup> The necessity to redefine design education is postulated by, among others, Hartmut Esslinger, who writes that "most educational programs today do a better job of teaching creative, artistic students - always too few in number - how to worsen the problems of our time rather than solve them".<sup>19</sup> In the education system Esslinger notices a mindless focus on the creative process rather than design challenges in which this process can animate social change. The need to conclude a new social contract for *changes through design* is also perceived by Tim Brown<sup>20</sup> who postulates a departure from the understanding of the practice of design from the perspective of the opposition between buyer and seller: "We are in this together".<sup>21</sup> Brown points out that the education system itself requires a fundamental change, illustrating it with the example of D-School, where the curriculum is a continuous experiment on an iterative design process with the goal being the path itself. A distinctive - in a critical sense - voice on the subject of design education is the project entitled *Future of Design Education*, initiated by the famous article by Donald Norman and Paul A. Kirschner, entitled *The Teaching and Learning of Design*.<sup>22</sup> Norman and Kirschner observe a fundamental deficit in the education of designers in terms of their compatibility with the so-called the present day - its complexity and the challenges behind it. Moreover, the authors point out the lack of an interdisciplinary environment of knowledge, competences and skills in the process of educating future designers. The initiative *Future of Design Education* provides an open forum for the exchange of ideas and experiences in the field of teaching design - its aim is to make an effort to rethink and redesign design education. The very fact of the emergence of such an initiative allows drawing two conclusions: 1) The design community notices deficits in the education system; 2) The design environment is self-reflective when it comes to trying to change through design. "The vast majority of college design programs still focus on the surface appearance of artefacts, despite declining

employment in this type of practice. These conditions triggered this initiative to rethink design education for the 21st century. One priority of the initiative is to provide an in-depth, evidence-driven academic foundation for design decisions. A second priority is to help designers to become advocates for social and environmental responsibility".<sup>23</sup> The theoretical framework for the project of the future of design education is created by an article of Michael Myer and Donald Norman,<sup>24</sup> where the authors put forward two very important theses already in the introduction. First of all - the level of complexity of design practice is increasing, while design education in this area is not developing; secondly - educational deficits of designers are mitigated by the broadly understood business, which in the long run has the possibility of replacing the education system, as will transpire below. Jorge Frascara offers an interesting, journalistic and empirical perspective on design education. He conducted interviews with Richard Buchanan, Donald Norman and Ezio Mazzini and the emerging picture of design seems to be similar to a situation where the education system took a break while the world moved on. "Too many schools believe their own advertising".<sup>25</sup> It would be difficult to agree with such an unequivocal conclusion, as evidenced by the inference of Ena Voûte from the Delft University of Technology: "Design education is changing rapidly in its content, its pedagogy, its students (...) now, designers work collaboratively and, increasingly, with many others to address societal issues such as obesity, aging, and global warming. Every ingredient has broadened and deepened".<sup>26</sup>

Design has changed from goal-oriented design to criterion-oriented design - the focus of design is no longer the object, but its usability, accessibility or serviceability. In design, the context of products, services or communication becomes crucial - contemporary design education should therefore focus on a holistic approach to design methodology, supplementing education with social, technical, economic and environmental context. "More than before, design students need to acquire a solid, critical understanding of design methodology rather than proficiency using a few tools for a specific application".<sup>27</sup> Focus on the skilful use of design tools will not prepare the designer for the challenges of the so-called the present day.<sup>28</sup> The scope of design education is perceived as much broader by Buchanan, according to whom, it consists of communication - in the sense of communication competence and creativity - in terms of its meaning and understanding, and ethics - in the sense of awareness of the role of designers and design, as well as social and environmental responsibility.<sup>29</sup>

The current discussion of the design community on re-designing design education seems to be of key importance, although we feel that it is closed towards an external perspective - interdisciplinarity, which is emphasized at every step in a theoretical sense, but not widely used in this on-going discussion.

### **The hypothesis - setting up the problem**

A critical look at the design education system comes mainly from the observation of its consequences, i.e. the condition of the design services market - this is where, in a systemic sense, we notice deficits in design education in the form of specific manifestations: imitative, non-reflective, profit-oriented (not user-oriented) and computing power-focused design. The focus of the design education system on responding to the requirements and challenges of the market creates the danger of education serving big business, which Paul Rand commented on, writing that: "It is no secret that the real world in which designer function is not the world of art, but the world of buying and selling".<sup>30</sup> In our opinion, the dynamic and temporal nature of the market should not be an adequate frame of interpretation for the design education system - on the contrary, the education system should stand in opposition to the market, while at the same time providing creative tension against which progress and reflection are born. "In many cases, employers argue for skills with temporary relevance".<sup>31</sup> Teaching design is learning to think critically, not to muse over new applications of *design thinking* in practice. "Design thinking is bullshit" thundered Natasha Jen from the Pentagram design studio

during one of the TEDx conferences. The subservient attitude of the design education system causes an understandable lack of market interest in the education system - a system that mimics another system is not a system worth attention, one might say. In this situation, the market becomes autonomous, i.e. the intra-market method of education becomes internalized, which results in short-perspective-oriented and specific, narrow specializations of educational initiatives, e.g. Google University or LinkedIn Learning. These very incarnations of business-oriented products which are called *business innovations* are for us a good example of how the design market breaks away from the design education system - *you don't need design studies*; what you need is practice and familiarization with the new tools, because in a moment they will be replaced by even newer ones.<sup>32</sup> The question arises why the design education system is not an attractive reference for the broadly understood market of design services.

Craftsmen's guilds have used an intra-market system of training, certification, granting diplomas and competency certifications since the 11th century.<sup>33</sup> The process of creating guilds also gave rise to universities at that time, and several centuries later higher education focused on the liberal arts was established.<sup>34</sup> Interestingly, the education system dedicated to design, independent of the manufacturing / production practice, has emerged quite late. At the beginning of the 19th century, state or private institutions funded design schools in the UK, and later in the USA and Europe.<sup>35</sup> The turn of the 19th and 20th century is the time when numerous design schools flourish, the curriculum of which is not only able to follow the huge scale of social changes, but more importantly, often gives direction to these changes. When one thinks of the dominance of modernism throughout most of the 20th century, one will see that it was the result of functionalism, present in numerous schools, or of rationalism. It is worth emphasizing that, apart from rationalism, the key epistemologies for designing also include phenomenology and pragmatism.<sup>36</sup> Perhaps it was the misunderstood pragmatism (e.g. in the case of the European system, the obligation for the economic environment to provide opinions on the emerging educational offers, regulated by the so-called Bologna process) that contributed to the fundamental change. Many current design education programs are focused on its extremely practical (i.e. market) aspects (i.e., technology or tools), devoid of deeper reflection on the meaning of design for the society and civilization. Hence our main thesis that the design education system in the near future will cease to be any point of reference for the design market, which, admittedly, still draws on the effects of the education process, for example in the kinds of new jobs that are offered, but this is due to the still insufficient educational offer within its own structures.

The lack of creative tension between the design education system and the design services market leads to a reduction in the quality of both systems - paradoxically, competitiveness may be the *modus operandi* of innovation in this case. In the model approach, the market of design services could look for inspiration and resources in the education system as regards the reflective application of design practice, while in practice the design education system, both in a formal and content-related sense plays a subservient role in relation to the market of design services. The latter performs only intra-system operations - it is a point of reference for itself, and thus becomes a self-sufficient system in acquiring resources to maintain. In a situation where the market is the leading reference for the design education system, innovation becomes only a market product, and the education system draws inspiration from it. In practice, it consists in maintaining a thoughtless race in generating new methods or tools that in the business narration are to contribute to the autonomy of bidders' design services, and in practice they contribute to extending the life of the product offered by a given company - which in turn translates into an increase in the cost of the service for the end user in the social role of a consumer. From the point of view of the relation between the education system and the market, only the market can offer an adequate educational component in terms of the product, service or tool that it produces.

One of the many examples of a mindless race in generating more and more new methods or tools is the creation of *naming* - understood as a strategic process of creating names for companies, products or services - out of the marketing-oriented communication design. In our opinion, *naming* as a market-oriented activity does not originate from the needs of the market, the consumer or the professionalization of the discipline, but precisely from the possibility of building specific market narratives - after all, the names of many organizations often result from many different circumstances. Interestingly, it is only after it appears in the market, the education system suddenly starts offering subjects related to naming. This situation only shows how the education system is secondary to the market for design services. Other examples are provided by all kinds of IT solutions in the field of sustainable packaging design (MMU, Indexes, REStar, DFE, RONDA, etc.), in which machine learning and deep learning algorithms are used. The use of these solutions in business practice basically excludes their widespread presence in the design education system (they are not open access solutions, either); only the market practice allows them to be learned and applied. Autonomization of design services in the form of market iterative tools of incarnation of design thinking methods (design safari, A420, IDEO's Method card, etc.) is another symptom of the lack of market and education system references - it is difficult to imagine, but design as a broad set of knowledge, competences and skills can be reduced to using a set of coloured cards or covering walls with such cards. Design education in its current shape becomes an unnecessary and overly time-consuming component of building a design career. Nevertheless, although the substantive condition of the design services market leaves much to be desired, the change is not necessary here. What we need to change is the design education system, so that it could become an attractive resource of knowledge, competences and skills for the market, as the latter is mainly responsible for the so-called contemporary challenges in the form of socio-economic stratification, unsustainable development, desemantization of entire constructs and concepts of communication,<sup>37</sup> exclusion or expansive modernity

### **Roadmap for new design education**

In the framework of a joint project of Volda University College and SWPS University of Social Sciences and Humanities, we are initiating a project aimed at changing the way designers are taught, which could translate into a new, reflective design paradigm based on so-called lean development approach.<sup>38</sup> What is needed is a study program that takes into account the issue of interdisciplinarity, basing on the synthesis of scientifically grounded design doctrines - human-centred design, participatory design, universal design, sustainable design or environment-oriented design. In such an approach, interdisciplinarity cannot only be the spectacular subject of academic talks or lectures on design - it is necessary to enable the creation of an interdisciplinary environment of knowledge, competences and skills. Such action is doomed to failure in design schools, mainly due to the function of design itself, which should be reduced to animation and moderation in an interdisciplinary environment. A systemic change in thinking about design is also necessary, in which design schools support other fields / disciplines, equipping them with specific competences, mindset and technology to deal with design problems. In our opinion, interdisciplinarity is the key in this case; however, it is interdisciplinarity in its practical application. A critical look at the current educational practice of design schools in no way invalidates their social significance - on the contrary; Design schools have an unprecedented opportunity to distinguish a completely new area of teaching, focused on educating moderators and animators of design processes. This by no means contradicts specialized areas of product design, graphics or fashion. Paradoxically, our proposal is not limited to design studies, but extends their scope with what is often the strength of pedagogical schools - the aspect of how to teach teaching (in this case, of design). Developing design studies in non-design fields or disciplines may result in very serious scientific potential in the form of creating an environment of creative tension on

the way to progress - design educators cannot only equip students with design thinking competences, but also, and perhaps above all, they could power entire research teams in which skilful application of *outside of the box* design methods can provide a specific type of creative thinking on the way to innovation or progress.

“We would like to propose an approach to educating non-designers in the field of design. What we have in mind is creating a comprehensive teaching component in the form of a reflective design model, in the centre of which we put design doctrines focusing on individual issues (*human centred design*), social ones (*universal design*) as well as environmental problems (*transformation design*) in the format of *learning by doing*”.<sup>39</sup> Such education would therefore be interdisciplinary processes that can be used in any area of the market, taking into account its specificity and scope. To make this concept affordable and engaging to non-designers, we propose a form of an open teaching service based on a design thinking framework. Such an approach is configurable for various fields and ways of working and offers effective methodological, cultural and tool-related support in framing, defining and solving problems.

Design cannot be mastered once and for all, but it can be learned by application. Design thinking by definition includes this context and prioritises the social relations level by bringing various groups of stakeholders into the process. This approach is the foundation of many so-called *design thinking* short courses. However the main disadvantage of this type of services is focus on narrow, tool-related aspects simultaneously missing the relevant context of a given domain. As a result, knowledge based mainly on case studies is not enough to build universal know-how. Hence, the main postulate is not to teach *design thinking*, but rather its use in sectors that may need such support for a better understanding of the problem, context and recipient. In this approach, the following educational components may and should be constructed: *legal design* (e.g. *law without walls*), *learning design*, *medical design*, *media design* - wherever the basis of functioning are social relations, and where the dynamic changes are everyday reality, it is possible to develop a relevant scope of education in a participatory and seeinterdisciplinary way.<sup>40</sup> We would like to propose the idea of teaching, the aim of which is to deliver a relevant know-how to low-design domains through a specific way of thinking about reality (problem framing, defining and solving), social sensitivity (empathy and creative attitude) and the observer's perspective (non-judgmental observation). It should be stressed, however, that not only knowledge of tools but rather the competence of conscious and reflective usage of tools makes one a true designer.

We adopt these criteria as the concept of legal design proposed by Wszolek and Pluchowska<sup>41</sup> with slight modifications:

The first criterion is the development of a certain type of sensitivity, which is key in design practice, mainly to skilfully transport information to the cognitive field of the end user. This information cannot simply be passed on, it must be negotiated, bearing in mind that the result of the negotiation is always the matter of an individual. To be more specific: first, it is about being sensitive to a design problem. This is one of the few terms that design theorists agree on - the concept of a problem is the starting point for design practice in nearly every design doctrine. The design problem is the purpose of diagnosis, and the general goal of design is its efficient solution and provision of adequate implementations. To achieve this distinguishing between effects (so called by non-designers ‘problems’) and causes (in fact design problems) seems to be a crucial competence. Only a proper diagnosis of the latter could lead to an accurate problem solution. Taking into account the social context, a true participation based on work culture and the design process is required to eliminate hierarchical structures of social relations and to involve the beneficiaries of change on a partnership basis. Finally, it is about sensitizing designers to the issue of solutions, which can be briefly described in Dieter Rams' words that “good design means as little design as possible”.<sup>42</sup> He draws attention to



consequences of design which - usually taking the form of solutions to design problems - create new problems. Systemic thinking allows observing and modeling specific change scenarios and estimating costs.<sup>43</sup>

The second criterion is paying attention to the "atmospheric nature of communication", which is what Peter Drucker<sup>44</sup> postulated as the most important characteristic of communication - what is most important in communication is what has remained unsaid. For example - *the point is not to call yourself a professional, but to prove it in what you are saying*. The atmospheric nature of communication could be explained as a sum of the communication situation, the communication scenario and communication competences.<sup>45</sup> The first two elements are enough to be recognized, but communication skills must be trained. The atmospheric nature of communication is used primarily in advertising to manipulate e.g. through discursive character of language and image, rhetoric and persuasion. As a consequence the message is not given outright but rather 'encoded' between lines. In the case of design, work on the atmosphere allows for efficient building and management of communication, which in the context of reflective, socially-oriented design "is of fundamental importance, regardless of whether we are talking about a direct (e.g. conversation) or mediated (e.g. a written contract) form of communication".<sup>46</sup>

The third criterion is the ability and competence "to organize and manage an iterative form of the design process",<sup>47</sup> both from the perspective of successive activities, as well as social roles and resources necessary to efficiently carry out a given design task. In the systemic approach, the design process shows a self-referential structure - regardless of whether it is intentional or just a coincidence. Each end of the project, understood in terms of a specific product, forms the basis for the operationalization of subsequent project activities that start from the design problem.<sup>48</sup> In the context of the third criterion, tool education is no less important is, whose aim in fact is to develop the ability not so much to use specific design tools, but to understand the possibilities and limitations in the relation with a specialist in a given area. It no less important to achieve *creative confidence* which allows searching for and creating non-obvious solutions through thinking *outside of the box*. The combination of these three criteria, i.e. design sensitivity, awareness of the atmospheric nature of communication and the necessary skills of the design process allow for the adoption of a creative attitude in the context of challenges posed by a given non-design field / discipline. A design educator in a non-design environment is to provide a framework for activities in which innovation can develop.<sup>49</sup>

## CONCLUSION

In the short-term perspective, we see the possibility of creating university teaching components dedicated to specific disciplines. The same view is represented by Wszolek & Płuchowska in accordance with legal design. In our opinion, teaching design to non-designers is, first of all, convincing the representatives of non-design sectors to think differently about their profession, that is to persuade them to focus their creative, manufacturing and transactional processes on their recipients in many dimensions, such as constructing friendly and socially sensitive services, offering transparent and friendly information on the subject of products, education, and creating new forms of work and cooperation.<sup>50</sup> An example of such an application may be legal design studies for representatives of the legal sector; in this sense, design as a subject in educating non-designers must be adapted to the requirements of the legal system, and not the other way around. In the long term, however, we will notice the need to think about educating educators in the field of design, so that they could develop centres for teaching design competences in non-project educational institutions. Since many non-pedagogical faculties provide education in the field of pedagogy, and as a result, a large part of students become teachers, it is also possible to teach design in non-project faculties, which allows for

skilful management of complexity on the way to problem solving. Thinking about the future of design education cannot just be a reconfiguration of design school curricula and approaches. Design is a core competence and skill, but more importantly, it is the key to understanding the society on the way to sustainability. "We are all designers" - we just need to be convinced of this fact, although the design community itself seems to be convinced enough: "Now it is time for today's community of design educators to follow in the transformational spirit of the early Bauhaus to modify design pedagogy to accommodate the many different styles and goals of 21st century design ".<sup>51</sup>

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# ARCHITECTURE, TECHNOLOGY AND THE ENVIRONMENT: PROPOSALS FOR THE REGENERATION OF THE URBAN CONTEXT

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## INTRODUCTION

When György Kepes inaugurated the Center for Advanced Visual Studies (CAVS) at the Massachusetts Institute of Technology, he was 61 years old and for many people, it was the culmination of a long professional and academic career, that included works as *Language of Vision* (1944),<sup>1</sup> where he argued that as perception requires engagement and the experience of an image is an act of creation that implies our engagement in a process of organization. From this idea, he built up the notion of 'vision' in terms of structure, where different levels as balance, rhythm and harmony were involved in a dynamic process of integration.<sup>2</sup> For Kepes, the art had to assimilate the use of scientific and technological tools to unify the experiences of the human being (the sensory, emotional, and intellectual dimensions). To that end, it was necessary to promote the connections between different disciplines, which would allow achieving a more holistic knowledge of the world as an ecological complex system. One year after the publication of this book, Kepes was invited as an Associate Professor at the Massachusetts Institute of Technology's School of Architecture and Planning to teach *Visual Design*, a subject in which he focused on representation using new technologies, as for example aerial photography, video or television under the belief that painting and sculpture were not the only tools to be used in the Arts.

In 1951, Kepes published *The New Landscape in Art and Science* (1951),<sup>3</sup> which preceded an exhibition of photography in which he was devoted, more than revealing the possibilities of the new technologies, to show the analogy between the forms that were found in the nature and the ones created by humans through manual work. As he declared: "The aim of the exhibition is to show the new frontiers of the visible world (...) until now hidden from the unaided eye".<sup>4</sup> The visible track of natural processes were shown on the pictures, not as visual documents of scientific facts, but as stimulant experiences that involved people, as Kepes made clear in the text of the publication, which included his own article and some others written by physiologists, chemists, zoologists, painters, architects, engineers, poets and physicists. Between 1954 and 1959, Kepes worked in the research project called *The Perceptual Form of the City* in collaboration with Kevin Lynch, who was analyzing how people understand the public space and the way they experience the urban environment. This material was the base for the book *The Image of the City*,<sup>5</sup> published by Lynch in 1960. The research increased Kepes's belief in the idea that the contemporary world was in a moment of visual chaos and therefore, it was necessary to promote the art as a public tool for the urban transformation. To that

end, Kepes began to glimpse the need of a research center that related art and technology to develop large scale urban projects.

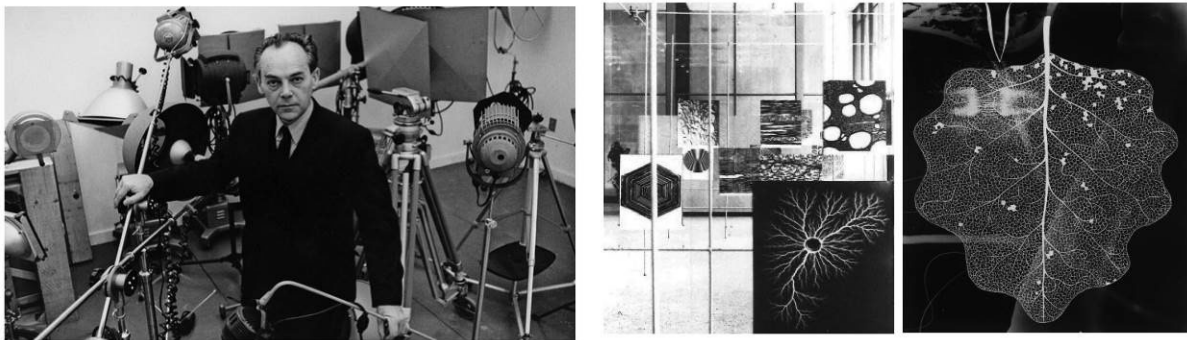


Figure 1. György Kepes at the Center for Advanced Visual Studies (1968). Image: Nishan Bichajian CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts (left). György Kepes: *The New Landscape in Art and Science* (1951) (right)

In 1966, the president of the MIT, Julius Straton, approved the creation of the Center for Advanced Visual Studies and nominated Kepes the director of the center, who firmly believed on the need of renovating the society by means of the technology, as he affirmed in *Daedalus* magazine: “New technical tools and materials; new approaches to teamwork, among creative individuals in the arts and in the sciences with different backgrounds and training; new awareness of the interplay of visual factors in the dynamic urban scene; these are the challenges to collaborative daring”.<sup>6</sup> Following these new ideas, Kepes proposed the development of urban design proposals that involved the cooperation with architects, town planners and engineers and the use of new technologies. Between 1965 and 1972, Kepes published the *Vision and Value Series*<sup>7</sup> that included articles by scientists, art critics, artists, engineers and architects as Rudolf Arnheim, Ludwig von Bertalanffy, Sigfried Giedion, Ad Reinhardt, Kevin Lynch, Robert Smithson, Richard Buckminster Fuller, Pier Luigi Nervi, Alison & Peter Smithson, John Cage, Christopher Alexander and Marcel Breuer, among others. The books showed his determination to look for a new language of vision that allowed including on the artistic creation values related to science and technology. To that end, each volume analyzed notions as vision, structure, movement, module, proportion, symmetry, or rhythm; structures that could be found in the nature, as well as in the arts, that were considered crucial to perceive all the environmental dimensions.<sup>8</sup> According to this new conception of vision as a structure, Kepes designed a program at the CAVS focused on the exploration of the urban reality and the transformation of the environment. The center was inaugurated in November 1967 around two main lines: the first one was focused on supporting artists that became research fellows at the center to develop their personal projects in total freedom, and the second was related to large scale collaborative projects that involved all the artists.<sup>9</sup>

### THE FIRST WORK OF THE FELLOWS

The first line proposed by Kepes at the CAVS was focused on promoting among the artists the exploration with new technologies. To that end, he invited engineers and scientists from the university to collaborate in the activities of the center. First years' guests included the photographer and engineer Harold E. Edgerton; the professors of Mechanical Engineering Norman Dahl, Ain A. Sonin and William Murray; the professor of Aeronautical Engineering Louis Sutro; the astrophysicist Walter Lewin, and the physicist Henry H. Kolm. Since its earliest days, the center became a meeting point for artists, engineers and scientists where they could explore new technologies to change the environment. Together with the guest professors, a variety of artists joined to the center in residence.



Among them, it is worth highlighting the photographer William A. Garnett, the artists Wen-Ying Tsai, Otto Piene and Michio Ihara and the architect Mauricio Bueno,

When William A. Garnett arrived at the center, he was working in a project of aerial photography related to the nature reserves at the United States that were in danger of disappearance. During his stay at the center he published in *Life Magazine*<sup>10</sup> a photographic report including beautiful pictures of landscapes that had a great impact on the society, especially on those who worked on the defense of the conservation of the environment. Kepes found in Garnett's work a parallelism with the line that he initiated in *The New Landscape in Art and Science* (1951),<sup>11</sup> where he tried to show the possibilities of the technological advances of the photography, using strobe lighting, microscopic photography and x-ray photography to extend the limits of the visible world and to show the analogy between the structures that organize the natural processes and the ones that underlie the artistic creations.

In 1969, Kepes invited the artist Wen-Ying Tsai, who worked on cybernetic sculptures exploring the phenomenon of his apparent movement and the interaction with people. His sculptures moved rhythmically, after receiving sounds from the exhibition room, by means of some microphones that modified the frequency of a few strobes hidden in the sculptures. Kepes described his rhythmic movements affirming: "Rhythm is friendship and in Tsai's work there is friendship of light, sound and our own heart-beats".<sup>12</sup> With this statement he showed his adscription to an art, in which the works had the aptitude to reflect the sensory and emotional answers of the people that interact with the sculptures at the exhibition. Frank Popper<sup>13</sup> described Tsai's sculptures as dancers, whose movement was taking place thanks to the vibrations transmitted by the electronic devices hidden in the sculptures. They were activated by the environmental sounds, being the people on the exhibition room responsible of modifying the choreographic movements of these dancers. The electronics and the cybernetics were used here as tools with which visitors established a dialog with the sculptures, which translated into a visual movement the sounds that they were gathering from their presence. All these works were exhibited in *Cybernetic Sculptures Environment* (1971),<sup>14</sup> at MIT's Hayden Gallery and at the University Art Gallery of Pittsburgh's University.



Figure 2. William Garnett. *Hills near Paso Robles, California* (1953) (left). William Garnett, *Dunes, Death Valley* (1956) (center). Wen-Ying Tsai. *Explorations* (1970) (right). Image: Nishan Bichajian. CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts

Kepes met Otto Piene in November 1965, on the inauguration of the exhibition *Piene, Light Ballet* (1965)<sup>15</sup> that was held at the Howard Wise Gallery of New York, and once Piene joined as a fellow artist at the CAVS he had already had exhibited his well-known series of 'sculptures of light in movement' from his period as a Zero Group artist as *Lichtballett* (1961),<sup>16</sup> *Electric Rose* (1964), *Light Ballet on Wheels* (1965) and *Black Light Ballet Drum* (1967), which displayed continuous lights thanks to a turntable. As a fellow, Piene designed a series of environments based on projections of

light in movement, and also worked in cooperation with the Center for Space Research on a series of *Sky Art's* installations, where he tried to combine the phenomena of light and gravity with natural elements, using transparent inflatable pipes of polyethylene suspended in the air. Inspired by MIT Haacke's *Sky Line* (1967) Piene designed memorable works as *Light Line Experiment* (1968), that was presented in June, 1968 at the MIT's Briggs Athletic Field; *A Field of Hot Air Sculptures over Fire in the Snow* (1969), that placed at the MIT in January, 1969; *Elements* (1969)<sup>17</sup> shown at the Howard Wise Gallery; *Lift and Equilibrium* (1969); *Citything Sky Ballet* (1970) and *Silver Balloons* (1969). With all these works, he extended the limits of the conventional work of art, designing installations in the environment that involved the participation of the citizens in their perception and trying to achieve a major impact on the urban environment through the humanization of the public space.<sup>18</sup>

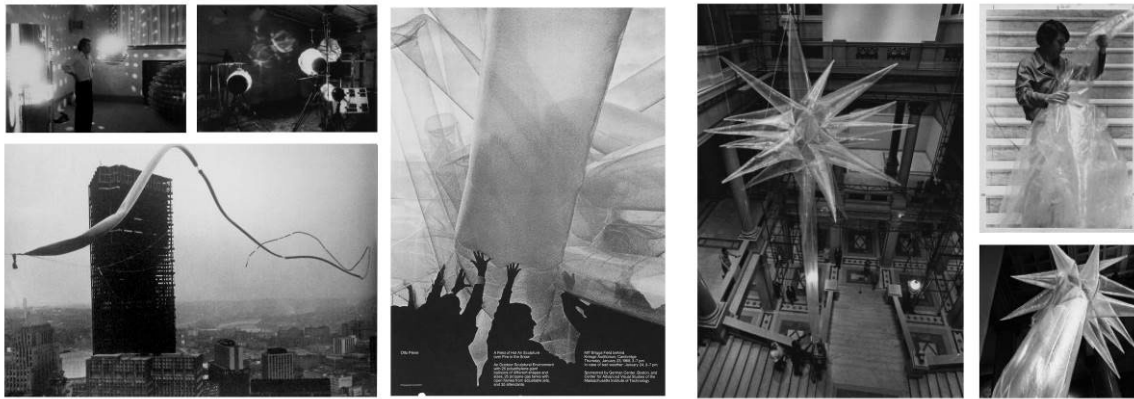


Figure 3. Otto Piene. *Litchraum* (1972) (top left A); *Lightballet* (1965) (top left B); *Light Line* (1970) (bottom left); *A field of Hot Air Sculpture over Fire in the Snow* (1969) (center). CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts. *Red Rapid Grow* (1970) (right). Image: Archive of the Carnegie Museum of Art.

In 1969, the Ecuadorian architect Mauricio Bueno joined the CAVS. He worked on a series of experimental light projects using laser, as *Escultura de láser y agua* (1970), where a laser light was projected across a focal point perforated in a cylinder full of water and provided with mirrors placed in the interior surface. The piece created a sort of fabric based on lines of light interlaced that appears when the light reflects in different directions according to the angles in which the mirrors are placed. With this work, Bueno started from the idea of transparency and immateriality associated to the idea of light to create a perceptible environment in the real world. Later, this work evolved to a series of urban projects that he called *Light Towers* (1970) developed in cooperation with Kay Larson<sup>19</sup> and Michio Ihara, where they used laser light projected from a structure conformed with a rotating cylinder in which a series of mirrors were placed. They looked alike windmills and generated geometric light patterns of a variety of shapes that responded to their movement.

Following this same idea of rescaling proposals to transform them into large scales urban interventions, the sculptor Michio Ihara started to work in some proposals as a CAVS' fellow in 1970. Before his stay at the center, Ihara had worked with Kepes as a Fulbright fellow between 1962 and 1964, designing a series of kinetic pieces based on the works that he started during his studies at the MIT's School of Architecture and Planning, between 1961 and 1962. From this period, it is worth to mention *Wall Sculpture* (1963), placed at the Street Office Building in Massachusetts; *Altar Canopy* (1965), designed for the Josen Ji Buddhist temple, in Tokyo or *Suspended Screen* (1966) for the Fuji-Film company, also in Tokyo. All of them were evolutions of some of his experimental kinetics works of art, and the step prior to the design of urban projects as *Wind Tree* (1970), where he placed a

sculpture on a public space that modified its appearance according to the wind, *Plaza Sculpture* (1970) and *Pond of Dreams* (1970) that were exhibited in the Universal Exhibition celebrated in Osaka in 1970, becoming the first environmental sculptures that he carried out during his stay at the CAVS (Figure 12).

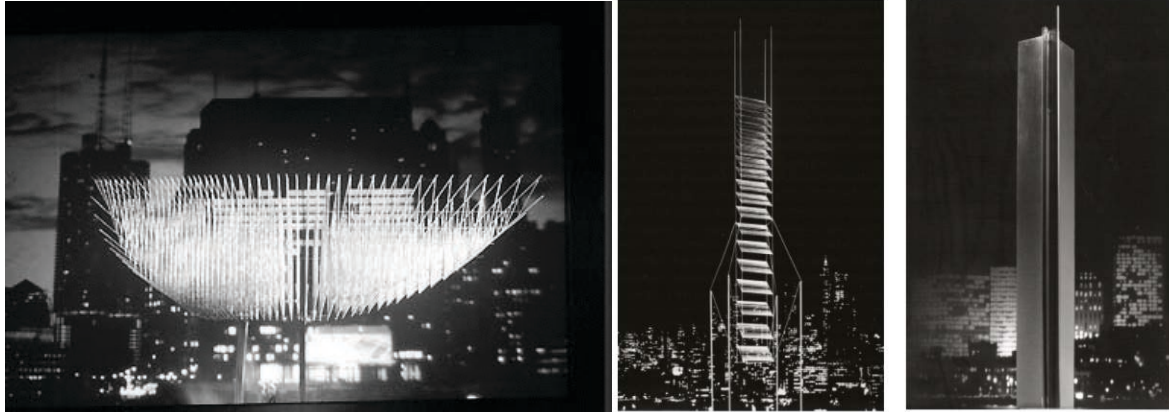


Figure 4. Michio Ihara: *Wind Tree* (1970) (left). Michio Ihara: *Light Tower* (1972) (center). Mauricio Bueno: *Pollution Monitoring Tower* (1972) (right). CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts.

## THE BOSTON HARBOR PROJECT

If the first Kepes' aim for the CAVS was focused on supporting artists providing them with a study where they could develop their work in cooperation with university's scientists and engineers, the second one was centered in the accomplishment of large environmental projects that arose from the collaboration among them. The first collaborative project that was developed at the CAVS was the Boston Harbor Project that started in the autumn of 1967, when Kepes proposed the artists the accomplishment of a kinetic-light tower to be placed in Boston Harbor. The aim was twofold: first, the regeneration of this devaluated area of the city and secondly, the creation of a landmark as a symbolic monumental door of the city. As Kepes stated in the *Technology and Culture Seminar* held at the MIT: "We have, in the past, had a great number of physical monuments, but the light tower would be a very different type, using technology as a kind of crescendo of confidence".<sup>20</sup> Kepes stated that this project, more than became the ostentation of technological sophistication, had to be a symbol that might have a relevant role in the celebration of the Bicentenary of the United States, since at that moment; it was thought that the commemorative acts would take place in the city of Boston.<sup>21</sup> To understand the idea of monument associated to the large scale kinetic-light tower raised by Kepes, it should be mentioned the influence of the first light-dynamic tower designed by the sculptor Nicolas Shöffer, who led a cultural movement in the beginning of the sixties that was claiming the need of a useful and functional art to serve the society. The cybernetic light-dynamic Shöffer's projects inspired by Cubo-Futurism, Russian Constructivist and cybernetic theories materialize in *Tour Cybernétique* (1956), a fifty-meters high tower that reacted to the stimuli of the urban environment to create sound environments thanks to photoelectric cells and microphones integrated in the tower, that captured variations in light and sound intensity to create movement.<sup>22</sup>

Influenced by Shöffer's project Kepes suggested to the CAVS' fellows the design of a large scale kinetic-light tower offering them the support of engineers, town planners and architects in search for a solution that satisfied the social and urban requirements of the project and the technical requirements of a large-scale tower. Besides, Specific-site Art installation where designed on the area to provide

citizens with urban spaces for the enjoyment of the landscape. Over time, all these proposals configured the base for the first large scale environmental projects developed at the CAVS. It is worth mention the project developed by the students of MIT's School of Architecture and Planning to support this environmental project that included a series of light-kinetic architectural models and a documentary focused on functional and aesthetical aspects of the night lighting on this area of the city, thanks to the financial support of the Joint Center for Urban Studies. Also, it should be mentioned the work developed by four research affiliates to the CAVS that worked along with the students (Frank Carlton, Leslie Larkin, Frances Masland y Jon Rubin). Carlton y Masland worked together along with Piene in Sky Art projects. Larkin focused on a series of photographs devoted to raise awareness about the environmental damage of the area and finally, Rubin developed the documentary *Man and Environment* analyzing issues related to the temporal consciousness of the citizens and their ideas about the perception of the environment.

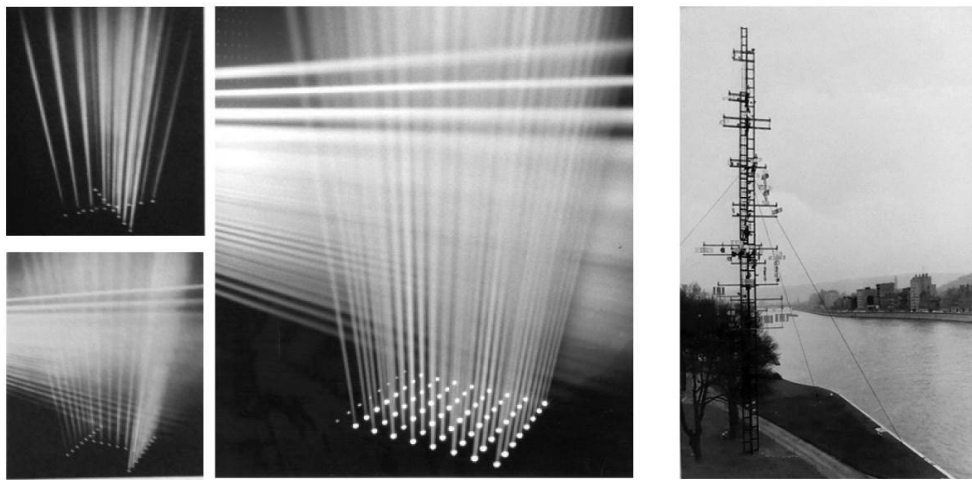


Figure 5. György Kepes, *Light Tower for Boston Harbor* (1966) (left and center). Image: Nishan Bichajian. CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts. Nicolas Shöffer: *Tour Cybernétique* (1956) (right).

Kepes encouraged artists to develop large scale urban projects, under the conviction that artists could be capable of promoting the application of the new technologies to face the urgent need to stop the environmental degradation in cities.<sup>23</sup> Nevertheless, the idea of materializing the Boston Harbor proposals was not possible, due to the lack of financial support that made impossible for the artists to move on from the theoretical projects to an experimental stage that involved the construction of architectural models and prototypes. Also, there was a fact that caused a moment of crisis among the artists, when they were told that finally the Boston Harbor project would never be realized since the principal events of the Bicentenary would take place in Philadelphia, instead of Boston. This caused some tensions among some artists, who disillusioned reproached Kepes that, in spite of his commendable aspirations, the ambition and the visionary nature of the urban projects developed at the center made their attainment impossible.<sup>24</sup> In spite of that, artists kept working on Boston Harbor proposals each academic year and some of them were gathered by the Massachusetts District Commission to be part of a wide debate thanks to the exhibitions that included all these projects as *Explorations*, at the Hayden Gallery (1969) and the Smithsonian Institution's National Collection of Fine Arts (nowadays known as the Smithsonian American Art Museum), in Washington (1970); the itinerant exhibition *Multiple Interaction Team* (1972-1974), *Boston Celebrations* (1975) and *You are Here, Boston Celebrations II* (1976) at the Boston's Institute of Contemporary Arts.



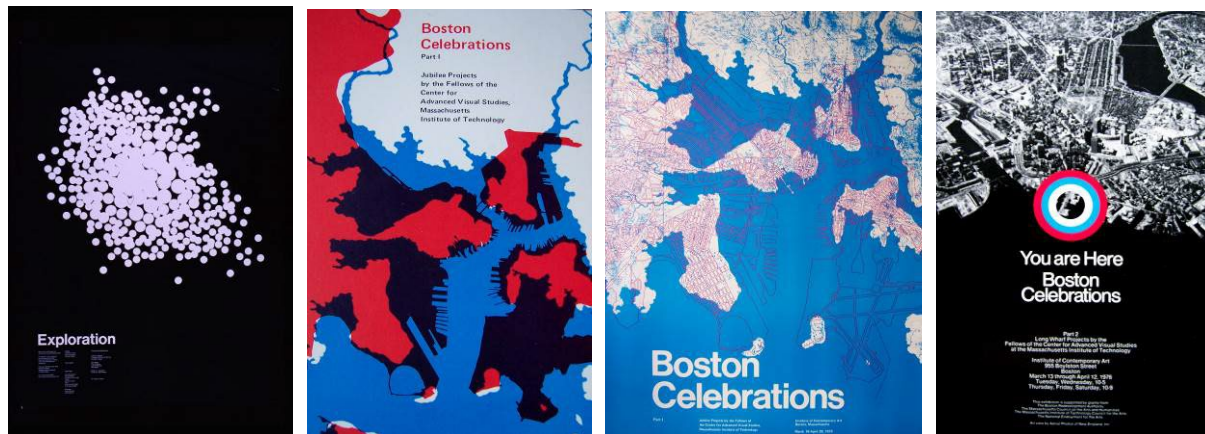


Figure 6. *Explorations* (1969) (left); *Boston Celebrations* (1975) (center); *You are Here, Boston Celebrations II* (1976) (right). CAVSSC, MIT, Program in Art, Culture & Technology, Cambridge, Massachusetts.

## CONCLUSIONS

A series of urban interventions carried out in the early seventies at the MIT's Center for Advanced Visual Studies are presented in this paper. The article has shown the work developed by the CAVS fellows on the early years of the center, under the guidance of the artist György Kepes, that was focused on exploring new ways of understanding relationships between technology and the urban environment. According to Kepes, it was a period of visual chaos, and it was necessary to promote the art as a public tool for the urban transformation. The article has analyzed part of the history of the center, where artists worked on scientific and technological projects looking for the regeneration of the urban environment.

Specifically, the aim of the proposals was the regeneration of some degraded areas of the city. The initiatives made use of technology to assist architects, artists and engineers that worked collaboratively and participatively with citizens to improve the city environment; a whole premonition about the ways the cities are being designed nowadays. The CAVS was created with the objective of developing research in the field of art, architecture, and urban planning to demonstrate the viability of new technologies as a creative tool, and their application in collaborative projects on an urban scale that involved citizens, seeking to reduce the environmental impact produced by the rapid growth of modern cities.

The works tried to demonstrate the viability of using technology as a creative tool; the fruitful interaction of artists, scientists, and engineers in the development of projects; the possibility of linking technology to a diversity of devices and the relevance of collective participation in shaping the city. All of them have greatly influenced interactive architectures and intelligent environments that began to materialize in specific proposals already in the eighties, less marked by the cybernetic than by the digital, and that today are helping us to visualize and raise awareness among citizenship on negative parameters that may affect our urban environment in the context of the current smart cities.

## ACKNOWLEDGMENTS

I would especially like to acknowledge the invaluable help and assistance of Thera Webb, Project Archivist at the Center for Advanced Visual Studies Special Collection (Program in Art, Culture & Technology) at the Massachusetts Institute of Technology.

## NOTES

- <sup>1</sup> György Kepes. *Language of Vision*. (Chicago: Paul Theobald, 1944).
- <sup>2</sup> György Kepes. *El lenguaje de la visión*. (Buenos Aires: Ediciones Infinito, 1969).
- <sup>3</sup> György Kepes. *The New Landscape in Art & Science*. (Chicago: Paul Theobald, 1956).
- <sup>4</sup> György Kepes. *The New Landscape in Art & Science*, *op.cit.*
- <sup>5</sup> Kevin Lynch. *The Image of the City*. (Cambridge, Massachusetts: MIT Press, 1960).
- <sup>6</sup> György Kepes. "The Visual Arts and the Sciences: A Proposal for Collaboration", *Daedalus* vol 94(1) (1965): 117-134.
- <sup>7</sup> György Kepes. *Vision and Value Series*. (New York: George Braziller, 1965-1974).
- <sup>8</sup> Bill Arning. *György Kepes' Vision & Value, 1965-1972*, (Cambridge, Massachusetts: ProQuest, UMI Dissertation Publishing, 2008).
- <sup>9</sup> "Activities (...) began to develop in three interconnected areas. The first is that of individual creative efforts, the artist fellows concentrating primarily on finding new technical means to express their personal aspirations. The second is the area of cooperative ventures, tasks of major dimensions calling for collaboration of the artists of the Center with scientists and engineers from the faculty and student body of the Institute. The third area involves communicating ideas generated at the Center to the general public, through publications, forums and symposia". György Kepes. "Center for Advanced Visual Studies", *Report of the President and the Chancellor 1968-1969*, p. 435. (Cambridge, Massachusetts: MIT Institute Archives, Massachusetts Institute of Technology, 1969).
- <sup>10</sup> William A. Garnett. *Life Magazine* (March 1968).
- <sup>11</sup> György Kepes, *The New Landscape in Art & Science*, *op. cit.*
- <sup>12</sup> György Kepes. *Tsai* (Exhibition Catalogue). (Paris: Denise René Gallery, 1972).
- <sup>13</sup> Frank Popper. *Arte, acción y participación*. (Madrid: Akal, 1980).
- <sup>14</sup> Wen-Ying Tsai. *Cybernetic Sculptures Environment*. (Pittsburgh: Frick Fine Arts Building, University Art Gallery, 1971).
- <sup>15</sup> Otto Piene. *Piene, Light Ballet*. (New York: Howard Wise Gallery, 1965).
- <sup>16</sup> In 2011, MIT List Visual Arts Center show in the exhibition called *Otto Piene: Lichtballett* Piene's light sculptures *Lichtballett* (1961), *Electric Rose* (1965), *Light Ballet on Wheels* (1965), *Little Black Lighthouse* (1965), *Electric Anaconda* (1965), *Hängende Lichtkugel* (1972), *Lichtballett* (2011) and *One Cubic Meter of Light Black* (2011).
- <sup>17</sup> Otto Piene. *Otto Piene: Elements*. (New York: Howard Wise Gallery, 1969).
- <sup>18</sup> "This expansion means that the work of art comes to the public, becomes more visible, reports especially with the spectator and the participant. The expansion of the work of art can be realized by means of increasing the number of elements, scaling the physical dimension of the objects and the phenomena, the exhibition in places (the sky, for example) where many people could contemplate them. (...) The artist might be a great help in the reconstruction, restructuring and humanization of the cities". Otto Piene, *Otto Piene, Elements*, *op.cit.*
- <sup>19</sup> Between 1970 and 1972 Kay Larson was research affiliate at the Center for Advanced Visual Studies.
- <sup>20</sup> György Kepes. "The Artist's Response to the Scientific World", *Technology and Culture in Perspective*, 35-41. Cambridge: Church Society for College Work. 1967.
- <sup>21</sup> György Kepes. "Center for Advanced Visual Studies", *Report of the President and the Chancellor 1967-1968*, Cambridge, Massachusetts: MIT Institute Archives, Massachusetts Institute of Technology. 1968.
- <sup>22</sup> Schöffer designed a cybernetic city that could be monitored from one of his towers. Schöffer, Nicolas. *La Villa Cybernétique*. (Paris: Denoël, 1972).
- <sup>23</sup> György Kepes. "Center for Advanced Visual Studies" *Report of the President and the Chancellor 1969-1970*, p. 37, (Cambridge, Massachusetts: MIT Institute Archives, Massachusetts Institute of Technology, 1970).
- <sup>24</sup> Jack Burnham. "Art and Technology: The Panacea That Failed", *Video Culture: A Critical Investigation*. (Rochester: John G. Hanhardt, Visual Studies Workshop Press, 1986).

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# VIRTUAL TOURISM RELOCATION (VTR) - TO EXPERIENCE THE LOST, TO SEE FOR THE FUTURE

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## INTRODUCTION

Closed schools and premature deaths<sup>1</sup> caused by toxic air, due to escalating levels of greenhouse gases (GHGs) and PM2.5 particles,<sup>2</sup> characterize everyday life in prosperous but fast-growing cities such as Delhi,<sup>3</sup> Xinxiang<sup>4</sup> and Xi'an.<sup>5</sup> To bring about lasting changes, a time travel ability is needed so that decision-makers can both go back in time to realize the losses of demolished historic building layers, but also to formulate visions for the future as they strive for a low-carbon transition and a greener development. Virtual Tourism Relocation (VTr) can become the missing time machine for these visionary journeys and thus counteract insufficient two-dimensional perspectives, but not least be a significant asset for tourism. With realistic time travel experiences, Virtual Tourism Relocation (VTr) encourages Staycation and is thus a potential carbon sink by reducing transport, but also to provide income when cities' lost building layers are digitally recreated.

Toxic air in cities do not only have consequences for its inhabitants, in fact they are severe GHG emitters as well. Due to stationary energy use and the transport sector<sup>6</sup>, cities emit more than 70% of greenhouse gases globally even though they make up only 2% of the Earth's surface.<sup>7</sup> The largest carbon dioxide emissions do indeed come from cities in Asia, but per capita the cities in the USA, Europe and Australia surpass these and, as expected, not least Venice<sup>8</sup> which is severely affected by overtourism.<sup>9</sup> Just as WHO underlines<sup>10</sup> it is not only the CO<sub>2</sub> that cause unhealthy air, also nitrogen oxide (NO<sub>2</sub>) which seems to be just as frequent in high-, middle and low-income countries.<sup>11</sup> Undoubtedly, IPCC's annual report emphasizes the urgency of a dramatic 45% reduction in CO<sub>2</sub> emissions by 2030,<sup>12</sup> for limiting the earth's warming to 1.5°C, otherwise, the heat effect becomes a fact which is thus achieved within 20 years.<sup>13</sup> Temperature increase over the past century in Antarctica is already 2° and has accelerated over the past 40 years.<sup>14</sup> This paper scrutinizes the potential of Virtual Tourism Relocation (VTr) to initiate the feeling of time travel by investigating digital feasibility study images (DFSIs) of augmented reality from the users' perspective. VTr advocates a low-carbon transition, thus explains the relevance of this paper.

## Time travelling

Just as Victor Hugo, by conveying Quasimodo's love for Notre-Dame de Paris, managed to save the cathedral itself in the 19th century<sup>15</sup> Edward Bellamy used *Looking Backwards 2000-1887* (1888) to visionary transmit his political solution for the contemporary economic and social turmoil in society.<sup>16</sup> Here the main character Julian West wakes up in year 2000 in a socialist US after a 113 years sleep.

Other than the novel's political impact at the time,<sup>17</sup> the time travelling theme inspired others writers. William Morris for example published *News from Nowhere* (1890)<sup>19</sup> and then came *The Time Machine* (1895)<sup>20</sup> by H. G. Wells who coined its industrial term. Finally in 1985 the film *Back to the Future* was released,<sup>21</sup> but despite being a decade after Bellamy's novel, it alludes to its precursors through professor Emmett's repeatedly 19<sup>th</sup> century's interjection *Grease Scott*. While the stories are unique, the drive the writers once had that unites the stories was to create realistic time travel experiences. That is, three-dimensional perspectives, using mental images, but then it was in writing. Virtual Tourism relocation (VTr) can become the time machine of our time by means of digital images globally available on the Internet both for sustainable urban planning and tourism. VTr consists of animated computer graphics of built, but highly altered or lost cultural heritage. These images are transmitted digitally to initiate relocation, either to be experienced at a distance via the computer, or displayed on-site via smartphones just as head-mounted displays to encourage Staycation.

Virtual Tourism relocation (VTr) aims to guide people through the past and even to experience completely lost contexts, which for example existed before Haussmann's street breakthrough in Paris in the 1870s<sup>22</sup> or the purging of dwellings in historic neighborhoods that symbolized "poor Sweden" after the Second World War.<sup>23</sup> Common to these drastic demolitions was that valuable and irreplaceable urban structure disappeared forever. All measures to increase the public's respect for what we have, when there is still time, are crucial for a sustainable future. Opponents of 19th century industrialization therefore undertook to move endangered buildings to museums due to the subsequent urban renewal. Today, these houses are irreplaceable resources, but less appreciated because they appear to be two-dimensional as they have been deprived of their original context. Despite the museums' regular events to promote the houses, with well-attended activities as a result, they step more into the background like two-dimensional screens. To move existing buildings today, with our advanced vehicles and technology, still is complicated but hardly as hazardous as it was for the early visionaries and pioneers who created open-air museums. These stories of sometimes impossible missions, can convey exciting IndianaJonesEffects (IJE),<sup>24</sup> add a deeper dimension to museum objects which unfortunately are never told. Undoubtedly, the task of saving the threatened buildings from demolition came first. Second, the growing collections from different eras and regions were intended to stage a three-dimensional experience of time travel that does not occur. The question is why buildings moved to the open-air museum cannot embody time travel experiences, even if they are perfectly reconstructed in detail. What is missing in museums' storytelling to make them three-dimensional again, and can virtual and augmented reality environments become the time machine tools needed for that?

This paper examines VTr through qualitative interviews which digital feasibility study images museum staff believe will make relocated buildings convey time travel experiences. If Virtual tourism relocation would attract a time-traveling ability in urban planning, this could encourage decision-makers in fast-growing cities to instead set the course for a sustainable future for all citizens.

## METHODOLOGY

### The field studies at Fredriksdal and Kulturen open-air museum

The museum buildings selected for this study differ in many ways, but what unites them is, first, that both were at risk of demolition, if they not had been relocated. For the dismantled Blekinge farmstead, the only alternative was then that the transport of all the wooden planks and beams the 124 km<sup>25</sup> to Kulturen 130 years ago, via the private railway companies, could be carried out free of charge. The Vicarage's journey of 3 km from the center of Helsingborg to the museum, in 1940, can hardly be compared. Secondly, their reconstruction at the museums became a milestone for Fredriksdal's and

Kulturen's outdoor concept, which has now unfortunately been forgotten. Blekinge farmstead was the prerequisite for the inauguration of Kulturen as an open-air museum in 1892<sup>26</sup> and with the arrival of the Vicarage in 1942, the Stadskvarteret took shape and thus gained an urban character, that is, an important addition to the park's vernacular architecture which was already in place for the opening in 1923. Study objects.



*Figure 1. The Vicarage at Fredriksdal Open-air museum seen from the south, left. A satellite image of the Stadskvarteret with the farm square shape, see bottom left. The Vicarage wing is facing the street.*



*Figure 2. The Blekinge farmstead at Kulturen Open-air museum from the west, left. The birds eye view of Kulturen with The Blekinge farmstead in the center.*

## Study objects

### The Vicarage

At the end of the 18th century, when peace with Denmark was finally a fact, the war- and plague-stricken Helsingborg began to grow again. The municipal council had received a new municipal building, therefore the church wanted to build a new Vicarage. Fortunately, the late Commissioner Berg's square farm by the former city wall in the south was auctioned off<sup>27</sup> and therefore bought by the church (figure 3). A more prominent Vicarage, which was to be built for the newly appointed parish priest Hans Bergeström,<sup>28</sup> must of course have the main facade facing the expanded Södra Storgatan (Main Street) and be in line with the other more urban buildings. However, as the existing farm buildings were further west, thus additional connecting buildings were needed to join the farm wings, to the north and south, with the new Vicarage as the old east farm wing was demolished. The Vicarage's first construction phase began in 1775 in the north on plots 6 and 7<sup>29</sup> (figure 4). The Vicarage was built in oak half-timbering with burnt brick in the fillings on a high plinth of natural stone. The steep roof was covered with burnt clay tiles and the remaining farm buildings were renovated.<sup>30</sup> As early as 1788, the vicarage had been rebuilt with an entrance that connected the street with the farmyard. A new staircase to the attic probably indicate that the frontispiece in the west had

been built.<sup>31</sup> To complete the vicarage block to the south another building was erected in oak timbers, but with clay and burnt brick fillings.<sup>32</sup> In the 1850s, the Vicarage got its current appearance when the most recent additions to the south were rebuilt according to the Vicarage's first construction stage.<sup>33</sup> The new high hipped roof was covered with tiles and later the street facade was plastered and whitewashed. During 1940, the congregation decided to build a new parish home. For this reason, all four buildings of the vicarage were dismantled to be transported to Fredriksdal museum. In 1942, the Vicarage's rebuilt main building was inaugurated at the museum, which thus shaped the future of the Stadskvarteret. In the 1960s, the three other wings could also be rebuilt for museum purposes.<sup>34</sup> Already in the 1990s, however, a large part of the Vicarage was rented out to a private primary school (70 children aged 6-12) and recently a flower shop has also been established in the west wing.

### **The Blekinge farmstead**

It is difficult to determine when Blekinge farmstead (BF) was first built, but with certainty it was before 1689 because then the first Swedish family was registered here.<sup>35</sup> The 17.5 x 6.5 m building actually consists of three separate units where the family lived in the lowest cottage, Ryggåsstugan, in the middle, with its fixed furnishings. This part was heated by the fireplace, which also provided light and framed the kitchen area, Ketten. The two gable houses were used for summer accommodation and workshops on the ground floor and the harvests were stored on the first floors. This log cabin model represents an ancient and very regional building tradition called Sydgötiskt hus.<sup>36</sup> The timber building frame was originally built from whole logs, but as the sawmill industry developed in the 18th century, half logs, so-called plank timber (100 mm), were used instead. However, the frame of this rational plank timber must then be covered with a wooden panel. The roof was a turf roof on bark fists. Due to new fire safety laws in the 18th century, the fireplace was modernized and the chimney was introduced. At the same time a skylight was added in the opposite roof, which was probably the former flue. Approximately every 25 years i.e. generational changes, extensive repair works were carried out, whereby damaged logs or roof beams were replaced or repaired. This is why both whole and plank timber are often found in the same building because only the rot-damaged timber was replaced. BF included a total of five buildings, but in the 1850s it was considered out of date so the owners built a new farm to the west. Unfortunate circumstances later forced the next owner to sell Blekinge farm at executive auction. In 1890, this second owner also sold the farm to the Kulturen foundation's<sup>37</sup> representative and museum founder Georg Karlin in Lund in 1891. Transport complications on various private railway tracks the 124 kilometers, lack of building permits and missing original measurement drawing delayed the opening of Blekinge farmstead at Kulturen until 1893. After an investigation of the BF stone foundation in 1997, it was discovered that the ryggåsstugan has been incorrectly rebuilt at Kulturen. The fireplace with the chimney is today on the northern roof instead of the southern one as it was originally built.<sup>38</sup>

### **The 1<sup>st</sup> Interviews –the museum objects**

#### **The Vicarage and the Blekinge farmstead**

The purpose of the first round of interviews was to map the respondents' current preconceived notions about how they view the Vicarage and the Blekinge farmstead, today. All respondents were interviewed in real time over Zoom where eight mixed illustrations per building were shown to them, one at a time. Each slideshow concluded with four open ended questions to answer in the role of staff members and then two more as museum visitors, here referred to as Laymen.<sup>39</sup> All responses were manually registered directly during the interview and the thematic coding provided the observable variables indicating available responses per question, which finally were valuate quantitatively.<sup>40</sup> The reason for applying an inductive approach to this research was to reach a deeper understanding of how

Virtual Tourism relocation was received as such, but in dialogue with museum management and demanding visitors. Participants and procedures.

Fredriksdal			Kulturen			Fredriksdal			Kulturen		
F G (guides)	2F	1M	K G (guides)	2F	0M	F G (guides)	2F	1M	K G (guides)	2F	0M
F M (management)	1F	0M	K m (management)	0F	2M	F M (management)	0F	0M	K m (management)	0F	2M
F L (Laymen)	3F	1M	F L (Laymen)	2F	2M	F L (Laymen)	2F	1M	F L (Laymen)	2F	2M
tot	6F	2M	tot	4F	4F	tot	4F	2M	tot	4F	4F

Table 1. Interview 1, left, and 2, right, with all the six respondent groups.

## The 2<sup>nd</sup> Interviews –digital interventions

### The Vicarage and Blekinge farmstead

The objective of the second qualitative interviews was to empirically examine how the respondents would react when confronted with the digital feasibility study images, to augmented reality. These had been designed to radically change the impression of the museum buildings like two-dimensional screens. Instead, they would be experienced as three-dimensional to provide time travel capability, hence to move them backwards or forwards in time. Of particular interest was studying whether the respondents' opinions had possibly changed between the 1st and 2nd interview and not least which images had digitally managed to create that effect. The intention was to determine what impact the digital images have had so as to suggest which might be best suited to use for Virtual Tourism relocation. In future research studies, these will form the basis for further development into augmented reality to encourage Staycation, either for remote visits via computer or on-site via smartphones or head-mounted displays. Once more, all respondents were interviewed in real time over Zoom where 44 mixed illustrations were shown to them one at a time. The Vicarage at Fredriksdal was presented in 24 images and 20 for Kulturen's Blekinge farmstead. The order was adjusted so all respondents saw their building first and each slide show ended with four open questions to answer.<sup>41</sup> Again, all responses were registered immediately, coded thematically, and the variables finally evaluated quantitatively. Participants and procedures.

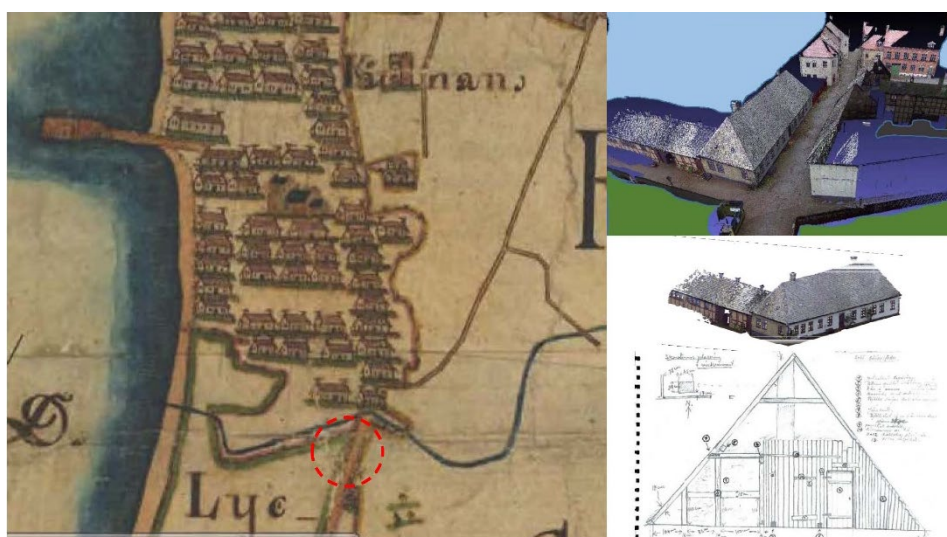


Figure 3. Map of the city of Helsingborg dated 1788. The Vicarage used to be outside the city wall, which today is the still existing diagonal Karlsgatan, left. The Vicarage at Fredriksdal with surrounding buildings, top right and middle, both illustrations digitally acquired with Faro Laserscanner. Survey drawing for documentation of the vicarage on site in 1940.

## The 1<sup>st</sup> Interviews –the museum objects

### Participants and procedures

The sample for the first interview was made up by eight respondents who represented two main groups.

One consisted of the Professionals (P) that is the staff at Fredriksdal (F) and Kulturen (K) open-air museums, thus the ones most familiar with the museum building in question. The (P) group consisted of guides (FG/KG) and representatives from Management (FM/KM), five from the former and three respondents from the latter. The (L) group with eight respondents actually included the professionals as well, but only when they were answering questions about the building of the second museum. Given the modest number of participants in the study, it should be noted that as a result after the regrouping, due to the thematic evaluation and coding, the professional and the laymen corresponded to 16 respondents in total (table 1). In both main groups (P) and (L) the age span was between 50-60 years old, with three male (M) and five female (F). After the subdivisions the gender coverage was 5F-3M among the professionals just as in the Laymen group, 5F-3M. In total P+L consisted 10 female and 6 men.

## The 2<sup>nd</sup> Interviews –digital interventions

### Participants and procedures

The sample for the second round of interviews, half a year later, was the same respondents as in interview 1. Although one less, they still consisted of the two main groups, professionals (P) and laymen (L). The professionals this time only had seven respondents since Fredriksdal had lost their Management representative. This reduction also applied for the (L) group with seven respondents included the professionals as well, but only when they were answering questions about the building of the second museum. With the regrouping after the second thematic evaluation and coding, the number of individuals in the other interviews instead corresponded to seven professionals and seven laymen, leaving a total of 14 respondents remaining in the study 2 (table 1). In both main groups (P) and (L) the age span still was between 50-60 years old, with three male (M) and four female (F). After the subdivisions the gender coverage was 4F-3M among the professionals just as in the Laymen group, 4F-3M. In total P+L consisted of 8 female and 6 men.

### The digital feasibility study images for the Vicarage

So as to reflect the vicarage three-dimensionally, that is to convey a journey through time, the slide show during the second interview visualized the building from five separate eras; *original location, building constructional changes, the 1<sup>st</sup> act of relocation, the museum object and the 2<sup>d</sup> act of relocation*. The Vicarage's original location in the city was illustrated with an 18th-century map of Helsingborg and a satellite image showed its current appearance (figure 1, 3). Archi Cad 3D reconstructions, based on ancient written sources, were the prerequisite to be able to illustrate all the *building construction changes* in the Vicarage (figure 4). These are particularly important and common to historic buildings and cities. The dilemma is deciding which layer to preserve or revive. Unlike other more traditional museum objects, such as a pottery urn, buildings in use will constantly change to meet new user requirements. The opposite is true for an urn that is constructed once and, unless cracked and repaired, is used as long as it serves its purpose, thus representing only one single time layer that is the original one. Anyone working within building conservation is well aware of this fact and the ongoing debate about which phase is the unique building-historical one to restore, as choices are governed by temporary value preferences that vary over time. To illustrate *the 1<sup>st</sup> act of relocation*, in this case it was important to digitally convert and reuse already existing and archived artefacts, for making Virtual Tourism relocation a cost-effective concept (figure 3). To reproduce *the*



*museum object era* two different scanning solutions were tested in order to more clearly illustrate the vicarage's current museum environment. First, to get an overall impression, digital images were produced with a Faro Laser scan, the point cloud was post-processed, the mesh was created in Meshlab and 3dhop was used for the web presentation (Figure 3). Second, to get more of a close-up, here tested in the vicarage yard that was photographed, these images were then post-processed with Agisoft Metashape into mobile textured 3D models (Figure 6). To scrutinize what kind of computer graphics that convincingly could stage a three-dimensional experience of a time travelling intended with the 2<sup>nd</sup> act of relocation, i.e. to virtually move the Vicarage back to its original site in the city, three methods were produced. The first was simply based on a photograph of Södra Storgatan today, taken at the same angle as one unique photo of the Vicarage in situ around the 1900s. Then the black and white photo was inserted into the first street view. In the second, the Södra Storgatan street views was obtained with the Faro Laser scanner, the point cloud was post-processed, mesh created in Meshlab and once more 3dhop was utilized for the web presentation. This illustration then was combined with a museum version of the Vicarage at Fredriksdal, produced in the same way, to illustrate the present street view for a comparison (Figure 5). Finally, in the third, which still is a work in progress, the Vicarage was presented as a structured 3D model that had been visualized in 3D GIS (ESRI ArcGiS PRO). This model was initially obtained from photos that had been post-processed in Agisoft Metashape and then exported and georeferenced to match the base map (Figure 5).

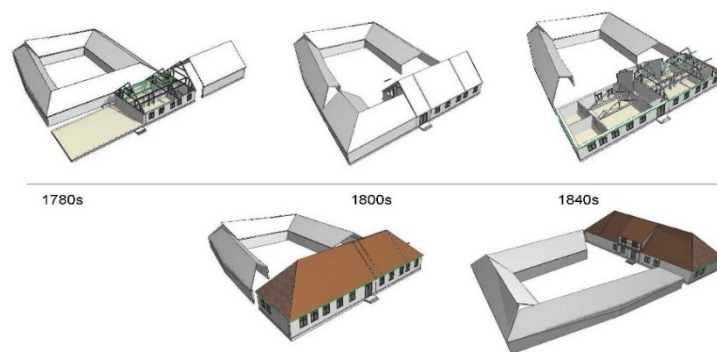


Figure 4. The development of the Vicarage complex from the late 1800s until the museum relocation based on written sources, Archi Cad reconstruction drawing.

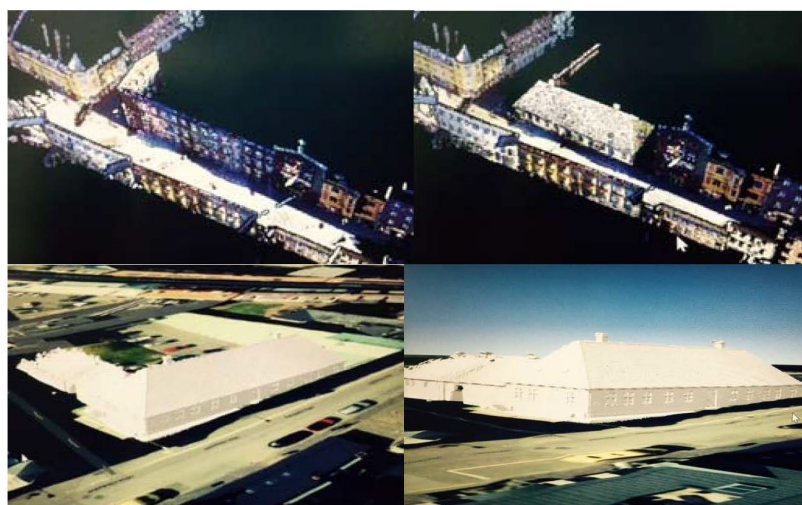


Figure 5. Top left, a Faro Laser scan of Södra Storgatan. Top right, a Faro Laser scan of the Vicarage at Fredriksdal but here combined with first scanning to the left. Bottom left and right, the Vicarage, here presented as a structured 3D model that have been visualized in 3D GIS.





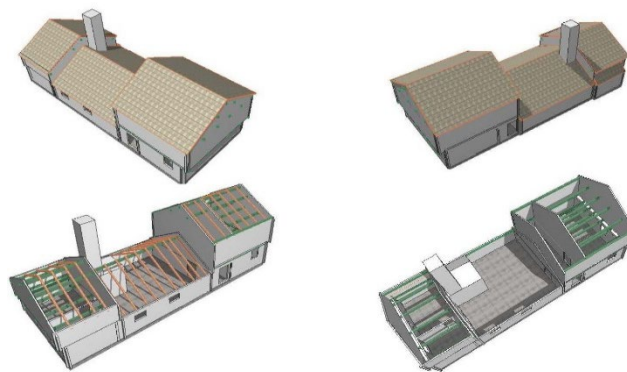
Figure 6. Top left and right, the Vicarage's courtyard towards the west as a mobile textured 3D models. Below left, photograph of Södra storgatan today with overlay of the vicarage in situ around the 1900s. Bottom right, the Södra Storgatan made from two combined Faro Laser scans.

#### The digital feasibility study images for the Blekinge farmstead

Just as it was already tried for the vicarage, to reconstruct the three-dimensionality of the Blekinge farmstead and evoke a sense of time travel, the slide show during the second interview consisted of the five eras; *original location*, *building constructional changes*, *the 1<sup>st</sup> act of relocation*, *the museum object* and *the 2<sup>d</sup> act of relocation*. Blekinge farmstead's *original location* was visualized by a 19<sup>th</sup> century land reform map together with a satellite photo, here the contour of a still existing foundation was marked in white (figure 7). Due to the fact that the farmstead was situated in the countryside and its use have remained the same, perhaps even since the 16<sup>th</sup> century<sup>42</sup> *the building constructional changes* only had affected the wooden construction, where the more exposed logs were exchanged partially or completely every 25<sup>th</sup> year. This was why the Archi Cad 3D reconstructions made of the farmstead (figure 8) had the purpose to first of all clarify the unique composition of the three-buildings-as-one concept that makes the Högloftstuga or Sydgötiska house exceptional. Because the relocation of the farmstead took place over 130 years ago in the 1890s, neither photos nor drawings have been preserved which could illustrate *the 1<sup>st</sup> act of relocation*.<sup>43</sup> The movable digital model, a work in progress, representing the *museum object* era, enabled a study of all of the farmsteads external angles. This version was obtained with the Faro Laser scanner, the point cloud was post-processed, mesh created in Meshlab and the colors added were from the scanners vertex color (figure 9). Finally *the 2<sup>d</sup> act of relocation*, i.e. to virtually move the Blekinge farmstead back to its original site, the open farmland, three versions of the farmstead superimposed on a background photo from were established which the respondents could discuss (figure 10). These were (1) photos of the building at the open-air museum today, (2) facade views taken from the Archi Cad 3D and (3) facade views from the Faro scanned movable digital model. The backgrounds were two photos of the old farmsteads foundation stones, which still remain on site after the relocation in the 1890s.



*Figure 7. Blekinge farmstead's original location on the agriculturalre form map dated 1806, left. On the right, a satellite photo with the outline of the still existing foundation of natural stones highlighted in white.*



*Figure 8. The Archi Cad 3D reconstructions of the farmstead were aimed primarily at clarifying the unique composition of the three-buildings-as-one concept. The ridges enhance the volume inside, bottom left. The inner gables are the oldest building parts in the structure, bottom right.*



*Figure 9. The movable digital model, is a work in progress, which enabled a detailed study of all of the farmsteads external angles.*



Figure 10. Various media overlaid on background images to move Blekingegård back to the open farmland. Top left and right, latest images from the south and west. Bottom left, an Archi Cad 3D version from the west and right, made from a Faro scanned moving digital model.

## RESULTS

### The 1st Interviews – the museum objects

The Fredriskdal groups				The Kulturen groups			
Variables	Main building	the Kiosk		Variables	Main building	Dean's house	Blek. Farm
F G (guides)	67%	33%		K G (guides)	50%	50%	
F M (management)	100%			K M (management)	50%		50%

Table 2. Question 1. Which house at Fredriksdal/Kulturen open-air museum is most important? Variables: (F/K) main building, (F) the kiosk, (K) the dean-s house, - the Blekinge Farmsted. Of the Fredriksdal groups (FG/FM), a majority proposed their main building, the manor house from the 18th century, around which the outdoor museum grew. The Kulturen groups (KG/KM) also chose their main building, i.e. the White House, from the 1850s. The answers indicate "a staff perspective" as both buildings are not so clear to museum visitors.

The Fredriskdal groups			The Kulturen groups		
Variables	< Knowledge	Alive as school	Variables	Standard O-A building	Not original
F G (guides)	67%	33%	K G (guides)	50%	50%
F M (management)		100%	K M (management)	100%	

Table 3. Question 2. What do you think about the Vicarage/ Blekinge farmstead? Variables: (F) < Knowledge, Alive as school. (K) Standard open-air building, Not original. The FG answer is due to the fact that V is leased out, thereby reducing its importance as a museum object, which does provide certain advantages according to FM. The KG/KM reflection is understandable because a majority of the few log houses that remain have no practical use, but are preserved for cultural use. A more extensive restoration in 1996 is reflected in the KG note.

The Fredriskdal groups				The Kulturen groups			
Variables	History	In use		Variables	History		
F G (guides)	67%	33%		K G (guides)	100%		
F M (management)	100%			K M (management)	100%		

Table 4. Question 3. Can you describe the benefits or qualities of the building? Variables: (F/K) History. The museum buildings become frozen time documents and an expected response from the museum staff.



The Fredriskdal groups			The Kulturen groups		
Variables	Curious/surprized	Add Environment	Variables	Appreciated	
F G (guides)	67%	33%	K G (guides)	100%	
F M (management)	100%		K M (management)	100%	

**Table 5. Question 4. What do visitors think about the Vicarage / the Blekinge farmstead, appreciated?** Variables: (F) curious/surprized, Add to the museum environment. (K) Appreciated. FG/FM's clear response underlines the fact that the Vicarage and the museum street are much more lively during the day than expected in museums due to all the active school children. The KG/KM answer shows that there is no doubt in this answer, here a well-established Open Air Museum is speaking.

The Fredriskdal groups			The Kulturen groups		
Variables	more museum building		Variables	improve in- outdoor env.	
F G (guides)	100%		K G (guides)	100%	
F M (management)	100%		K M (management)	100%	

**Table 6. Question 5. Is there anything that should be added or changed with how the building is exposed today?** Variables: (F) More of a museum building, (K) Improve in- and outdoor environment. Under the current circumstances, the FG/FM response may be difficult to achieve as the school (Central School) has been a well-established institution for the past 30 years. GF/KM's dissatisfaction with the way the BF is mediated today stands in contrast to the clear conviction expressed in the previous response.

The Fredriskdal groups			The Kulturen groups		
Variables	Yes	No	Variables	Yes	No
F G (guides)	100%		K G (guides)		100%
F M (management)	100%		K M (management)		100%

**Table 7. Both staff groups in question 6-7 become laymen/visitors commenting on the other museum building. Question 6. Do you know the B. farmstead/Vicarage which is located at Kulturen/Fredriksdal Open-air museum?** Variables: (F) Yes, (K) No. The FG/FM answers emphasize once again that Kulturen is the better known of the two museums and this is where many in Fredriksdal started their careers, therefore they know the B. farm well. Hardly anyone from KG/KM remember the Vicarage.

The Fredriskdal groups			The Kulturen groups		
Variables	Place of origin	Other stories	Variables	Place of origin	Other stories
F G (guides)	100%		K G (guides)	100%	
F M (management)		100%	K M (management)	100%	

**Table 8. Question 7. What would you like to know about the building to become more interested in it?** Variables: (F/K) Places of origin. A clear answer from all laymen, even if this information is missing today in the museums. They mainly convey stories to bring to life the former inhabitants and how they lived in here.

## The 2<sup>nd</sup> Interviews –digital interventions

The Fredriksdal groups				The Kulturen groups			
Study object	Vicarage		Blek. farm	Study object	Blek. farm		Vicarage
Resp./Variables	Yes > knowledge	No	Yes > interest	Resp./Variables	Yes > knowledge	No	Yes > interest
F G (guides)	67%	33%		K G (guides)	50%	50%	
F L (laymen at K) W			100%	K m (management)	50%	50%	
F L (laymen at K) M			100%	K L (laymen at F) W			100%
				K L (laymen at F) M			100%

**Table 9. Question 1. Has your view of PG/BG changed after you received more info about the building's prehistory?** Variables: (F) Yes > knowledge, (F/K) No, Yes > interest. A majority of the FG discovered new facts, but in contrast only half of the K staff. Interest grew in all four Laymen groups. No M-F difference.

The Fredriksdal groups

Domicil	Vicarage		Blek. farm	
Resp./Variables	3D scan CY	orig. measure	3D drawings ax	Photo interior
F G (guides)	67%	33%		
F L (laymen at K) W			100%	
F L (laymen at K) M				100%

The Kulturen groups

Domicil	Blek. farm		Vicarage	
Resp./Variables	3D model SL	3D drawings ax	3D scan CY	orig. measure
K G (guides)	50%	50%		
K M (management)	100%			
K L (laymen at F) W			100%	
K L (laymen at F) M			50%	50%

**Table 10. Question 2. Which of the illustrations do you remember particularly well and for what reason? Variables: (F/K) 3D scan Courtyard, 3D drawing axonometric, original measurement. (F) Photo of interior. (K) 3D model SL. The most appreciated illustration to describe V to everyone (FG and KL) was the 3D scan Courtyard. The measurement sketch was also appreciated by both the FG and KL groups. Concerning farmstead, once again it was the axonometric model to be the most appreciated by both KG and FL. The mobile digital model, on the other hand, was only chosen by the majority of the KG/KM group. In spite of the difference between the M-F groups this strengthened the ties between the museums.**

The Fredriksdal groups

Domicil	Vicarage		Blek. farm	
Resp./Variables	Acceptable- Yes	N. Accept- Yes	N. Accept- Yes	
F G (guides)	67%	33%		
F L (laymen at K) W			100%	
F L (laymen at K) M			100%	

The Kulturen groups

Domicil	Blek. farm		Vicarage	
Resp./Variables	Acceptable- No	Acceptable- Yes	N. Accept- Yes	Acceptable- No
K G (guides)	50%	50%		
K M (management)	50%	50%		
K L (laymen at F) W			100%	
K L (laymen at F) M			50%	50%

**Table 11. Question 3. What do you think about the fact that the moved building has not been rebuilt as it was originally? Can a faulty reconstruction become a resource or an asset? Variables: (F/K) Acceptable- Yes, Not acceptable –Yes. (K) Acceptable –No. A majority of the staff groups (FG, KG/KM) agreed that inaccurate reconstructions made by the own museum are acceptable for relocated and remodeled houses. Yet, when they assumed the role of laymen/visitors (FL/KL), in the other museum, this was completely unacceptable. A majority was nevertheless convinced that inaccuracies contribute to the narrative or storytelling, which therefore becomes a resource. Small M-F difference.**

The Fredriksdal groups

Study object	Vicarage		Blek. farm	
Resp./Variables	no 4 1900s	no 3 from south	no 1 from south	no 4 from west
F G (guides)	67%	33%		
F L (laymen at K) W			100%	
F L (laymen at K) M				100%

The Kulturen groups

Study object	Blek. farm		Vicarage	
Resp./Variables	no 1 from south	no 4 from west	no 3 from south	no 4 1900s
K G (guides)	100%			
K M (management)		100%		
K L (laymen at F) W			100%	
K L (laymen at F) M			50%	50%

**Table 12. Question 4. What illustration can relocate the building back to the place of origin, why or how is the experience created? Variables: (F/K) No 4 1900s, No 3 from south, No 1 from south and No 4 from the north. The groups (FG+KL and KG/KM+FL) identified the same two illustrations for V and BF that could convey a sense of relocation. To give the feeling that the vicarage had been moved back, an overlay photo and a digital Faro-scanned animation were chosen (figure 6 bottom). For Blekinge farmstead, however, both images were superimposed photographs (figure 10 top). The majority's choice for V and BF was due to their authenticity and clear perspective. A noticeable M-F difference within the museums, but not as an ensemble.**

## DISCUSSION

Time travel was already introduced in the 19th century by opponents of industrialization and urban renewal, which erased cities' historical annual rings. Namely, these adversaries undertook to move unwanted buildings to open-air museums. These houses are irreplaceable resources, but nowadays they are experienced as two-dimensional screens. What is missing in museums' storytelling to make them three-dimensional again? Can Virtual Tourism relocation (VTr) become the time machine of our time through augmented reality (AR) environments globally available on the Internet, both for sustainable urban planning and tourism? This study has on two different occasions, through

qualitative interviews, investigated what types of digital feasibility study images (DFSI) of AR that museum staff/visitors experience can make museum buildings once again convey time travel experiences as they could when they were part of the city's annual rings. The open-air buildings selected for this study have common denominators such as being saved from demolition, but they are also important milestones that show how Kulturen's and Fredriksdal's open-air concept has developed. Together they also reflect the development of both rural and urban building traditions and represent more than 300 years of architectural history. The first interview mapped the respondents' preconceived notions about the Vicarage and Blekinge farmstead. The second investigated their reaction to digital feasibility study images of AR (figures 3-10).

The purpose of the first round of interviews was to map the respondents' current preconceived notions about how they view the selected museum buildings the Vicarage and the Blekinge farmstead. It is clear that these houses are no longer considered the most important but form only part of the collection. Both museum staff/visitors instead advocated houses that have not been moved, but were originally built here. The lack of knowledge, as the vicarage is now a school, just like describing Blekingegården as an ordinary open-air building does not mean that they stand out, but still represent history. Surprisingly, therefore, the respondents actually believed that visitors appreciated the buildings as they are today. The Vicarage, even though it is inaccessible, here the school children contribute to making the museum come alive. Blekinge farmstead is considered to be valued for what it represents, without justification. But when respondents were asked to think about what improvements could be made, dissatisfaction was again revealed. When the respondents instead became laymen or visitors, the reduced contact between the museums was revealed, even if they are only 50 kilometers apart. To finally become interested in the second museum building, all respondents asked for other, deeper facts than the stories of families and residents that both museums convey today.

The conclusions of the first interviews suggest that these two buildings are not exceptional today, yet they are considered appreciated by visitors and can embody history. Many things need improvement to be upgraded as museum objects and despite the short distance between the open air museums, they have little contact. This is particularly unfortunate because there is so much to be gained from collaborations between cultural institutions. Finally, in the role of visitors, it was clear that the information that the respondents requested in order to be fascinated by the other museum building, as quoted below, they do not tell their own visitors.

*"...The visitor would like to know where it (the house) once stood..and some also what type of building construction it is and how it was once built.."female 50+. "...I always will like to know the history of the place of origin (where the house stood) and how it has changed over time..", male 50+..."what the building has been utilized as..and about the choices the museum has made..", male 50+. "...to know more about the building constructional details..", female 50+. "...when and how it was moved..", female 50+.*

The intention of the second qualitative interviews was to empirically investigate how the respondents would react when confronted with the digital feasibility study images (DFSI) of augmented reality (figures 3-10). All respondents declared that they appreciated the DFSI, but only half of them gained new knowledge, which is understandable. But as laymen or visitors, a majority gained new interest and perhaps revealing a lack of prior knowledge this time, was prestige less. When talking about what image that was most memorable a majority from both museums, i.e. staff and laymen had the same favorite for the Vicarage, the movable 3D scan of the courtyard. Concerning the Blekinge Farmstead many favored the axo presentations explaining the three-houses-in-one character. Unexpected was that only the equivalent movable 3D model of the Farmstead only was appreciated by the respondents already acquainted with it. Totally correct reconstructions of relocated houses might not exist, which

all respondents could accept when it came to the own museum, but that this was intolerable elsewhere is irrational, not least as many considered that faultiness would spice the narrative. When the respondents were asked to choose among 14, eight for the Vicarage and six for Blekinge farmstead, different digital images to see which one could give a sense of time travel, thus relocating the two buildings back to their place of origin, only four were acceptable. In this case for BF it was the manipulations with two photos that every respondent suggested. Concerning the Vicarage also only two were selected, but here it was the frozen street view produced initially as a Faro scan which gained majority, but black and white 1900s photo became second though the most respected by respondents more acquainted with the Vicarage.

Results from the second interview (table 9-12) show that half and more of the guide and management groups gained more knowledge from the digital feasibility study images (DFSI) and all laymen (visitors) increased their interest. This implies that either the DFSI as such or the themes; *original location, building constructional changes, the 1<sup>st</sup> act of relocation, the museum object and the 2<sup>d</sup> act of relocation* have been successful. "...really..more background information..I only knew about the move from HBG..now I can tell others..", female 50+. "Yes...to look down into the axo...I really didn't know about all the other renovations...", male 50+

When judging the images digital qualities, a majority of the respondents from both museums selected the Vicarage's courtyard, a movable 3D scan, as the most memorable (figure 6). Surprisingly, the equivalent movable 3D of the Blekinge Farmstead's exterior (figure 9) was only esteemed by all of Kulturen staff, while instead a majority at Fredriksdal favored the axonometric image with the three-houses-in-one (figure 8). The result suggests that it is not enough to just have a moving digital 3D model of the exterior if you lack facts about the interior environment. The choice of image is determined by the knowledge that is requested. The reason why the scan of the courtyard was so appreciated may be due to its photo-like appearance. "...that you could see the inside of the square yard with the half-timbering..and it was movable..", female 50+. "...the axo model that shows how they (houses) were built together perhaps to save building materials...", female 50+.

Completely accurate reconstructions of moved houses may not exist. This fact could be accepted by most respondents when it came to their own buildings, but that it was unacceptable elsewhere seems irrational. Not least because it is believed that errors in the reconstructions are what spice up the story. By always conveying the whole story, this type of mistrust could be avoided, i.e. an Indiana Jones Effect "...Yes it is an asset..but also a real problem for example Marienburg or Malbork Castle...", man 50+. "...it's an advantage..but I really think you're missing the point if you don't rebuild it and use it as it was originally...", female 50+

To assess the ability of the images to give the impression of moving the buildings back to their original locations, only two superimposed images were selected for Blekinge farm (Figure 10). For the vicarage, two were also selected, one was a digital image representing the street view from the south and from the north it was an overlaid black and white photo from the year 1900 (figure 6). The responses indicate that photographs are considered superior in establishing credibility, although they have been manipulated. Perhaps it is difficult to digitally reproduce the photo's true colors, shadows and clear perspective lines. "...I prefer no...because it really gave spaciousness..the feeling that it's a square courtyard..", female 55+. "...I think no...because it is a photograph...that shows how it really looks there..and blends into the surroundings..", female 55+.

## CONCLUSION

The outcome of the first interviews underlines already stated facts of open-air buildings two dimensional appearance. Therefore that what is missing in the museums' storytelling to make relocated buildings three-dimensional again are the narratives about the houses themselves. Unlike



ordinary museum objects, buildings consist of layers of time because they are constantly changing. This process comes to an abrupt end when they are moved to museums. Therefore *all previous stories* (APS) describing the original location, building construction changes, the 1<sup>st</sup> act of relocation, the museum object and the 2<sup>nd</sup> act of relocation, therefore must be told. The outcome of the second interviews, when the respondents actually were confronted with digital images (DFSI), including and arranged according to APS the following observations were made. (1) The museum staff/visitors increased knowledge and interest for the buildings and given the pilot study nature of the slideshow being tested, further success can be expected if augmented reality is applied. (2) What determined the choice of image was the knowledge it conveyed and not how advanced the illustration was, which promotes low-cost solutions. (3) The need and power of communicating all the efforts behind the creation of museum objects, the IndianaJones Effects. (4) Photographs were superior to provide credibility, moving digital images to convey space, and digital stills to reveal historical layers. As a next step, for Virtual Tourism relocation (VTr) to become today's time machine to encourage Staycation the top-ranked digital images must be further processed and tested remotely via the computer, or displayed on-site via smartphones and head-mounted displays.

Today's living conditions in some heavily industrialized cities show that it is now urgent to develop new tools to support decision makers to broaden the two-dimensional perspectives on urban development. If the concept of Virtual Tourism relocation (VTr) can contribute as a time machine so that decision-makers can go back in time to realize past losses and instead strive for a low-carbon transition and a greener future, it will be a win-win for everyone.

## NOTES

<sup>1</sup>57 000 died prematurely in Dehli 2020, BBC News, “Delhi pollution: What’s causing poor air quality?,” November 28, 2021, <https://www.bbc.com/news/world-46138064>.

<sup>2</sup> BBC News, “Delhi pollution: What’s causing poor air quality?,” November 28, 2021, <https://www.bbc.com/news/world-46138064>.

<sup>3</sup>Hari Kumar and Emily Schmall, “New Delhi’s Air Turns Toxic, and the Finger-Pointing Begins,” New York Times, November 18, 2021, <https://www.nytimes.com/2021/11/18/world/asia/india-new-delhi-pollution.html?smid=tw-share>.

<sup>4</sup>“Environmental Health Challenges in Xinjiang”, Erika Schull, China Environment Forum, accessed June 10, 2022, <https://www.wilsoncenter.org/publication/environmental-health-challenges-xinjiang>

<sup>5</sup>“25 Most Polluted Cities in the World (2022 Rankings),” Tyler Vanzo, April 20, 2022, <https://smartairfilters.com/en/blog/25-most-polluted-cities-world-2022-rankings/>

<sup>6</sup> Ting Wei and Junliang Wu, “Keeping Track of Greenhouse Gas Emission Reduction Progress and Targets in 167 Cities Worldwide,” *Frontiers in Sustainable Cities*, July 12, (2021): 1-13, doi: 10.3389/frsc.2021.696381.

<sup>7</sup>Suzanna Burgelman, “Just 25 mega-cities produce 52% of the world’s urban greenhouse gas emissions,” *Frontiers Science News*, July 12, 2021, <https://blog.frontiersin.org/2021/07/12/just-25-mega-cities-produce-52-of-the-worlds-urban-greenhouse-gas-emissions/>.

<sup>8</sup> Ting Wei and Junliang Wu, “Keeping Track of Greenhouse Gas Emission Reduction Progress and Targets in 167 Cities Worldwide,” *Frontiers in Sustainable Cities*, July 12, (2021): 1-13, doi: 10.3389/frsc.2021.696381.

<sup>9</sup>With merely 270,884 permanent residents and some 19 million day-tourists who visited the crowded city in 2019, “Italy: Venice to charge day-tourists to visit city,” *DW Top Stories* July 1, 2022, <https://www.dw.com/en/italy-venice-to-charge-day-tourists-to-visit-city/a-62334724>

<sup>10</sup> “Billions of people still breathe unhealthy air: new WHO data,” WHO, April 4, 2022, <https://www.who.int/news/item/04-04-2022-billions-of-people-still-breathe-unhealthy-air-new-who-data>.

<sup>11</sup> “Billions of people still breathe unhealthy air: new WHO data,” WHO, April 4, 2022, <https://www.who.int/news/item/04-04-2022-billions-of-people-still-breathe-unhealthy-air-new-who-data>.

<sup>12</sup>“IPCC Report Analysis: The Top Five Measures to Halve Emissions by 2030,” Richard Pallardy, accessed June 20, 2022, <https://journeytozerostories.neste.com/sustainability/ipcc-report-analysis-top-five-measures-halve-emissions-2030#b49bf8c5>

<sup>13</sup>“Vad Säger Den Senaste Ippc-Rapporten?,” *Naturskyddsforeningen*, Accessed July 10, 2022 [https://www.naturskyddsforeningen.se/artiklar/vad-sager-den-senaste-ipcc-rapporten/?gclid=Cj0KCQjw8amWBhCYARIsADqZJoWWowQeL3WDFKF9cOVmmcwNBXiIFdmuSdcUpWU3oYXI1ZfPZcEXrYaAnwcEALw\\_wcB](https://www.naturskyddsforeningen.se/artiklar/vad-sager-den-senaste-ipcc-rapporten/?gclid=Cj0KCQjw8amWBhCYARIsADqZJoWWowQeL3WDFKF9cOVmmcwNBXiIFdmuSdcUpWU3oYXI1ZfPZcEXrYaAnwcEALw_wcB).

<sup>14</sup>“World’s largest ice sheet threatened by warm watersurge,” Clare Watson, August 12, 2022, <https://www.nature.com/articles/d41586-022-02168-y>

<sup>15</sup>“How Victor Hugo Saved Notre Dame de Paris,” Carol A. Seidl, May 29, 2020, <https://casdinteret.com/2020/05/how-victor-hugo-saved-notre-dame-de-paris/>

<sup>16</sup>Sylvia E. Bowman, *The year 2000. A critical biography of Edward Bellamy* (New York: Bookman Associates, 1958), 87-89

<sup>17</sup> Edvard Bellamy, *Looking Backward 2000-1887* (Oxford: University press, 2007), ix Introduction. Matthew Baumont.

<sup>18</sup>“Looking Backward,” Wikipedia, August 8, 2020, [https://en.wikipedia.org/wiki/Looking\\_Backward](https://en.wikipedia.org/wiki/Looking_Backward).

<sup>19</sup>William Morris: *News from Nowhere* (Oxford: University press, 2009).

<sup>20</sup>H. G. Wells, *The Time Machine* (London: Alma Classics, 2021).

<sup>21</sup>“Back to the Future,” Wikipedia, July 29, 2022, [https://en.wikipedia.org/wiki/Back\\_to\\_the\\_Future](https://en.wikipedia.org/wiki/Back_to_the_Future)

<sup>22</sup>Kim Willsher, “Story of cities #12: Haussmann rips up Paris –and divides France to this day,” *The Guardian*, March 31, 2016, <https://www.theguardian.com/cities/2016/mar/31/story-cities-12-paris-baron-haussmann-france-urban-planner-napoleon>.

<sup>23</sup>I. Pålsson Skarin, “Establishing a City Scan Procedure for Sustainable Virtual Tourism, in order to Save Built Cultural Heritage Based on case studies in Dubrovnik, Pärnu and Helsingborg,” Paper presented at Connections: Exploring Heritage, Architecture, Cities, Art, Media, University of Kent, Canterbury: June 24-26, 2020.

- <sup>24</sup> I. Pålsson Skarin, "Establishing a City Scan Procedure for Sustainable Virtual Tourism, in order to Save Built Cultural Heritage Based on case studies in Dubrovnik, Pärnu and Helsingborg," Paper presented at Connections: Exploring Heritage, Architecture, Cities, Art, Media, University of Kent, Canterbury: June 24-26, 2020.
- <sup>25</sup> Blekinge farmstead comes from Olofström which is 124 km from the museum Kulturen in Lund.
- <sup>26</sup> Kulturen in Lund is Sweden's second oldest open-air museum after Skansen in Stockholm which was inaugurated in 1891.
- <sup>27</sup> J. Wittberg, July 29, 1775, Förslags Räckning öfwer konstnaden till vidare byggnade och Inredning af framl:e Hr Commissarie Bergs gård N 6 och N 7 å Stora Södra Gatan, archive Fredriksdal museum.
- <sup>28</sup> Hans Bergeström, 1774–1784, "Helsingborgs Maria församling," Wikipedia, May 3, 2022, [https://sv.wikipedia.org/wiki/Helsingborgs\\_Maria\\_f%C3%B6rsamling](https://sv.wikipedia.org/wiki/Helsingborgs_Maria_f%C3%B6rsamling).
- <sup>29</sup> J. Wittberg: "Förslags Räckning öfwer konstnaden till vidare byggnade och Inredning af framl:e Hr Commissarie Bergs gård N 6 och N 7 å Stora Södra Gatan," July 29, 1775, archive Fredriksdal museum.
- <sup>30</sup> J. Wittberg: "Förslags Räckning öfwer konstnaden till vidare byggnade och Inredning af framl:e Hr Commissarie Bergs gård N 6 och N 7 å Stora Södra Gatan," July 29, 1775, archive Fredriksdal museum.
- <sup>31</sup> Wendorff, "Beskrifning öfwer Helingorgs Stads Präste Gård," May 30, 1788, archive Fredriksdal museum.
- <sup>32</sup> C. Hallbeck, "Helsingborgs Stad Brandförsäkrings N:r 640," July 19, 1828, archive Fredriksdal museum.
- <sup>33</sup> W.F.Cöster and O.C Wählin, "Helsingborgs stads- och landsförsamlingar. Syneförättning å Präsgården 1851." May 12, 1851, archive Fredriksdal museum.
- <sup>34</sup> "Hitta rätt när du upptäcker Fredriksdal på stan!," archive Fredriksdal museum.
- <sup>35</sup> Because this country was Denmark until 1658 and the fact that one oak pole got a dendrochronological analyze date of 1534, which suggests that the Blekinge farmstead is even older, I. Pålsson Skarin *Byggnadsliggare Blekingegården. Dokumentationsuppdrag inom Tradition och Byggproduktion, Riksantikvarieämbetet* (Lunds Universitet, 1996): 3-8.
- <sup>36</sup> the Name Is Connected To The Region Of Southern Götaland, I.E. From Halland In The West To Öland In The East. The Name Högloftsstuga Also Occur.
- <sup>37</sup> kulturhistoriska Föreningen.
- <sup>38</sup> I. Pålsson Skarin *Byggnadsliggare Blekingegården. Dokumentationsuppdrag inom Tradition och Byggproduktion, Riksantikvarieämbetet* (Lunds Universitet, 1996): 6-8.
- <sup>39</sup> (1) Which House At Fredriksdal/Kulturens Open-Air Museum Is Most Important? (2) What Do You Think About The Vicarage / The Blekinge Framsted? (3) Can You Describe The Benefits Or Qualities Of The Building? (3) What Do Visitors Think About The Vicarage / The Blekinge Framsted –Appreciated? (4) Is There Anything That Should Be Added Or Changed With How The Building Is Exposed Today? (5) Do You Know V/B Which Is Located At F/K Open-Air Museum? (6) What Would You Like To Know About The Building To Become More Interested In It?
- <sup>40</sup> Michael Quinn Patton, *How To Use Qualitative Methods In Evaluation* (Newbury Park, Calif: Sage Publications, 1987): 150ff
- <sup>41</sup> (1) Has Your View Of Pg/Bg Changed After You Received More Info About The Building's Prehistory? (2) Which Of The Illustrations Do You Remember Particularly Well And For What Reason? (3) What Do You Think About The Fact That The Moved Building Has Not Been Rebuilt As It Was Originally? Can A Faulty Reconstruction Become A Resource Or An Asset? (4) What Illustration Can Relocate The Building Back To The Place Of Origin, Why Or How Is The Experience Created?
- <sup>42</sup> see Note 35.
- <sup>43</sup> There Are Only Archived Written Sources That Can Strengthen The Theory That Blekinge Farmstead's Ryggåsstuga/Ridge Cabin Was Rebuilt Turned 180°, I. Pålsson Skarin *Byggnadsliggare Blekingegården. Dokumentationsuppdrag Inom Tradition Och Byggproduktion, Riksantikvarieämbetet* (Lunds Universitet, 1996): 8

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# FROM ALTERNATE REALITIES, TO THE URBAN IMPOSSIBLE: DRAWING ON THE INCOMPLETE CITY IN CENTRAL SYDNEY, AUSTRALIA

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## INTRODUCTION

This paper focuses on ‘incompletion’ as an ongoing continuum of urban making and un-making via practice-based research conducted in Sydney, Australia. The concept of ‘the incomplete city’ goes beyond the informal and formal urban economy dichotomy discussed by Guha-Khasnobis, Kanbur and Ostrom.<sup>1</sup> Practice-based researchers have contextualized ‘incompletion’ as an approach to understand cities in times of crisis, ruin or duress, while urban theorists, such as Saskia Sassen<sup>2</sup> and Paul Chatterton<sup>3</sup> point towards incompletion to understand complex social urban systems and the temporal and shifting plurality of cities. Contributions from art and architectural practice also challenge thinking about cities. Hiroaki Kani’s<sup>4</sup> sectional reconstruction of urban life in the Kowloon Walled City and CJ Lim’s<sup>5</sup> axonometric reenvisioning of London both point towards an ephemeral quality to city incompletion, contextualized by ‘realities’ that are in flux, layered and sit between one another.

This paper discusses and builds on these perspectives by addressing a gap in the theoretical understanding of the themes of ‘city incompletion’. After reviewing aspects of the literature, the paper reports on the author’s practice-based research, using experimental graphic processes, from architectural spatial diagramming and speculative image making. The research mapped and interrogated changes over six decades in an inner-city case-study site in the Central Business District (CBD) of Sydney, Australia. Information from local government archival development applications, historic media, and web content were reenvisioned as part of ‘alternate realities’ that co-exist and co-mingle, and parallel, and pertain to alternate theories of urban making discussed in the literature. ‘Incompletion’ or ‘incomplete’ processes from these are incorporated into practice-based research outputs, and have been proposed as a possibility, to bridge these various viewpoints on urban theory, dealing with city incompletion.

## THEORIES OF CITY INCOMPLETION: BETWEEN THE MULTIPLE REALITIES OF A CITY

City incompletion has fostered broad enquiry into the processes by which cities are made, with a focus on the temporal and shifting plurality of cities,<sup>6</sup> however many researchers who discuss their own theoretical positionings on city making, point towards various combinations of phenomena, realities and urban-making across time, that can contribute to the ongoing and incomplete nature of a

city site.<sup>7</sup> Aspects of the literature discussed below are introduced here as varying vantage points to understand different possibilities for sites of incompleteness within cities.

In her essay “Does the City Have Speech?”<sup>8</sup> Sassen describes a combination of urban phenomena, site, and certain ‘preferences’ of researchers, commenting ‘if it is to be a study of the urban, it will have to deal with these key features: incompleteness, complexity, and the possibility of making’.<sup>9</sup> Stoper and Scott similarly describe in “Current Debates in Urban Theory: A Critical Assessment”<sup>10</sup> preferences of researchers ‘for separating out that which is distinctively and inherently urban from the rest of social reality’.<sup>11</sup> Within this, they argue researchers engage in an ‘ever changing’ social, economic and political conditions ‘all creating constantly shifting circles of urban social collisions’ through ‘frictions’, ‘collisions’ or ‘tensions’.<sup>12</sup>

Paul Chatterton’s essay entitled “The Urban Impossible: A Eulogy for the Unfinished City”<sup>13</sup> tracks debates by researchers on the ‘right to the city’,<sup>14</sup> yet critiques ‘fixations’ in analysis as contributing only to an ‘urban possible’ – as a kind of model reciprocal reproduction of city form. Here the focus on the interplay of analysis and the built realities of future possibilities, see according to Chatterton, ‘the untold other paths which could have been explored’ unvisited, yet prefigured within an ‘urban possible’<sup>15</sup>. This interplay between focus and built reality emphasises importance of ‘imagination’ as sitting somewhere between Sassen’s<sup>16</sup> ‘complexity’ and ‘making’ – and positions ‘city incompleteness’ as a phenomena between ‘certain’ (both known and particular) urban realities, to those before, now and into the future. Chatterton observes:

So my interest lies less in what the city currently is or what it was, but more in what it could become, in what it has never been. Such an approach is strongly utopian, but this is not a project that searches for a perfect ideal, but a militant utopianism that demands that the future be made in the present. This is the urban impossible— simultaneously within, against and beyond the current urban condition.<sup>17</sup>

Looking more closely at related urban research, a clear distinction between city site, and a ‘possibility for making’ denotes processes of city incompleteness. Here city incompleteness emerges as variously globally and digitally connected, as sites that are mediated and mobilised from ‘within’ yet extend outwards from the city site itself. Examples of these include: the ‘transclave’ and the rise of ‘Koreatowns’ through economic and political imperatives,<sup>18</sup> where incompleteness is drawn on to describe sites that are ‘reconstructed’ as ‘increasingly and visibly transnational’;<sup>19</sup> or the ‘mediated city’ generates ‘alternative scenarios for inclusion and participation’ across global boundaries through digitally interconnected diasporas.<sup>20</sup> For the ‘platform-mediated city’, Leszczynski’s<sup>21</sup> theory of city change involves ‘glitchy mechanics’ that mediate a city site through online platforms:

Rather than a universally totalizing urban condition rendered legible only via totalizing analytics of rents, value extraction, class difference, and labor exploitation, platform urbanism as theorized from the minor via the glitch reveals it to be a highly contingent, indeterminate, and necessarily incomplete phenomenon where erratic/erroneous configurations of platforms and cities are both the result of, and open to opportunities for, tactical manoeuvres rooted in everyday digital praxes that remake, unmake, and make differently platform/city interfaces.<sup>22</sup>

The potential for a layered conceptualisation of city incompleteness arises from these perspectives, as part of a multitude of envisaged theoretical ‘realities’ of city sites. These may involve firstly, imagined interactions as frictions or mediations, then evolve as alternate scenarios for urban making. Shifts in remnant identities and prefigured states are changed by intervening phenomena. These are ideas that are explored further in the next section. Graphic approaches to interpretation of city incompleteness are presented as overlapping and emerging states indicating a potential for various theoretical ideas to be combined ‘through’ incompleteness as a tangible positioning.



## GRAPHIC DEPICTION OF CITY INCOMPLETION AS ALTERNATE TO ADDITIONAL REALITIES

The focus on the city as a state of incompleteness is an undercurrent within speculative architectural and art practice. Attention has to a large degree hinged on moments in time that reveal an embedded plurality to the production of sites within a city.<sup>23</sup> Practice-based researchers have also focused on the abandonment or destruction of a city, such as the graphic sectional reconstruction of the Kowloon Walled City by Hiroaki Kani<sup>24</sup> or CJ Lim's<sup>25</sup> axonometric reenvisioning of London submerged by catastrophic sea level rise. Other depictions of transition, focus on temporary occupations of city streets, such as Carena and Marco's<sup>26</sup> visualisations, where themes of construction and deconstruction are applied to city sites in 24-hour cycles. In each of these, conceptualisations of a city in changing states of 'incompletion' are situated 'between' many alternating conceptualisations, or 'realities' of a city.

Perhaps most apparently 'incomplete' is Hiroaki Kani's<sup>27</sup> sectional reconstruction of urban life in the Kowloon Walled City, Hong Kong before abandonment and demolition in 1993. The surveying of the site sought to graphically preserve a highly complex and dense urban formation of cellular room-by-room interiority. The sectional drawing depicts minute scenes set within individualistic and internalised social relations.<sup>28</sup> This aligns with discussions of the problematic nature of the informal and formal urban dichotomy discussed by Guha-Khasnobis, Kanbur and Ostrom.<sup>29</sup>

Davis and Hunt's<sup>30</sup> distinction between 'connotation' versus 'denotation' in visual communication, is useful when interpreting visual practices. Here, the 'literal object' is separated from a 'field of related associations', through qualities, forms, and contexts, that 'expand or reposition meaning'.<sup>31</sup> Connotation and denotation borrow from the field of semiotics, where emphasis on the social, political and economic realities are related to processes of communication.<sup>32</sup> In visual communication, the image takes on these qualities and 'become evidence for something'<sup>33</sup> and may operate as part of 'complex codes' of understanding.<sup>34</sup>

While Carena and Marco's *Borrowed City*<sup>35</sup> depicts the 'denoting' of Seoul, South Korea as a city in two parts that associate – one of permanence, against flux – and of a downtown Seoul that is transient, informal, and negotiated, CJ Lim's *London is Flooding*<sup>36</sup> constructs a new future reality by transfiguring the complex codes associated with significant cultural iconography of the city, to form a perpetuating logic for city making:

Built-on anxieties, fears and foreseeing a great flood within a few short decades, three multi-use infrastructural 'castles' embrace and protect the inhabitants and core institutions of the city from being submerged... London is dramatically transformed with farming moats and living castles that dominate the skyline, thus moving the city's communities from relative low-rise housing into concentrated vertical living. The heritage and spirit of London is divided into three fundamental bodies to safeguard: the 'Queen', the 'Economy' and the 'Knowledge'.<sup>37</sup>

CJ Lim's work, considered an interdisciplinary provocation to mainstream ideas around urban design,<sup>38</sup> mixes the complexity of the reality of the 'real' existing London, to generate alternate city possibilities that diverge, remix, or distil future realities, and through these present underlying processes of city incompleteness.

So far discussed in this paper are the many possibilities for a theory of city incompleteness, and presented visual 'realities', that combine multiple and individualistic interpretations of the co-existing and illustrated practice-based research approaches. In the next section a graphic microhistory<sup>39</sup> practice-based research study of the author's is presented. This work is informed by archival research which traces the detailed history of a singular site in central Sydney, Australia from the 1960s to 2020s. Co-existing and composite urban realities are depicted as alternate accounts of the identity of the site and as processes underlying city-making. The work suggests many understandings of the

‘reality’ of a site and building and articulates further understandings of city incompleteness through practice.

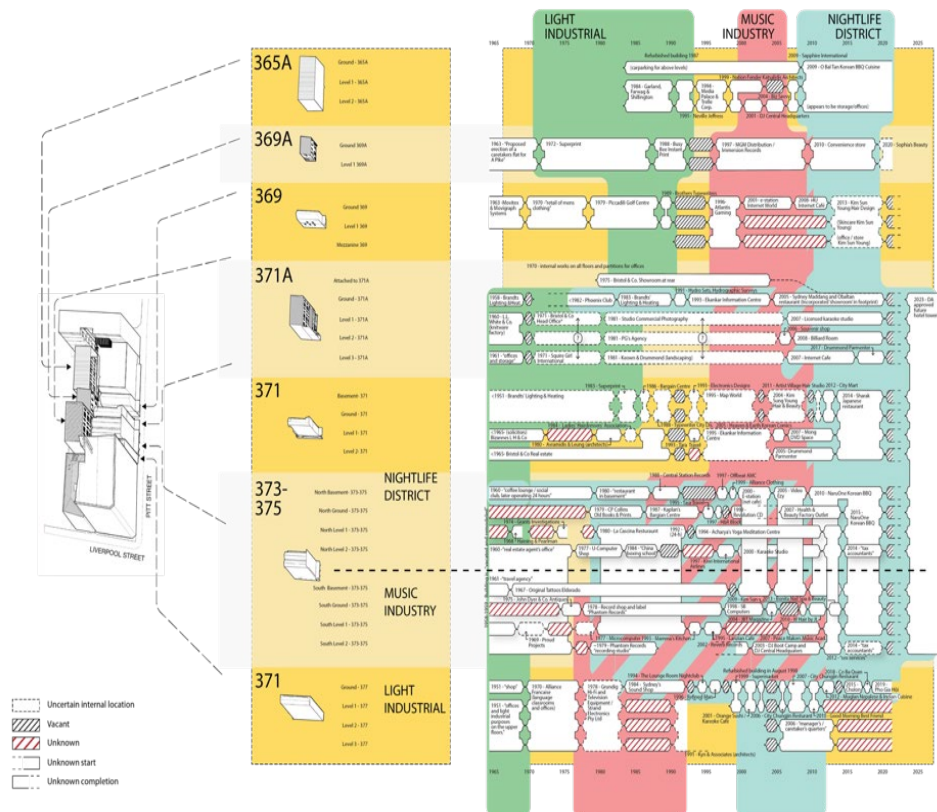


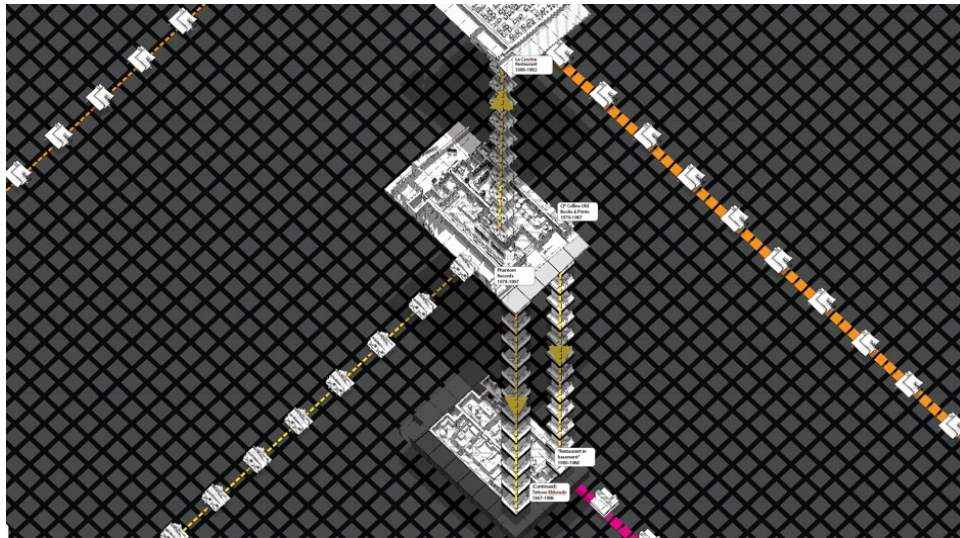
Figure 1. Sydney CBD block study site: part of a series of timelines drawn detailing ‘Light Industrial’ (1960s-1992), ‘Music Industry’ (1978-2012) and ‘Nightlife District’ (1960s-current) within buildings in the study site as continuous occupation from 1965-2022.

## REALITIES MAKE REALITIES: TRANSMISSION AND THE POSSIBILITIES OF PROPAGATED ‘GROUND’

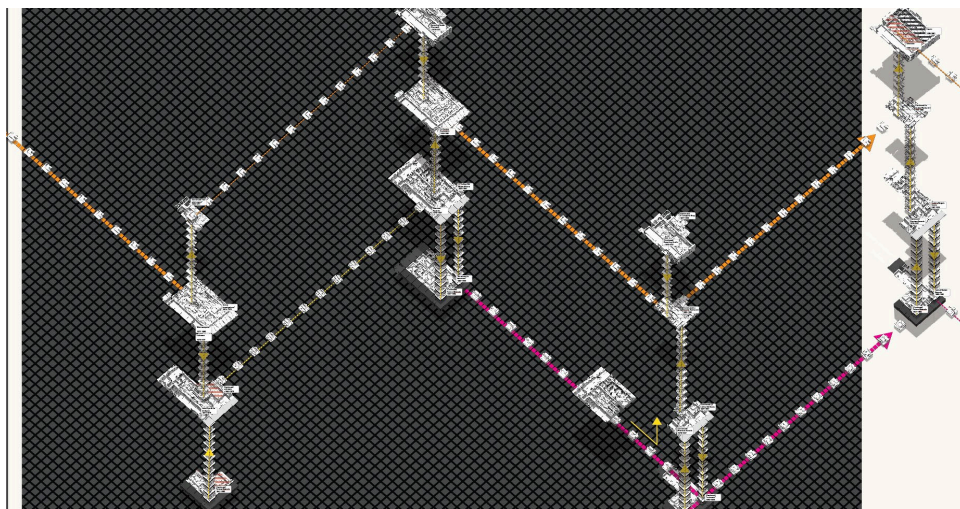
The study site is located in the CBD of Sydney, between Central Street and Liverpool Street, and predominantly along Pitt Street (on the western edge). George Street, historically the high street and centre for retailing in the CBD, runs parallel to the study site (eastern side) and continues to attract high levels of visitation. The brief history of the block includes a light-industrial past, evolving through time to a centre for the music industry, and is importantly cited as playing a role in the early development of Sydney’s ‘inner city sound’.<sup>40</sup> Most recently, the site has been characterised and officially signposted as ‘Koreatown’ by the city’s local government.<sup>41</sup> Lockdowns, pandemic measures, and a looming approved hotel tower development proposal<sup>42</sup> have, however, caused several the occupants to vacate in 2020.

Study of historic data from government archives, physical publications held in libraries, and city development applications relevant to the site was conducted to piece together a careful collation of material into timelines of occupation.<sup>43</sup> Diagrammatic representations ‘collected’ this data with the aim of building up understandings of urban change within the CBD block (Figure 1). From this ‘Light Industrial’ (1960s-1992), ‘Music Industry’ (1978-2012) and ‘Nightlife District’ (1960s-current) emerged as thematic identities to the block over time, characterised by the documented accounts within the source material. To incorporate spatial qualities and map change as an axonometric

drawing, each building within the block was digitally modelled, informed by archival development application floor-plans and historical photographs.<sup>44</sup> Figures 2 to 7 show the outcomes of this diagramming and are discussed next.

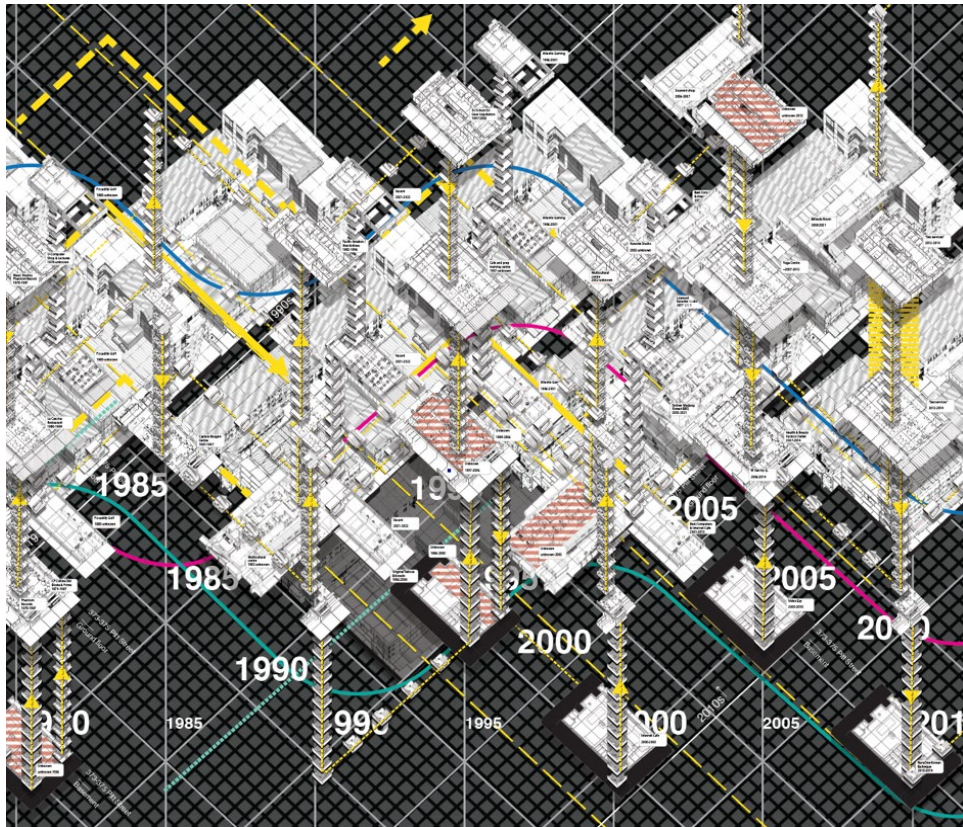


*Figure 2. A detail showing the method adopted to diagram each building within the study site. Exploded in axonometric and transferring repeated 3m x 3m x 3m cubes of built fabric, as interstitial connecting spaces, including hallways, stairs or paths, between occupants.*



*Figure 3. Zoomed out, illustrating the method adopted to diagram each building within the study site. In addition to transferring repeated 3m x 3m x 3m cubes of built fabric, in some cases small businesses continued to operate over many decades, and entire floors are transmitted also to the next decade stack.*





*Figure 4. A live 'working drawing' that collected the spatial relations and layouts of shops, offices and occupants over time and a mapping of change from 1965-2020 for the study site. Each building interior was modelled using archival material, such as floorplans or photographs.*

Each floor within the axonometric diagrams is exploded upwards and downwards and connected by 3m x 3m x 3m repeated cubes that are 'transmitted' from one time period to the next (see Figures 2 and 3). When studying each building, it became apparent that while there could be discernible change from one occupant to the next (for example, one small business becomes another), there were areas within and around buildings that remained relatively static, for example hallways, stairs, and footpaths – and appear to be similar to the phenomena in cities where streets might historically remain relatively fixed. In some cases, entire floors are also transmitted (Figure 3) as they form a continued presence in the block (for example a small business that operates over several decades). Questions as to what is 'apparent' as explicit change, arise within these depictions; activities such as co-location, for example in the conceptualisation of the block as 'Koreatown'<sup>45</sup> can be seen in the individual timelines of buildings as 'propagating' these qualities. Ideas around 'propagation' and 'transmission' are further expressed in later iterations of the diagrammatic process (see Figures 4 and 5).

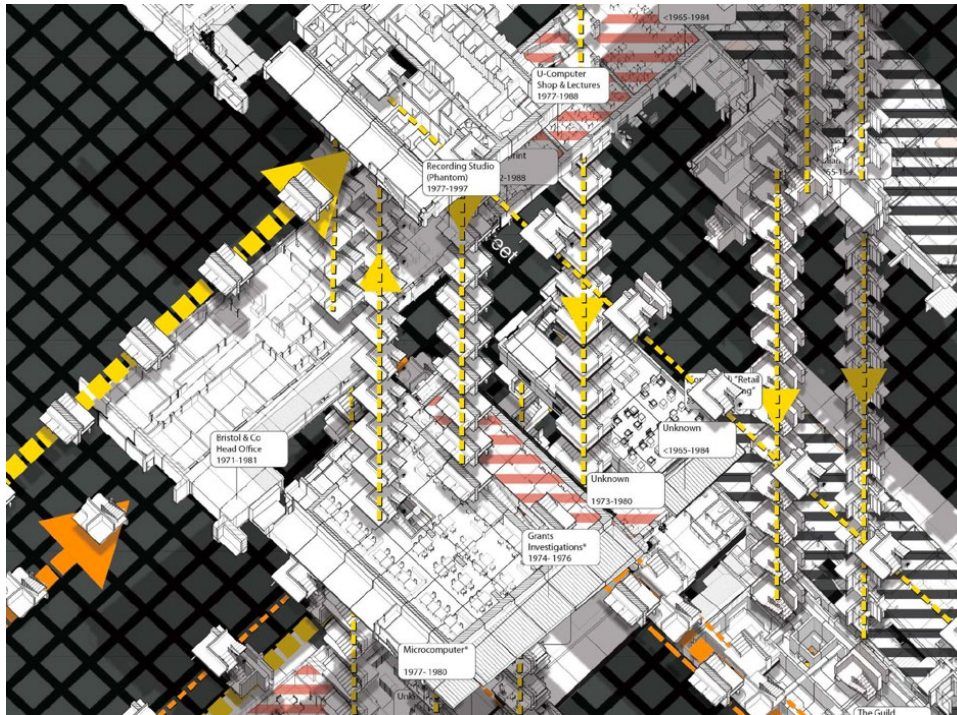


Figure 5. (Detail of Figure 4) The drawing is built up in complexity, with additional buildings from the study site, to collect as a fine-grained urban block, exploded in axonometric.

Figures 4 and 5 became collecting points for the spatial investigation of change over time, as they were arranged into a continuity of ‘working drawings’ that took on a topological and fragmented appearance (Figure 5, detail of drawing in Figure 4). Complex and information heavy, as diagrams they might begin to emerge here as maps of the ‘denoted’ objects within Davis and Hunt’s ‘field of related associations’.<sup>46</sup> These Figures also situate the objects that lay between the many ‘frictions’ of city site and its ‘urban related phenomena’.<sup>47</sup>

A challenge for this practice-based graphic project was primarily in the documenting of change within the block. To do this the ‘user’ of the diagram needs to navigate and to discern these dynamics, such as the ‘transmissions’, ‘fields of associations’ or ‘frictions’ discussed above. Due to the complex nature of the diagrams, a process of experimentation was introduced moving from static depictions to a dynamic and animated diagram imbedded in HTML5 (Figures 6 and 7). Although difficult to present here (as part of a paper with static images) the next series of diagram screen-shots are of an interactive and controllable interface. Figures 6 and 7 show complexity incorporated in stages, with the aim of not overwhelming the user. To understand how this might work, Figures 2 and 3 represent a single building within the study site (373-375 Pitt Street) and the clarity of this as a singular element becomes what could be a good starting point for user exploration, where adding or subtracting further buildings will allow for isolating, or layering as desired by the user.



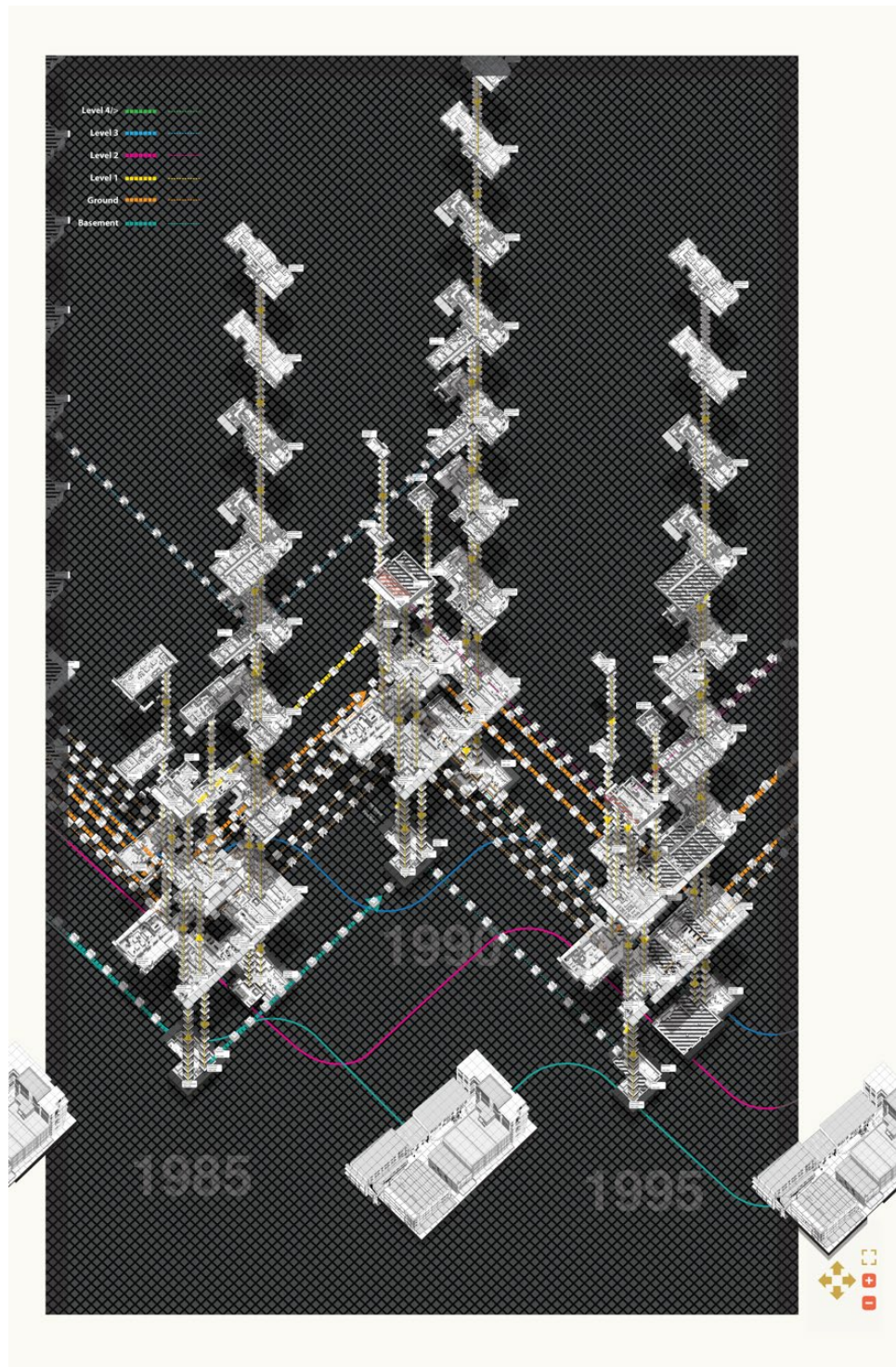


Figure 6. Interstitial stage of drawing development, where snapshots of each decade (showing 5 years on either side) is split into a navigable interface (using HTML5). This is further animated with moving floor-plate elements between 'decadal stacks' to show transmitted forms of occupation in the block.



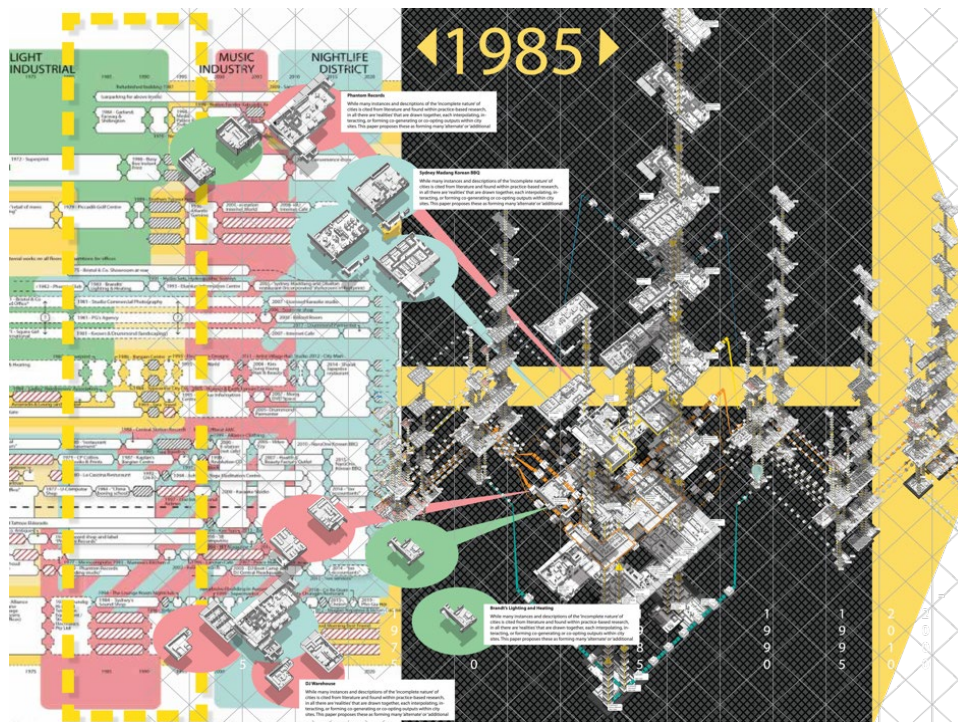


Figure 7. Interface for a developed HTML5 (web-based) platform, animated and ready for user interrogation. The year 1985 is selected, with information 'call-outs' describing different occupants at the time with text boxes and associated axonometric detail drawing.

Figure 7 culminates with timelines, diagrams and axonometric drawings brought together into a single interface. The pairing of a detailed timeline, and thematic colour coding of 'city realities' with an exploded view in axonometric, creates a comprehensive mapping of city incompleteness within the study site. Hosted in HTML5, it will be possible to develop this interactive diagram further into an online platform, where individual floors or spaces within buildings are then able to be clicked into by the user, explored and related to the rest of the site. Navigation of the timeline or the axonometric view itself paired with explanatory text on the history of the site at any given time, might further connect with other material via weblink, such as the Internet Archive's Wayback Machine.<sup>48</sup>

## CONCLUSION

A central focus of this paper has been how 'city incompleteness' could be depicted for analysis, both to further theoretical understanding, but also specifically *here* as a graphic output (in the context of practice-based research). As part of this investigation, relevant literature has been visited on states of city incompleteness, as well as related theoretical positions. While these positions may compete or complement one another in the case of this research, they are all 'realities' of incompleteness of city sites and are seen as layered and additional to the site itself. The practice-based research outputs proposed here arguably bridge the various viewpoints on city incompleteness described in literature.<sup>49</sup> From this, 'incompleteness' can then be seen as offering a 'transmitting' of opportunities, if not 'ground', to be filled in over time, vacated and filled in again, with the possibility for, and multiplicity, of contributing 'urban realities' to the city site.

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## NOTES

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# THE REACH OF A MORPHO-TOPICAL ARCHITECTURE

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## INTRODUCTION

What type of unity should the form of the built environment have? How homogeneous or heterogeneous should its consistency be? Which rhythmic pattern and aesthetic should it follow? To what tune should it play, urban jazz? More importantly, how are we to deal with the transition from one type, consistency, pattern to another? If we take a quick glance across the history of the form of the built environment at the architectural and urban scales, we quickly deduce that the transition is moving in a direction from a unified unity towards a diversified unity, from homogeneity to heterogeneity, from singularity to plurality, from classic rhythmic patterns to eclectic patterns. In short, the transition seems to be moving towards fragmentation and change of reference, from stability to change, from static equilibrium to a dynamic of liquidity and flow characteristic of a 'network' and rhizomatic society. If the built environment is to sustain meaningful sense within a framework of incessant change, we need to examine the question of contextualization. How can we relate the new frame to the existing without causing, on one extreme, stark discordance, social alienation, and cultural shock; or on another extreme, falling into inauthentic habituality of tradition, social staleness, and cultural stereotypes? The position this paper assumes is that the contextual problematic of architecture needs to be supplanted by an understanding of place that is, in turn, predicated on an understanding of truth. Architectural form can be reconceptualized as part of a wider understanding of being a constituent of place, a nested and networked place situated in relation to other places and networks. This may avail architecture from being framed as a commodified object while setting a foundation for an architecture of embodiment. To this end, this paper calls for an embedded approach to context based on combining Gilles Deleuze's notion of the fold with a process view of context based on the work of Stephen Pepper.

## THE CONTEXTUAL CONTINUUM

Figure 1 shows the insertion of a shopping mall along a main street within a historic district of Poznan, Poland. The placing of the mall in terms of scale, massing, level of detail, material, etc. relative to its immediate context is distinctly *acontextual*. It creates a discontinuous *discontinuity* in the urban fabric.<sup>1</sup> Meanwhile the nearby church, in contrast to the mall, is *contextual*. The church creates a discontinuous *continuity* within the historic urban fabric. The configuration of the church here within the historic district is reminiscent of monumental medieval cathedrals contextualized within the urban continuity of a medieval town. The backdrop of residential buildings to both the mall and church forms a stable reference, a continuous continuity. Evidently, the degree of continuity within the urban fabric determines if a building is inserted contextually.



*Figure 1. Galleria MM, Poznań, Poland (Photo by author)*

In modern urbanism, the logic of continuity within the urban fabric was intentionally disrupted on pretense of realizing a utopian vision for an ideal society that breaks away from history and the confines of tradition. This meant buildings were no longer contiguous, with the opportunity to open more facades of modern buildings to natural light and cross ventilation. Starting afresh with a tabula rasa approach meant that the composition of each building would be self-referential, an architectural composition in and of itself, with no reference to historical context or consideration of the morphology of the urban fabric. In fact, the intention was to disrupt the continuity of the fabric in a discontinuous manner. The result was not only a disruption in the coherence of the physical built environment, but also a disruption in identity due to the internationalization of the modern style, which was aloof to local culture. Nevertheless, modern urbanism struck a chord with the technological zeitgeist of society. Modern architecture appealed to society's values of simplicity and pragmatism. It is within the modern period that the slogan "Form follows Function" became currency in design practice, accompanying the mechanistic logic of an industrialized society. The problem with modern urbanism appears at the architectural and urban scales. We find ample examples of modern cities laid out in a functionally segregated manner as well as buildings with no rapport to each other contextually.

When considering two examples of buildings in Paris, the Louvre Museum and the Centre Pompidou, researchers Riza et al. assessed the glass pyramid addition in the Louvre Museum to be a successful juxtaposition of modern and traditional, while the insertion of Centre Pompidou within its immediate context was assessed to be discordant and acontextual despite being an artful object heralding hi-tech architecture.<sup>2</sup> The contextual continuum along which they placed their examples, based on the work of Carmona et al., ranged from total uniformity to total dis-uniformity, what they called free-style. They identified continuity and juxtaposition as successful ways to contextualize, while uniformity and free-style as unsuccessful. Jencks observed another way to contextualize through what is called contextual counterpoint, much like that quality in music.<sup>3</sup> Contextual counterpoint creates subtle music variations on a theme, stark disjunctions with some continuity rather than radical collisions.



Jencks gave examples, like Hotel Fouquet in Paris and Caixa Forum in Madrid, that show how the second emergence of postmodernism in the 21st through contextual counterpoint can help stitch the city together and repair the surrounding context.

Whether it is through continuity, counterpoint, or juxtaposition, the focus remains solely on surface articulation and composition, without a deeper engagement with context. Such a focus may reduce the notion of context to rigid rules to follow such as horizontal continuation and repetition of architectural elements across buildings along a streetscape, resulting in a superficial understanding and impoverishment of context, which is hence regarded as an applique, elements that are grafted on a façade. The result is the production of an inauthentic built environment that lacks a deeper understanding of creation or enrichment of an authentic place. There are many examples of places and built environments that are inauthentic such as simulated environments and buildings in Las Vegas and Macau, neo-traditional environments reminiscent of historic towns and main streets, mannerist, and post-modern architectures, etc.

## CONTEXT AND TRUTH

The issue of responding to context is primarily a question of truth and how to create true places and true placed-ness. Though relating truth to architecture in a comprehensive way is beyond the scope of this paper, broad correspondences can be drawn between the architecture of the built environment and truth. If we consider four varieties of contextualism as proposed by Stephen Pepper, Formism, Mechanism, Organicism, and Contextualism as four types of logics (or metaphors, recall Kevin Lynch's *The Image of the City*)<sup>4</sup> subtending the architecture of the built environment, the theory of truth criterion for each is, respectively, correspondence theory, verification theory, coherence theory, and pragmatic theory of truth.<sup>5</sup> A root metaphor is associated with each of these four lenses of truth and contexts. The root metaphor of formism and correspondence theory is similarity, the result of formism is uniformity of the built environment. In the case of transcendent formism, the built environment corresponds to a cosmic model of a city with an image of stability and hierarchy. The root metaphor of mechanism and verification theory is the machine, and the result of mechanism is rational functionalism with an image of efficiency and standardization in the built environment. The root metaphor of organicism and coherence theory is organic development, and the result of organicism is continuity within the built environment, with an image of growth and change. The root metaphor of contextualism and pragmatic theory (where truth is a happening, an event) is the ongoing act in context, and the result of contextualism is a simultaneity of current and historical environments with an image of integration and fusion. Truth in contextualism emerges discontinuously as a juxtaposition; it is then recaptured by history. Truth is manifested not as a continuation or an unfolding, but as the suspension of the temporal framework, a transverse interruption within time.<sup>6</sup>

Pepper's contextualism goes against the position of Martin Heidegger (in *Being and Time*)<sup>7</sup> and Christopher Alexander (in *The Order of Nature*)<sup>8</sup> who view being or truth as a gradual unfolding taking place and arising from hidden or latent centers within existing structures, much like the unfolding of patterns that emerge in a kaleidoscope. The emergence of the new pattern from the old appears in those cases to follow the logic of organismic development where there exist organic rules and genotypical codes (recall the typo-morphological approach to the *Architecture of the City* by Aldo Rossi).<sup>9</sup> The built environment however is not an organism in the proper sense although the organismic metaphor may partially apply. The built environment is an inorganic entity that imperfectly manifests processes of organic growth that are constrained by existing structures and traces of the old.

**Trace, assemblage, and rhizome**

Perhaps the deconstruction notion of the trace by Jacques Derrida applies better to the built environment, where traces of the past are always part of and embedded in the present.<sup>10</sup> We must think of the trace, as Derrida posits, as primordial to existence especially given that some traces offer the possibility of presence and existence. Meanwhile, other traces remain latent and in a state of deferment as residues. The notion of trace advances an understanding of the built environment as a palimpsest where the old and new are not simply juxtaposed but imbricated together. Truth, and Being, in this view is palimpsestic, with interweaved layers that offer potential, i.e., as a generative nucleus for the new. The point here is that the morphology of the built environment needs to be taken into consideration, but the question remains for which dynamic of morphology better applies to the built environment. While Alexander's morphology focuses on a dynamic of hidden centers, Derrida's morphology focuses on a dynamic of hidden traces, with no centers. Both refer to potentiality of the existing, one through a predetermined field of centers, the other through a decentered and undetermined field that is eccentric. Alexander subscribes more to Pepper's organicism, while Derrida subscribes more to Pepper's contextualism. Organicism and contextualism are presented by Pepper as mutually exclusive based on the purity of their root metaphor: organic development versus the historic event, such that eclecticism and combining between them are not entertained.<sup>11</sup>

Assemblage thinking and the notion of the rhizome (based on the work of Gilles Deleuze and Felix Guattari)<sup>12</sup> may offer a middle ground for combining both logics, the logic of morphology and the logic of historic event. Assemblage thinking reconfigures connectedness within the logic of morphology while rhizomatic thinking reconfigures connectedness within the logic of the event. The term assemblage is used for things that are part of an entity and not entirely part of that entity at the same time, as they are part of other entities as well. In this sense, the organism is an assemblage in that it has morphologies with different rhythms within it. Likewise, a trace is an assemblage in that it offers a multitude of possibilities when reinscribed within the new. The term rhizome meanwhile refers to connections that are non-linear. In this sense, the organism is rhizomatic in that connected to a 'here' and singular place, but also connected to a 'there' and plural place. Likewise, a trace is rhizomatic in that it connects to the present, an absent presence, but also connects to the past, a present absence.

**CONTEXT-EMBEDDED ARCHITECTURE**

A context-embedded architecture communicates a deeper and truer insertion of a building within its context. It avoids the extreme of total decontextualization, an intrinsically generated form that engenders an architecture as an autonomous form, and the extreme of total contextualization, an extrinsically generated form that engenders an architecture as a passive instrument of culture. A context-embedded architecture offers a middle ground between the two extremes of total discontinuity that produces discord and disorder, and total integration that perpetrates symbolic violence in the sense introduced by Nancy Fraser,<sup>13</sup> with a quality of closure and static image. Applying a consistent style of architecture on a relatively large urban scale such as the scale of a neighbourhood is an example of symbolic violence. New Urbanism and neo-traditional developments such as the reconstruction of Le Plessis Robinson, a district in southwestern suburbs of Paris, is a case in point. Its reconstruction, though mimicking the beautiful pattern and styles of a traditional Parisian neighbourhood, results in a static picturesque image that is furthered by the construction of an artificial river meandering through the district. One cannot deny the success of Le Plessis Robinson in regaining the loss of its population and enhancing the environmental quality of life of its residents by improving the image of the built environment. The critique here involves the static and uniform approach applied to a large urban area irrespective of different morphology dynamics. This critique

parallels that raised by Brian Sinclair when criticizing Western approaches to the aesthetics of buildings which are based on fixed proportions of their overall form rather than follow a more agile approach such as the Open Building Concept.<sup>14</sup> In his article, Sinclair links the adoption of a flexible approach to buildings in Japan to traditional Japanese culture and spirituality, which is a blend of Shintoism and Buddhism. To avoid a narrow and static focus on aesthetic composition and architecture of a large urban scale, there needs to be a shift in understanding of architecture from an architecture of objects to an architecture of place. Scholars such as Jeff Malpas have made a similar call with the caveat that an architecture of place involves a response to place and a conversation with place as well as place-making.<sup>15</sup> This is what Deleuze suggests with the concept of context-embedded architecture where architecture is defined by a fold, a fold of forces / layers, social, cultural, economic, political; each layer decipherable within the architecture but not determining the overall form. It is as if these constraints or layers help shape an architecture while making their way into the architecture by being able to be 'read' within the architecture, each as an individual layer, separate yet combined and mixed with other layers. The embedding of context is not simply a passive process. It aims at creating a new political subjectivity, i.e., a revolt, a 'new people' through a process that Deleuze and Guattari call fabulation.<sup>16</sup>

### **Morpho-topical architecture**

An embedded approach to an architecture of place allows architecture to authentically respond spatially to its immediate, local, and regional context, and temporally to the past, present, and future. A contextual response is usually realized by appropriateness, amplification / reinforcement of existing patterns, imputing and contributing to the overall ambience.<sup>17</sup> Of these contextual responses, ambience is what establishes the essence of place. Ambience is the totality of patterns (images, symbols, and activities) that sustains the central meaning of a place and that shapes users' recognition and attitudes.<sup>18</sup> A morpho-topical architecture that follows an embedded approach captures and appropriates the spatial and temporal morphological dynamics of an area while also undertaking the task of place-making. Architecture ceases to be a technical object that merely needs to be sustainable and energy-efficient, i.e., *performative*, to rather become an architecture of place that responds topically (topos) and morphologically to context, i.e., *permorfative*, for lack of a better term. This means that the logic that architecture follows is not simply a logic of form (formistic), or of function (mechanistic), but a developmental logic and contextualistic logic.<sup>19</sup> Context is conceptualized as a process rather than a fixed category.

A morpho-topical approach calls for an understanding of morphology that is processual and emergent as well as an understanding of place (topos) as a fluid event comprising a dialectic of being-becoming.<sup>20</sup> Context can then be considered a horizon or an open frame within which a set of meanings are containable. The contextual horizon is simultaneously redefined by the text as the text is framed by the context, with recognition of scalar differences between context and text. Borrowing the notion of panarchy from ecological sciences may shed light on scalar dynamics. Given that hierarchy of scale manifests differential rates of change, panarchy explains the dynamic linking larger to smaller scales by a logic of remembrance / memory, while the dynamic linking smaller to larger scales by a logic of revolt. One may draw parallels to these dual logics for the case of the built environment. Developmental logic of morphology parallels a logic of memory, with associated concepts such as path dependence and emergence, while contextualistic logic of place parallels a logic of revolt, with the associated concept of placed-ness. Placed-ness is a matter of both being 'here' and 'there'; of proximity and distance; of singularity and plurality; of sameness and difference.<sup>21</sup> Combining these two logics, architecture can be defined as the embedded placed-ness of embodied place. This means that under this definition artful buildings such as Centre Pompidou is not an architecture in its fullest

sense because it does not embed contextual aspects. It may point to a hi-tech future for humanity, but it does not connect to the immediate context nor is it based on the human element in terms of scale, material, etc. Architecture in its fullest sense needs to cater to the physical, social, cultural, and spiritual aspects of context.

## CONCLUSION

Context-embedded architecture is an architecture that *enfolds* the context in layers which can be read and interpreted in the architecture, and it is likewise an architecture that *unfolds* to the context new meanings and new possibilities. The Fold, or Folding, is suggested to resolve the problem of combining cultural context, immediate site, and program. It explains discontinuous changes within continuous changes, just as Rene Thom's catastrophe theory.<sup>22</sup> The unity achieved is a multiplicitous or complex unity rather than a simple unity. It incorporates discontinuities without being discordant, unlike the case in a postmodern collage. With Folding, elements pass into each other, and forms respond to each other in response to outside forces that are internalized in the fold. It solves the problem of conflict and contradiction in Postmodernism and the problem of simple unity and homogeneous continuity in Modernism. The fold is the inside of the outside in the sense that there is connectedness and continuity between inside and outside, much like a Mobius strip. The process is not a simply passive one of internalization, but also a process of extending its influence outward, an externalization, to the context in which it is situated, i.e., a two-way folding process. Through this process an architectural work effectively arises in the continuum of culture and takes its place in that continuum, with an ever-present newness and intimacy.<sup>23</sup> This understanding sets a foundation for an architecture of embodiment such that different forms of embodiment effectively open different forms of environment, and thus different modes of subjectivity, a 'new people' and a 'new society'.

## NOTES

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# SPATIO-TEMPORAL ALTERITIES: MULTICULTURALISM IN TRANSPORT HUBS

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## INTRODUCTION

Cities are fundamentally about opportunities, possibilities, and diversity. People come together in cities not just for the infrastructure it provides, but for the multitudes of opportunities they present. By enabling mobility and access to opportunities, transportation hubs can be instrumental for achieving integration of culturally and linguistically different community groups while supporting transnational spatial practices that are sympathetic to the intersectional needs of new migrants, alongside inter-generational projections of multicultural identity. As such, these spaces become ideal sites for investigating socio-spatial transformation. Through the presentation of two case studies, of Oakleigh and Box Hill in Melbourne, we argue that each possesses different spatial layering and integration of transport systems, land use and infrastructure that appear connected to the cultural demography associated with these suburbs, particularly in the way public amenities have been adapted through public and private development in these areas.

The study brings together methodologies across planning, design and ethnography to construct a multimodal and multi-scaled timeline that traces the relationship between refugee and immigrant entry and domicile in the specific suburbs to infrastructure improvements and commercial expansion, and then, the nested cultural behaviours and socio-spatial practices familiar to migrants that have shaped the design and use of the neighbourhoods. We demonstrate that the case studies present very different approaches to neighbourhood design. Oakleigh adopts the open street plaza familiar to Mediterranean cities where pedestrian links to nearby transport hubs facilitate circulation, while Box Hill layers retail on top of the transportation hub, similar to metropolitan transit hubs in Asia. These interventions diverge from the increasingly car-dependent park-and-ride models encouraged in suburban Australian developments and suggest ways in which transnational spatial practices can be integrated; improving the quality of Australian public spaces, by encouraging diversity.

## METHODS

The study links two timelines of differing scales. One that is broader, which traces the relationship between refugee and immigrant entry and domicile in the specific suburbs to infrastructure improvements and commercial expansion, and then, the nested cultural behaviours and socio-spatial practices familiar to migrants that have shaped the design and use of these neighbourhoods. Fieldwork was approached based on the conceptual framework of rhythmnanalysis, as proposed by Henri



Lefebvre, that interrelated space, time and the social body and the first author's development of a multimodal mapping technique that draws on this interrelationship.<sup>1</sup>

Observations were supplemented by interviews with participants from a cross-section of migrant generations - first, second and third generations of Greek background (for Oakleigh) and Chinese background (for Box Hill).<sup>2</sup>

## **CASE STUDIES**

Transit-oriented development (TOD) is a term coined by Peter Calthorpe in his book *The New American Metropolis*. It describes the integration of mixed-use, high-density community development with public transit hubs. The purpose is to encourage transit use, foster pedestrian-friendly areas and support the formation of more sustainable urban neighbourhoods and communities.<sup>3</sup> Jamme et al argue that the 'transit-oriented' part of the definition is unequivocal while the 'D' in TOD has evolved and been expressed in multiple ways, to capture its multidimensional quality.<sup>4</sup> As Cervero and Kockelman explain, 'D' can be 'Density, Diversity, or Design'.<sup>5</sup>

While the term has largely been associated with North American examples, TOD as a concept is not new. According to Black et al., TOD has been implemented and perfected by the Japanese for several decades now but was an initial attempt to respond to post-war urbanization challenges.<sup>6</sup> Mateo-Babiano disputes that it is in fact urbanism that evolved during Japan's Edo period, a consequence of the Shogunate's Sankin Kotai policy.<sup>7</sup> The policy required feudal lords to live in Edo (Tokyo) on alternate years. The yearly processions resulted in the formation of thriving post stations (shukuba), an early form of TOD. Black et al., further assert that Western TOD models were cultural borrowings of this Japanese conceptualization.<sup>8</sup>

As greater numbers of migrants arrive in Australia, the need to design and manage contemporary public transport hubs to be responsive to the mobility and access needs of a multi-cultural society becomes imperative. Most of these migrants depend on public transport for their local travel.<sup>9</sup> Moreover, earlier scholarly work that investigated public transport hubs revealed that the experience of migrants in their origin countries, including their cultural values, factors and transport preferences, are often revealed in the way they make mobility and accessibility decisions in their host countries.<sup>10</sup> As such, deriving these insightful learnings through periodic reflection can inform the design of more responsive TODs.

The next section focuses on two Melbourne suburbs served by two transport hubs, Oakleigh and Box Hill, respectively. We argue that each transport hub possesses a different spatial layering and integration of the transport system, land use and infrastructure, which appears to be connected to the cultural demography associated with each suburb. Oakleigh is known to have accommodated the Greek-Australian community while Box Hill is considered a popular area for Chinese migrants to reside. We discuss the morphology and socio-spatial behaviours associated with the spaces and highlight how each contributes to the ontological security of new migrant arrivals.

### **Oakleigh**

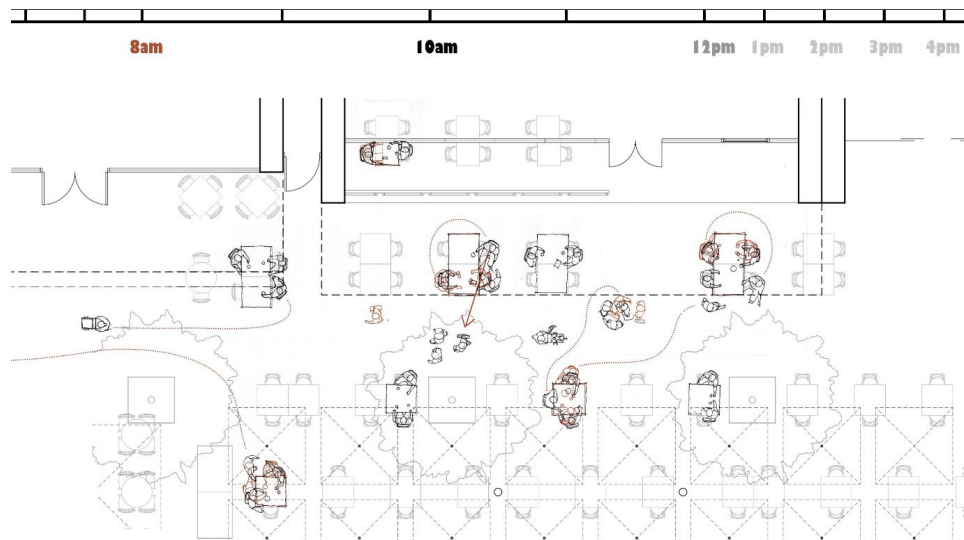
In the 1840s, Oakleigh was established as an independent rural railway township. The second half of the twentieth century became known as a period of sustained migration in Australian history, attracting migrant and refugee populations from European countries post World War II. Many migrants to Victoria settled in Oakleigh because of the migrant hostel accommodation at Holmesglen (in the 1950s) and then Westall (in the 1970s). This was provided by the Housing Commission of Victoria at the time. Although it is a multilayered ethnic landscape, Oakleigh soon became what was often described as 'the epicenter' of the Greek-Australian community in



In our observation of Eaton Mall's sociology of space use with time, we found that older men, typically in groups of three to five, socialise in a distinct way at the Mall (Figure 2). These groups spend their time from around nine in the morning until midday moving from one café to the next, from table to table and group to group and dominate the space. These groups of men appear to spend their time from around eight in the morning until midday moving from one café to the next, from table to table and group to group (Figure 3). A sense of time is reproduced—that has strong connections to the culture of origin, and specific way of socialising – that is found in Greek culture. It is a slow occupation of space, extended over a period of time.

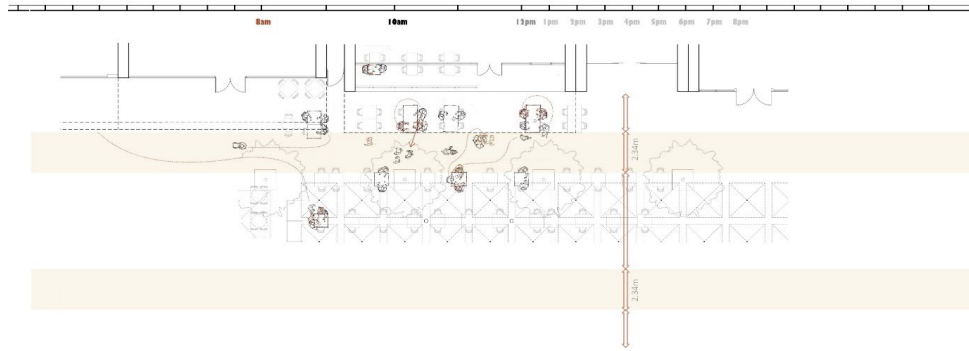


*Figure 2. Older men meet in groups at the Mall. Source: Kelum Palipane*



*Figure 3. Occupation of cafes by older men between 8am and 12 noon. By Kelum Palipane and Dhanika Kumaheri*

It appears the particular concentration of shops and cafes next to each other allows for this movement of individuals and groups from one cafe to the next. Interestingly, there are no stepped level changes, slight slopes allow movement from the cafes across the Mall, into Oakleigh Central (local shopping centre) and through the back to the station without needing to navigate any steps at all. Thereby movement axis is created from the Mall which leads straight to Oakleigh Central through which you can access the transit station. Meanwhile, the layout of two pedestrian pathways flanked by banks of tables and chairs encourages people to promenade (Figure 4). People on either side are close enough to see who's walking past and recognize them, call out to them, they can stop and step away from the promenade into the sides which are shaded and have these social moments. The men appear to shift seats and position themselves for better visibility of people passing by.



*Figure 4. Pedestrian pathways flanked by banks of tables and chairs encourage people to promenade. By Kelum Palipane and Dhanika Kumaheri*

There are also multiple layers of exposure to the public sphere which people have control over—the interior spaces of the cafes, semi-public spaces shaded but defined by shop overhangs and sometimes dropdown plastic transparent sheets, and a completely open central bank of tables/chairs, where one is seen as much as one can see others. Occupants are able to select the level of exposure desired.

But throughout the day, the way people use the Mall and who is present in the Mall pivots (figure 5). In the morning, there are more of the inward-facing activities describe above, but later in the day, it becomes more outward-facing, welcoming a more diverse mix of people. Older men no longer dominate the space as more family groups and a mix of genders begin to arrive and tables are joined together to accommodate larger groups. Even the soundscape of the Mall changes, from mostly Greek music played by shops during the day<sup>12</sup> to street performers like a string duo playing classical music or jazz musicians<sup>13</sup> walking up and down the Mall in the early evening.

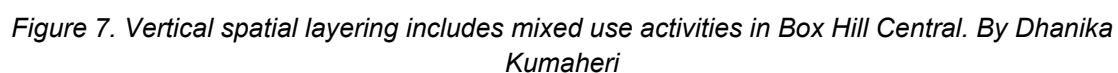


*Figure 5. Street musicians transform soundscape in the evenings. Source: Kelum Palipane*



With the lifting of the White Australia immigration policy in 1973, the number of immigrants from non-European countries increased in some Melbourne suburbs due to their good transport connectivity. Box Hill, a suburb about 14km east of Melbourne CBD, like Oakleigh, is known for its large migrant population, a majority of whom come from east Asia, particularly China. Over 45% of residents are either born in China or identify with Chinese heritage.<sup>14</sup>

We argue that this vertical spatial layering follows the Japanese ‘*Ginza model*’ – the density-driven vertical stratification evident in East and Southeast Asian cities where small land parcels based on old subdivisions and high main street rental costs drove vertical development with commercial and retail activities to upper levels, creating what Mateo-Babiano and Darchen refer to as vertical mixed-use communities.<sup>17</sup> This model of TB-HOD that is, tall buildings and Transit-Oriented Development is ubiquitous now in countries such as Japan, Hong Kong, Singapore, and Thailand.



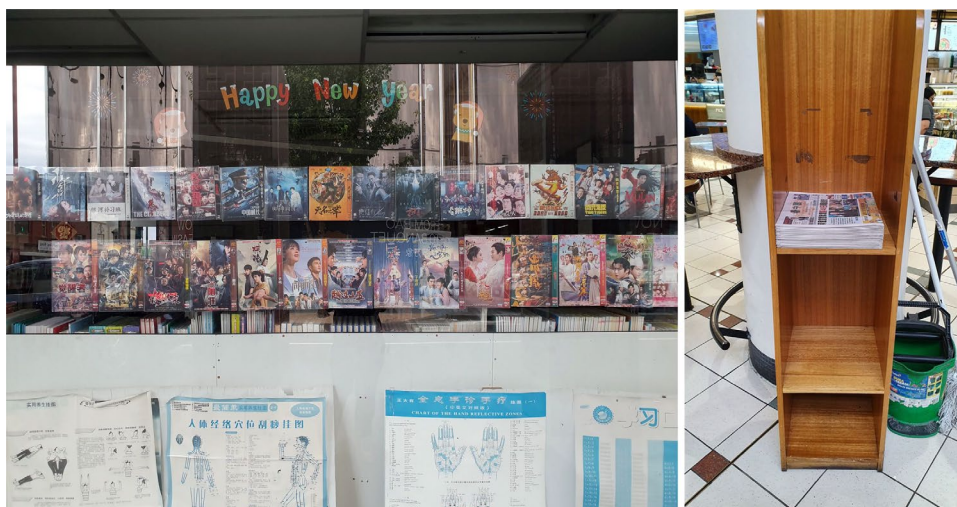
These developments are typically characterised by mixed-use activities. In Box Hill Central, this includes a fresh food market, specialty stores, and health services such as doctors' clinics and optometrists.

We conducted a similar time-based socio-spatial analysis of Box Hill Central that entailed ethnographic observation over an extended period focusing on the food court area which is a central point of convergence and orientation in the hub: Shops open around 8 am. The demographic is mostly older. Typically visiting the specialty grocers and fresh food market. Older people sat for an extended time reading the newspaper, but still typically alone.



*Figure 8. Food court at Box Hill Central is a central point of convergence and orientation. Source: Kelum Palipane*

The material culture through non-fixed and semi-fixed elements conveys specific cultural identities such as Cantonese and Mandarin newspapers that are made available in the space and the ephemera on display on shop fronts (Figure 9).<sup>18</sup> The soundscape includes shopkeepers speaking Cantonese or Mandarin to customers.



*Figure 9. Ephemera convey cultural identities. Source: Kelum Palipane*

From around 10 am there are younger people in groups of 2 or 3. The sound of voices is more prominent in the space. People sit down for meals from 11 am, and they are mostly solitary diners looking at their phones. At times you see older people accompanied by a younger family member. People eat quickly and quietly. During the night, however, while most retail spaces in Box Hill Central are closed, restaurants and eateries are well patronised by family groups and friends walking the mall.

While there are these clear parallels in the morphology of the built-scape to metropolitan transit hubs in Asia what became evident through the ethnographic study is a marked lack of sociality in a comparable way. The reasons for this could be several converging factors that are both structural and socio-cultural which we pose here tentatively, open for further investigation. Firstly, there appears to be a temporal disjunction; most retail shops close early around 5 pm in Box Hill Central as is typical of most Australian suburban high streets, while in many Asian metropolitan areas, socialising occurs at night until late. An interviewee compares it to her experience in China and says:

*Living... yep, they are different. They are in evenings, for example, shopping malls finish very early, shops are all closed, but in China those usually open until late... Just like many people still love to go out for late-night meals or like shopping – J.*

Secondly, Confucian values which underpin Chinese and some east Asian societies and its impact on work culture may have an influence. There is a growing body of empirical work on the work-life interface in Asia which details accommodation of long working hours and intense job demands.<sup>19</sup> We speculate that this contributes to the reason we see very little socialising during the day and family groups at night. Finally, an attitude toward eating in public and occupying public spaces and relationship to the street that is not performative. Although private spaces i.e., restaurants, are well patronised, there are no provisions for eating outside. There is a strict distinction between inside and out, a clear disconnect to the typically blurred boundaries between indoor and outdoor spaces common in Asian urban space.<sup>20</sup>

## ONTOLOGICAL SECURITY

We saw in both these contexts, networked dependencies that supported first generation migrants whether recent or established. The interviews we conducted confirmed how important these spaces are for maintaining social networks, periodically bringing them back for visits long after they've settled in Melbourne, or re-assembling networks lost during the migration process. These relationships occur not just amongst visitors but between shop owners, staff and patrons as well. In Oakleigh an interviewee states,

*"People get to know some of the shop owners, waiters, and they welcome you. It's a good feeling. It's a good atmosphere." And he goes on to tell this story, "There was maybe a dozen of us, the owner seems to know most of us. And we had food, had our drinks, the guy closes around 11 o'clock. He starts packing up. But, because we were having such a good time, he just locked the doors and he just joined us and we went to 3 o'clock. – T*

Meanwhile in Box Hill, ontological security is afforded to older migrants who arrive to support their adult children in childcare duties with shopkeepers, service providers and others speaking Chinese languages. These spaces are also important for new younger migrants needing to connect to job opportunities and social services, with both suburbs highlighted as points of the first arrival for new migrants.

*"I can guarantee you that if any Greeks came to Melbourne, they'll know Oakleigh within the first week. They'll know about it and then they'll probably even get there." T*

*"If you are new immigrants to Australia, I think Box Hill is, a good 'landing' place. First, very close to train stations. Second, if you wish to seek for help, everyone, is using the same shared language,*



*which makes thing perhaps easier. ... only when you are having the same language, after then can you help out each other.” W*

Essential to this are services delivered in a culturally specific or sensitive way. For example, interviewees spoke of how they and their friends come to Box Hill just for a haircut because it was easier to communicate their needs but also the hairdressers are familiar with the particular styles and cuts for their type of hair. They also spoke of medical clinics and other professional service providers that can speak Mandarin or Cantonese. Similarly, an interviewee says,

*“Oakleigh has got some professional services that are popular. They have a lawyer there who’s very well known and he helps the community. I think there’s a concentration of Greek services in banks. And a funeral parlour are there. I know that real estate agents that concentrate their services on the Greek... people...” T*

We also heard interviewees evoke a sense of time and place from elsewhere.

*“In Crete we used to go every week for coffees, and then sometimes when I go have coffee at Oakleigh it’s the same feeling. You feel the same thing. You get to see people.” D*

*“Just walking in Eaton Mall, just walking there. Just hearing people talking Greek and sitting around the cafes just reminds me of Greece, like Athens, It reminds me of that..” D*

*“In Box Hill Central, particularly the dining zone, makes me feel like, ‘Oh, that’s so similar to China.’ Looks like the large underground dining areas in the big shopping centres in China.” L*

Unlike Eaton Mall in Oakleigh, in Box Hill, the timings and rhythms from elsewhere were difficult to reproduce because of structural barriers – that is, the closure of retail at 5pm. The temporal rhythms of the host country are discordant with the rhythms of practices brought from elsewhere.

## EXCLUSIONS, INTERNAL DIVERSITIES AND DIVISIONS

It is important to acknowledge these spaces are not homogenous but are complex with internal diversities.<sup>21</sup> For example, the lack of women in the early mornings in the spaces in Oakleigh suggests traditional divisions of labour along gendered lines as the wives accompanying the older men typically shop while the men frequent the cafés. Equivalent public spaces for socializing weren’t seen for older women. Meanwhile, an interview with a new Greek migrant brings attention to the fact that political and ideological lines drawn in the home country are sometimes extended to the new context.

*“And I think Oakleigh is more... a community for the older people...they haven’t taken the steps to include... people like me. ...in the community. Which is one thing I don’t like about it. One thing I hate about the Greek community at Oakleigh is that they separate the people who came in the 1980s and the people who migrated in recent years, like 2013, 2012, 2015.” S*

In Box Hill, there is resentment expressed at the demographic changes to the suburb by the earlier mainly Anglo-Celtic migrants who had settled there. The now defunct “Spot the Aussie” social media page was a platform that emerged around this issue.<sup>22</sup> Meanwhile in interviews, these sentiments emerge as a value-laden language that’s charged with the fear of confrontation of an ‘other’ that needs to be ‘controlled’ and ‘managed.’<sup>23</sup>

## CONCLUSION

Both Oakleigh and Box Hill are considered transition suburbs where the relationship to public transport hubs has been vital in precipitating settlement along ethnocultural lines. As migrants settled and gained sufficient social capital to influence precinct development, hubs transformed into key sites of immigration that went beyond merely mobility needs of migrants. They support transnational spatial practices that are sympathetic to the intersectional needs of new migrants, alongside inter-generational projections of multicultural identity. The need to re-think the design, planning and management of transport hubs that support informal social and commercial networks to form within

transport precincts becomes a critical next step to diversify Australian public space use and support a more inclusive Australian society.

### **ACKNOWLEDGMENTS**

We would like to thank Athanasios Tsakonas, Kristen Wang, Dhanika Kumaheri and Tanzil Shafique for their research assistance.

## NOTES

<sup>1</sup> Fieldwork in Oakleigh and Box Hill was conducted in 2021 and was approached based on the conceptual framework of rhythm analysis, as proposed by Henri Lefebvre, that interrelated time, space and the social body: Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (New York: Continuum, 2004). Multimodal rhythms associated with the occupation of space were recorded in selected spots across a 12-hour period in shifts. Specific attention was paid to who or what produced the rhythms, and under what circumstances, with the interplay between bodies and the built environment noted in those moments. Ethnographic methods, participant and non-participant were used to gather experiential data that supplemented the identified rhythms. The data collected spanned multiple media from sketches, photos and reflexive text, to sound and video recordings. For detailed discussion of methodology see, Kelum Palipane, "Multimodal Mapping: A Methodological Framework," *The Journal of Architecture* 24, no. 1 (2019): 91-113.

<sup>2</sup> Semi-structured interviews were conducted with six research participants each from Oakleigh and Box Hill in 2021.

<sup>3</sup> Peter Calthorpe, *The Next American Metropolis: Ecology, Community, and the American Dream* (New York: Princeton architectural press, 1993).

<sup>4</sup> Huê-Tâm Jamme et al. "A Twenty-five-year Biography of the TOD Concept: From Design to Policy, Planning, and Implementation," *Journal of Planning Education and Research* 39, no.4 (2019): 409-428

<sup>5</sup> Robert Cervero and Kara Kockelman, "Travel Demand and the 3Ds: Density, Diversity, and Design." *Transportation research part D: Transport and environment* 2, no.3 (1997): 199-219

<sup>6</sup> John Black et al. "Planning and Design Elements for Transit Oriented Developments/Smart Cities: Examples of Cultural Borrowings," *Procedia Engineering* 142 (2016): 2-9.

<sup>7</sup> Iderlina Mateo-Babiano, "How is Urbanism Socially Constructed? An Examination of Japan's Post Stations." *Journal of Urban Design* 23, no.3 (2018): 395-413.

<sup>8</sup> Black, et al. "Planning and Design Elements for Transit Oriented Developments/Smart Cities."

<sup>9</sup> Andrew Heisz and Grant Schellenberg, "Public Transit Use Amongst Immigrants," *The Canadian Journal of Urban Research* 13, no.1 (2004):170-191.

<sup>10</sup> Natascha Klocker et al. "Ethnically Diverse Transport Behaviours: An Australian Perspective," *Geographical Research* 53, no. 4 (2015): 393-405.

<sup>11</sup> Charles Nilsen, "A Village for Walking Into The Future," accessed July 30, 2022, [https://www.ictct.net/wp-content/uploads/23-Hague-2010/ictct\\_document\\_nr\\_678.pdf](https://www.ictct.net/wp-content/uploads/23-Hague-2010/ictct_document_nr_678.pdf)

<sup>12</sup> Access sound file here: [https://www.dropbox.com/s/q8076fx0n6t6pxq/Cafe%20music\\_Oakleigh.mp3?dl=0](https://www.dropbox.com/s/q8076fx0n6t6pxq/Cafe%20music_Oakleigh.mp3?dl=0)

<sup>13</sup> Access sound file here:

[https://www.dropbox.com/s/20l21gm3ugyvy53/Mobile%20musicians%20\\_Oakleigh.mp3?dl=0](https://www.dropbox.com/s/20l21gm3ugyvy53/Mobile%20musicians%20_Oakleigh.mp3?dl=0)

<sup>14</sup> ".idcommunity: demographic resources," accessed August 15 2022,

<https://profile.id.com.au/whitehorse/ancestry?WebID=130>

<sup>15</sup> See 'Mr. Box Hill' in: Julie Szego, *Melbourne's New East: What Change In One Australian Chinese Community Says About The Nation's Future*, accessed 28 July 2022, [https://scanloninstitute.org.au/sites/default/files/2020-12/Scanlon%20Institute\\_Narrative%206\\_v15.pdf](https://scanloninstitute.org.au/sites/default/files/2020-12/Scanlon%20Institute_Narrative%206_v15.pdf)

<sup>16</sup> Eileen Sim, et.al. "The impact of transit-oriented development (TOD) on residential property prices: the case of Box Hill, Melbourne," *Pacific Rim Property Research Journal* 21, no. 3 (2015): 199-214.

<sup>17</sup> Iderlina Mateo-Babiano and Sébastien Darchen, "Vertical mixed-use communities, a compact city model?" 6th State of Australian Cities Conference, 26-29 November 2013, Sydney, Australia, 2013.

<sup>18</sup> Nisha Fernando goes on to underline the importance of semi-fixed elements (such as banners, posters, display stands, tables) as something that can be addressed through planning practices. Nisha A. Fernando, "Learning from an Urban Enclave: Lessons for Flexibility in a Multicultural City" (paper presented at the 11th International Planning History Conference, Barcelona, Spain, July 14-17, 2004).

<sup>19</sup> Jae Hyeung Kang et al. "Affective and Normative Motives to Work Overtime in Asian Organizations: Four Cultural Orientations from Confucian Ethics," *Journal of Business Ethics* 140, no. 1 (2017): 115-130.

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<sup>20</sup> Margaret Crawford, "Blurring the boundaries: public space and private life," in *Public Space Reader* (Routledge, 2021) 26-33.

<sup>21</sup> Katarina M. Brown, "Sharing public space across difference: attunement and the contested burdens of choreographing encounter," *Social & Cultural Geography* 13, no.7 (2012): 801-820.

<sup>22</sup> "This suburb's been called mini-Shanghai but there's more to the story" accessed August 20, 2022, <https://www.abc.net.au/news/2019-10-28/australia-talks-do-immigrants-try-hard-enough-to-fit-in/11611854>

<sup>23</sup> Changes in Box Hill were described by research participants in terms such as 'ugly,' 'overcrowded,' 'uncomfortable' and 'dirty.'

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# POIPOIA TE KĀKANO, KIA PUĀWAI: ENABLING MĀORI COMMUNITY RESEARCHERS TO EXAMINE THE MEANING OF HOME

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## INTRODUCTION

*Poipoia te kākano, kia puawai*, a Māori (Indigenous peoples of Aotearoa New Zealand) traditional saying that translates as ‘Nurture the seed and it will blossom’ is the name of our community-based housing research programme. Our goal in this paper is to draw you alongside us as we describe this programme of Māori community-based research and share some of the stories and learnings gathered over the past two years. We begin with a brief discussion of the current housing crisis in Aotearoa and its impact on Māori whānau (kinship collectives). Kaupapa Māori (by, with and for Māori) research inquiry is then described, followed by the research projects and a small taste of what we are finding out about houses, homes and being responsible guardians of our home places.

Māori are experiencing a housing crisis; the rate of Māori home ownership has been falling since the 1980s due to the end of government sponsored mortgages and the ability to capitalise their family benefit (the small, weekly grant families received for each dependent child) as a deposit for a home. With the cost of housing – to own or to rent – increasing dramatically in the past 3-5 years Māori are increasingly experiencing housing insecurity and homelessness.<sup>1</sup> The opportunity to fund local housing research to support local community decision-making coincided with growing concerns about Māori housing and rising interest in Papakāinga (i.e., clusters of houses on Māori multiple-owned land).<sup>2</sup>

Kaupapa Māori research seemed most suitable for this task.<sup>3</sup> Kaupapa Māori researchers are committed to collaboration, building capacity and societal transformation through decolonisation and the return of Māori land.<sup>4</sup> During a six month design phase in the second half of 2019, Fiona and Tepora invited community researchers to develop research project ideas for a funding application to the Kāinga Tahī, Kāinga Rua funding stream of the Building Better Homes, Towns and Cities National Science Challenge. This was guided by the aim of Vision Mātauranga “to unlock the innovation potential of Māori knowledge, resources and people.”<sup>5</sup> Funding was secured for the four research projects.

**POIPOIA TE KĀKANO, KIA PUĀWAI**

Community researchers were asked to design a housing research project that would benefit their community, with at least two community research groups expanding this inquiry into their community to test ideas and get their permissions for the research to take place. Each section begins with a pepeha, an introduction that connects the researchers to people and places important to them.

**Papa Kāinga – Ko au ki te whenua, ki te whenua ko au**

Ko Kahurānaki te maunga

Ko Ngaruroro te awa

Ko Takitimu te waka

Ko Mihiroa te Marae

Ko Waipuka te whenua

Until recently, the people of Ngāti Mihiroa have been disconnected from their land at Waipuka, Hawke's Bay, because in the 1950s it was leased to Pākehā (white) farmers. Now that lease has ended and they are returning home, with 12 new whānau homes planned among the existing 32 batches. Co-ordinated by Beverly Te Huia, Rangatahi (young people) from Ngāti Mihiroa initially designed a survey to collect people's views about the move to Waipuka. We found that people were thinking a little bit about housing and a lot about the whenua (land), kaitiakitanga (guardianship), kawa and tikanga (protocols, customs, rules for living together), and whanaungatanga (kinship relations). At the completion of the survey at the 2019 Ngāti Mihiroa AGM, the Rangatahi received the blessing of the hapū (subtribe) to carry on doing research.<sup>6</sup>

The approval of research funding just prior to the 2020 Covid-19 lockdown in Aotearoa New Zealand was challenging. The Rangatahi shifted their attention from housing to environmental concerns and took the opportunity of being able to move around in their community to learn about the re-seeding of paua (abalone) beds. Their stocktake of the beds was the first in 12 years.<sup>7</sup> When the COVID-19 lockdown lifted in May 2020 they continued to pursue their environmental interests, including advocating to the regional council for sand dune protections, and taking part in a wānanga (forum) to support the development of kaitiakitanga training for young people. At the start of 2022 they rekindled their interest in housing on the papakāinga.

Since the research began, the regional council has revoked and then reinstated the resource consent to build 12 whānau homes on Waipuka Papakāinga. The rangatahi meet at the end of April 2022 and again in May to refocus their research on the papakāinga build, to reinvigorate the dreams of whānau by having discussions with them about their house designs for Waipuka Papakāinga. A list of questions was developed to help shape the interviews and each of the 12 Rangatahi was charged with taking the lead in asking the questions of their whānau. Two interviews with three whānau groups have been completed to date. The Reo whānau have approximately 26 members (extended whānau) who their house will cater for at different times. The house will be the home for one family and the matriarch during Summer-Raumati. The Te Huia home will be shared between four whānau. They have not yet agreed to a plan but like the idea of 'Marae styles' and common areas. This house will be home to the elderly parents once finished and will require a private area for them. Being part of *Poipoia te kākano, ki a puāwai* has allowed the rangatahi to take a lead in informing what Ngāti Mihiroa does next to support whānau to return to their home-place and be housed well.





Figure 1. Rangatahi at the beach

### Te Kinakina Wetlands Project

Te Whānau-a-Te-Ērutu – Mai i Kopiritotoro ki Waiorore

Ko Te Kaha te marae

Ko Tūkaki te Whare whakairo

Ko Tamahae te tekoteko kei runga

Ko Te Rangiwhakapūnea te wharekai

Ko Karipori te wharetāpere

Ko Mataruia te puna wai

Ko Te Kākā te urupā

Ko Kākānui te maunga<sup>8</sup>

On the 1 July 1967, two months after Kathleen's mother Mateohorere Tukaki Morrison passed, Te Kaha 2C (Te Kinakina) land block came under Crown management, with the Department of Māori Affairs signing a 42-year lease agreement with a 'local' farmer. By the time Kathleen and her siblings succeeded to their Mother's land shares, the ink on the contract was dry. Te Kinakina, or Snake Gully as it is also known, is just over 24 hectares. Crown documents revealed there were 14 acres of 'swamp land' that the local farmer was directed to drain and fence off providing extra pasture for his dairy herd. The valley boasts remnants of native bush, including 200–300-year-old Pohutakawa and Puriri. Pakuranui stream meanders, snake-like through the valley then out to ocean.

It was a long, hard fought battle before Kathleen, and her family were able to gain safe and secure access to Te Kinakina. It started with Kathleen signing a 3-year lease agreement with Te Puni Kokiri (1 July 2009); was punctuated with the issuing of trespass orders; and sealed with a successful Hapū Partition application granted by the Māori Land Court in November 2015. Te Kinakina is now *he papakāinga*, a place to rest, a place to work, and a space to fulfil the dream of restoring the wetlands so it can once more be a home for ngā tamariki o Tane Māhuta me ngā tamariki o Tangaroa (the 'others', our non-human relations).<sup>9</sup> The research project is documenting this regeneration.

The design of the wetlands landscape includes plants for weaving, and trees for carving, the raw materials for future weavers and carvers. Three Pā Harakeke (flax plantations) will be planted, the first to provide flax for piupiu and korowai (skirts, cloaks); the second, flax for whāriki (mats); and the third, flax for kete (baskets). Harakeke cultivars will be locally sourced because they whakapapa (link through genealogy) to Te Whanau-a-Apanui. Other plants grown for weavers and artists include tikouka, kuta, and pingao. Totara, grown for carving, will be planted on higher ground in the wetland area - ten trees each year - with the first trees ready to harvest in 2102.

Funding from Billion Trees initiative has alleviated some of the Native plants and tree costs, as too the gifting of flax cultivars from local weavers. By growing these plants, the art, the tikanga (protocol), and the skills associated with weaving and carving are nurtured and respected, and carvers and weavers will become mātauranga conduits, transmitting knowledge and skills through to the next generations.

The preparation of the land has involved excavators and arborists - excavators to remove noxious weeds and willows growing in the lowlands and along the waterways, while arborists felled pine and gum trees. Regenerative seeds were planted in the spring of 2020 to rejuvenate the soil after many years of dairy farming and maize cropping. Gordon Collier discussed with Kathleen the management of water levels before he embarked on the creation of three large ponds, one of them 100m long, the second 2m deep, and the third with an island.



*Figure 2. After the rain, looking out to sea, December 15, 2021*

The community and research team arrived at the start of May 2021 to celebrate Te Kinakina restoration project, and to take part in a blessing for the planting of the first Pa Harakeke, cultivars gifted by Whaea Mate Lawson (who sadly passed away less than 10 days later). Since this auspicious occasion, Te Kinakina wetlands has been subject to the extremities of climate change – Pakuranui has become a raging torrent of water gouging, relentlessly, into Papatūānuku (Earth Mother). This stark experience of climate change has pushed us to rethink what Te Kinakina wetlands will look like, and

how it may become the spearhead of our climate resilience action plan and a model for other whānau living in close proximity to Tangaroa (deity of the sea).

As the vision of the wetlands emerges from the landscape, our attention is turning to climate resilience, to Kāinga and Kai (home and food). Drawing upon what we have seen, heard, and felt about the need to listen to the land we are turning to the past for inspiration and guidance for the future – for example, where embedded into Papatūānuku, following and utilizing her contours to manage wind, rain, and sun. Perhaps when realized, these homes will enable others to visit, rest or stay, and to be nurtured by a regenerating environment.

Tihei Mauri Ora.

### **Mahue Pera Ahu Whenua Trust**

Ko Kahuranaki te maunga

Ko Kahuranaki te marae

Ko Poukawa te waiū

Ko Takitimu te waka

Ko Ngāti Kahungunu te iwi

Ko Ngai Te Rangi Koianake te hapū

Ko Te Whatuiapiti te rangatira

Ko Pukeaute te whenua

The Mahue Pera Ahu Whenua Trust (the Trust) was established in 1997, with the primary goal of the re-settling whānau on their ancestral land. After many years of toil, this goal was realized in April 2022 with the official opening of the Pukeaute papakāinga at Te Hauke, Hawkes Bay. A two-year case study looking at the development of the papakāinga was initiated by the whānau. In the second year, the emphasis shifted to collaborative storytelling with three whānau who had been housed on the papakāinga. They were each interviewed and were then supported to write their own stories about their journey home to Pukeaute.

Their involvement in the research and the papakāinga development has contributed to whānau transformation in three ways. Firstly, through improved communication the individual voices of the whānau have been heard and appreciated and their collective agenda reinforced with lived experience. Secondly, a deeper understanding of individual needs, and individual understanding of the needs of the collective, has developed. This knowledge has helped to improve critical decision-making processes among whānau on the papakāinga. Finally, the opportunity to better understand their previous dire housing conditions (in relationship to whānau health and wellbeing) now exists in ways as never before. Armed with ‘hard’ research evidence, and proposed solutions, the whānau have been empowered to make informed change/s to better themselves.

The Pukeaute research is an intergenerational story about whānau tino rangatiratanga (self-determination). At its heart is the reclamation of whenua Māori and the restoration of mana whenua (those with whakapapa (genealogical) ties to the land) to whānau. The story below highlights the living conditions for one whānau, prior to their move to the papakāinga and changes that have ensued after.



Figure 3. The infrastructure is completed and building sites await construction

*We decided that Bridge Pa, where we were living before moving to the papakāinga, would have to do until we found somewhere of our own. We hired a cabin to put on the property, as there were already 12 whānau living in the three-bedroom home. The four of us – Phillip, Taraiwa, Te Aiokura and I – made do with our 4.8m x 2.4m cabin. I never imagined life would be like this for our small whānau. Heoi anō (however), we were grateful that we had a roof over our heads. Four months later we received the most precious news that I was hapū (pregnant), something that I had been waiting a long time for, and I was due in February 2022. This was another blessing, but I was not prepared for a third child in terms of our living situation.*

*We've been living on the papakāinga now for four months. We have a three-bedroom, one garage, brand new home that we rent from the Trust. I can honestly say that I feel like I'm living my best life here at the papakāinga, with my own babies being free, having their own space with our bigger whānau close by. I'm so happy we're getting to raise them in a loving and safe environment and most of all we're letting them experience life here on the papakāinga. In the past four months, we've had so many different experiences. We've been building relationships with others, whānau that we have never met before even though we share the same whakapapa. We've been running wānanga (meetings) [about developing papakāinga] for as few as 10 people to as many as 200. We've been getting involved in the little farm life we have here; getting the kids to feed and look after the chickens and check for eggs and take care of the sheep. It's great for them to be able to watch Dad doing mahi (work) on the tractor, feeding the people, cutting and splitting wood, and setting up the fire pit for the hangi (earth oven). And it's awesome for them to get to watch Mum doing her thing around hosting, organizing, karanga (welcome call), diving, and coordinating kaupapa (events).*

*Whānau at Pukeaute are home – “there is a sense of restfulness and peace. It feels like home, it is home, we're home” – said Mum Georgina.*

### Te Wairoa

Ko Te Whakapunake oTe Matau a Maui Tikitiki a Taranga te maunga

Ko Te Wairoa Hopupu Honengenenge Matangirau te awa

Ko Te Waihirere te patuwatawata

Ko Takitimu te Wharetipuna

Ko Ngāti Kahungunu o Te Wairoa nga hapū

Tihei Kahungunutanga

Te Wairoa is a small town located at the mouth of the Wairoa River, in the north of Hawke's Bay. Morehu asked locals what housing research they would like to see conducted as part of *Poipoia te kākano, kia puāwai*. The outcome of his consultation was a project involving the collection of narratives about Mātauranga Māori (Māori knowledge) and Ahi Kaa, what it means to have remained at home and what it means to return home. At least three learnings emerged from conducting this research. The first is the reciprocity of sharing stories – just as those Morehu visited with told him about their lives, he has also shared and recorded the stories of his parents. Second, research is more than a storytelling moment; it is also about visiting in-between, touching base, sharing the paepae (orator's bench) at tangi (funerals), and being there for people. Third, when something is not right with a storyteller, then a researcher should act, leveraging their connections and their connections' connections to see what help can be given. It is with these lessons in mind, that Nanny Cath's kōrero (talk) is described next by Morehu.

I have spent many hours talking to Nanny Cathy in te reo Māori (the Māori language). Nanny Cath is almost 90 years old and lives with her son on their papakāinga, in the homestead she built with her husband Bill in 1960.

*Bill and I built this home for 16 pounds. It had a roof and a concrete floor with a fireplace, we were grateful because it kept us warm and safe. We didn't have a fridge until the 1970s, I used to take our kids down to the Mohaka [River] so they could wash and while we were there I would wash the laundry. Dad and Willy would carry the water up 3 times a day; we were grateful because we had fresh water.*

The businesses they established on the land enabled Cath and Bill to travel the world extensively and provide an education for their children and now grandchildren. Bill passed away early 2000 and I can tell that Nanny Cath misses him even now, so many years later. Many support organizations and whānau members have tried to encourage her to go to a rest home, but she will not hear of it.

*So many of my whanau put their parents in homes thinking it's the best thing, they don't know. I would die in a rest home... When I was a child maybe 10 I looked after my nanny in her home, mud floor, open fire, no power, she was almost 100. There was no thought of sending her away, we needed her, and she settled us, her calmness.*

We worked through a housing conditions survey and good homes questionnaire, to check out how well the homestead is holding up. A few years ago, Nanny Cath was interviewed by a support organization about upgrading her home: insulation, a new ceiling, carpet, handrails in toilet and shower, new kitchen, and the renovation of her wash house. She heard nothing until the beginning of this year and then it was all go, with plumbers, painters, carpenters, and electricians giving the homestead a complete overhaul. Afterwards she said to me, "*Tama, I am so happy with what has been done to my home. Bill would be thrilled; tears fill my eyes and love fills my heart.*"

Nanny Cath had her birthday not long ago and of course I went and joined in the festivities. I managed to spend some more time with her talking about her life and her home.

*I do think that we spend too much time acquiring possessions and not enough time spending time with the people we love. That's why days like today are so important. I look around and see so many of my family missing passed on; it makes me realize how old I am. I get lonely sometimes sitting in my house but then I look around and remember I am surrounded by memories of my life, pictures of my family, things that Bill gave me, trips abroad. I have lived a full life so I can't complain. I am grateful for the many blessings that have been bestowed upon me and my family.*

Quality of life for older Māori is inter-generational and built over people's life course.<sup>10</sup> Nanny Cath's story about living with her own nanny when she was young instilled in her Māori values about how

the elderly should be cared for and be allowed to remain at home. Her home, in turn, was an artefact filled with memories of the man she had married aged 19 years and the house and home they had built together and raised their children in. Its rejuvenation delighted her and lifted her spirits. On her birthday the values she had to pass on were about treasuring people, as it's the people who make a house a home rather than the things we accumulate.

## CONCLUSION

As a programme of research, *Poipoia te kākano, kia puāwai* has many threads because it was important to us that those who we invited to join us in this research space would do something they thought would be useful, interesting, and thought-provoking for them, their communities and for others if they decided to share some of the goodness from their research projects. We could not talk Mana Motuhake – self-determination – and then demand that certain research topics we were interested in be examined or that what was found be handed over to us to repurpose as reports and peer reviewed articles. Instead, we have experienced the joy of travelling together and speaking as a team about what we are up to and thinking about dissemination in many different forms. We have visited for coffee, lunch, and had sleepovers so we can walk the land and be in each other's company. Importantly, the community researchers have thought up new research projects and applied to other funders for support. These applications are related to housing, climate change, kaitiakitanga, Māori maternities, doing post-graduate study, and supporting the intergenerational transmission of knowledge. Standing back and looking across the diversity of activity, the common thread is the researchers' growing appreciation of and love for research. It is no longer an 'ivory tower' activity that has little meaning in their day-to-day lives and aspirations. Rather, it is a tool that they have been able to put to service to support them in achieving their aspirations for the land, for housing and for the re-establishment and strengthening of 'home'.



## NOTES

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# REVISITING THE NOTION OF LANDSCAPE IN LANDSCAPE ARCHITECTURE

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## INTRODUCTION

This paper examines how ideas on nature and landscape conditioned by urban life and urbanity have created a distance to the rural landscape as an integrated part of the urban realm and urban life.

This distance is historically reproduced in Landscape Architecture through a dominant emphasis on landscape as a controllable and passive object. The distance is now questioned by climate changes, and the biodiversity crisis, which questions the dichotomies, urban >< rural, nature >< culture, active><passive, and asks how to work architecturally with nature and landscape as active agents - in a wider sense how the discipline is going to (re-)land on Earth, as Bruno Latour suggest.

To discuss these questions other notions of sensing and perceiving nature are examined in the following. The theoretical discussion is set by Emanuele Coccias idea on the image as the sensible experience<sup>1</sup>, and Hartmut Rosas exploration on the concept of resonance.<sup>2</sup> To put the discussion into perspective, landscape architectural projects conditioned by embedded sensible, form generating and biodiversity qualities in the organic materials are discussed as an example of how the design process may be guided by other ideas and notions on nature than the ones traditionally seen in many Danish landscape architectural projects.

The aim is to explore possible ways for the landscape architectural discipline to reconsider its historical notions of landscape as a passive aesthetic category by incorporating and translating questions on biodiversity and material agency architecturally.

## THE STATE OF CRISIS

Recent literature<sup>3</sup> on topics related to nature assures you that something rather dramatic is going on with nature, and with the ideas on nature with which we have organized ourselves on the planet. The current discussion contributes to a long-standing discourse on how notions of nature have legitimized human interaction with the non-human world, and how humans have contributed to the current biodiversity and the climate crisis. Common to the discourse is that foundational notions on nature are questioned by the climate crisis, the biodiversity crisis, and that an epistemological crisis arises because of the other crisis as argued among others by, B. Latour, I. Babou, and C. Bonneuil and J.B. Frezzos.<sup>4</sup>

Even though the discourse is mainly conducted within disciplines other than Landscape Architecture, the discourse is extremely relevant for Landscape Architecture as this profession is engaged with the

design of our surroundings as landscapes, and as natural non-human materials - plants and soil - are basic construction materials in these landscape designs.

Historically the Landscape Architecture discipline has to a large degree detached itself from the rural productive landscape, and primarily focused on landscape as disinterested, shapely, landscapes conditioned by urban needs and approaches. This development was recently critiqued in a book review on contemporary Danish landscape architecture,

“Many of the projects have a lot of form but not much content. (...) Is it not, that there often is too much design and too little landscape? (...) The big question is whether these installations really exist for nature or for the architects themselves?”<sup>5</sup>

In short, too much abstracted form, too little substance and too much staging of the architects themselves on the behalf of the non-human and the landscapes.

The crises are depressing but they may also be seen as a window of opportunity for Landscape Architecture to reconsider its role, epistemological background, and its categorizations, i.e., to reconsider its notion of nature in a broader sense, and how an understanding of nature as an active form generating agent may be translated, integrated, and conceptualized and represented architecturally.

## THE MOUNTAIN CLIMB

Joachim Ritter<sup>6</sup> dates the emergence of landscape as an aesthetic category with the transition from the Middle Ages to the Renaissance, i. e., with the emergence of the modern society, modern man and the modern sciences. Based on the writings of Petrarch and his climb of Mount Ventoux in Southern France in the first half of the 13-century, Ritter unfolds the emerging understanding of landscape as an aesthetic category and its cultural and artistic impact.

Petrarch's mountain climb is not a smoking gun; as he finally stands on the mountain and gaze at the rural valley beneath, he senses that the valley may be seen as an aesthetic spatial entity and admired as such in its own rights, but he also remembers that such admiration of nature is beyond the teaching of the church, and thus non-acceptable. Petrarch hurries down and decide to forget the disturbing aesthetic experience of the valley on the mountain. The story illuminates that a new way of seeing landscape took its beginning<sup>7</sup> at that time, which also impacted the relationship between man and nature - Petrarch was later by Jakob Burckhardt categorized as one of the first among the moderns.<sup>8</sup>

Ritter here touch upon the paradoxical notion of nature in the Christian tradition.<sup>9</sup> On the one hand nature is created by God and should thus be treated with respect. On the other hand, nature is given to the disposals of man. A hierarchy is thus established, above all is God, beneath God is man, who is promised eternal life due to his spirituality and devotion to God, and at the bottom the non-human and earthly. In this understanding man should strive towards the spiritual and the heavenly after-life; this creates a distance to nature.

Landscape as an aesthetic category and cultural construct is thus linked to the creation of modern society, and to the formation of modern man and the Self – the individualized subject. To admire its beauty presupposes distance and emancipation from the needs that previously linked man to nature,<sup>10</sup> landscape as an aesthetic category is the alienated and work-relieved nature,<sup>11</sup> and a reflection of our own imagination of nature,

“Nature transformed into landscape became a screen for projections of the interior lives of human beings. Landscape and the Self are dialectically interdependent, with each relating to the other as both precondition and result.”<sup>12</sup>

The notion of landscape as an aesthetic category is thus deeply rooted in the modernization processes and in our own interior lives and believes as human beings.

## STREAMS OF CONSCIOUSNESS

### Resonance

In his analysis of the modern society Hartmut Rosa<sup>13</sup> examines the modern worlds unspoken but imperative mantra and the embedded paradox: the world that we have made scientifically, technologically, economically, and politically controllable, turns out to elude us and withdraw - we can no longer understand and access it. The world becomes threatening and a monster to us, why we encounter it through a series of points of aggression. The aggressions do not stem from that which we cannot yet control, but from that which we have lost because we control and master it.

Rosa's critique is a reflection on the fundamental contradiction of modernity and its driving cultural force: the desire to make the world controllable. He argues that life is fulfilled in an interaction between that which is controllable and that which we cannot control but which nevertheless concerns and is important to us. But, a world that is fully known, in which everything has been planned and mastered, would be a dead world.

Rosa introduces the concept of “resonance”, arguing that to really encounter the world and achieve resonance with it requires us to be open to that which extends beyond our control. The outcome of this process cannot be predicted, and therefore moments of resonance are always connected with moments of uncontrollability; it is only in encountering the uncontrollable that we really experience the world – only then do we feel touched, moved, and alive, according to Rosa.

Four dimensions of controllability<sup>14</sup> are identified by Rosa,

1. to make something controllable means in the first place to make it *visible*
2. to make something controllable also means to make it *physically accessible or achievable*
3. the third-dimension concerns being able to *master* a part of the world or to bring it under control – for example by cartography.
4. the fourth-dimension concerns *instrumentalization*.

Rosa's diagnosis of modern life provides both a background analysis and it identifies the perhaps most fundamental challenge for us – to let go of our desire to control the world for us and again touch the world and feel alive.

His analysis is an in-dept sociological study with relevance for Landscape Architecture, but how to work with resonance in landscape architectural projects is left as an open question.

### The sensible image

For Emanuele Coccia there is a realm of existence that is neither that of the cogitating subject nor that of the material object, but that of the *sensible*, and the image is the sensible. Coccia's exploration of what he describes as the obscure sphere of existence in which both subject and object must participate for there to be perception of a perceptible world, is an eye-opening philosophical analysis of the “sensible” and the “image”.

According to Coccia “species or form” does not reside wholly in the mind of the thinking, perceiving subject. There is a “sensible image” or a likeness that exists as a nexus point between the perceiving (mental or spiritual) subject and the perceived (material) object. Such a structure, which entails a distinct though elusive space, is the medial space of the image, which is historically derailed by rationalist epistemology and its rigorous dualism.<sup>15</sup>

In validating his claim Coccia refers to pre-modern philosophers, among others Aristotle, and to the medieval notion of ‘intentional species’ – i.e., intelligible, or *sensible forms* that are ontological autonomous from both the raw materiality of the objects that they represent and the subject that perceives them. A notion, which also Rene Descartes addressed in his Optics from 1637, here quoted by Coccia, “those small images flitting through the air, called “intentional species”, which worry the imagination of Philosophers so much.”<sup>16</sup>

In Coccias definition, “The sensible is the Being of forms when they are outside, in exile from their proper place.”<sup>17</sup> He exemplifies this by referring to the mirror and the image – the reflection - as, “an autonomous image existing in a region of being beyond (or between) those of psychological subject and objective material extension. Indeed, that image in the mirror short-circuits this rigorously dualist opposition since it exists (albeit fleetingly and precariously) in a space other than those of mind and matter. (...) In the mirror, or better within the mirror our form, our selves, momentarily transform into something that does not know and does not live but remains perfectly sensible, or better is the sensible par excellence. (...) an other space between or beyond the I think and the I am is the” place of images.”<sup>18</sup>

By juggling elegantly with the terms and their meaning, the sensible as sensitive capacities and as common sense, Coccia rehabilitates aspects, and understandings that were forgotten or repressed by the modernization processes starting in the transition between the Middle Ages and the Renaissance. He argues for a rehabilitation of these dismissed aspects and understandings by the philosophical tradition; a dismissal that was the enabling condition for modern philosophy to develop, is an enabling condition for modern life to unfold, and hence for a modern notion of landscape to develop.

Coccias analysis may inspire us to understand the aesthetic experience and the image beyond the notion of nature developed and preconditioning the Modernization process and represented aesthetically in Landscape Architecture, even though his understanding of the sensible and the image differs from how we usually understand the terms within the architectural field. In Coccias understanding the image as a third kind of being that occurs between the subject and the object – between the perceived and the perceiver – but is neither of them but refers to both. In his understanding the image is ephemeral and something that might occur as a dematerialized sensing, and as such there is a resemblance to Rosa’s concept of resonance, both concepts recognize an autonomous agency in nature.

Is this then a way to land on Earth, Bruno,<sup>19</sup> to let go of some of the control and apply a more sensible and including approach to the agency of nature in Landscape Architecture? How could such a notion of nature give meaning in designing landscapes?

## COMING DOWN THE MOUNTAIN

Bjørn Ginman is a Landscape Architect and Project Director at Stig Lennart Andersson Office (SLA) in Copenhagen Denmark. Bjørn is born in the 1960ies and has work experience both from the period when the traditional notion of landscape as a passive controllable object dominated, and now where SLA is trying to find new ways to design more active and biodiverse landscapes. I interviewed<sup>20</sup> Bjørn in relation to this article.

In recent years the office has developed a new approach to nature,

“A nature that is 100 percent man-made, and which actively uses and utilizes the properties and qualities that are built into nature, in its design. These properties are ecosystem services, metabolism, photosynthesis, etc.”<sup>21</sup>

Applying this approach has impacted the office in several ways: from previously employing landscape architects the staff group now entails more than ten different professions,<sup>22</sup> which in itself initiated changes within the applied design methods and the approach to the natural materials and the aesthetics, “The aesthetics is disintegrating. That has been good for me, growing up with a landscape architect father, who represented a completely modernist approach with clear geometries and monocultures ad libitum, along with endless paved areas (...) and now, where the aesthetics are secondary in some sense, and the whole thing becomes a little more long-winded, if you can say it like that.”<sup>23</sup>

Along with these changes Bjørn describes, how he now works with the soil and water conditions as part of the form generating processes, meaning that the design process has transformed from being guided by a design concept to design as a process, in which the architect prepare the ground for the design to happen over time. To this end every project is overloaded with plants, the more plants, the better.

The ambition is to stimulate more life, resulting in an abundance of lushness, and biodiversity, and to initiate form generating processes by the materials. Some plants will disappear, others will survive, “In some projects we try to overtake the site with plants. Then we will come back in five years’ time and see what has happened.”<sup>24</sup>

As a follow up on their designs SLA monitor the biodiversity. To some clients a high biodiversity score has now become part of their image and branding. So far SLA have not conducted any systematic surveys on how the users perceive the projects, but according to Bjørn he receives a lot of positive response on the designs; especially the experience of being engulfed in the mass of plants and disappearing into another world is emphasized as something positive.

“(there is) a story from when we planted the courtyards. The construction workers had been working for a year putting up slabs and stuff, and then one day the trees were lifted in. One of the workers was really touched by it. Suddenly, they showed up one morning and they were in a forest (...) some of them shed a tear and were really affected by it.”<sup>25</sup>

A further implication of the new office approach is that the projects now depend differently on the maintenance, meaning that SLA in some cases have had to teach the maintenance staff for them to understand the different approach both to nature and to the design. “But we have also done projects where we cannot expect maintenance – that is bloody fun! Then you must think differently, much more informally, plant directly in mineral soil or sand, and other things. But it's really fun to work with, all classical landscape architectural ideals fall into the background, you could say, the formal aesthetics rules don't interest me so much anymore, now there has to be more process in it before it becomes really fun.”<sup>26</sup>

## **GAINING NEW FOOTHOLD**

The example from SLA illustrates a change in the way nature is perceived and landscapes constructed and designed. It seems possible to let go of, at least, some of the control we exercise as Landscape Architects, and we may contribute to find new ways to inhabit the Earth as shown here by SLA.

Ways that are sensible in both of Coccias understandings, regarding biodiversity and open towards multiple forms of image making. Projects that resonate with and are experienced as meaningful to both the architects and the users. The example given here from SLA is just one and it calls for further investigation and further development of how to represent and work with an active, form and experience generating natural world.

It can be argued that the approach applied by SLA is a rehabilitation of a gardening-oriented approach and skills, which previously was more common among Landscape Architects. But directing focus on the living materials and their design agency and growing processes, along with the emphasize on biodiversity, and the open attitude towards the user's sense, in both of Coccias understandings, of the design, suggests that new attitudes towards nature and landscape, aesthetics and design can gain foothold within the profession. But gardening skills are not enough.

Recall Cicero, saying that all you need is a library and a garden. Listen to and learn from the super-thinkers like Rosa and Coccia, from the history and practice of Landscape Architecture, and especially listen to and learn from the living materials themselves. Perhaps even the attitude towards the rural landscape in Landscape Architecture can and will change in the future.

## NOTES

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- <sup>2</sup> Hartmut Rosa, *Resonance. A Sociology of Our Relationship to the World* (Polity Press 2016/2019)
- <sup>3</sup> Eugene Thacker, *In the Dust of this Planet* (Horror of Philosophy vol 1, Zero Books 2010); Jedediah Purdy, *After Nature. A Politics for the Anthropocene* (Harvard University Press 2015); Anna Lowenhaupt Tsing, *The Mushroom at the End of the World - On the Possibility of Life in Capitalist Ruins* (Princeton University Press 2021)
- <sup>4</sup> Bruno Latour, *Down to Earth, Politics in the New Climatic Regime- Politics in the New Climatic Regime* (Polity Press 2018)
- Igor Babou, The Political Workshop of Nature. From Great Divides to Tangible Experience (Questions De Communication Volume 32, Issue 2, July 2017) 22 P., <https://www.cairn-int.info/Journal-Questions-De-Communication-2017-2-Page-7.htm>
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- <sup>5</sup> Gaute Brochmann, *Review of Ny Agenda 3. Edited by Annemarie Lund* (Arkitekten No.1 Feb. Chp. DK 2022)
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- <sup>7</sup> Denis Cosgrove, *Prospect, Perspective and the Evolution of the Landscape Idea* (Transaction of the Institute of British Geographers, Vol.10 nr. 1, 1985 pp.45-62, The Royal geographical Society UK 1984)
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- Kenneth Olwig, *Landscape, Nature and the Body Politic* (The University of Wisconsin Press 2002)
- <sup>8</sup> Ritter, p.7
- <sup>9</sup> Hans Fink, *Et mangfoldigt naturbegreb* (1993/2015) July 12, 2022 [https://www.byplanlab.dk/sites/default/files/Et\\_mangfoldigt\\_naturbegreb\\_Fink.pdf](https://www.byplanlab.dk/sites/default/files/Et_mangfoldigt_naturbegreb_Fink.pdf)
- <sup>10</sup> Rainer Piepmeyer, *Das Ende der ästhetischen Kategorie 'Landschaft'* (Westfälische Forschungen 30 1980) 39 p.
- <sup>11</sup> Wilhelm H. Riehl, *Das landschaftliche Auge* (Ders. (Hg.) Culturstudien aus drei Jahrhunderten. Stuttgart 1962) p. 57–79.
- <sup>12</sup> Jörg H. Gleiter, *Parnassus and Paradise, or the Anthropocene and the Reversal of a Mode of Consciousness* (Cloud-Cuckoo Land: International Journal of Architectural Theory no 35, 2016) July 12, 2022, [https://cloud-cuckoo.net/fileadmin/issues\\_en/issue\\_35/article\\_gleiter.pdf](https://cloud-cuckoo.net/fileadmin/issues_en/issue_35/article_gleiter.pdf)
- <sup>13</sup> Hartmut Rosa, *The uncontrollability of the World* (Polity Press 2020)
- <sup>14</sup> Rosa, *The uncontrollability*, p.15-18
- <sup>15</sup> Coccia, p. xiii
- <sup>16</sup> Coccia, p.6
- <sup>17</sup> Coccia, p.21
- <sup>18</sup> Coccia, p. 18-24
- <sup>19</sup> Latour (2018)
- <sup>20</sup> The interviews were conducted in July 2022 and recorded and transcribed.
- <sup>21</sup> SLA homepage June 15, 2022, <https://www.sla.dk/perspectives/city-nature-a-definition/>
- <sup>22</sup> This information comes from an enumeration of employee information on the SLA's website. June 15, 2022, <https://www.sla.dk/contact/>
- The team consisted in June 2022 of 53 Landscape Arch./1 Landscape Planner/ 6 Urban Designers/4 Urban Planners/1 Urban Landscape Engineer/41 Architects/3 Anthropologists/1 Cultural Geographer/3 Biologists/1 Light & Darkness Designer /14 others. Out of the 128 employees, seven describes themselves as plant specialists.
- <sup>23</sup> Transcribed from interview with Bjørn Ginman July 2022
- <sup>24</sup> Transcribed from interview with Bjørn Ginman July 2022
- <sup>25</sup> Transcribed from interview with Bjørn Ginman July 2022
- <sup>26</sup> Transcribed from interview with Bjørn Ginman July 2022



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# THE INFLUENCE AND IMPORTANCE OF SACRED PLACES IN COMMUNITY ACTIVITIES AND THE COEXISTENCE BETWEEN LOCALS AND THEIR ENVIRONMENT

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## INTRODUCTION

In Japan, people have long revered all things natural, such as thunder, rain, huge trees, and so on. The Japanese people saw both a good side and an awe-inspiring side to them. For example, rainfall was necessary for agriculture, but at the same time, there was always the fear of flooding. The Japanese people prayed to their gods for increased blessings and the prevention of disasters.<sup>1</sup> In rural areas, some of these prayers became annual seasonal events that followed the agricultural cycle. They held these events with their family and the community to pray for good health and a good harvest. And residents in rural have jointly managed local resources as inherited property from their ancestors for productive activities. All those have built social capital<sup>2</sup> among people<sup>3</sup>. However, in Japan, the introduction of new technologies that improved productivity during the period of rapid economic growth (1955-1972), drastically changed the way residents connect with nature, and the natural environment.<sup>4</sup> In recent years many of the old annual events which fostered a sense of community and a social capital among local residents have gone out of favour.

In this study, we examined the contemporary value of a sacred place that has been revered since ancient times. We interviewed rural residents in Kawazu village, and we analyzed the activities concerning the pond called Nuinoike and the water deity Benzaiten <sup>5</sup> in a case study. We also used some documents descriptions of the area.

This paper is related to studies examining community revitalization activities at shrines based on a number of findings on place attachment<sup>6</sup> and the activities of existing organizations in rural communities in Japan.<sup>7</sup> Most studies of activities at shrines have examined what people do there and the organizations involved in the activities.<sup>8</sup> This study is unique to focus on the fact that the local residents' faith in the deity Benzaiten had generated the Yusuikai <sup>9</sup> and a number of events.

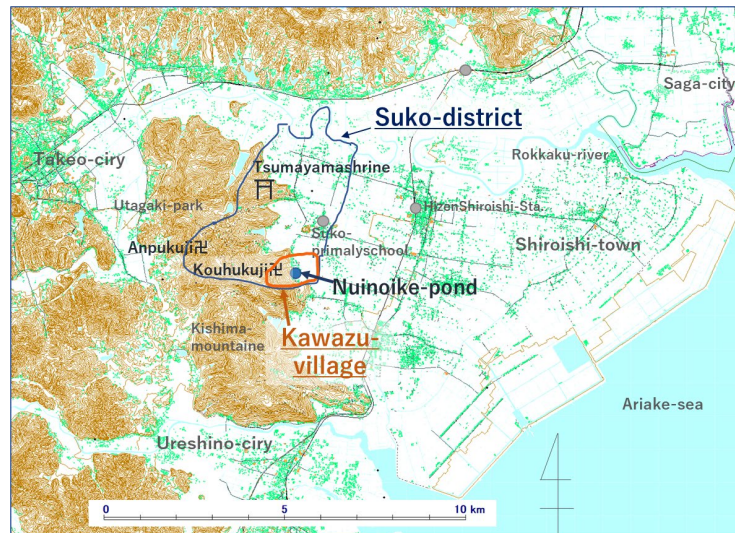


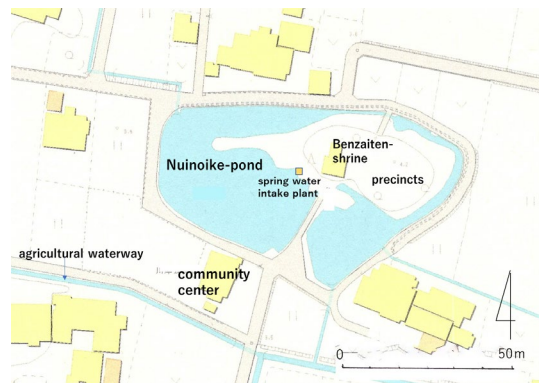
Figure1. Area map. Geospatial Information Authority of Japan Map with author's additions

### Overview of the Sacred Place

The Nuinoike pond is in Kawazu village Suko district Shiroishi-town, Saga Prefecture in the west of Kyusyu, the southern island of Japan. Benzaiten is enshrined in the middle of the Nuinoike where residents come to get spring water nearby. On the south side of the pond, there is a community center for the residents, where they eat, drink, and relax together after work and events. In the past, the water of the pond was used for irrigation and drinking. They washed vegetables and grain by the pond and gathered fish in the pond.

The maintenance and rituals of Benzaiten have long been the responsibility of the Kawazu villagers. Daily maintenance consists of cleaning and weeding the precincts. Concerning the pond, there is a special cleaning in midsummer to remove underwater grasses. The Benzaiten's rituals are performed four times a year. The spring ritual on the Day of the Snake<sup>10</sup> in April is for welcoming the gods from the mountains down to the rice paddies, the summer ritual in July 15th is to pray for a harvest, the autumn wind ritual in September<sup>11</sup> is to pray for the protection of crops from wind damage, and the winter ritual on the Day of Boar in December is to give thanks for the harvest for the gods and to send them back to the mountains.

In the village, there are many other collaborative efforts. The most typical is the cleaning of agricultural waterways in winter which is the off-season for farmers. Almost all the residents of the community work together on these tasks. After work, they share meals and drinks while talking about daily matters or problems in the community. These are the opportunity to communicate with people outside the family. They say, "It is important to talk about what to do next after working together."



*Figure 2. Detailed Map of the Case Study*

## How Yusuikai Activities Formed and Developed

### History of Agricultural Water Use

The birth of the Yusuikai whose activities have been taken place at the Benzaiten Shrine and the surrounding pond Nuinoike has been closely related to the history of water use for agriculture in the village.

The Nuinoike pond is located on the western edge of the vast plain where rice cultivation has flourished for centuries. However, there has been lacked water sources, so the local people regularly suffered from freshwater shortages, as there are few large rivers in the area. The old way of lifting irrigation from a low-lying moat with human power before agricultural modernization, water pumping was very tough physical labor.<sup>12</sup> In those days water supply was always so difficult to secure, sometimes resulting in conflicts during drought.

Things changed when electric underground water pumping was introduced in the Taisho period (1912-1926). That made farmers not only free from the hard labor of getting water but also the harvest amount of the area rose to the highest level in Japan.

Since the groundwater was used freely without planning, problems such as land subsidence gradually appeared. The spring water in Nuinoike dried up, exposing the bottom of the pond, in 1958. Nevertheless, the use of groundwater continued, and no one complained about the depletion or the subsidence of the land. This means that it would have been very difficult to secure water for irrigation other than groundwater.

Concerning Nuinoike, converting the bottom of the pond into a parking lot was occasionally proposed, but each time most locals disagreed, because they strongly believed that "If we fill up the Benzaiten's pond, we will receive some kind of punishment". So, the pond was kept in its dried-up state, and the existing activities related to Benzaiten, such as the rituals, cleanings, and maintenance continued. The elderly people enjoyed using the precincts as a field for ball sports.

To prevent groundwater pollution, the government built a dam to draw water to the plain and they limited the pumping of groundwater.<sup>13</sup> In April 2001, some part of the water supply was replaced by this new water source, and after that, clear, cold water began to accumulate in the pond. The spring was restored for the first time in 40 years. After a while, the water had filled the Nuinoike pond.

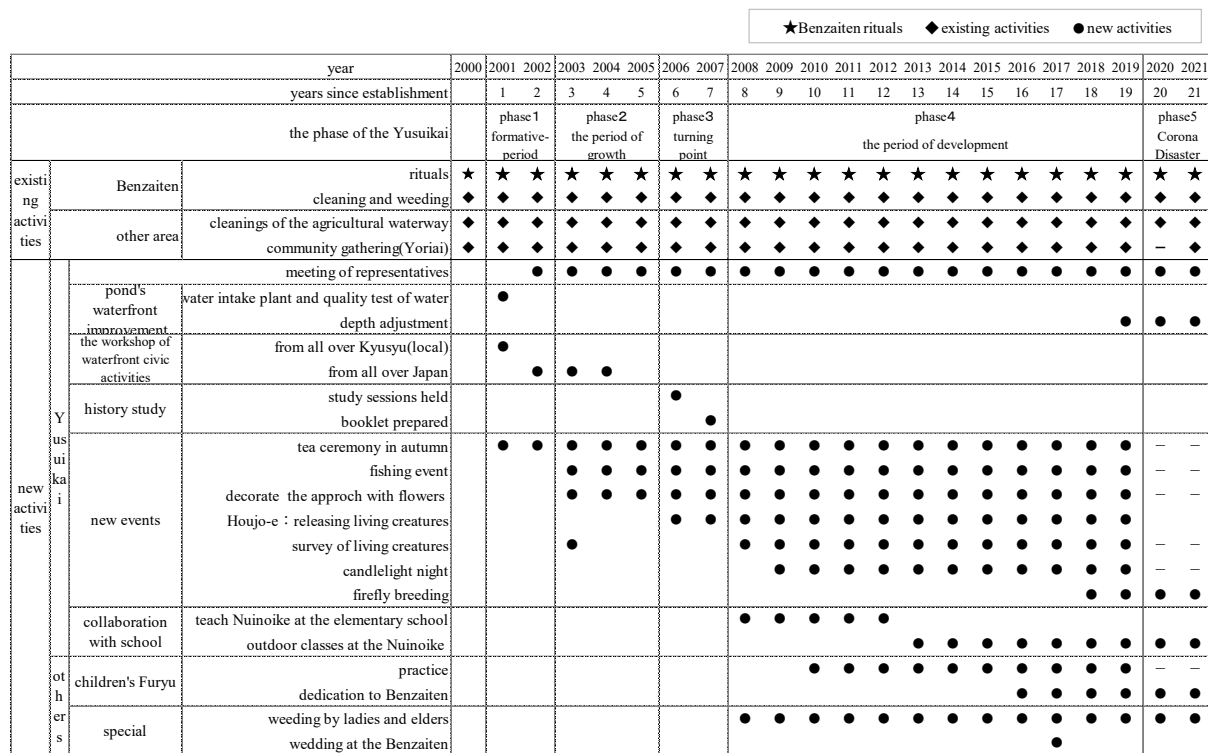


Figure3. Timeline of the activities

### Establishment of the Yusuikai: phase1

This scene brought back many fond memories among the elder residents. People in the community were inspired to do something together. So, at first, they constructed a water intake plant and tested the water quality. Next, they had a tea ceremony event using spring water.<sup>14</sup>

The locals started to think that it would be better to have a core organization to carry out these activities. So, in July 2002, the "Nuinoike Yusuikai" or "Pond Springwater Association" was established and formed by the residents.

### Start Events: phase2

They took part in a workshop, kind of like a competition, showcasing waterfront civic activities from all over Japan,<sup>15</sup> and the member of the Yusuikai presented their tea ceremony event and cleaning activities. Then they won first place. At the workshop, they received some advice on how to revitalize their activities. Their winning first place was published in a local newspaper. All members of the Yusuikai were so encouraged by this achievement.

The following year, several new events were planned and executed, such as a project to decorate the approach to Benzaiten with flowers, a fishing event, and an underwater creatures survey. These activities were highly evaluated by the government, and Yusuikai received many awards. In the five years after the establishment of the Yusuikai, their events attracted many people were based on advice from others.

### History Study: phase3

As the number of awards and visitors increased, they began to receive many questions about Nuinoike and Benzaiten. Though the members of the Yusuikai had heard brief outlines of those, but they did not know the details. So, they could not answer the questions they received.

Therefore, in 2006, they organized the “Nuinoike History Study Group”. They invited a local historian to the community center and began studying together. They understood the letters on the stone monuments in the area, which they had been unaware, even though they were familiar. They asked local elderlies about the history of the area and asked them to make a picture map of their memories. They inquired at archives keepers and collected documents. They recorded them and deepened their understanding. Through these activities, they learned that Nuinoike and Benzaiten have a long-standing history and rich folklore.

For example, the water of Anpukuji Temple on Mt. Kishima, which was mentioned in the Hizen Fudoki<sup>16</sup> of the Nara period (710-794), was revered as the sacred water of the goddess Kannon. At the end of Heian period (850years ago), the Lord Taira-no-Shigemori,<sup>17</sup> who presented the sacred water of Kannon to an ailing Takakura emperor, enshrined Benzaiten in the center of Nuinoike in gratitude.

The booklet entitled "Visit the Historical Heritage of the Kawazu District" was created. That was distributed to residents of the district. The booklet was well-received. The history study provided an opportunity for residents to take a fresh look at their hometown.

### More events: phase4

After understanding the meaning of the stone monuments of the Hojoike,<sup>18</sup> the locals realized that “We have to take care of the creatures in the water”. Then the event called “Hojo-e”, or “The ceremony of releasing living creatures into the pond”, which had long been discontinued, was revived in 2006. Next year, at the same time as the summer ritual, a candlelight night in which children line up handmade candles on the approach to Benzaiten and around the pond and light them, was established. There was also a concert and fireworks display. It has become a popular event for young people. Work began with the elementary school to teach the children about the history and folklore of the area. These events organized by the Yusuikai, which began after the historical study, were opportunities for children to learn about the history and lore of Nuinoike and Benzaiten, which has been passed down in the community.

Children's Fuyu,<sup>19</sup> a local original dance which had been stopped for a long time, was revived in 2015. In 2017, the locals reintroduced fireflies that were present in the area before the pond dried up, and now they enjoy firefly watching in the summer. These new events after the locals studied the history of the area, are being held to bring the area back to what it used to be.

### Recently: phase5

Thus, Nuinoike became known to many people. So, gradually the daily scene of the Nuinoike pond and Benzaiten precinct have changed. A lot of people come to draw soft and tasty spring water. On a sunny day, people sit on benches in the precinct eating lunch and chatting. Children play in the water after school. The pamphlets produced by the local governments feature Nuinoike, and some visitors post photos on social networking sites.

After the Corona Disaster, since the spring of 2020, it made people impossible to come together at one time. So, residents have been cancelled all events of Yusuikai and all their existing activities, except rituals of the Benzaiten. However, people come to the pond to draw spring water as ever. They enjoy the beautiful scenery, take pictures, and post them on social networking sites a lot more than before. The pond become a place where there is always someone there. Even now, they would keep the pond

clean and weeded to make the visitors feel comfortable and spend a pleasant time there. The Nuinoike pond and Benzaiten precinct have become a place of recreation and relaxation for the community.

## DISCUSSION

To understand about the characteristics of local activities, we have created a circular chart (Figure4) which shows the times and the locations of activities in Kawazu village when they are held and where they are take place. It is represented by concentric circles showing the Nuinoike and Kawazu, with Benzaiten in the center. The circle is divided into 12 months. We plotted a symbol for each activity, corresponding to the location and the month in which the activity took place. Figure of During Dried up shows that existing community activities take place throughout the year. And then we have added the makers of new events conducted by the Yusuikai to During Dried up. And similarly, Yusuikai's activities, variety of new events take place throughout the year.

And, to analyze the characteristic of development of the Yushukai activities, we have created a chart showing which activities took place in which years.

These figures indicate that existing activities afterwards food and drink were shared, such as rituals, cleanups of Benzaiten and agricultural waterway remain unchanged. And some of Yusuikai's activities are held in concern with Benzaiten's rituals. The candlelight is conducted with the summer ritual at the same time, others are held on a month when no ritual is performed.

For the locals those were also good communication opportunities. These events have been held even when the village was in an inactive state, the pond was dry or the Corona Disaster. In other words, in this way, communication opportunities were preserved at any time.

In particular, during the Corona disaster all meetings and gatherings were canceled but local people have never missed a single ritual at Benzaiten. They say this is because "we need to ask Benzaiten to dispersal of the Corona disease.



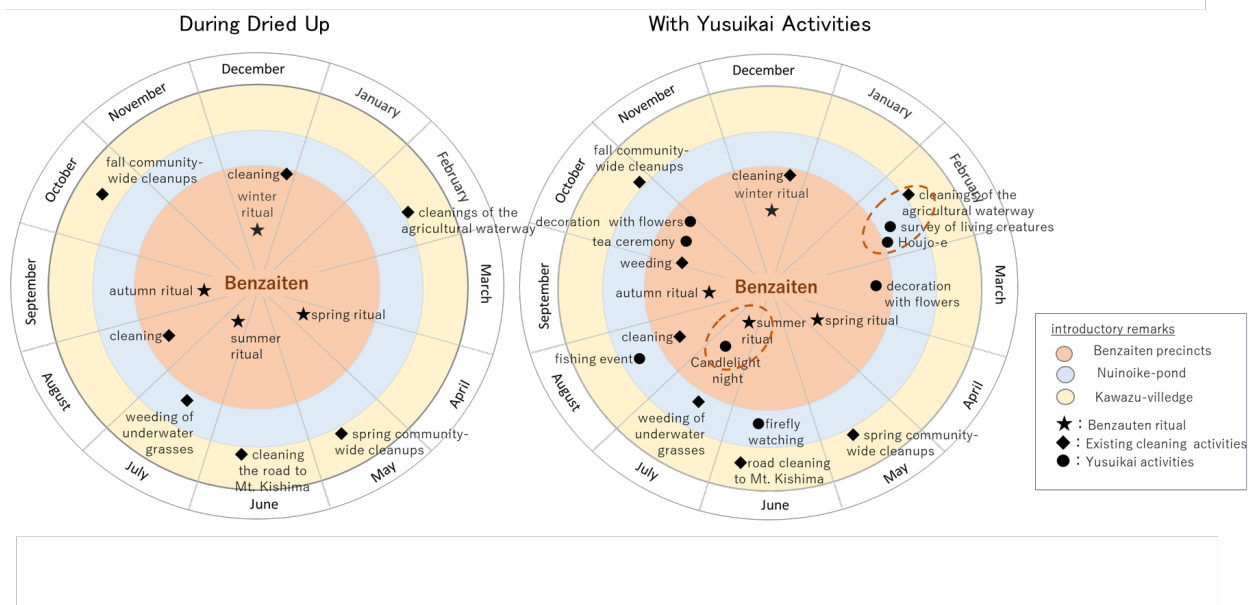


Figure4. Activities on the circular chart

### Characteristics of Time Series

As Figure 4 shows, the existing activities remain the same at all times, but we find different situations in the new events conducted by Yusuikai. At first, we could divide Yusuikai activity throughout 20 years into five periods based on their feelings and the characteristics of their activities.

Phase 1 is the formative period of Yusuikai.

Phase 2 is the period of growth when new activities were initiated.

Phase 3 is the turning point when they studied the history and rediscover the value of the community.

Phase 4 is the period of development. They held some new events to teach and pass on to the children what they had learned. Also, they wished to be the pond that was once there.

Phase 5 is the Corona disaster. Events and meetings were all cancelled, except rituals of Benzaiten. However, the Corona Disaster has not ended, and a deeper discussion would have in the future.

### Faith in Benzaiten Sacred Place Brought

When the water returned, their communication was well because they had been continuing existing community activities even when the pond dried up. So, they were able to start the Yusuikai activity promptly, furthermore, they could do more new events and keep them going. In other words, the collaborative existing works that they performed in the same way every year led to create new events and enabled them to keep them going.

Why were they able to continue their existing activities so well? It can be said that it was because of their reverence for Benzaiten. Let me remind you that for the Japanese the gods give both blessings and disasters. Their Benzaiten is also sacred enough that it makes them think that they will be punished if they disregard her. And their awe of Benzaiten contributes to keeping the local environment in a state.

In the early days of the Yusuikai activities they began, there were few people there except events. However, people began to come to the Pond and Benzaiten, even if there is no event. And during the Corona Disaster local residents sorry that they could hold no Yusuikai's events, but gradually they have come to realize that it is more important to keep and protect their unchanged beautiful scenery of Nuinoike and Benzaiten. It can be said that this shows how important it is for the local residents to take care in their daily activities of keeping clean the place where the goddess Benzaiten resides.

## CONCLUSION

From our case study, in this way, the belief in the sacred place of goddess Benzaiten has created a new community revitalization organization Yusuikai and a wide variety of events. Also, the belief in the sacred place made their events continued. Especially after they studied the history of the area, new events were not only fun, but also taught the children the importance of what they had inherited from their ancestors. And they would have been held to bring the area back to what it used to be. After the Corona Disaster, in the difficulty of being unable to carry out their previous activities, the locals noticed that the most important thing was to take care of the sacred place Nuinoike and Benzaiten in daily basis.

Before the high-growth period, the local people earnestly prayed to the gods, the sacred place in the community for good health and good harvests. However modern technology arrived to guarantee both health and harvest. Instead, now the sacred place Nuinoike and the Benzaiten have become a place for people to interact and relax together, and greatly contributes to the liveliness and interaction of the people which is much needed in the village nowadays.

Even today, residents in Kawazu are still in awe of Benzaiten. This is manifested in the fact that the seasonal rituals and cleanups of Benzaiten have continued during the Corona Disaster, though all other events have been stopped. This meant that the meetings shared meals and drinks after the ritual were the only opportunity for locals to communicate with each other. Benzaiten was keeping people connected even in the face of the Corona Disaster. We could say that people's awe of Benzaiten and gratitude for the spring water revitalized the village and protect the environment. And this is the contemporary meaning of sacred places in community activities and their connection with coexistence between locals and their environment.<sup>20</sup>

## NOTES

<sup>1</sup> Hiroko Yoshino. *Yama No Kami*. Koudansya, 1989;

Nomoto,Kanichi. Kami To Shizen No Keikanron. *Koudansya*, 2006. Sato,Hiroo. Nihonjin To Kami. *Koudansya*, 2021

<sup>2</sup> Robert D Putnam. Bowling alone : The collapse and revival of American community. *New York: Simon & Schuster*, 2000

<sup>3</sup> Kouichi Ikegami. *Mura no Shigen wo Kenkyusuru*. Rural Culture Association, 2007.

<sup>4</sup> Keiichiro Nagata. Chiikishigen no Kokuminteki riyō. *Rural Culture Association*,1988.

<sup>5</sup> Benzaiten is the deified deity of the Sarasvati River in ancient India and was introduced to Japan in the Nara period (710-794). She was loved by the farmers for her role in controlling the water supply for agriculture. Benzaiten, one of the Seven Gods of Good Fortune, has been worshipped as a deity who grants the wishes of the people. She is worshipped near ponds and rivers.

<sup>6</sup> Clare L. Twigger-Ross, and David L. Uzzell. "Place and identity processes." *Journal of environmental psychology* 16, no. 3 (1996): 205-220.. Robert Hay. "Sense of Place Development Context", *Journal of Environmental Psychology*, Vol.18, 5-29, 1998. Shampa Mazumdar and Mazumdar, Sanjoy. "Religion and Place Attachment: A Study of Sacred Places", 385-397, *Journal of Environmental Psychology*, Vol.24, 2004.

<sup>7</sup> Humika Hashimoto. "Environmental Management in Village Community-Subjective Relationships between Man and the Environment", *Journal of the Japanese Association for Environmental Sociology*, Vol.4 ,1998. Hageol Ryu. "Study on Factors of Revitalization at the Movement of Settlement in a Mountainous Village-With viewpoint of residents consciousness and behavior", 181-186, *Journal of Rural Planning Association*, Vol. 5, 2003. Mami Chibuka and Senga,Yutaro and Nakajima,M.asahiro, "A Basic Study on Sustainability of Internal Organizations and Inhabitants' Activities in a Rural Settlement-A Case of Kitaochi Settlement, Kora Town, Shiga Pref." , 235-240, *Journal of Rural Planning Association*, Vol.5, 2003. Ryota Negishi and Goto,Haruhiko and Taguchi,Taro, "A Research of the Influences Festivals Has Affected Regional Management – A Case of Chichibu Night Festival, Which Takes Place in Chichibu, Saitama prefecture" , 129-136, *Journal of Architecture and Planning AIJ*,Vol.72, No.622, 2007.

<sup>8</sup> Erina Kita and Goto,Haruhiko and Sato,Hiroshi., "A Study on the Formation of Regional Community through Festival Management by Shopping District Promotion Association-In case of Takamatsu-shi Marugamemachi Shopping District", *Journal of the City Planning Institute of Japan*, Vol. 46, No.3, 2011.

Chiomi Watanabe. Shoko Nakagiri. Yamazaki,Kazutoshi, "Consideration of the Process of Development of Regions Based on Tomatsu Shrine in Amagasaki-city-The case of Tomatsu Issun-Mame festival" , 255-260, *Journal of Rural Planning Association*, No.31, 2012.

Ryouya Morita and Goto,Haruhiko and Yamazaki,Yoshito. "Development of Activities by Nonresidents through "Ko" – Case of Tenkawa Daibenzaiten-sha Shrine Tenkawa-village, Yoshino-gun, Nara-prefecture", 1589-1599, *Journal of Architecture and Planning*, Vol.84, No.761, 2019

<sup>9</sup> Yusuikai : accessed August 20, 2022, <http://www.nuinoike.sakura.ne.jp/>.

<sup>10</sup> The Serpent is one of the twelve signs of the Chinese zodiac, "Serpent", Weblio, accessed August 20, 2022, <https://ejje.weblio.jp/content/Serpent>,

The white snake is worshipped as the messenger of Benzaiten.

<sup>11</sup> The 210th day (from the first day of spring, usually February 4<sup>th</sup>, according to the lunar calendar,), The 210th day is called the storm day.

<sup>12</sup> "Rice and Regional Culture (The history of rice cultivation) in Saga Prefecture", Plenus Kome Academy, accessed August 20, 2022, [https://kome-academy.com/en/kome\\_library/culture/culture02\\_saga.html](https://kome-academy.com/en/kome_library/culture/culture02_saga.html)

<sup>13</sup> Ministry of Land, Infrastructure, Transport and Tourism, *Chikugo and Saga Plains Ground Subsidence, etc. in the Chikugo and Saga Plains*, 2020, accessed August 20,2022, <https://www.mlit.go.jp/common/001330247.pdf> Ministry of Environment, Chikugo and Saga Plains, Saga Prefecture Geotechnical Information, 2020, accessed August 20, 2022, <https://www.env.go.jp/water/jiban/directory/41saga/chikugo/index.html>

<sup>14</sup> The tea ceremony was organized outdoors in the form of "Nodate" (outdoor tea ceremony) in the precincts of Benzaiten. Water is important in the tea ceremony, and the spring water from Nuinoike pond is always loved by tea ceremony masters. The photo of the tea ceremony: [https://www.town.shiroishi.lg.jp/kanko/kanjiru/\\_4029.html](https://www.town.shiroishi.lg.jp/kanko/kanjiru/_4029.html) , accessed August 20, 2022.

<sup>15</sup> This big workshop has been organized by NPO (incorporated nonprofit organization) MIZUKAN since 1999, accessed August 20, 2022, <http://mizukan.or.jp/kawanohi-2022>

<sup>16</sup> Hizenfudoki : Hizen was the name of these region until the Edo period, and is now Saga and Nagasaki prefectures. The Fudoki are ancient records of local industry, culture, and lifestyle. The Hizen-Fudoki was compiled in the early Nara period (710-794). It is one of the five existing ancient Fudoki.

<sup>17</sup> The lord of the Taira (Heike) family in the late Heian period. The eldest son of Taira-no-Kiyomori. He is said to have been a loyal and filial son of the Taira family.

<sup>18</sup> Hojo means to release captured creatures and let them go. An act of Buddhist compassion. Hojoike is the pond to do Hojo.

<sup>19</sup> Fryu is a traditional performing art of Hizen. The villagers dance and parade with the sound of flutes and drums. It is dedicated to Benzaiten during the New Year and summer rituals. In the old days, even in times of drought, people danced Furyu hoping for rain. <https://www.youtube.com/watch?v=zWIZCU1-ssE> (0:48-1:15 into the movie is the Fury performed at Nuinoike Pond. accessed August 20, 2022.

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# FACTORS SUSTAINING CITY'S DISTINCTIVENESS. CASE STUDY SURABAYA, INDONESIA

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## INTRODUCTION

Cities always have their own spatial organization and distinctive patterns of change through time, which result in patterns of community behaviors and dynamics of which are specific to the city's identity. Learning from history, a big city was started with small settlements or villages close to the river. Some of them had famous stories about their old kingdom which were told from generation to generation.

Learning from old cities in several countries, we can detect how history has played a key role and has been giving a good ambience of the city. Such as the dominance of river transportation in the old days gives the special ambience to its cities and the residents as well. Surabaya was chosen as the second largest city in Indonesia that has 729 old years (since 1273). Kampung *Keputran*<sup>1</sup> is one of the historical villages inherited from royal Surabaya in the past. This study aims to define factors that sustain the Kampung *Keputran* identity in Surabaya, by looking at the history and the present condition of the Kampung *Keputran*.

Hermeneutic Phenomenology approach was chosen to grasp people's daily life and the history that has been told. How life is performed in a rhythm of a knitting of the past stories stitching with present daily life. A temporal porosity is experienced while eating in the street, taking a nap in a shady corner, or drinking a cup of coffee in a '*warung*'.<sup>2</sup> It is as if daily life is knitted and connected through temporal passages that represent the simple momentary experience of occasion. Thus, these everyday occasions construct Kampung *Keputran* identity.

The aim of this study is to determine the factors that form the city's distinctiveness, by exploring what attributes that are forming the sense of place of Kampung *Keputran*. Because Surabaya city was formed by much kampung, so how people in kampung perceive their surrounding environment counting on their cognition towards space and the social atmosphere, it might have contributed to the city's distinctiveness. This study explores how people's spiritual values, people's memory that supports people's interactions, and their daily life on how they use daily space experience. Even though people's lifestyles have changed, Kampung *Keputran* still survives until nowadays.

## Surabaya City Development

Surabaya city was believed to have appeared among rural communities in the form of a legend about the fight between *suro* and *boyo*. *Suro* is a type of fish that lives in sea water, while *boyo* (crocodile) is a type of reptile that lives in rivers. This shows that the area where the *suro* and *boyo* meet is a

seaside village close to the river mouth (delta). In the past, rivers and seas were the main transportation routes in Surabaya, while the deltas were meeting places, areas for changing modes of transportation and at the same time trading areas. Produce from the hinterland was brought by river out of the area, while traders from outside the island and even from abroad came by sea. They met on the delta coast. Therefore, the *Brantas* river delta which is now developing into the city of Surabaya is a strategic and fast-growing area.

In the book 'Surabaya Lintas & Step',<sup>3</sup> it is explained based on a historical review of the city of Surabaya. During the Surabaya Royal throne reigned, whose residence was also known as the *Kanoman Kraton* (palace for Prince). At that time, Surabaya already had a good concept of city layout. There is a connection between the Kingdom of Surabaya and the Kingdom of *Majapahit*, so it is not surprising that in the determining the city planning was influenced by the concept of Javanese urban planning. Johan Silas explained that in the concept of Javanese urban planning, the city is like a house. It is something that is alive, therefore its city layout must follow the pattern of the human body with considering the basic directions. North is where the head is, so it's always official and grandiose. South is the location of the feet, so it is familial and hereditary. East is the direction the sun rises means hand for working or anything related to the occupation. West is the direction of the sunset, meaning it is a spiritual and sacred place. While in the middle is where the heart, which is the center of life.<sup>4</sup>

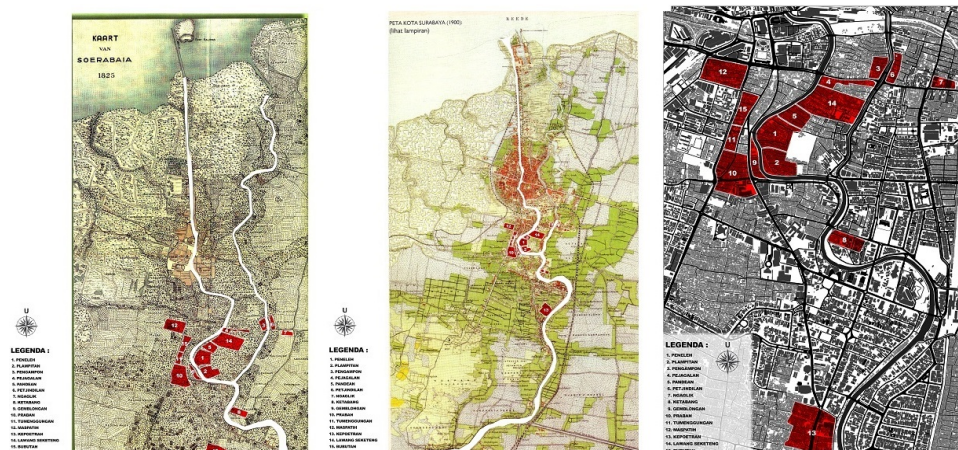


Figure 1. The Surabaya City Development Within centuries.

## KEPUTRAN'S HISTORY

*Kampung Keputran* was part of the *Kanoman* kingdom of Surabaya in 1293. At that time the meaning of the word "*Keputran*" meant the settlement of the king's sons and daughters. When the Dutch entered Indonesia in 1600, *Kampung Keputran* became a special village for high-ranking Indigenous people. Unfortunately, at this time *Kampung Keputran* was split with the construction of *Raya Urip Sumoharjo* street in the late 1800s, so the village on the left remains a residential village, while the one on the right road becomes the largest vegetable wholesale market in Surabaya.

In the 1950-1970s, *Kampung Keputran* was visited by many and became the residence of scholars from other areas in Surabaya. These villages create a network that creates bonds between their residents. The relationship of social interaction and multicultural life is a unique feature of *Kampung Keputran*.

*Kampung Keputran* was once an important part of the city of Surabaya so many immigrants became residents in *Kampung Keputran*. From many immigrants from various cultures and living in the



village together for a long time, a unique multicultural life emerged in the village. As time goes by, Surabaya becomes a metropolitan city, the number of immigrants, population density problems such as slums arise. The economy of this village is still relatively middle to lower during very rapid urban growth, but they still have traditions in a better social life, such as the tradition of borrowing and borrowing spices for cooking, to playing in the neighbor's kitchen without permission has become an expression of the community atmosphere *Kampung Keputran*.



Figure 2. The Kampung Keputran in the old day.

This Kampung is dominated by dense settlements that are less organized but still maintains the beauty of its environment, all buildings in this village are permanent buildings, this village also has several public facilities such as community hall, mosque, elementary school. There is open space in this Kampung, which can be seen from the field which is used as a place for selling residents and for extraordinary events. However, street vendors are often found selling on the street so that the space in the kampung's alley feels more cramped. Although most of the building use is for residences, some residents use part of their houses for making additional income, like rental games, salons, small-shop or *warung*, urban farming, etc.

The same culture in every Kampung Keputran is that every house has a front porch that functions as a seat so that the residents of Kampung Keputran can have a 'cangkruk' habit (sitting together and chatting with each other) especially in the afternoon after doing their respective jobs, the residents sit on in front of their houses while enjoying snacks and looking at the surrounding alley that busy with children voice.

Every *warung* in *Kampung Keputran* almost has its own special culinary, there are 17 *warung* among 42 houses. The sellers and buyers also come from among themselves.

Some are doing barbershop, traditional massage, tailor, laundry, photocopying place etc. which can be accessed by residents surrounding so they do not have to bother traveling any further. The culture of planting trees has been a habit for community, as we can see along the alley the presence of several types of plants, or even hanging. Urban Farming is the result of the *Kampung Keputran* achievement awards, as the third winner of Green and Clean Surabaya competition. The culture of processing waste also becomes useful goods and has economic value for the residents, they get training from NGOs. Residents process plastic waste into recycled art and craft and bags that have economic value, and they sell it outside of Kampung in order to get additional income too. The processed plastic waste is in the form of snack packages, milk bottles, plastic bags, and used straws.



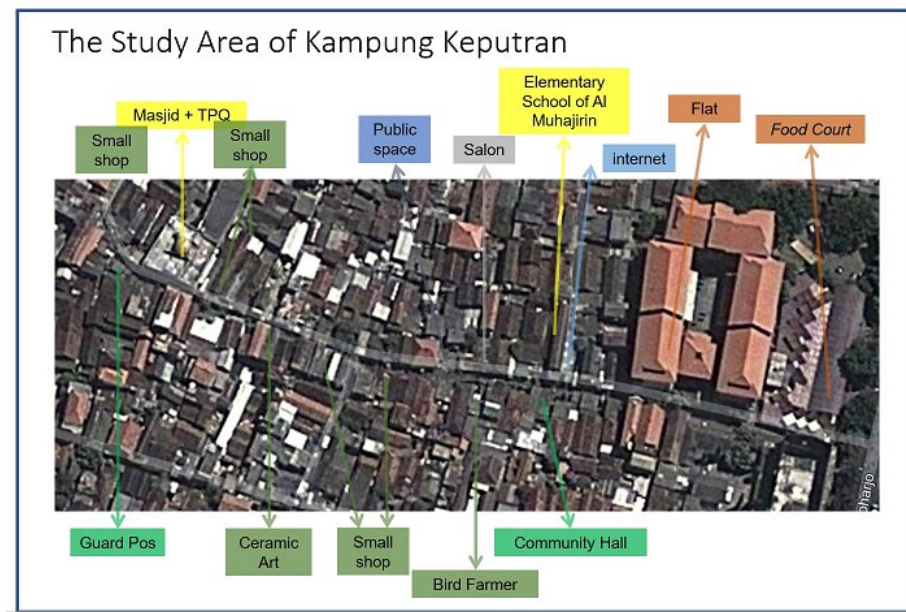


Figure 3. The Map of Study Area.

### HERMENEUTIC PHENOMENOLOGY APPROACH

This research focused on *Kampung Keputran* as an old village that still exists until nowadays. The concentration of this research on how people have been initiating and constructing the Kampung to be one of the popular Kampung in Surabaya. By using hermeneutic phenomenology approach, this research grasps both the history and their daily lives. This approach was applied with the assumption that as time goes by, humans begin to choose to live where they feel comfortable, safe and match them. Thus, the tradition was acknowledged as an old culture and as a recent lifestyle as well.

Phenomenology view, initiated by Husserl at the beginning of the twentieth century, focuses on the subjective experience and perception of a person's life world.<sup>5</sup> Phenomenology is essentially the study of the life world<sup>6</sup> and Hermeneutics describes how one interprets the 'Texts' of lived experience. It is especially concerned with place and home due to the centrality of these topics in everyday life. "To dwell" has been described as the process of making a place a home.<sup>7</sup> Thus, Hermeneutic Phenomenological approach gives us the possibility to see *Keputran* as a sandwich sense of place of past and present that has contributed to the city's distinctiveness.

Sense of place is the emotion of every place since it gives identity and a distinctive character to the area. Altman dan Low (1992) said that sense of place is a symbolic relationship within the place which is formed by giving emotional or affective meaning to a particular place. This provides the basis of individual's and group's understanding to place.<sup>8</sup> The concept of sense of place is composed of three components, activities, setting of places, and human experience.<sup>9</sup>

In this study, we defined the exploration into three categories 'daily experience', 'daily interaction', and 'routine festival annually'. First, we explore the history from literature to find the genius loci of *Kampung Keputran*. Second, we observe and document the village during morning, at noon and evening for three months, and the during the National holidays in a year. And last, we have an in-depth interview with 10 informants who got from snowball methods to find the key persons. From their stories we can grasp their memory, their daily lives, and their dreams.

### **The Routine Festivals of Kampung Keputran that expresses the memory of Place.**

Nowadays, the quality of Kampung spaces is the topic that is highly debated. Some studies argue that kampung has their own risk physically and morally, such as social risk,<sup>10</sup> environmental degradation, even criminal risk.<sup>11</sup> But Surabaya has won the category of Special Mention in the Lee Kuan Yew World City Prize 2018 in Singapore as well as winning the Online Popular City of Guangzhou International Award for Urban Innovation. Nowadays, there are more than 30 Kampung that have their own special entrepreneurship, and Kampung *Keputran* known as Kampung *Jajanan*/ traditional snack.

The most influential ones are “Green and Clean Kampung Competition” since 2006 and the initiative “Surabaya Smart city” that tries to push Kampung to be *kampung wisata* {tourism village). Actually, the last awards that launched since 2019 by the mayor of Surabaya has an intention to preserve historical values of Kampung, to support a unique culture of society and to improve the environment of Kampung. Therefore, *Keputran* as one of the old Kampung in Surabaya has participated to cultivate the historical stories and gets benefits for its activities with mission to improve the financial of its inhabitants. group, despite of some positive impacts to kampung society itself.

Through the year, people have some activities routinely which give the memorial ambience. Such as celebrating the Independence Day, welcoming the fasting month before celebrating the *Ramadhan* day of Idul Fitri, preparing the kampung competition of green and clean, to celebrate the birthday of Surabaya city. Their activities do not include just one activity, but people will have cleaned up on the weekend, called *kerja bhakti* is a voluntary work of residents for cleaning the kampung, revitalizing and decorating every corner of Kampung. With these activities, they point to the fact that maintaining of their memory and delivering to the younger generation. The routine festivals that they celebrate every year as follows,

People's Stories	Phenomena Interpretation	Finding factors
 <p>Children play the earth lantern and make a sound by hitting the lantern slowly. This festival called “<i>teng-tengan ciluk</i>” “<i>teng-tengan</i>” is a sound from hitting the earth lantern, and “<i>ciluk</i>” means peek-a-boo, that reminder people is fasting month and people are asking to have a good habit, leave the bad habit and shine like a light that come out from the lantern.</p>	<p>*People feel calm to hear the sound and see the lantern. * The kampung ambience heart warming</p>	<p>The festival enters <i>Ramadhan</i></p>
 <p>Children and teenagers have parade by holding torch and singing “<i>Allah Hu Akbar</i>” means, God is the greatest. This festival called “<i>tak.bi.r</i>” in Arabic word means Allah is the greatest. People thanksgiving that they can carry the fasting in 40 days successfully.</p>  <p>Sometimes they have cultural parade</p>	<p>*People feel joy to see and hear the parade. *The kampung ambience delightful.</p>	<p>The thanksgiving festival due to the fasting month is over</p>
 <p>Making heroic mural</p>  <p>Making special decorations on the Gate of Kampung</p>	<p>The independence decoration make Kampung more heroic and vibrant.</p>	<p>Independence Day Festival</p>
 <p>Banner as 3rd winner</p>  <p>urban farming</p>  <p>Recycling plastic to be art and craft</p>	<p>*Kampung feels more green and healthy. *Kampung more liveable, houses are crowded with additional jobs and additional income too. * People feel happier.</p>	<p>Green and Clean Activities</p>

Tabel 1. From People Stories to Festival Function Knowledge








### The Daily experience and interaction of *Kampung Keputran* that expresses the use of space.

The growth of people initiatives that expand their space for financial reasons have forced them to use their front yard for working. In the case of *Kampung Keputran* which is located on the inner city of Surabaya offers the chance for people to have additional income.


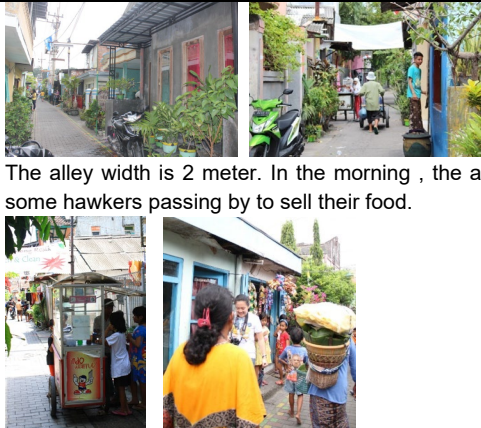



The most discussed example of additional jobs is *warung/* smallshop, hawkers. The problem has arisen in the relation with residents of neighbourhood, because some of them just put their food cart in front of their houses interrupting the alley for circulation. On one hand, the project has received a positive response from experts, it has become popular among citizens of Surabaya as ‘*Kampung Jajan*’ ( traditional snack).

In the old time, houses in *Kampung* had a quite big yard in front which was used for children playing and planting some vegetables and fruit trees. The original concept of vernacular building design is that every house has their terrace, called ‘*Emperan*’ and they used to say hello to their neighbour easily, and have informal chatting along the day. But nowadays because of their demands to increase their economy thus they expand their houses forward, so they don’t have a front yard again. As a result children are playing around the alley.

Nowadays, the use of alleys in *Kampung* is not just for circulation, but space that can be used for chatting among neighbourhoods, playing, and celebrating festivals. Thus, the alley in *Kampung* has a very rich meaning to the people. It is clear from the research that the street is not only physically determined as circulation space, but it is also living substance which includes a communal space, diversity of functional filling of the buildings, greenery, or inhabitants who are moving and living in the *Kampung*.

People Stories dan Physical Condition Observation	Phenomena Interpretation	Finding factors
  <p>Children happy playing together after school on the alley.</p>	<ul style="list-style-type: none"> <li>*The alley can be a place for playing and make the ambience liveable, cheerful.</li> <li>* The alley becomes crowded with the sound of laughter makes <i>Kampung</i> ambience cheerfully.</li> </ul>	Daily interaction
   <p>People in <i>Kampung</i> like to chat with their neighbours when they have free time. Sometimes they “<i>andhok</i>” together. “<i>Andhok</i>” is treating their close friend for eating together whether in a <i>warung/</i> smallshop or to stop the hawkers that are passing by the alley.</p>	<ul style="list-style-type: none"> <li>*People feel happy with their friends, and the alley can be a place for chatting, either gossiping too.</li> <li>* The <i>kampung</i> ambience heart warming</li> </ul>	Daily interaction
  <p>During evening around 4.00 pm usually people gather along the alley . Most of the houses have their benches in front of their houses, so that they can sit and relax together, have informal talk, joking each other..</p>	<ul style="list-style-type: none"> <li>*People feel comfortable with their neighbourhood, and the alley can be a place for relaxing, feeling the wind blow.</li> <li>* The <i>kampung</i> ambience is joyous.</li> </ul>	Daily experience



 <p>Along the <i>kampung</i> there are 17 of 42 houses in Kampung Keputran alley. They sell daily necessities, snacks. It is a convenience store. The habit is people can buy without paying in cash, but they just write in the bill book and later can pay at the end of the month.</p>	<p>*People feel trust each other and willing to help, not just running a business. * The kampung ambience is full of family atmosphere.</p>	<p>Daily experience</p>
 <p>The alley width is 2 meter. In the morning , the alley tend to be quite, some hawkers passing by to sell their food.</p> <p>But during Sunday and holiday, the alley is look busy in the morning.</p>	<p>*The kampung ambience feel calm in the morning. *kampung becomes one of the wheels of micro economy for city.</p>	<p>Daily experience</p>
 <p>(left) The women have their informal gathering every month called 'arisan' in the community hall. "Arisan" means they save their money together in a year, and every month there will be one person who gets her saving.</p> <p>(right) In this community hall, some women who used to teach children held a small workshop for children about loving the environment by making plant pots from used plastic bottles.</p>  <p>The community hall also used for muslim children do "pengajian", menas to learn and read the Qur'an, usually every Thursday evening before dinner. And during fasting month almost everyday.</p>	<p>*The kampung has strong community bonding. *Community Hall has an important role to elevate people in Kampung socially, spiritually and environmentally friendly.</p>	<p>Routine tradition celebration,</p>
 <p>Mosque interior</p>	<p>*The kampung has various facilities for people's living.</p>	<p>Place for gathering, for routine learning and praying</p>

  <p>Open space with a tent for Children fashion competition by using recycled plastic bags.</p>   <p>elementary school</p>	<p>*People feel convenience because their kid can have education nearby without spending the transportation expenditure.</p> <p>*People feel excited by the events for their children.</p>	<p>People experience.</p>
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Tabel 2. From Daily Life Stories To Sense of Place Knowledge

Places are fragmentary histories, pasts that are sometimes hidden and others cannot be read, accumulated activities and festivals can weave all stories from the past, together with the daily life at present, and can be symbolizations unique to every *Kampung*.

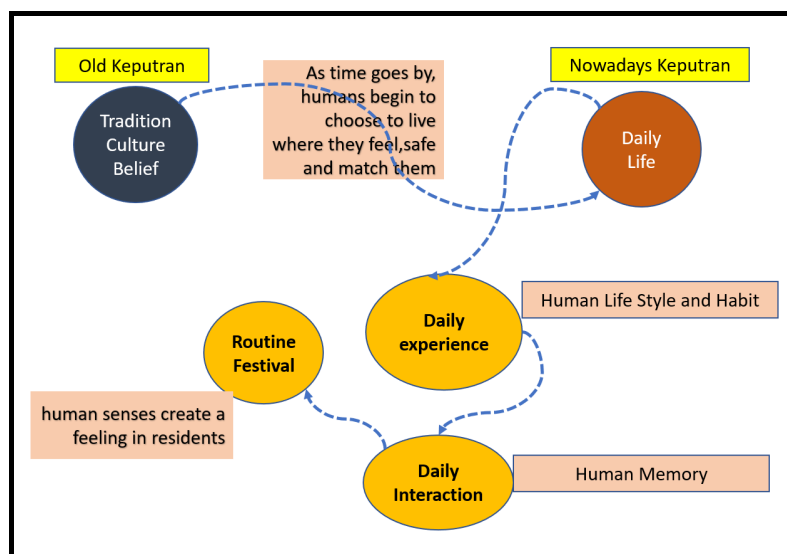


Figure 4. Finding From Stories to Knowledge of Kampung Keputran, Surabaya.

## FINDINGS

The object of the study was focused on finding factors that contribute to the city's distinctiveness. By applying phenomenological approach, this study grasped daily life, what are the elements of architectural spaces and their potential of the socio-cultural use, as well as connection of society to the alley and tradition. Determine how alley has an important role in *Kampung* architecturally, and socially as public spaces as well as community space dimensions. In the table we presented the methods from stories to knowledge by interpreting people's stories, the continuous activities and evidence that support *Kampung* ambience can be a functioning model definition for developing City's distinctiveness and generate City's identity. The study process was simultaneously aimed at the evaluation of space function and adaptability by diverse groups of inhabitants.

The result of this study pointed to filtering stories looking for common perceptions on different activities. Exploring current activities in alley spaces in *Kampung Keputran* and festivals held to raise to the surface the positive values of the village community. Historical, cultural, and social conditions play essential role of resident identification with alley as public spaces in *Kampung Keputran*. Analysed features of social activities play key role of spontaneous alley places transformation.

Based on the study, the following can be stated: The hypothesis – “*City’s distinctiveness is supported by old villages at the centre of city which has their traditional annual festivals, routine daily activities that are passed generation to generation*”, was presented and confirmed. There are good cases of the mentioned phenomenon. The life in several places of the Kampung were activated by the neighbourhood association called *RT/Rukun Tetangga* and Women Family welfare empowerment, called *Ibu PKK/ Ibu* means mother, *PKK* is *Pemberdayaan Kesejahteraan Keluarga*.



## NOTES

- <sup>1</sup> "Kampung *Keputran*", is the name of rural village from the 13th century in Surabaya during the Kingdom era. Kampung is a type of indigenous settlement in Indonesia.
- <sup>2</sup> "*Warung*", is an informal small-shop that sells all kinds of daily household things. The location is just part of the house. But sometimes "warung" also is used in terms of a small informal café with just a long bench for sitting and eating.
- <sup>3</sup> 'Surabaya Lintas & Step, 1994 Subbag Humas dan Protokol Kotamadya Surabaya, *Surabaya dalam Lintasan Pembangunan*, (Surabaya: Kotamadya Daerah Tk. II Surabaya, 1980), p. 19
- <sup>4</sup> Johan Silas, and Rita Ernawati. "Liveability of Settlements by People in the Kampung of Surabaya." In Proceedings of the 19th International CIB World Building Congress: Construction and Society, QUT, Brisbane, 2013, available at: [http://www.conference.net.au/cibwbc13/papers/cibwbc\\_2013\\_submission\\_98.pdf](http://www.conference.net.au/cibwbc13/papers/cibwbc_2013_submission_98.pdf).
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- <sup>7</sup> Heidegger, *Martin. Being and Time*. Translated from the German *Sein und Zeit* (seventh edition) by permission of Max Niemeyer Verlag, Tiibingen. Blackwell UK. 2001.
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- <sup>9</sup> Punter.1991 cited by Hutama. Hutama, I.A.Waskita. *Exploring The Sense of Place Of An Urban Kampung*. University of Twente.Netherland, 2016.
- <sup>10</sup> Jörgen Hellman. "*Living with floods and coping with vulnerability*", Disaster Prevention and Management, 2015. Vol. 24 No. 4, pp. 468–483
- <sup>11</sup> Shirleyana and Sari, A.A. "*The possibility for public green open space provision in informal settlement. Case study of Kampung Kejawan Lor, Surabaya*", 2013. Journal of architecture & Environment, Vol. 12 No. 2, pp. 193–206.

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# CO-CREATING WITH DESIGN URBAN-RURAL FOOD SYSTEMS FOR SUSTAINABILITY

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## INTRODUCTION

The relationship between humanity and the natural environment requires radical change, repair and restoration.<sup>1</sup> It has been made evident that humanities ways of being and doing have accelerated climate change among other ecological destructive impacts.<sup>2</sup> Systemic change is required to redirect society towards more sustainable societies.

Design's role and contribution is changing as designing for systemic shifts towards new visions of sustainability to improve the wellbeing of society and natural environment is different from that which came before.<sup>3</sup> It requires of design to think in systems, that requires an "assignment of a boundary to the system" that embodies different relationships and "feedback mechanisms" that contribute to the outcomes.<sup>4</sup> The relationships in this scenario are between the identified "relevant actors and their requirements".<sup>5</sup> Capabilities key to design for new futures of sustainability are an understanding of the physical flows and "rich understanding of social behaviour".<sup>6</sup>

This paper sets the systems boundary around a farmers' market and identifies the relationship between urban citizens and local environmentally conscious agricultural producers. The research explores a co-created design intervention on an emerging food and agriculture eco-system as a way to bridge and grow relationships between stakeholders to improve the wellbeing of people, society and the natural environment. It contributes to existing literature by depicting successful practice that weaves together people and society in the presence of a circular economy intervention.

In the past decades, and as recently accelerated, firstly by covid19 pandemic and then geopolitical unrest, the flow of food and agricultural production methods, have become critical concerns to governments and communities alike: as food security is at high risk.<sup>7</sup> Where agricultural land now accounts for 50% of all land and producers have become the stewards of our future (Global farm metric). 'Food has become the nexus of wider societal, economic, environmental and ideological concerns'.<sup>8</sup> Radical change is needed on the food system.<sup>9</sup> This raises urgent questions as to the efficacy of globalized supply chains and re-orientates policy makers to reconsider the benefits of local and regional eco-systems<sup>10</sup> and the relationships between urban citizens and local producers. These impacts have heightened reasons to re-consider the urban-rural relationships with food and agriculture, as a contribution to the wellbeing of our cities as serviced by our natural environments.

This paper reflects on the role of farmers' markets in building stronger relationships between urban and rural societies. Farmers markets have been recognized as contributing to a rise of alternative production systems.<sup>11</sup> Kirwan refers to these as a form of "Alterity (or otherness)"<sup>12</sup> and Smithers et

al.,<sup>13</sup> relate a farmers' market to "a different space of consumption". The success of a farmers' market, to realise an alternative flow of produce and "maximize the benefits of purchasing food in situ", is dependent on the social conditions,<sup>14</sup> that rely on the weaving together and relationship building between the two major stakeholders: the first urban citizens who search out quality food and the second, local producers who produce locally with environmentally responsible methods. In this alternative space, urban citizens can learn about food, connect on a personal level and access fresh food and provenance where producers Ideally, capture a greater proportion of sales value.<sup>15</sup> This calls for design transformation on both production and consumption systems.<sup>16</sup>

The research reflects on ten farmers markets conducted over a six-year period in the city of Shanghai, China. Organic farmers' markets were designed to bridge the gap between urban citizens and local producers to grow relationships between stakeholders. New combined values were set to improve, the conditions of the natural environment, and the wellbeing of people and society. The process was guided by openness to experiment, learn and iterate through immersion in the local-regional food system. To encourage behaviour change by changing the context by designing-in behavioural effects to encourage stronger relationships through knowledge building.<sup>17</sup>

Organic farmer's markets designed in this way have been found to contribute to foster and grow relationships between urban and rural as realized through urban citizens and peri-urban rural agricultural producers.

To guide the research the following three research questions were posited

- RQ1: What is the current situation?
- RQ2: How might the situation be improved between agricultural producers and citizens: at a farmers' market?
- RQ3: What are the outcomes of a co-created design intervention?

The paper is organised across six sections, the following five sections will address the research questions as introduced above. The sections begin with the theoretical background which defines the key terms as applied in this research, section 3 outlines a two-step research design and describes the context and situation with focus on the main stakeholders in the bounded eco-system, section 4 presents the results, these are discussed in section 5 and conclusions are given in section 6.

## **THEORETICAL BACKGROUND**

The terms circular economy and sustainability remain contested and their definitions continue to evolve.<sup>18</sup> For this reason and to improve clarification of the terms in this research the definition for the circular economy and sustainability, as will be applied by this paper are given. These are drawn from historical scholarly literature resources and aim to reflect the common characteristics from these resources. The definitions draw the boundaries of the Circular economy around the physical flows of materials and energy and defines the Circular economy (CE) as a system to "optimize[s] the value of material resources and minimizes overall resource impact, emissions, waste and pollution by narrowing, slowing and closing a looped system".<sup>19</sup>

The two terms Sustainability and sustainable development are frequently transposed where the definition of sustainable development is applied to the term sustainability.<sup>20</sup> To aid clarification the relationship as applied in this paper locates the term sustainability as the future vision, that can be attained by transformation as defined by Sustainable development (SD).<sup>21</sup>

SD is defined as: "A dynamic system composed of three interrelated dimensions, namely, society, economy and natural-environment that through changes in [socio-economic] structures and behaviours aims to restore and regenerate social and natural environmental conditions and enable transition for long-term wellbeing of diverse societies, within the boundaries of the planetary life support system, in an equitable and just way".<sup>22</sup>

The CE as related to the scenario of the food and agricultural eco-system, is achieved through improved restorative and regenerative practices to local production.<sup>23</sup> The disruption to the production system requires change in consumption patterns.

The societal aspects of a circular economy intervention are less known as in the main scholarly discourse argues a lack of a societal dimension.<sup>24</sup> This research addresses the gap in the societal dimension as it relates to the circular economy transformation. To achieve this the research explores the relationship between the urban citizens and local producers in the context of a farmers' market. In this scenario the societal characteristics explored are new skills, access to information and knowledge acquisition.

## **RESEARCH DESIGN**

This research uses a reflective transformative design approach.<sup>25</sup> This begins with cross-disciplinary collaborations and co-creations with local and emerging peri-urban producers of organic and environmentally sustainable practices. The research is in context, takes a pragmatic philosophical approach<sup>26</sup> where, solutions are tentative and iterative.<sup>27</sup>

The data for this study is drawn from ten farmers markets temporally distributed over a six-year period. A narrative thematic strategy is applied.<sup>28</sup>

A two-step serial design process is applied. Step 1 collects data from the farmers market through observation and discussion among the two stakeholder groups to understand the perspectives of each group and interpret the relationship between the urban citizens and the local producers. The data is analysed to reveal narrative themes. The themes determine the gap in the relationship between the two stakeholders. Step 2 Co-creates a design intervention that acts on the finding of step 1 with intention to bridge the gap between the two stakeholders and weave the narrative to grow the relationship between the two stakeholders.

### **The context**

In the past agricultural production has been left to the elderly as young people have left their villages to seek work in the cities.<sup>29</sup> Although in more recent times and as witnessed in the last decade there has been an increase in interest among young people to move back to the countryside and practice responsible agriculture. These emerging young producers practice more environmentally conscious production methods with new economies and among customers who value environmentally grown produce. At this time there is an originality associated with farmers' markets that reflect these new values, that include presence of organic and responsible agriculture, activities to support and differentiate mindset and design interventions to strengthen collaboration and relationships between producers and urban citizens.<sup>30</sup>

### **The situation**

The relationship between urban citizens and peri-urban and rural producers in the context of a farmers' market is firstly described as found for each group.

#### **Local environmentally conscious producers**

These local and often small emerging producers in peri-urban or rural areas explore alternative and more environmentally conscious methods to the normative industrialised process to reduce impact or to improve natural environmental conditions through production: examples include BioFarm<sup>31</sup> to the Modern Agriculture Zone, Chongming Island.<sup>32</sup> These producers deploy sustainable practices to improve humanity's relationship with the natural environment. in this way address the larger issues of climatic change and at the local level contribute to quality food to achieve this without use of

synthetic fertilizers or herbicides. This is a move from a destructive linear model towards more circular flows and production using biological cycles on a circular economy model.

### Urban citizens

Urban citizens search for quality foods as constructed from a rise in awareness of issues, such as food scares and health issues as associated with industrialized and globalized food chains. This has led to a lack of trust in the normative food system. This lack of trust had been fed over recent years by a series of media announcements, that documented food and agricultural scandals, from ‘exploding melons’,<sup>33</sup> Gutter oil, the recapture of cooking oil from public drains,<sup>34</sup> to thousands of floating dead pigs in the yellow river,<sup>35</sup> for example. With this build-up of food scandals citizens became more considerate as to the provenance of their food and the methods utilized to produce the food. This shift in citizen awareness is reflective of the rise in concerns across global locations.<sup>36</sup>

In contrast the rise of farmers markets provides an opportunity for citizens to gain understanding of their local food systems and to participate in supporting alternative food flows. In this respect, urban citizens may contribute to systems shift towards more localized food production with the benefits of building relationships and community, that can lead to growing human capabilities.<sup>37</sup>

## RESULTS

### Step 1

A mismatch was identified, in terms of mindset and behaviours between the two stakeholder groups as recognized by urban citizens and emerging local environmentally conscious producers. It was found that more established producers of environmentally conscious produce had far greater experience and know how to engage with urban citizens. The mismatch as found between urban citizens and emerging producers is represented by four themes that draw from and build on societal characteristics,<sup>38</sup> and from expectations with a system disruption.<sup>39</sup> The four themes are represented by 1) focus of change; 2) Language utilized to represent the transformation; 3) Aesthetic appreciation and 4) Access to relevant information (Citizens and producers)

**1) Focus of change:** The producers are focused on the production methods, and it is the methods and processes of production that are of primary concern. Once the produce is harvested this is the desired outcome for the producer, namely, production of quality produce and achieving this with benefits to the land that are integral to the change in production. While, the urban citizens and potential consumers of the produce are focused on the quality of the food first, which is expected to be represented with a certain aesthetic and story. These two areas of focus bring with them different reference points, language, aesthetics and information that require weaving together so as to bridge the producers story with the urban citizens desires.

2) **Language** to describe the change on the system is related to the focus of change (point 1) of the transformation. Such that the language used by producers is far more technical with different priorities, than that required by urban citizens. Although the change in process as executed by the producer, is desirable to both stakeholder groups.

3) **Presentation aesthetic** is vastly different between the two stakeholder groups. The small and emerging producers are satisfied with their produce. The produce is not packaged or presented in ways that are desirable to the urban citizens. From the perspective of the urban citizen this produce requires a form of presentation that helps to differentiate it from industrialised produce. For example a producer may dedicate themselves to changing the processes to restorative and regenerative methods and once produce is harvested, it may be placed in a large blue plastic bag and taken to the farmers’ market and presented as is. This aesthetic of the producer is found incompatible with the expectations of urban citizens who are interested in purchasing this produce.

4) A **lack of access to relevant information**, neither in type or form, that could help the citizens to find out more about producers methods from a citizens perspective.

These four findings affected the ability of the two groups to a) grow relationships as there were barriers to exchange information; b) Slowed down the process for citizens to learn about local producers and their produce and methods; c) Presented barriers for the producers to sell their produce; d) Reduced producer abilities to build customers; e) A lack of customer support slows down the transformation to alternative production systems

## **Step 2**

Drawing on the findings from step 1 a design proposal was co-created with the producers and urban citizens for application at the farmers' market. This led to an introductory and individualized producer card (Figure 1), that represents five areas as identified as relevant and engaging for urban citizens with capability to represent the producers' contribution to transformation towards sustainability, namely,

Provenance

Products

Growing methodology

Environmental responsibility

Social and sustainable contributions

In addition to the individual producer cards, emerging local producers were further supported with options to enhance table presentation and in some cases packaging. With an understanding that all changes are woven into relationship building it is the individualized producer card as reported in this research.

Figure 2 represents an established regional organic producer who has been an active contributor to changing the ways of being and doing in Shanghai. This example provides a spectrum of deliverables that were found desirable to urban citizens and provides an adequate narrative to understand the values of the producer. This form of design intervention was found to engage urban citizens in further conversation and relationship building. For example, during this period, it was of importance for urban citizens to know the form of fertilization, pesticide and GMO usage along with water sources. In addition, on the far-right corner of the producer card (figure 2) extra information is provided on the types of activities that the producer conducts. In this case the producer contributes to school education, supports emerging organic and urban farms and works with diverse disciplines to promote more environmentally aware agricultural practices.



Figure 1. Individualised producer card.



Figure 2. Bio Farm, Farmers' market, Producer card (2013).

Overall, the producer stories, as represented by the co-created design intervention, were found to contribute to grow relationships. The cards were used as an entry point for conversation between the two stakeholder groups. There are five contributing findings as follows:

- 1) **Access to relevant information** contributes to bridge the gap between stakeholders. It achieves this by melding the technical localized and circular changes of farm production with the desires and behaviours of urban citizens. The information increases opportunity to engage in conversation.
- 2) **Knowledge building** was found to be ameliorated through engagement and conversation between stakeholders
- 3) **A Blended new vision**, of combined technical and societal values was found to increase likelihood to influence societal mindset and behavior
- 4) **Clarifies and informs decision making**: as an outcome of exchange between stakeholders is found to improve the understanding of the technical processes and methods utilized by the producer that informs decision making



### 5) **Raises stakeholder confidence and builds community** that can grow human capabilities

## DISCUSSION

This research identified that the key systems stakeholders, urban citizens and emerging local producers, at a farmers' market, can benefit from a design intervention to provide information that weaves together the societal desires of the urban citizens with an understanding of the technical changes made by the producer. A co-created design intervention was found to nudge behavioural changes towards more sustainable consumption in the presence of a move towards sustainable production. The design intervention achieves this as it bridges the gap between the key stakeholders with relevant information and by using a shared language. The outcome of the intervention is found to grow the relationship between the main stakeholders. Where it is the technical change, as described by a change to the biological cycle on the circular economy, that disrupts the system and opens-up new opportunities for societal relationships. As cause of this disruption new bridges are required to address the technical environmental changes, and to improve societal understanding and engage behavioural change. This disruption brings with it new language (section 4.1), needs for new skills, information and technologies, and requires access to this information by the people in the system (section 4.1).<sup>40</sup> This research found that with a design intervention to bridge societal and technical values a circular economy transformation is more likely to be, accelerated and successful, and there is higher likelihood to grow human capabilities. In contrast and without a design intervention, gaps between key system stakeholders, in knowledge and access to information, are highly likely to slow down transformation towards sustainable production and consumption.

By addressing these differences through a design intervention is likely to increase transformation towards more sustainable societies and by doing this increase human and societal wellbeing<sup>41</sup> along with environmental conditions.

## CONCLUSION

This research contributes to co-designing for systemic transformation towards sustainability in the context of a circular economy. This research has been conducted on the food and agricultural ecosystem with a systemic shift towards localized food systems. It fosters and grows relationships between urban citizens and peri-urban and rural agricultural producers. It has found that changes in technical natural environmental systems require integrated societal characteristics to improve success and accelerate changes towards circular localized restorative and regenerative systems.

To answer research question 1: *What is the current situation?*

A mismatch was found between the citizens who wish to purchase responsibly grown foods and the producers of the foods. The differences are found to be 1) the different focus of the two stakeholders, producers on production methods vs citizens on food quality; 2) the different language used to describe the change in the production – consumption cycle: technical vs societal approach; 3) the aesthetic believed to be sufficient by the producer vs the expected urban form of presentation; 4) a lack of convenient relevant information that could help to bridge the gap between the producer – consumer ; 5) the form of the information is narrowed to the capabilities of the producer and/or the consumer who are found unable to bridge the gap between each other. The gap was found to slow down the process for citizens to learn about local producers, produce and methods, presented barriers to the producer as it reduced their ability to build customers and with a lack of customer support slows down the transformation to alternative production systems

To answer research question 2: *How might the situation be improved between agricultural producers and citizens: at a farmers' market?*

Through co-creation with the producers and the customers a producer story protocol was developed and utilized at the farmers market to help navigate communication and build relationships. The story aimed to build trust in the producers methods, included provenance, designed with relevant language that could be understood by customers and explained by producers. In addition a protocol for table design was followed to bridge the aesthetic differences between producer and consumer.

To answer research question 3: *What are the outcomes of a co-created design intervention?*

Five key outcomes from the co-created design intervention were found. 1) **Access to relevant information** melds the technical localized and circular changes of farm production with the desires and behaviours of urban citizens; 2) Citizens and producers were able to **build knowledge** as conveyed through the design intervention and ameliorated through conversation among the two groups; 3) A **blended new vision**, that is for peoples wellbeing and technical producer changes to improve conditions of natural environment and quality of food, increases likelihood to influence mindset and societal behavior and increase successful transformation to more sustainable societies; 4) Informed citizens and producers have improved **clarity** on the transformation which **informs decision making**; 5) There is an **increased confidence and sense of community** among both groups that contributes to **grow human capabilities**

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# **FLEXIBILITY AND DIVERSITY IN MAKING AGE-FRIENDLY CHINESE PARK IN SOCIAL DIMENSION**

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## **INTRODUCTION**

Parks are key public spaces, involving physical activities and opportunities for recreation, relaxation<sup>1</sup> and restoration of nature-contacting.<sup>2</sup> They play a key role in supporting people's physical health, but have been identified as particularly valuable for people's mental health,<sup>3</sup> in which parks provides public spaces for social activity, social events, mixes with communities,<sup>4</sup> which means social interaction could be promoted in parks.<sup>5</sup> doubtedly, they also play a vital role in catering for the social needs of older people. A number of policies or guidelines draw attention to parks for making age-friendly cities; the checklist of the 'Global Age-friendly Cities: A Guide'<sup>6</sup> includes guidelines for parks and outdoor spaces, which advocate for and emphasise their main role and related general principles for age-friendly design. In addition, other concepts and related strategies, such as 'Universal Design',<sup>7</sup> 'Accessible Design',<sup>8</sup> 'Inclusive Design'<sup>9</sup> and guidelines inspiring for building institutional gardens,<sup>10</sup> outdoor settings,<sup>11</sup> tend to help with barrier-free and social inclusion improvements and are concentrated more on accessibility for disabled people<sup>12</sup> or those who live in institutions.<sup>13</sup> A number of scholars have examined social and non-spatial effects that potentially affect senior users' preference for park visitation, including examples of amenities, services, facilities, vandalism and public setting<sup>14</sup> and young people hanging around.<sup>15</sup> Such policies, guidelines and related research have clarified the vital role of parks in making an age-friendly city and revealed amenities, services and public settings; however, these are either based on a macro scale without giving any specific details of park design, or they overlook all the different age cohorts and their varied requirements and preferences, or they do not concentrate on qualities that are reflected by specific spatial mechanisms to support and stimulate social interaction of older people. Hence, this research will explore which space qualities are connected with the social interaction of older users and how these social-spatial mechanisms cater their daily use of parks on a micro scale.

While various good public space qualities have been explored in-depth in urban design and practice to support social interactions for social inclusion,<sup>16</sup> flexibility and diversity are two of the main qualities in connection with meaningfulness and inclusiveness for good public space.<sup>17</sup> These qualities can stimulate more social possibilities related to social combination for multi-performance and choices, involving sitting,<sup>18</sup> standing,<sup>19</sup> walking and people-watching<sup>20</sup> and also involve active social participation,<sup>21</sup> fleeting encounters,<sup>22</sup> and passive engagement.<sup>23</sup> A high-quality environment contributes to more time spent staying rather than transitioning.<sup>24</sup> All these flexible and adaptive use can be supported by thresholds, props, and edges.<sup>25</sup> As Simões Aelbrecht<sup>26</sup> suggests the flexible use of

thresholds in terms of spatial, temporal and managerial ‘in-betweenness’, which reveals spatialised features to promote social interaction among strangers in new planned public spaces called ‘fourth places’; this theory extends the ‘third places’ of Oldenburg<sup>27</sup>. Indeed, the ‘edge-effect’ and edges with different typologies and morphology – stages, stairs, niches, recessed spaces and terraces, elevated and sheltered layouts<sup>28</sup> – and different external stimuli – ‘triangulation’ and ‘convexity’ space<sup>29</sup> – reveal a flexible spatial feature of public space for supporting social activity. Likewise, diversity has focused on activating social interaction in different views, which includes the social aspects of a diverse social order and social intensive relationship,<sup>30</sup> formal or informal behaviours<sup>31</sup> and all users,<sup>32</sup> and spatial aspects in terms of the diverse functions of mixed-use spaces, and the form of designed elements which are summarised by functions and forms and uses. Given the existing knowledge of flexibility and diversity in urban design theories, these can be used as a theoretical framework in this research to address the knowledge gap of how these attributes impact park use in the age-friendly social dimension, and what is truly meant by meaningful social contact among old people in parks.

Regarding the different cultural contexts in different countries with a high rate of ageing, China is officially becoming an ageing society subsequently since 2000.<sup>33</sup> There is more limitation of considering the social dimension in related design policies or guidelines for social complexity and limited specific details of building age-friendly parks, because of initial stage for age-friendly construction in fields of improving social infrastructure and social service, for example (‘The city residential planning guidelines’ (GB50180-2018) and ‘Code for urban park design’ (2016).

Therefore, this research is innovative in combining park design with urban design theories, flexibility and diversity, aiming to focus on public space per se and how these qualities interact in park use of age-friendly social dimension, and ultimately in providing evidence to optimize design policies in making age-friendly parks.

## CONCEPTUAL FRAMEWORK

This paper is supported by a conceptual framework that combines two bodies of knowledge of sociology (gerontology) and urban design. Sociology and gerontology are provided by macro-sociologists Ryan,<sup>34</sup> Albert<sup>35</sup> 1980, Pallis,<sup>36</sup> Tinker,<sup>37</sup> Kerstein and Isenberg,<sup>38</sup> Keidel<sup>39</sup> who offer a profound knowledge of social interaction among old people and overall social activity relations in society. The theory of public space and urban design by De Jonge,<sup>40</sup> Alexander,<sup>41</sup> Whyte,<sup>42</sup> Jacobs and Appleyard,<sup>43</sup> Oldenburg,<sup>44</sup> Stevens,<sup>45</sup> Carmona<sup>46</sup> will support to build theoretical framework (Table 1) and regarded as analytical framework to do further analysis.



Flexibility	Indicators	Spatialised stimulus in connection with social interaction among people in literature review.
	Thresholds	Spatial, temporal ‘in-betweenness’; transition space.
	Props	External stimulus - “event” and “triangulation”; Effects in terms of location, scale, distance, orientation.
	Edges	Typology: stage, benches, terrace, niche, nook and corner; Morphology: shade or sheltered layout; elevated layout; rectangle.
Diversity	Function	Mixed-use function spaces within a space.
	Form	Shape: geometrical shape, ‘convexity’: positive and negative space; Scale: small scale and large scale; Design elements: natural and built environment.
	Uses	All users; Social behaviour; Diverse social intimacy degree: strangers, acquaintances, friends.

*Table 1. Overarching theory of flexibility and diversity in literature review*

## METHODOLOGY

A review of existing social study methods reveals how complex social interactions act in sociological research, so that a combination method of observation and ethnographic interviews is necessary for this paper. This is useful for identifying older people’s use pattern of parks and their related behaviours and activities objectively, and it is better for collecting detailed descriptions of their uses and attitudes. Additionally, micro-design analysis is used to explore spatial features that contribute to the key role of parks in making an age-friendly city in the social dimension.

## CASE STUDY

Four very frequently used squares in two fully fledged and master-planned parks will be selected, reflecting the existing level of Chinese park design based on the ‘Code of the design of public parks (GB 51192-2016)’. Yu Men He park (Figure 1, P1) and He Ping park (Figure 2, P2) are near to high-age population communities and are very frequently used by older residents in Taiyuan, China. These parks are characterised by a long history and are very familiar to elderly residents, within 5–10-minute walking distance of gated residential blocks, and include a variety of functions, facilities, and amenities for elderly people to use (see Figures 1 to 4 below). The selected periods for study include different times (06.30–21.30) over the whole day in each walkable buffer zone of 15 minutes, including weekdays and weekends. All observational data will be presented by behaviour mapping and recorded by site-note taking and photographs, from August 2020 to April 2021 (excluding the extremely cold winter, i.e. late December 2020 to mid-March 2021).



Figure 1. Different function spaces of P1.



Figure 2. Different function spaces of P2.

Interviews involved a total of 40 older people in face-to-face mode, each one between 15 minutes to 1 hour, depending on different health statuses and degree of complexity of lifestyle in terms of different age groups, and recorded by a voice recorder.

## **FINDINGS AND DISCUSSION**

The findings in this paper renew knowledge of the social dimension of age-friendly urban design. Initially, the park square in China is demonstrated as a key preference for elderly people's combined social and optional activities. This space reflects a high level of flexibility and diversity that confirms previous research related to social interaction.

### **Flexibility**

#### **Thresholds**

First and specifically, in micro-design analysis, flexibility could be confirmed by spatial and temporal 'in-betweenness' of thresholds to create more potential social activities in the park. The clarified thresholds can offer more meaningful social possibilities and adaptive use<sup>47</sup> flexibly among encounters, unplanned social possibility that can be supported by spatial characteristics of temporary, spatially "in-betweenness", eg, in-between busy and quite or private and public. However, finding of this research also extends this theory by diverse functional 'in-betweenness' that could stimulate more opportunities for fleeting encounters, random participation, passive engagement,<sup>48</sup> particularly for those who have lower social expectation or with more impairment of physical function, or active participation that involving wide range of old users with different requirements.<sup>49</sup> This is especially the case when there are crowds in main catchment, thresholds could offer high potential expansibility and convertibility<sup>50</sup> with the more attractive views and busy movement to active multi-uses, this indeterminate space where it is easier to start and end conversations among encounters (Figure 3-2, 3-3).<sup>51</sup> Significantly, this type of threshold not only reveals spatial 'in-betweenness' but also profoundly emphasizes the close connection between two diverse functional spaces, referring concerning more on mix-used function within a space and high connectivity in-between two busy spaces (Figure 3-1). Indeed, if a threshold has the added function of children playing, it can serve as a stimulus to support long-lasting staying for more diverse social activities, especially for young-old women looking after grandchildren. This also confirms the external stimulus to support social opportunities and attractiveness of intergenerations.<sup>52</sup>



Figure 3. A group figure above shows that thresholds in term of diverse functions space “in-betweenness” (in-between Square 1 and Square 2, P1), with flexible social activities shown in thresholds of sub-space E, and the number of different social activities in the morning.

## Props

Secondly, regular programmed group activity could act as a prop to stimulate older people's sociability, not only through the external stimulus of the event effect,<sup>53</sup> but also through regularity of props of an event can foster sense of belonging and familiarity that are supported by shared experience with members to build social bound into place, which not only build meeting opportunities for active social among older members (Figure 4), also the recorded memory attracting more passive engagement potentially in long-term to cater for their need for discovery.<sup>54</sup> Moreover, props in term of the changing seasonal environment can also be understood as a novelty that is preferred by older people<sup>55</sup> to create social possibilities, because timeliness as a novelty in the familiar space of the park can create social potentiality; this not only extends the theory of Aelbrecht<sup>56</sup> by a new form of novelty as unfamiliarity to create social comfort, this also challenges them by creating unfamiliarity in familiar space and calls for debate on the theory of familiarity<sup>57</sup> that is preferred by older users<sup>58</sup> in the literature review. It also challenges causation – greenery as priority in visiting the park. This is not to say that greenery is insignificant, but rather to emphasise changing greenery with a high level of flexible use that as far as possible boosts active social participation, fleeting and random encounters, and passive social engagement for elderly. Findings of interviews shows that 53 percentage young-old (aged during 55-70) states they very keen on social group activity when greens seasonally changing. This is notable to demonstrate the significance of the seasonal changes, as large green space strengthens attachment to place and supports the sense of community<sup>59</sup> for elderly preferred familiarity,<sup>60</sup> also noting new form of novelty – in terms of psychological preference of environment to increase possibilities for multi-users' unplanned social activity and discovery.





Figure 4. Regularity of props (large group activity as event).

## Edges

Thirdly, edge use has confirmed with previous research,<sup>61</sup> which is emphasized active view<sup>62</sup> related to regular activity as mentioned above (Figure 5,6), which enhance use of edge by more meaningful combined social activities, particular within small scale positive space and enclosed by greens for sense of enclosure.<sup>63</sup>



Figure 5. Enhanced edge use, active views of group activity as stimuli (Square 1, P1).

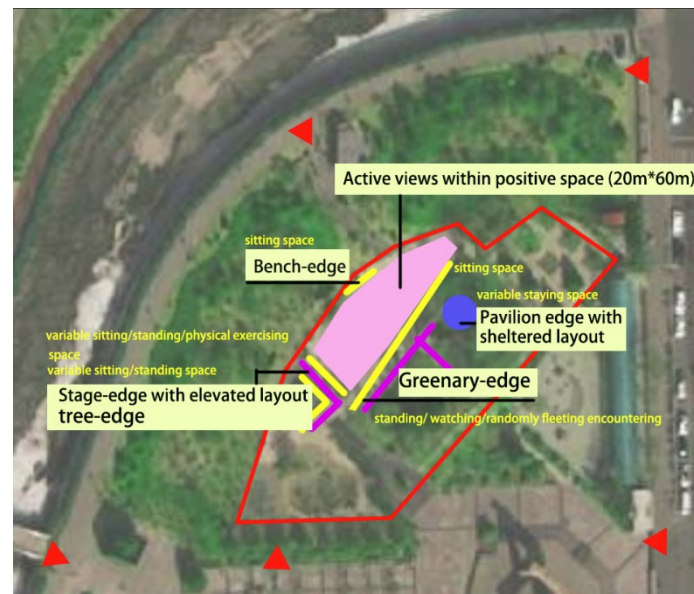


Figure 6. Enhanced edge use, active views of small group as stimuli (Square 1, P1).

## Diversity

Diversity can also be conducive through function, form and uses to the creation of social interaction; likewise, diverse functions can not only be confirmed within a space, but also highly connected with adjacent diverse functional spaces as clarified diverse functional “in-betweenness” of flexibility, because of more mobile possibilities for potential conversations and the attractiveness of a busy view to older people.<sup>64</sup> Moreover, ‘convexity’ space within an enclosed small-scale space can serve as an ideal comprehensive form to contribute to diverse social activities, because of the higher possibility of interaction among users in ‘convex’ spaces<sup>65</sup> to stimulate fleeting encounters and passive users and close emotional interaction within reasonable dimensions (2.5–6m proximity to events)<sup>66</sup> and a sense of enclosure for territory. Thirdly, passive older users like to see children playing, which also supports flexibility for diverse potential users with various purposes to create more social opportunities; this also demonstrates that diversity and flexibility can contribute to each other in the dimension of park design concerning older people’s social interaction, in order to bring more potential opportunities for multiple social choices for older users and offer more meaningfulness, particularly for passive older users.

Flexibility	Indicators	Confirmed theories and concepts in literature review	Key findings that extended and challenging existing knowledge
	Thresholds	Spatial, temporal ‘in-betweenness’	Diverse functions’ ‘in-betweenness’ (emphasized children-playing function).
	Props	External stimulus, location, scale, distance, orientation.	Regularity; Seasonal changeable space.-extend new form of novelty to support unfamiliarity; Argument: familiar space can also create social opportunities; Argument: unfamiliarity can also preferred by elderly.
	Edges	Typology: stage, benches, terrace, niche, nook and corner; Morphology: Shade or sheltered layout; elevated layout.	Enhanced by active views within ‘positive’ space
Diversity	Function	Mixed-use function spaces within a space	Adjacent diverse function
	Form	Shape: geometrical shape, ‘convexity’: positive and negative space; Scale: small scale and large scale; Design elements: natural and built environment.	Relatively enclosure with greens, small scale and positive space
	Uses	All users; Diverse social intimacy degree: strangers, acquaintances, friends.	Children (playing)

*Table 2. Key findings which confirm, extend and challenge existing knowledge*

## CONCLUSION

This research brings new insights in connection with the age-friendly dimension which extends and challenges existing knowledge of urban design (Table 2). Timeliness has been analysed as a new form of novelty to support flexibility, contributing new unfamiliarity to a familiar space to cater for potential social interaction of older users, not only extending existing theories in terms of social with unfamiliarity and familiarity of elderly’s need, but emphasising the changeability of greenery to clarify the vital role of parks in contributing to a sense of community. In addition, the extended regularity of props tends to create more more meaningful social opportunities among a wide range of older users. While, the threshold of diverse functions’ ‘in-betweenness’ not only extends an existing form of flexibility, but also correlates with the diversity that is closely connected with the adjacent diverse functional space to offer more potential social opportunities, especially with the threshold



adding the children-playing function. Last, edge-spaces can be seen as favourable spaces when they are enhanced by active views within positive small-scale spaces and relatively enclosed green spaces.

## NOTES

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# RESEARCH      METHODOLOGIES      FOR      CHANGING LANDSCAPES AND PLACES IN FLUX

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## INTRODUCTION

The importance of civil society and public participation in tackling climate change is becoming increasingly important.<sup>1</sup> Natural Resources Wales's (NRW) 2020 State of Natural Resources Report supports this idea by stating that it is only by re-considering the importance of civil society that 'Wales can address the causes of environmental degradation at their source'.<sup>2</sup> There needs to be a change in the actions and attitudes of society and the narratives we all follow. NRW is reinforced by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 2019 report which concludes that a transition to a sustainable world is technically and economically possible but will require collective and individual creativity to re-imagine the way we live.<sup>3</sup>

The Welsh Government calls for 'every citizen, community, group and business in Wales to embed the climate emergency in the way they think, work, play and travel'.<sup>4</sup> Juliet Pietsch and Ian McAlister point out that 'for the advanced democracies, public opinion is a key element in developing an appropriate policy response' to mitigate climate change.<sup>5</sup> Additionally demands are being made that decision-makers should grow 'attentive to the varied ways that knowledge about landscapes is acquired, and to how different interest groups navigate change'.<sup>6</sup>

Below I will provide case studies of research methodologies that can help researchers better understand local dynamics and the compounding narratives which occur in changing landscapes. My aim is to inspire colleagues to reach out beyond the tentative boundaries of our respective disciplines by utilising alternative methodologies to collaborate with local stakeholders. I believe that questioning and frustrating current local decision-making frameworks is the only way to secure a more democratic approach to negotiating landscape change during the climate and nature emergency.



Figure 1. Collage by author

## ENGAGING METHODOLOGIES

### Loading cows

[Interviewer]: Are there any historical features on your land? [Farmer]: They tell me we've got burial mounds. They've been to look at it... and it's been mapped out. We used to use it to load the cows for market. It's sloped up you see, so we used to back the lorry up to it and run the cows into the lorry.<sup>7</sup>

These were the insights Mark Riley, David C. Harvey, Tony Brown, and Sara Mills received when carrying out twenty-two semi-structured interviews in Devon. Their aim was to find out more about the land and those who worked it during World War II. They covered four broad themes during their interviews which were 'family history', 'World War II', 'landscape change' and 'landscape conservation'. The researchers found that the themes did become interchangeable when speaking with the respondents as they tended to speak about more than one at a time. Most notably, the theme of family history served as a helpful introductory theme which allowed them to get into the flow of the interview process.

The quote from the farmer, which heads this section, strikes at the heart of the conversation regarding the multiplicity of values and priorities present in a landscape. The quote also provides the dichotomy which exist between lay and expert knowledge. The researchers found that many farmers they interviewed 'defined importance through their very immediate concern of making a living from the land.'<sup>8</sup> This runs contrary to the traditional belief held by western archaeological experts (and in extension by the state) which values something in terms of its heritage value.<sup>9</sup>

Through the use of oral histories, Riley, Harvey, Brown and Mills challenged positivist traditions of how and what type of data is collected within the field of landscape archaeology. They drew on recent feminist geographical and linguistic ethnography (Gillian Rose and Penelope Eckert), providing the Community Landscape Project with words and categories used by local people. These informed the framing and organising of data, rather than the other way round. Local people had authority in the process. The use of oral histories challenges the idea that there is 'one truth' to which many past (and current) archaeological oral history projects have tended to subscribe. The researchers follow Alexandra Mack's notion that 'to extrapolate and understand the complex perceptions of a shared environment, multiple data sets must be employed'. This means acknowledging the 'various lenses through which landscapes were viewed historically', allowing for a 'more complete picture of the past'.<sup>10</sup>

These interviews and transcripts reveal the importance of listening to the histories of those who manage the landscape, as they provide alternative ways of seeing the land. The researchers re-centred

the local people as knowing agents. By sharing the gathered lay knowledge, they have allowed for a wider set of values and priorities to be represented in the landscape decision-making process. Alongside scientific techniques used by landscape archaeologists (such as pollen analysis), oral histories provide an additional layer which is a nuanced account filled with particularities and temporary conditions. Most importantly, an account deeply embedded within cultural circumstances. Oral histories can help destabilize preconceived value placements, even if they are simply those formed about features such as a burial mound.



*Figure 2. Cattle in Devon - INF 9/913/2 in The National Archives*

### **Varying narratives**

The next study focuses on the notion that there are many actors within a given landscape who have varying narratives and framings of the same thing. In their paper Vera Köpsel, Cormac Walsh and Catherine Leyshon explore the dichotomy between expert and lay knowledge by ‘revealing differing constructions of local landscapes and their implications for climate change adaptation.’<sup>11</sup>

They began by targeting Cornwall Council’s policy documents and followed an interpretive policy analysis approach to establish the official narrative that framed landscape change. They then carried out nineteen semi-structured interviews with people identified through a purposive sampling strategy. This allowed them to pick ‘key actors in local landscape management either due to their position within respective organisations or because of their engagement as Parish or Cornwall Councillors.’<sup>12</sup> During interviews the researchers focused on different story strands which they categorised as ‘landscape’, ‘landscape change’, ‘climate change’, and ‘adaptation.’ These strands were then evaluated relative to each other to identify the larger line of argument stretching through a single interview. Any strands circling around similar phenomena and following similar internal logics were grouped together to form “encompassing narratives.”<sup>13</sup>

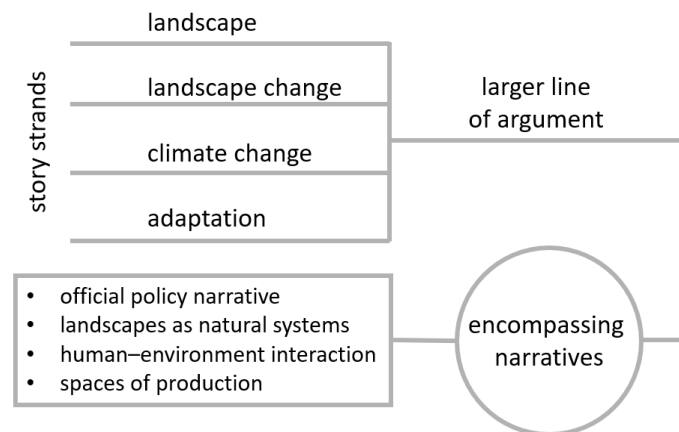


Figure 3. Line of thought followed by Köpsel, Walsh and Leyshon by author

They found that alongside the ‘official policy narrative’, other encompassing narratives existed (Figure 3). These were described as ‘landscapes as natural systems’, ‘human–environment interaction’ and ‘spaces of production’. What was surprising was that ‘these constructions stand in surprising contrast to each other and to the way in which the region is portrayed by its Council’.<sup>14</sup> Carrying out these interviews with key actors in local landscape management allowed the researchers to dig deeper into what people actually mean when they talk about “landscape” and “change.”



Figure 4. War time harvesting with horses - corn01577 in Kresen Kernow

Notably, this research reveals that there are contrasting perspectives on how landscapes are being affected by climate change. Köpsel, Walsh and Leyshon’s work highlights the importance of seeking out and listening to local actors and stakeholders, as it can open the possibility for dialogue and alignment of people’s definitions and rationales about landscape and climate change. The alternative - rejecting and not seeking out other encompassing narratives - could lead to confusion and cause obstacles for implementing positive change.

### Launchpads for discussion

Scenario building and stakeholder panels are tools researchers can use to explore and open discussions about landscape change and possible futures. Reto Soliva, Katrina Rønningen, Ioanna Bella, Peter Bezak, Tamsin Coopere, Bjørn Egil Fløb, Pascal Marty and Clive Potter carried out twenty-five semi-structured interviews in each of their six European study areas. Their main line of

questioning focussed on the perception of agricultural decline and the change it brought about in the upland areas.

Following the twenty-five interviews, twelve of the interviewees were selected to be part of stakeholder panels. The panels undertook three meetings and each panel included people with different personal and professional backgrounds. In the second of the three meetings a photo series was introduced illustrating the possible landscape changes in four future scenarios developed for the year 2030. The scenarios were: Business as Usual (Figure 5), Agricultural Liberalisation (Figure 6), Managed Change for Biodiversity (Figure 7), and in three of the countries, a Wilding scenario. The stakeholders were asked to assess the socio-economic dimension, the visual landscape dimension, and the biodiversity dimension of each scenario.

Their conclusion was that the ‘stakeholders across the study areas are united in their overall rejection of agricultural liberalisation, advocating a production-oriented, but multifunctional and environmentally-friendly agriculture that maintains landscapes and biodiversity’.<sup>15</sup> The researchers found that as a tool, scenario building was vital in helping participants step out of their comfort zones and think beyond their own understanding of the landscapes they knew so well. In addition, those who lived and worked in the areas did not limit their comments to the visual aspects of change (using just the photographs as stimulation), but also drew on their own stories of place, backgrounds and knowledge.

The photographs became launchpads for greater discussion; the panels offered spaces for sharing views and needs and to voice the perceived/actual threats the participants anticipated. Involving stakeholders, particularly those whose daily actions shape and maintain landscapes, in envisioning possible futures could improve understanding and reduce conflicts in local decision-making.



*Figure 5. Business as usual scenario by Reto Soliva and co-authors*



*Figure 6. Agricultural liberalization scenario by Reto Soliva and co-authors*



*Figure 7. Managed change for biodiversity scenario by Reto Soliva and co-authors*

### **Poetic transcriptions**

Abbi Flint conducted eight in-depth interviews with people who live locally to Ilkley Moor. These interviews were recorded and transcribed as part of the WetFutures UK project. Flint went on to represent those transcriptions in a form of poetry known as poetic transcription. Corrine Glesne defined the approach as ‘the creation of poemlike compositions from the words of interviewees’.<sup>16</sup> Flint, following a similar process to Glesne, read through the transcripts and selected key words and phrases, highlighting what chimed with the overall themes and feelings of the interviewees. She printed the transcriptions, cut out phrases and moved them around on a table. No words were added or changed but they are not in the order which were spoken during the interview. Flint’s aim was to create a poem inspired by and which embodies the participant’s voice. Below is one of the poems she created:

### **The continuation of history**

It lifts my heart when I look to the hills sparks my interest when I start digging into it  
How the Moor has been a background for the lives of other people I mean we’ve got history  
You just walk out onto the Moor

And you hit the history. Mesolithic, Neolithic, Romans Knights Templars, Normans You name it, we've got it. Victorians used it on High Days and Holidays then across the moor are tracks with Viking names.

So much of it is still unknown or if it was known it's been forgotten. I see myself as playing a part, a small part reviving those stories, reviving the memories helping people understand where they live look after it, create meaning.

My first house I lived in with my husband where my son was born, my first grandchild was born. Every event I've got the moor as the backdrop Don't you see how it's always been there? Ilkley Moor is the background to my life and my life is a continuation of history.<sup>17</sup>

Flint says that 'a poem can hold some of those plural meanings of landscapes and plural voices of landscapes in a single form... it allowed me to keep the voices of the participants alive in the research in a way I didn't think a couple of disembodied quotes might.'<sup>18</sup> In addition, poems can be an easier medium through which people can engage with large subjects or concepts.<sup>19</sup> Poetry can evoke emotions and the senses, allowing people to connect to places in ways a transcript or scientific paper may not.

The poem above identifies Flint's interpretation of the themes and underlying connections of her exchange with an interviewee. Her representation of the interview enables us, as readers, to enter not only the world of Ilkley Moor but also into the world of the interviewee. The rearranged words and cropped phrases connect us to place, lived experience and future possibilities. The poems become personal tellings, vehicles for a wider audience to understand and engage with the happenings that occur on and around the moor. Flint's engaging process provides a way for a continued exchange with data and offers up a creative example for representing research work.

### **Anticipatory history**

The final case study revolves around the 'experimental narration of the history of a Cornish harbour'.<sup>20</sup> Caitlin DeSilvey's research focuses on telling an alternative history of Mullion Harbour, one that does not follow the traditional linear narrative often found in cultural sites. DeSilvey questions the current status-quo/default writing of history and how it interprets the landscape as static well into the future, even though we know change is coming. Her approach follows the ideas of Walter Benjamin who, 'insisted that history should stop "telling the sequence of events like beads on a rosary", and operate instead through a "telescoping of the past through the present"'.<sup>21</sup> DeSilvey attempts to go against the grain and finds further inspiration from Alan Pred whose method involves 'radical experiments with montage and nonlinear narration, seeking to excavate dormant and obscured political energies through the "assemblage of disjointed (geographical-hi)stories, [the] collection of jagged-edged partial narratives"'.<sup>22</sup>

Mullion Harbour, a National Trust (NT) managed structure, has had a long history of being a focal point for tourism, business, and investment. Though not apparent, the physical structure is in a vulnerable state. There is a local desire for the harbour to remain standing as long as possible due to it being a landmark. However those who know the changing storm patterns can hear the clock ticking. DeSilvey employs interviews and literature reviews (NT guidebooks, local business descriptions, postcards) to develop a knowledge of the human response to the harbour. The aim of the project is to tell an alternative history and 'draw connections between the past dynamism and future process'.<sup>23</sup> The narrative DeSilvey creates is split into four parts: 'material process', 'cultural inscription', 'contemporary resonance' and 'photographic records.' Her experimental approach seeks alternative narratives and 'to draw out patterns and themes that are obscured by more conventional tellings - moments when it could have been otherwise'.<sup>24</sup>

Even though DeSilvey has included few contemporary voices, I have included this case study because



local published and archival material is also important to building our understanding about changing landscapes. Joan M Schwartz and Terry Cook write that archives ‘are not passive storehouses of old stuff, but active sites where social power is negotiated, contested, confirmed’.<sup>25</sup>



*Figure 8. RNLI Barbie, August 2008 by Caitlin DeSilvey*

## CONCLUSION

I have tried to demonstrate through the case studies above that seeking to build collaboration with local stakeholders into our methodologies can be an important way to empower and give voice to alternative narratives of place. Geographer Augustin Berque writes that landscape ‘relies on a collective form of subjectivity’.<sup>26</sup> As researchers we have an opportunity to question the narratives that have already been formed in our collective consciousness. Dominant narratives can dictate and drive change within landscapes, but approaches such as interviews, oral history, scenario building, stakeholder panels and poetic transcription can be mobilised to bring different perspectives to the decision-making table.

In light of rapid environmental change and biodiversity loss, research that collaborates with, and values, local stakeholders whose daily actions shape and maintain landscapes has the potential to present a more holistic narrative that can influence political and administrative decisions. Figure 9 is a photograph taken by a young person during a 1991 Groundwork project in Cwm Ogwr. The project enabled local communities to highlight the issues they felt most important to them through photography - almost all of them chose to take pictures of their friends in the landscapes they called home.

Our choices as researchers, beginning with which methodologies we employ, can help support the legitimisation of local decision making and question the politics, power relations, and responsibilities connected to landscape. Maybe we can develop a more democratic approach to landscape change; one that ‘recognizes the untidiness and contradictoriness of human encounters with time and landscape’.<sup>27</sup>



*Figure 9. Young person's photograph by Groundwork*

## NOTES

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- <sup>5</sup> Pietsch and McAllister, "'A diabolical challenge': public opinion and climate change policy in Australia," 217–236.
- <sup>6</sup> Nadia Bartolini, and Caitlin DeSilvey, "Landscape Futures: Decision-Making in Uncertain Times, a Literature Review," *Landscape Research* 46, no 1 (2020): 8–24, <https://doi.org/10.1080/01426397.2020.1861228>.
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- <sup>22</sup> DeSilvey, "Making Sense of Transience: An Anticipatory History," 36.
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# INDIGENOUS WEAVING TECHNIQUES IN SHAPING BUILDING SKINS

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## INTRODUCTION

This research focuses on reviving and experimenting with ethnic methods of making in the beginning design pedagogy towards building resilient futures. The current article is developed based on the literature and trajectories on the African and Indigenous weaving techniques to create building skins. Researching literature on African vernacular architecture is integral to this study. Contemporary architect, David Adjaye's work inspires textiles and patterns in the abstraction and creation of architectural spaces. A circular economy adds the value of materiality through life-cycle and local availability, which is tied to weaving. In this studio, students are introduced to the circular economy concept, accompanied by literature on weaving techniques such as twill weaving, randing, coiling, and twinning.

Experimental and qualitative methodologies are used to introduce sophomore design students to building skin design. The project asks students to revive the architectural wood weaving techniques to create patterns and adjust them as shading screens based on passive design strategies. The results are from a 4-week project with 30 students at an HBCU, celebrating indigenous architectural takeaways. Observation of the student's progress serves as a technique to evaluate the success and shortcomings of the pedagogy. Materiality and local construction techniques were primary points in the beginning design studio, to make design thinking more tangible.

Tim Ingold, Emeritus Professor of Anthropology at the University of Aberdeen, considers knots the origin of *Making*.<sup>1</sup> The idea of weaving and growing resembles lessons learned from nature.

## Literature Map

Weaving has been applied as a vernacular building technique throughout the world. Preston, in *The Anatomy of Architecture*, reviews the context and traditions of African architecture.<sup>2</sup> In Africa, bamboo, rattan, raffia, and other natural materials are used to weave structures and facades. David Hughes' *Afrocentric Architecture* and Adjaye's *Geo-Graphics* shed light on the terrain and uniqueness of cultures within the African continent.<sup>3</sup> For instance, textiles are unique to each region, and such patterns are traceable in the methods of weaving roofs, shades, etc. To explain the origins of weaving and patterns in architecture, this study will not be complete without exploring Native American Weaving and basketry techniques as ontology.<sup>4</sup> Materiality played a crucial role in distinguishing weaving patterns and techniques worldwide. For example, based on the availability of local materials such as dried mud and rammed earth, brick facades in the Middle East were historically embedded with shading patterns as their woven facades. The integration of weaving brick knots or wooden

frames is phenomenal in Middle Eastern / North African Architecture. In Asian cultures, on the other hand, bamboo weaving is traced in forming their weaving techniques. Vo Trong Nghia architects in Vietnam specialize and apply levels of finesse in their Bamboo projects.<sup>5</sup> Ayres et al. revive a type of basket-making technique through interlacing Kagome, in architecture.<sup>6</sup> This work is a fascinating example of the contemporary application of weaving as a technique. As a literature review to revive indigenous practices in architectural education, this study consists of the ontology and application of weaving different materials as a technique (Fig 1).


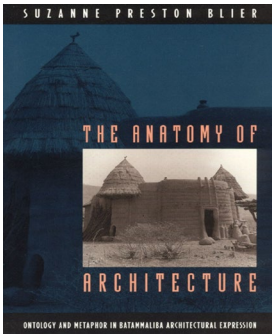
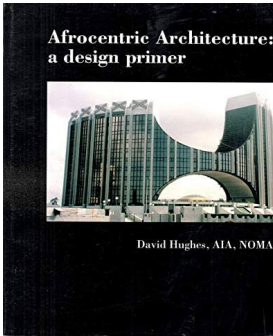
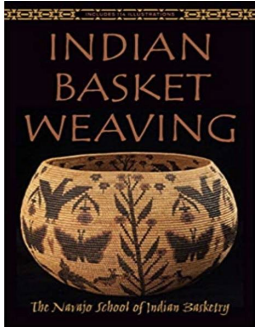
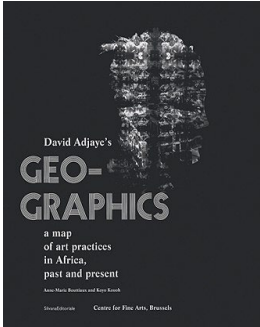

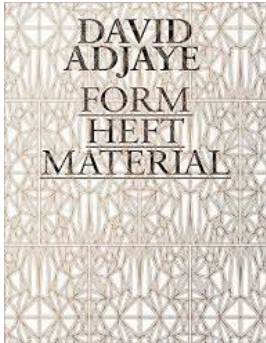
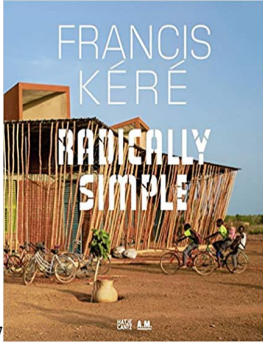
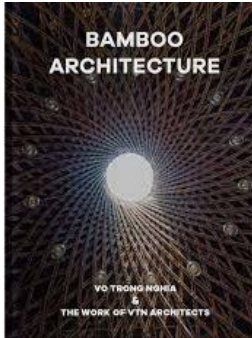
Context	<p>Architecture without architects Rudofsky, Bernard 1964</p> 	<p>The Anatomy of Architecture Suzanne Preston Blier 1995</p> 	<p>Afrocentric Architecture David Hughes 1994</p> 
Ontology	<p>The Navajo School of Indian Basketry 2015</p> 	<p>Adjaye's Geo-Graphics 2010</p> 	<p>Polly Adam Sutton Weaving Artist</p> 
Application	<p>Form Heft Material Adjaye 2015</p> 	<p>Francis Kerre: Radically Simple 2017</p> 	<p>Bamboo Architecture VTN Architects 2021</p> 

Figure 1. Visual map of the literature review

## WEAVING ENCLOSURES CASE STUDIES

Contemporary architect David Adjaye's work is described as inspired by textiles and patterns in the abstraction and creation of architectural spaces. The National Museum of African American History and Culture in Washington D.C. 2016 by Freelon Adjaye / Bond Smith is a manifestation of weaving in building skins. The book *Form, Heft, Material* provides insights into how Adjaye's work defines new typologies and cultural interpretations of the modernist approach. "Architecture is about where we are, how we are, and where we want to go." Sir David Adjaye quotes.<sup>7</sup> Palmer in his *Smithsonian Magazine* article mentions how David Adjaye perceives Enclosures based on the notion of weaving and textiles, first explored by Gottfried Semper, a 19th-century thinker.<sup>8</sup> The notion of heritage, simplicity of design, and the use of patterns and colors are some commonalities observed in the influential works of David Adjaye.

Next, we turn to the work of Pritzker prize winner Francis Kéré<sup>9</sup> as an inspiring case study. The modest design and a sense of community and local materials distinguish his work. Gando primary school and Lycée Schorge are some examples that address ventilation, lighting, and shading in such an artistic and innovative way. We've observed a flow of indigenous African design techniques in our most contemporary examples of buildings whose designs derive from traditional African craft.

Ota-Kwaku House (Design Competition) by Lucas London and Jade Zheng in Accra, Ghana, is another excellent example of using weaving and technology solutions in a modest and sustainable architecture, which connects to the heritage.<sup>10</sup> Reviewing case studies inspired this article to view weaving as a contemporary way of fabricating enclosures tied to the notion of materiality. The nature of materials in the modern era altered the way we build. This study argues that techniques such as weaving could be used with more natural materials. As a result, this study sought to test this idea as a design thinking method in the context of ARC Design pedagogy.

## Building Skins Through Weaving

Weaving and local techniques of construction are the main focus of this section. Beginning design students in ARC Design 2.2 at Florida A&M University in Spring 2022 were introduced to the subject of the life-cycle of materials and weaving as a means of making. Students learned about *Rewilding Kernwood*, a documentary that explains the life-cycle of materials in architecture based on restoring a cabin to nature.<sup>11</sup>

Students were asked to research literature on African vernacular architecture, and indigenous weaving techniques. In this design studio, furthermore, we learned about weaving techniques such as twill weaving, randing, coiling, and twinning to create a building skin. Weaving is an example of applying Circular economy at a smaller scale, in terms of the life-cycle of the materials and the local construction technique. This beginning design project attempts to create awareness towards resourcing materials in buildings and *Circularity* in architecture education.

## Project Description and Assessment

This project asks the students to use a different technique to explore study models through weaving, which indigenous people used. Materials that are used to create a roof or screen by Native Americans and Africans have the potential to create a building. At a smaller scale, these materials could be compared to basket-making fiber splints, bamboo, wicker, etc., using weaving, plaiting, and other techniques. This project asks the students to design a shading screen with respect to material reuse and its regional availability in a circular economy. Students use a 20 by 20 ft. horizontal shading design for a South-facing facade.

Students successfully used a new technique with regard to their time constraints, following the timeframe and deliverables listed below. Figure 2 illustrates the application of weaving in building



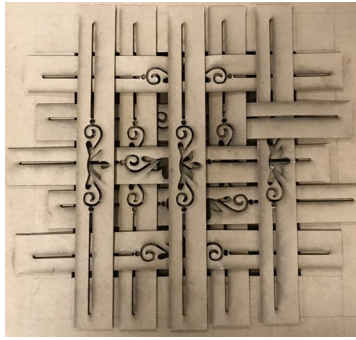
skins in ARC Design Studio 2.2 at Florida A&M University in Spring 2022. Deliverables included a Physical model to scale:  $\frac{1}{2}"=1'$ , and drawings representing model photographs and a section of the screen connecting to the wall.

Week 1. Learn how to weave using 0.5" strips of chipboard

Week 2. Create shading screen iterations

Week 3. Exploring detailing of the connections and drawing

Week 4. Photography and presentation



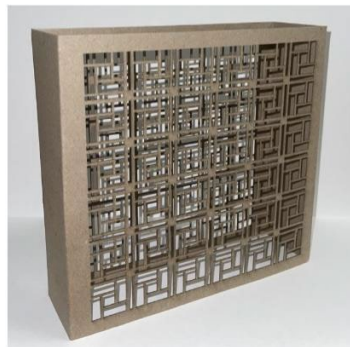
Student: KenNiya Dennard



Student: Garrick Brooks



Student: Jaime Charles



Student: Jaime Charles



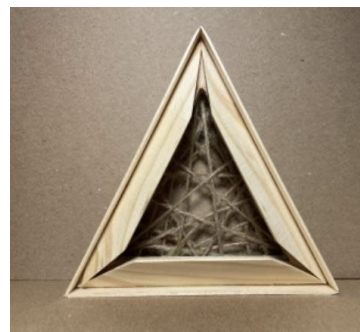
Student: Tatiana Williams



Student: Soleil Oladeji



Student: Noah Sadler



Student: Anthony Freeman



Student: Anthony Freeman

**Figure 2. Application of weaving in building skins. Design Studio 2.2 at Florida A&M University 2022**

Observation of the student's weaving process in the beginning design represents successful architecture pedagogy outcomes. Weaving in this Beginning Design studio was a glance at the notion of materiality in the curriculum.

## CIRCULARITY

Building for the future involves minimizing environmental deterioration. This process points to ideas of Circularity, where materials and flows have a closed-loop system. Stahel is one of the early advocates in this field through his 1982 article called "Product Life Factor."<sup>12</sup> Ellen McArthur Foundation defines three principles for a circular city as eliminating waste, circulating products, and regenerating nature.<sup>13</sup> Eliminating waste in design is achievable when buildings are made in a way that they could be dismantled, and materials are resourced with life-cycle considerations.

In the *The Handbook to Building a Circular Economy*, Cheshire illustrates the example of the Urban Mining and Recycling (UMAR) building in Switzerland by Werner Sobek. This building is made with modularization and the doctrine that all building resources should be reusable, recyclable, or compostable.<sup>14</sup> Innovative recycled bricks and repurposed insulation materials are examples of the materials used in this building. The diagram in Figure 3 represents this paradigm shift towards recycling, reusing and recovering waste in the building industry.

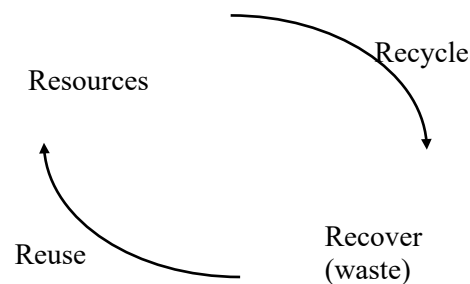


Figure 3. Circular Architecture

## CONCLUSION

The concluding remarks are focused on “*how we build.*” The weaving project started to speculate about materiality at the beginning of design pedagogy. Industrial fields such as automotive or biomedical engineering rapidly adopted new materials in their production. However, we are building with the same techniques and materials as in the modern era. Steel and concrete do not go back to nature, as part of their life-cycle. Plant-based building materials are, therefore, one of the solutions to building a circular economy, which should be incorporated into architecture pedagogy. Recent work by Mad Arkitekter in Norway and Parsons Healthy Materials Lab<sup>15</sup> provide examples of material-conscious decisions towards a circular architecture. This studio sought the integration of *Indigenous Weaving Techniques* to introduce beginning design students to A Circular Economy.

This study advances how our perception of design heritage becomes a physical construct. Given the solutions discovered through our research, we find moments of convergence between antiquated building design methodologies, indigenous woven culture, and clues into how contemporary architectural language may benefit significantly from its predecessors. Introducing this conversation to our ARC Design 2.2 students gave them insight into building materiality, cultural context, climatic considerations, and how their craft may inform robust and inclusive architectural manifestations. Beyond the students' achievements, we find great utility in connecting old-world architecture and an intrinsically woven architectural future.

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# URBAN DESIGN PROJECTS FOR UNIVERSITY CAMPUS

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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. Established over 20 years ago, the CDW has completed over 100 projects and worked in 15 parishes throughout the state of Louisiana. The CDW's focus is to aid neighborhoods, small towns, cities and the university to visualize their potential as a community. Operating as a faculty-led graduate-level studio, the CDW has expertise in urban design, planning, architecture and sustainability.

The CDW is housed in two office/studio locations on the campus of the University of Louisiana at Lafayette. Graduate studios are run through the CDW studio facility where projects are developed and explored and then continued in the summer. The summer studio operates by employing students and faculty members of the School of Architecture and Design.

The role of the CDW in working on the university projects has been multifold. For example, in the development of a University Master Plan, the CDW acted as a think-tank to run a series of studios that showed options for the redevelopment of the traditional campus and to address options for the development of a research park. Additionally, the CDW served on charrettes with the architecture firm to help complete the new campus vision. For the University insertion projects: The UL Bike Path, The Quadrangle redesign and the new International/Culture Space, the CDW's role was to organize the charrettes and public meetings, produce conceptual drawings and design development drawings. “. the art of the garden designer is much like that of the architect. The ground plane is the natural starting point, and vertical elements can be raised from it to bound and focus spaces. Roofs and canopies can be added where shelter is needed. Connections can be made by forming openings, and sequences of movement through which the spaces can be composed.”<sup>1</sup> The Bike Path and Quadrangle redesign required the CDW to produce the construction drawings and help with contract administration to see the project through its completion. Additionally for the Bike Path, the CDW was tasked with assisting the Lafayette Economic Development Authority in writing the Grant awarded from the Louisiana Department of Transportation and Development.

## COMMUNITY DESIGN WORKSHOP MISSION

The School of Architecture and Design provides expertise in urban design, planning, landscape design, architecture, and housing. The CDW has collaborated with many state and local governments on urban design and planning projects, as well as neighborhood redevelopments, small town urban design and public university improvement projects. The CDW is committed to rebuilding and

renovating neighborhoods, downtown areas and underutilized properties by establishing clearly defined public spaces such as streets, squares, and parks. The inclusion of pedestrian walkways, bike paths, community gardens, linear parks, and creating public space are design scheme priorities. Focus is always placed on the creation of greener and more sustainable places and, whenever possible, incorporate mass transit systems into projects. These design systems lend a level of density to the areas and decrease traffic problems. The CDW is founded on working in a collaborative spirit with the state, city governments, neighborhoods, university administration and personnel and other interested parties throughout their process.

### **Collaborative Process – Discussion and Education**

Instituting a public forum is a common technique implemented in all workshop projects. This manifests itself into two types of discussions: charrettes and public meetings. Both charrettes and public meetings were used for the three projects which helped to educate the involved parties on issues of urbanism, architecture, and planning. The meetings provided a collaborative exchange between the CDW, students, faculty, university administration and others. Each group involved brought with it a wealth of knowledge from their respective area of interest to these discussions. Because of this, the CDW played the role of both educator and student through the exchange provided by the respective parties involved.

#### **Charrettes**

Charrettes are short design exercises that focus on a wide range of design issues. Numerous charrettes took place for the three projects with a representative cross-section of interested parties and professionals in attendance Figure 1. These groups had active roles, collaborated in the charrette process, and helped the CDW to arrive at a consensus regarding the importance of the three projects to the university with respect to planning, architecture, and landscape. Policies and procedures were discussed along with lighting concerns, sound issues and the overall aesthetic properties.



*Figure 1. Charrette discussions foster multiple design options*

#### **Public and Drop-in Meetings**

Structured public meetings provide a forum for presenting ideas about urbanism to the university officials, student organizations, faculty, and university administrators. Public meetings encourage the formal exchange of ideas between these interested parties. Since the CDW worked on the three university projects in their on-campus studio location, “drop-in” meetings also occurred. These informal exchanges provided easy access for the university populace to drop-in and submit input,



become educated on the projects' process and progress, and see the hands-on collaborative approach employed by the CDW. Using the information from these public and informal drop-in meetings, the CDW was able to emphasize and present concepts and procedures for the urban design.

## University Urban Insertion Projects

### The University Bike Path

The design concept for the University of Louisiana at Lafayette's University Bike Path was to link the southern campus starting at the Research Park to the traditional campus with an approximate two-mile bike path and walking trail. The path allows the university's property to be visualized as one expansive property rather than a series of individual ones. "Separated bike paths should also be provided along greenways and arterials, and through open space corridors."<sup>2</sup>

Louisiana is an extremely hot and humid state for the majority of the year; therefore, numerous trees were planted along the pathway to provide shade and a respite from the heat. Working with a landscape architect, the CDW incorporated garden spaces and interspersed them throughout the trail's length. Planted with flowers and small bushes, these gardens act as a buffer between the path and the street while providing a more aesthetically pleasing route and a place for rest. Portions of the Bike Path run through somewhat isolated areas highlighting safety concerns. Working with an expert in lighting design, the Bike Path is lined with the traditional campus acorn light posts and these run for the entire path's length Figure 2.



Figure 2. Sections illustrating gardens, lighting, landscape and pedestrian uses

The Bike Path was a collaborative effort between the 502 Graduate Urban Studio, the CDW, university administration and officials, local professionals, the Department of Transportation and Development and the Lafayette Economic Development Authority. Students learned the importance of working as a team and that a variety of professions is required to complete a project of this scope and size. Developed and designed during two phases, the project took approximately six years to complete from the conceptual design to completion of construction. Project work was interrupted during this six-year period by two hurricanes which had a significant impact on the area.

Actual construction was a ten-month process in which the studio had a secondary role Figure 3. University Facilities and Planning managed the supervision of the construction while the CDW and

students were involved with troubleshooting issues that arose during construction. The CDW and students checked the bid process, updated drawings and print drawings and inspected the project on a weekly schedule until completion. The result was an urban design element that links various isolated pieces of property and links the southern campus with the traditional campus by creating a series of gardens, walking trails, and the Bike Path. “When architects are empowered to design for the health, safety, and welfare of their own communities, they have a personal stake in the work-and in the results. If we don’t support the future of our communities with sensitive design, who else will?”<sup>3</sup> By developing a form of alternative transportation, this multi-use path becomes an important linking element between the two separate campuses and a city park.



*Figure 3. Illustration of completed University Bike Path*

### The Quadrangle

The University of Louisiana at Lafayette’s Quadrangle has been a central point on campus since the university’s initial founding in 1898. The Quad, as it is commonly known, is still regarded as the traditional center of campus. The campus itself retains most of its original classroom buildings that date back to the turn of the 19<sup>th</sup> century and has many buildings from the 1930s that together establish the campus’s character. The Quad is surrounded on three sides with a covered, arched walkway (arcade). The arcade and surrounding buildings are constructed from red brick, trimmed in limestone, and have white, wooden details. All this established the palette on which the CDW would redesign the Quad.





*Figure 4. Ariel design concept for University Quadrangle*

The redesign itself incorporated the super geometry of a circle being inserted into the Quad to organize the space placing a fountain in the center Figure 4. Surrounding the central area is a plaza incorporated with new walkways and landscaping. “Whereas “space” denotes the three-dimensional organization of the elements which make up a place, “character” denotes the general “atmosphere” which is the most comprehensive property of any place.”<sup>4</sup> Concrete sidewalks were used along with the traditional UL brick, thus tying the Quad area back to the rest of the campus. Centuries old Live Oak trees anchor the center square of the Quad. The central focus point, the fountain, has a 21-foot metal Fleur de Lis constructed as a three-dimensional sculpture Figure 5. Lights were added which enable the space to be utilized both at night and during the daytime. Crepe Myrtle trees were added and ring the organizing circle. The Walk of Honor is a pathway that includes each graduated student name being engraved on a brick paver and then placed along the path. This Walk of Honor was also incorporated into the Quad redesign since a portion of the walkway runs through the Quad.

“The new design is based on input from students who participated in charrettes and surveys since the makeover was first proposed by the Student Government Association in 2010.”<sup>5</sup> It is viewed as a vital step towards enhancing the pedestrian-friendly aspects of campus, including a comfortable gathering place for students, faculty, and staff.



*Figure 5. Fleur de Lis fountain in newly constructed Quad<sup>6</sup>*

### University International/Cultural Space

The site of Our Lady of Wisdom Church has been declared by the President of the university to become an International/Cultural Space to celebrate the diversity of the university populace. The site is situated on one of the busiest campus intersections and is adjacent to some of the most visited buildings within the campus complex including the Student Union, Angelle Hall, and E. K. Long Gym. These buildings host a variety of events for the student body and the Acadiana community. The Diocese of Lafayette intends to relocate the parishioners and build a new church on a site situated across the street. This opens the way for the current site to be redeveloped as a cultural space. As with the other university projects, the palette of red brick and limestone becomes the building code that the CDW must follow. The site is surrounded on two sides by centuries-old oak trees planted by the first president in 1900.



*Figure 6. Our Lady of Wisdom Church*

Keeping and utilizing the oak trees that define two of the site's edges, a third edge will be defined by a planned water wall inscribed with a map of the world. The fourth edge will be defined using the existing church while keeping its classical front and stained-glass windows Figure 6. The church is viewed as an urban artifact "Where does the individuality of such a building begin and on what does it depend? Clearly it depends more on its form than on its material, even if the latter plays a substantial role; but it also depends on being a complicated entity which is developed in both space and time."<sup>7</sup> The church itself will be repurposed with a variety of events to be run by the Student Union.

The design takes advantage of a corner entry into the heart of the site. This becomes the main circulation for the exterior space. Limestone pavers and red brick pavers are used to adhere to the continuity of the university. A field of trees is then inserted into the overall design to help decrease the scale and provide shade. Three water fountains are axial organized to the stained-glass windows in the church. A fourth linear fountain has red pavers at the fountain's water line and are engraved with the names of important historical leaders and events linked to the university. "Fountains, whether ornately tiled or designed with simplicity in mind, add both architectural intrigue and tranquility to any garden – there's something about the sound of burbling water that lulls the mind into a meditative state."<sup>8</sup> The CDW envisioned this important site as a respite inside a busy campus.

## RESULTS AND DISCUSSIONS

The three University Urban Insertion projects demonstrate how the public can be engaged in a design process, how student learning benefits both the student the public, the development of the design, and shows the construction process to completion. Currently two of the projects are fully constructed – the University Bike Path and the University Quadrangle. The University International/Cultural Space is currently in the conceptual design phase. “In cities of all sizes and in all regions, developers, designers, planners, and public officials have begun a dialogue about the need to create urban spaces that draw people, to establish a sense of place, that connect various components of the urban environment, and that are usable in addition to being beautiful.”<sup>9</sup>

## CONCLUSIONS

The success for these projects depended on the collaboration and dedication from many parties including the students, faculty, university administrations working alongside with outside consultants, government officials and professionals. Aldo Rossi states, “a city is the product of a thousand acts”.<sup>10</sup> The three university insertion projects are an appropriate demonstration of this concept. Benefits to the university are numerous. The campus was improved with a Bike Path that now links the two separated campuses while addressing and improving the safety for students with a lighted pedestrian pathway. The Quad redesign reestablished this area as the main focal point on campus. By making the space more livable, it is now in constant use by faculty, students, and staff. The International/Cultural Space celebrates the diversity of the university’s student body while embracing the Acadiana culture. Architecture students learned valuable lessons that emerged from the collaboration between a vast array of professions and students also benefited from the process of working with public institutions and government entities.

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# MAPPING EVERYDAY COMMUNITY LIFE IN EXURBAN AREAS AROUND TOKYO: CASE STUDY OF MINAMIASHIGARA, KANAGAWA PREFECTURE

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## INTRODUCTION

The phenomenon of urban shrinkage is appearing in an increasing number of countries. An expanding body of literature analyzes its wide range of causes, from deindustrialization to demographic aging and suburbanization.<sup>1</sup> Its physical and socioeconomic symptoms have pressed local governments worldwide to search for new revitalization strategies.

Although most studies have focused on the decline of urban centers, many researchers<sup>2</sup> have highlighted the need for deeper analysis regarding the shrinkage of *suburbs*—communities within a metropolitan area where the city center can be reached conveniently.<sup>3</sup> Some have defined suburban decline as "the next urban crisis,"<sup>4</sup> emphasizing the urgency of addressing its multidimensional complexity.

Particularly *urban sprawl*—low-density suburban areas with preeminence of transportation for private vehicles—has drawn the attention of an increasing number of scholars, who point out a diverse range of issues in these areas.<sup>5</sup> The apparent lack of a clear urban structure, the scarcity of community life spaces, and the subsequent lack of community involvement<sup>6</sup> are often highlighted as some of the most relevant issues.

How can we design strategies to ease the consequences of shrinkage while vitalizing these local communities? This paper addresses this question by mapping everyday life community spaces and the residents' attachment to them. Traditional strategies to address shrinkage tend to focus on physical aspects and neglect the subjective dimensions of place. Among them, the *place attachment* of the remaining inhabitants to community spaces is particularly relevant since it can prevent them from moving out.<sup>7</sup> It refers to the cognitive or emotional bonds that individuals or groups develop to specific places as they get to know and value them.<sup>8</sup> The feeling of rootedness and sense of social bonding to these places can be integrated into new strategies to ameliorate the consequences of shrinkage.<sup>9</sup>

This paper maps everyday life community spaces in Minamiashigara, a 50,000 population town in Kanagawa Prefecture, Japan. Local authorities are searching for new revitalization strategies to face the effects of urban decline. This study aims to identify spaces that can play a relevant role in this new phase.

## UNLEASHING REGENERATION IN SHRINKING CITIES THROUGH PLACE ATTACHMENT

Given Japan's aging and low birth rates, most scholars assume shrinkage as inevitable in most cases. Instead of addressing approaches to stop depopulation directly, it is generally considered more sustainable to develop strategies to avoid the most dramatic consequences of shrinkage, and to make the transition to a smaller population softly while improving the quality of life of the inhabitants.<sup>10</sup> This paper focuses on the relationship between the loss of residents' attachment due to the negative perception of shrinkage and urban regeneration. Particularly, we argue that reinforcing the attachment to everyday life community spaces has the potential to slow down the exodus of existing residents and become a key factor in regeneration efforts in situations of urban decline.

The pivotal relevance of everyday life community spaces in the attachment of the inhabitants has been extensively investigated. Communication, understood as the exchange of knowledge, opinions, and attitudes, takes place in a wide range of spaces, making this exchange formal or informal to different degrees.<sup>11</sup> Formal communication places are specifically designed for the meeting and are assumed to be rule-based, structured and predictable. In Japan, *kōminkan*, community centers that offer a wide range of services and meeting rooms for the residents, mainly embody this kind of space. In contrast, informal communication places are considered spontaneous and unorganized, stimulating social interactions among strangers. Both formal and informal daily life community spaces have a substantial impact on the inhabitants, who develop an *emotional co-ownership* for them, a strong attachment that results in interest from citizens in perpetuating the valued qualities of the place.<sup>12</sup>

Previous research has already demonstrated how small-scale interventions in some of these places have the potential to benefit a larger urban context.<sup>13</sup> Notably, Hiss<sup>14</sup> coined the term *sweet spots* referring to places where citizens feel particularly rooted. We will use this term to describe those everyday life community spaces specially attached by the residents that need special care and maintenance and whose regeneration can potentially bring improvements on a larger urban level. This paper aims to map everyday life community spaces and reflect on which ones have the potential for future revitalization as sweet spots.

## PARTICIPATORY MAPPING OF EVERYDAY LIFE COMMUNITY SPACES

In contexts of decay, shifting from top-down urban planning processes to bottom-up models that involve the participation of residents is imperative.<sup>15</sup> Within citizen participation methods, *participatory mapping* has become an indispensable tool for urban planners. These maps involve the researcher working collaboratively with participants to reflect on the places that are meaningful to them, revealing new potentials of the place.<sup>16</sup>

The participatory maps adopted in this research are inspired by two methodologies: the cognitive and the evaluative maps. The cognitive maps developed by Lynch<sup>17</sup> represent the imageability of the city: the relevant elements of a place recorded in the residents' memory. Evaluative maps capture both the imageability of places and also their evaluation: the positive, negative, or mixed likability levels of these places for the participants.<sup>18</sup> The mapping method of this study collects information from local stakeholders into evaluative maps. The involvement of diverse stakeholders has proved fundamental in shrinking cities since their engagement allows researchers and policymakers to understand the community's needs better.<sup>19</sup>



## CASE STUDY

### The case study within the Japanese context

Since peaking in 2008 with 128 million inhabitants, Japan's population has shrunk faster than any OECD country due to a low birth rate, a rapidly aging population, and restrictive immigration policies.<sup>20</sup> Even large metropolitan areas are expected to lose population in the next few decades.<sup>21</sup> The Tokyo Metropolitan Area (TMA) is expected to lose about 7% of its population by 2045.<sup>22</sup> At a regional level, suburban areas are losing the most significant proportion of the TMA's population.<sup>23</sup> After World War II, these areas were planned as green belts to constrain urbanization. However, the lack of proper land use control tools and financial resources for conserving green spaces led to these areas' uncontrolled urbanization and urban sprawl,<sup>24</sup> bringing a mixture of residential and agricultural areas to their urban fabric. After the collapse of the bubble economy in the 1990s, the migration of residents to the inner cities made these suburbs steadily shrink, a trend expected to aggravate in the following decades.<sup>25</sup> The increasing number of derelict spaces and the mixture of land uses make new urban approaches necessary.

This paper takes as a case study Minamiashigara, a suburban city on the west of the TMA (Figure 1), located inside the sprawl-like area of Ashigara Plain (Figure 2). The city's total area is 77,1 km<sup>2</sup>, but a large part of the territory is covered by forests (67,61%) and agricultural land (8,42%).<sup>26</sup> Although the population density is about 522 inhabitants per km<sup>2</sup>, the city's four districts present unequal densities (Figure 3).

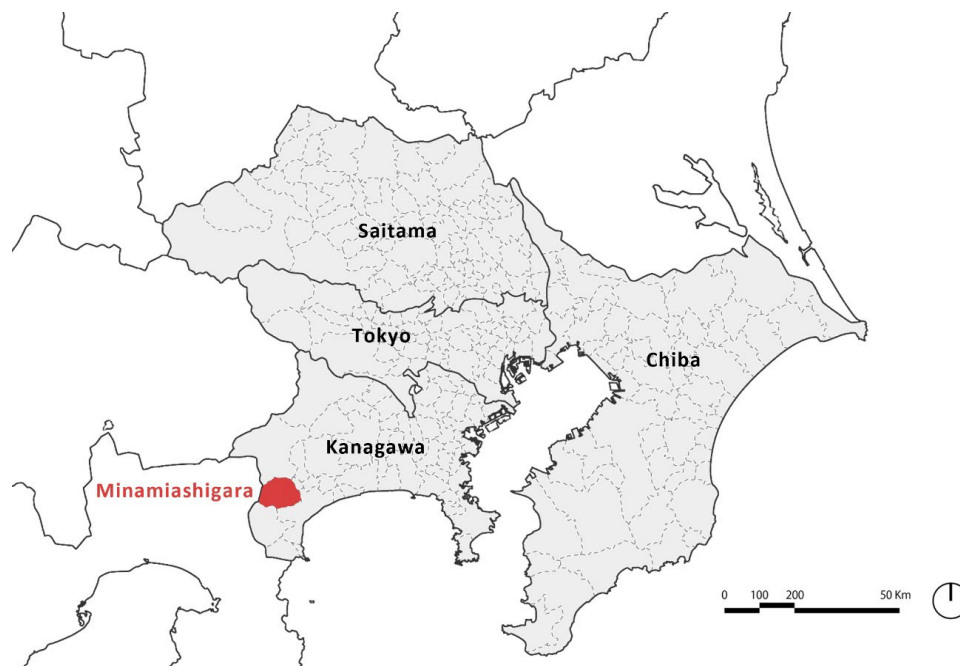


Figure 1. Map of the TMA and location of Minamiashigara.



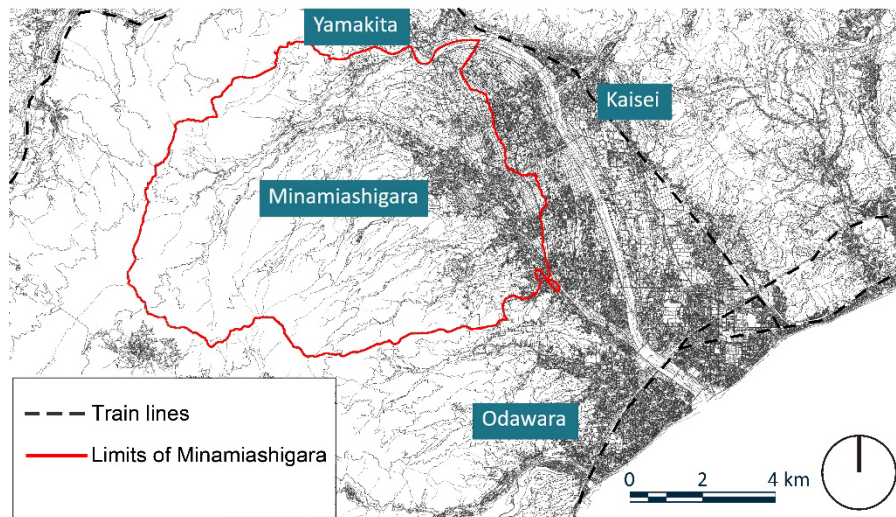


Figure 2. The Ashigara Plain urban area and cities.

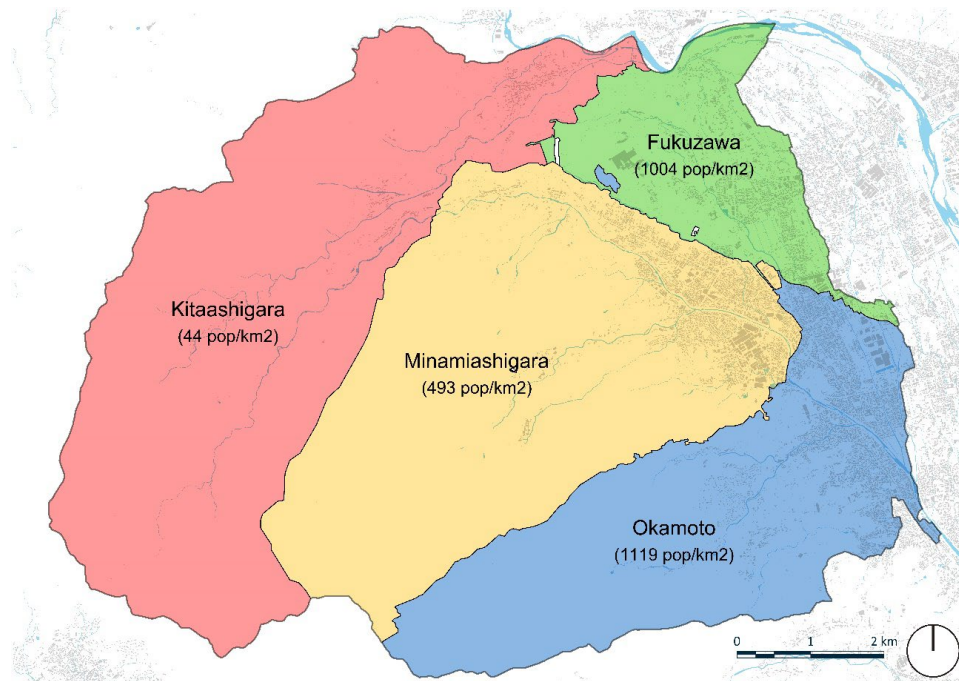


Figure 3. Map of Minamiashigara densities by districts.

The current Minamiashigara was established in 1955, following up on the *gappei* (village-town amalgamation) promoted by the national government. This process aimed to improve local government's financial and administrative efficiency by annexing nearby villages across the country into bigger municipalities.<sup>27</sup> The sparsely populated towns of Kitaashigara, Minamiashigara, Fukuzawa, and Okamoto were merged into a single administration. The current four districts of the city inherited the name and limits of these four old towns<sup>28</sup> (Figure 3).

During the Japanese economic miracle (1960s-1990s), the city population increased by more than 220%. After peaking in 2001 with 44,000 inhabitants, it has declined to 40,800 inhabitants in 2022, and it is expected to shrink to 32,600 inhabitants by 2040 (a decrease of 25% from 2001 to 2040).<sup>29</sup> The population over 65 years is 32%, slightly above the national average, of 28%.<sup>30</sup>

The effects of decay unevenly threaten the built and socioeconomic environment of the city. The research area mainly corresponds with the limits of the municipality.

### Design of the mapping methodology

We interviewed thirty stakeholders with high community involvement (Table 1) (Figure 4), conducting individual semi-structured interviews with open and closed questions from 30 min. to 1,5 h. We asked the interviewees the following:

1. Location and role of everyday life spaces that support community interactions.
2. General urban aspects that need improvement, asking them to point the specific spaces and aspects into printed maps.

Gender				Age (average: 49 years)															
Men		18		20s		2		30s		4		40s		7					
Women		12		50s		4		60s		9		70s		4					
Local activity																			
Regional-promotion		7		Sports-promotion		6		Social-welfare-council		4		Children-education		4		Sightseeing-promotion		2	
Environmental-protection		2		City-promotion		2		Heritage-protection		2		Local-art-promotion		1					

Table 1. Characteristics of the interviewed stakeholders.

We classified the responses into eight subcategories according to their main role in the residents' everyday life. Finally, we mapped these results.



Figure 4. Interviews with local stakeholders.

## RESULTS

We collected the location and role of 318 places that support everyday community life. Each interviewee gave an average of 42 responses (therefore, several of the places were mentioned by two or more interviewees). We classified these places into nine categories:

- *Meeting facilities*, kōminkan or other facilities designed for the encounter.
- *Green spaces*, like parks, agricultural land, forests, and water courses.
- *Culture places*, religious buildings, education facilities, and spaces related to historical heritage and art.
- *Shopping places* related to shops, supermarkets and department stores.
- *Gastronomy places*, like restaurants and cafes.
- *Exercise places* related to sports facilities and playgrounds.
- *Streets and open spaces*, like roads, paths, or intersections.

- *Office and welfare places*, administrative spaces, bank branches, and daycare centers.
- *Others*, associated with hotels, train stations, and garbage dump areas, among others.

Additionally, we collected 434 urban aspects that need improvement. 254 of these aspects refer to specific locations in the city and 180 to whole-city policies or issues.

### **Everyday life community spaces**

Table 2 shows the classification and number of places obtained. Green spaces are the most mentioned category (23,58% of the places), followed by culture places (15,41%) and streets and open spaces (15,41%). It follows the shopping places (15,09%) and gastronomy places (10,69%). The residents valued to a lesser degree the meeting facilities (7,55%), the exercise places (3,14%), the office and welfare places (2,83%), and other spaces (6,29%).

Category	N	%	Role	N
Green spaces	75	23,58	Areas near watercourses	19
			Farmlands	17
			Small-green areas	17
			Parks with resting and playground areas	13
			Forest areas	7
			Private gardens	2
Culture	49	15,41	Religious buildings	25
			Education facilities	19
			Places with heritage-remains	4
			Spaces renewed into cultural facilities	1
Streets and open spaces	49	15,41	Roads, paths and bridges with pleasant views of the surroundings	33
			Open spaces with pleasant views of the surroundings	11
			Lively open spaces	5
Shopping	48	15,09	Small local-shops	14
			Big brand-supermarkets	12
			Convenience stores	8
			Department stores	6
			Big brand-shops	5
			Old houses renovated into shops	3
Gastronomy	34	10,69	Local restaurants	23
			Brand-restaurants	9
			Old houses renovated into restaurants	2
Meeting facilities	24	7,55	Easy to book Kōminkan	15
			Accessible public facilities	4
			Private meeting facilities	4
			Spaces renewed into community facilities	1
Exercise	10	3,14	Public sports facilities	5
			Sports playgrounds	5
Office and welfare places	9	2,83	Bank branches	4
			Health-services facilities	3
			City hall	1
			Post offices	1
Others	20	6,29	Barnyards	4
			Factories	4
			Hostels	3
			Train stations	3
			Fuel stations	3
			Hot springs	2
			Roadside stations	1
<b>Total</b>	<b>318</b>	<b>100%</b>		

Table 2. Number of places (N) and percentage (%) by category. Role of the places for the residents and number of places (N).

Figure 5 collects the location and role of the obtained places into an evaluative map. The circle size of each place represents the number of respondents, while its color displays the different subcategories mentioned previously. To better understand the relationship between these spaces, we also represented the main roads and train lines that the residents usually use. The places particularly relevant, mentioned by more than 7 respondents, are represented with a specific code number. Regarding the particular spaces, the most remarked were the Saisoji Temple (23 respondents), the local city hall (16 respondents), the Michi no Eki service station (15 respondents), the Welmi 2 local department store (14 respondents), and the Odawara-Yamakita street (13 respondents), among others.

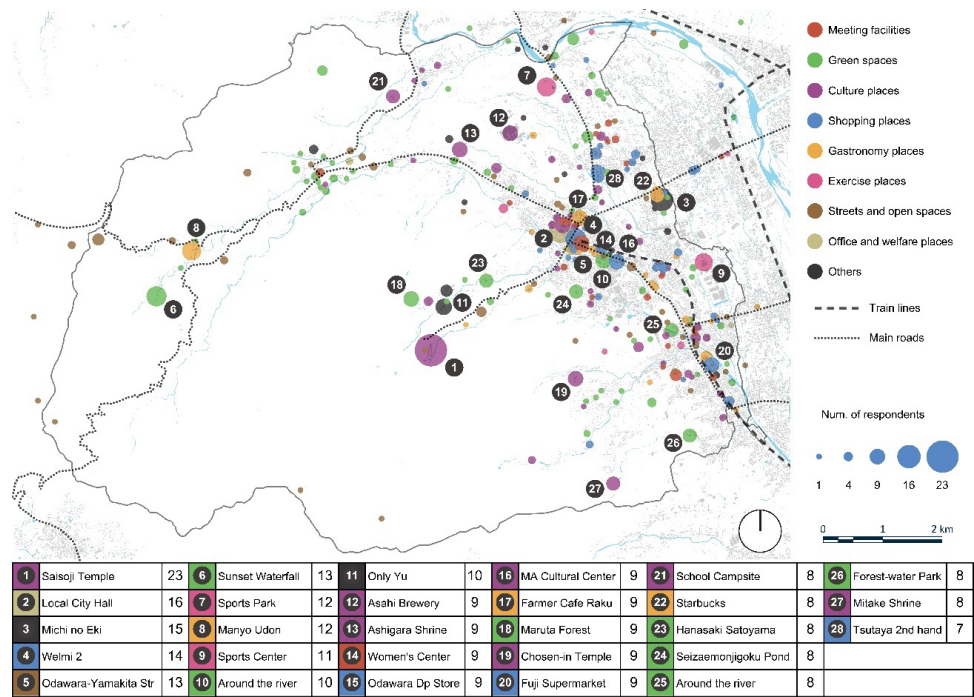


Figure 5. Evaluative map of everyday life community spaces.

Improvement aspects

The respondents noted a large number of urban issues (Table 3). The most mentioned is the lack of a mid-and long-term urban plan for the city for facing decline, particularly the lack of necessary consultation between the local government and the citizens (27 respondents). The second aspect (21 respondents) is the scarcity of spaces for the community. The interviewees highlighted the bureaucratic difficulty of borrowing meeting spaces and the limited opening hours of many of them. The participants also remarked (16 respondents) on the lack of transport services and their limited running hours. 15 respondents also noticed the lack of maintenance of some public spaces, mostly green areas and specific roads. Some interviewees emphasized the lack of local identity in the city, perceiving an absence of spaces different from the ones in surrounding cities (14 respondents). Finally, the inefficient use of some spaces was noticed by 8 respondents. One example of this category is the considerable number of abandoned houses in the city. According to the suggestion of some stakeholders, these spaces could be converted into community spaces.



Category	Example	N
Lack of urban plan	Lack of mid and long-term urban plan. Lack of citizen consultation in urban and tourist plans	27
Lack of community spaces	Lack of community spaces, difficulty of booking meeting spaces, limited opening-hours	21
Lack of transport	Scarcity of transport services, limited running hours.	16
Lack of maintenance	Poor maintenance of certain public spaces, like some parks and forests	15
Lack of local identity	Lack of distinctive local identity. Absence of spaces different from the surrounding cities	14
Inefficient use of space	Large number of abandoned spaces which could be converted into community spaces	8

*Table 3. Main improvement aspects by number of respondents.*

## DISCUSSION AND CONCLUSION

This paper identifies and maps everyday life community spaces rooted by residents. Particularly, the revitalization of sweet spots can help ameliorate the ill-social consequences of decline and become the base for designing local-specific strategies. The results suggest two relevant aspects for strengthening this attachment in sprawl areas. The first is the usefulness of participatory maps in identifying places that have become, or can be turned into, sweet spots. The second is the value of these maps in helping to clarify the urban structure of sprawl areas.

Regarding the first aspect, besides the iconic landmarks in the city, the interviews highlighted less-known spaces relevant to community life. Two types of spaces are particularly significant: those abandoned spaces converted into sweet spots and overlooked spaces with the potential to become them. As for the first type, the interviews highlighted seven places that went from derelict spaces to lively places relevant to the everyday lives of many interviewees. The most significant example is the Farmer Café Raku (9 respondents), a formerly abandoned house revitalized into a vibrant restaurant where the residents sell and prepare dishes with local vegetables. Another case in this category is the School Campsite (8 respondents), an abandoned school converted into an art center. These places have become sweet spots whose revitalization has positively influenced the residents' attachment to a larger urban scale.

The interviews featured several underused places that can also become sweet spots for regeneration. The most evident ones are the abandoned houses, an inherent consequence of urban decay. But the interviewees highlighted two kinds of less-known spaces with potential for future revitalization: the farmlands and some of the *kōminkan*. The informal interaction in the farmlands is a constant pattern in the city (the interviews highlighted 17 of these spaces). In addition, some interviewees conduct sporadic events like street markets in these spaces. They especially manifested their will to conduct these events with the potential participation of visitors. Some of these spaces are integrated into the urban fabric, making their revitalization convenient.

Most interviewees noted the under-use of some of the *kōminkan*, which are difficult to book or have very limited timetables. Of the 34 *kōminkan* of the city,<sup>31</sup> only 15 were positively highlighted by the participants. Turning some of the under-used ones into places managed by the neighbors with a broader range of activities, could be a suitable strategy for the less populated areas, where less municipal staff is available and whose residents are lacking community spaces the most.

Regarding the second aspect, the spaces noted in the interviews also help clarify the research area's structure. The participatory maps highlight a particular identity and centralities for each of the four

former cities that gave birth to the actual Minamiashigara. The places in Kitaashigara denote a community life based mainly on farmlands, green spaces, and hostels, and a clear urban node at the intersection of the roads connecting the area with the nearby cities in the north and the west. Minamiashigara district places are related to traditional religious buildings and hot spring facilities, with the activity centered in the Saisoji Temple area. The most populated areas of Fukuzawa and Okamoto have places related to big sports centers, brand restaurants, and department stores, a convenient location due to the wide prefectural roads connecting these areas with the nearby cities. The intersection of these roads with the train line is the liveliest area, where the more significant number of small local shops and restaurants is based (Figure 6).

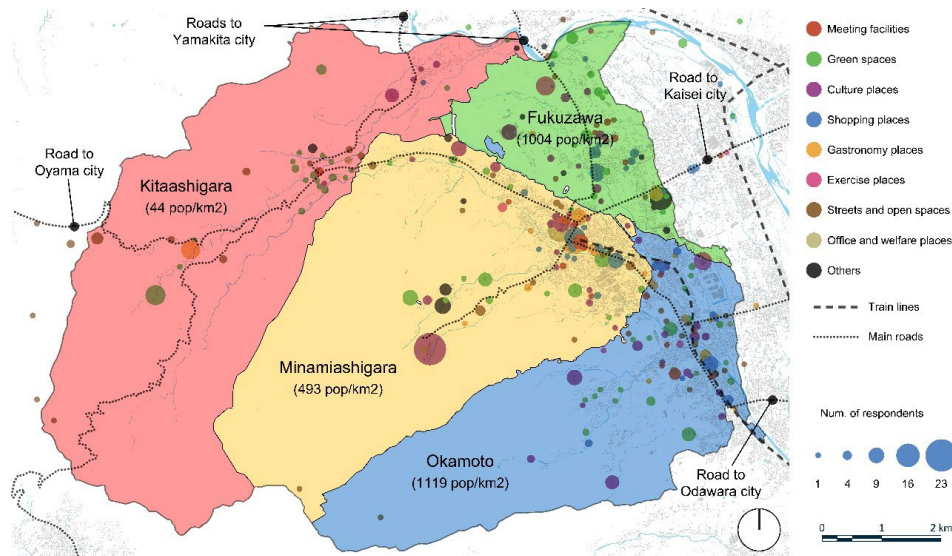


Figure 6. Minamiashigara districts, overlapped with the identified places.

This research mapped the everyday community spaces in Minamiashigara. Analyzing more subjective aspects of the city can unveil clear clusters and structures on urban sprawl. The proposed methods can be applied to other exurban areas facing similar threats, not only in Japan but also worldwide.



## NOTES

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# TRANSFORMING THE HARBOUR – THE ROLE OF ARCHITECTURE IN CREATING URBAN LIFE

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## INTRODUCTION

Global challenges related to urbanization call for the sustainable development of cities.<sup>1</sup> Transforming and building urban areas to be compact, mixed-use, and integrated to minimize the negative social, economic, and environmental consequences of urbanization has been a leading concept in the last 30 years.<sup>2</sup> However, creating sustainable compact cities on multiple dimensions can be characterized as a wicked problem, a complex task, that requires multidisciplinary efforts to tackle the underlying challenges.<sup>3</sup> Thus, in practice, they rarely succeed to focus on all three dimensions of sustainability equally. Emphasis is often put on the environmental and economic dimensions, while the social is less addressed.<sup>4</sup>

This study is concerned with the underexposed social dimension of sustainable urban development, discussing the role and potential of architecture in creating urban life seen as a social value contributing to the well-being of citizens living in compact neighbourhoods. This value potential is investigated through the interrelations between the design of the built environment and practice, primarily from a user perspective. In this paper, urban life is studied in relation to the urban public space created by a mixed-use building complex, as part of the large-scale harbourfront redevelopment in Aarhus Bay, Denmark. While the study discusses the role of architecture in the matter, it is important to note, that architecture in itself is not enough to develop these interactions. However, if it's designed correctly, it can certainly act as a catalyst.<sup>5</sup> These entanglements between design, practice, and value on an urban scale in Scandinavia were studied by urbanist architects,<sup>6</sup> anthropologists,<sup>7</sup> and economists<sup>8</sup> too.

Present study applies a multidisciplinary methodological framework built on tectonic theory described in Sántha et al.<sup>9</sup> to critically discuss the social value potential of architectural efforts in creating urban life. Through a mixed-method inquiry, the study aims to better understand how urban public spaces in densely built neighbourhoods are used and to open a discussion on the role of architecture in creating urban life as a social value.

## TECTONIC METHODOLOGY

The physical built environment as a “framework” can be designed to either encourage or discourage certain activities and social interactions; to limit or offer possibilities, that allow for a broader range of narratives to unfold through the dynamic interactions between social processes and buildings.<sup>10</sup> However, in search of the potential of architecture to catalyze these processes, it is also pointed out, that architects and urban planners tend to focus one-sidedly on space (e.g. Ståhle et al.<sup>11</sup>), while it

should always be studied in connection to life.<sup>12</sup> Urban space should be considered as a forum for these interactions and thus the focus should be on “all the versatile imperceptible flows that run through a city”,<sup>13</sup> instead of the classical topics of urban theory, dividing between subjective and objective interpretations of the city.<sup>14</sup>

This mindset however would not be a new approach in architecture and urban design. In fact, it is rooted in the ancient task of the *architecton*, as a pre-specialization,<sup>15</sup> comprising the essential skills of tectonics; the careful articulation of the spatial gestures by architecture, through structure, and construction,<sup>16</sup> as a way of non-verbal communication between architect and experiencer, the user.<sup>17</sup> In the past century, tectonic theory has re-emerged as means to explicitly describe and discuss the expressive quality of architectural works<sup>18</sup> and was applied on different scales from the interior<sup>19</sup> to urban design<sup>20</sup> in recent research. The study also builds on most recent findings that tectonic theory has the potential to provide a basis for a multidisciplinary methodological framework,<sup>21</sup> and it can be applied to identify and analyze spatial gestures as “key expressions/statements, stressing the core potential of architecture to facilitate human well-being through its form, which potentially translates to social value, depending on the users’ preference and response to those gestures through everyday practice”<sup>22</sup> (Figure 1).

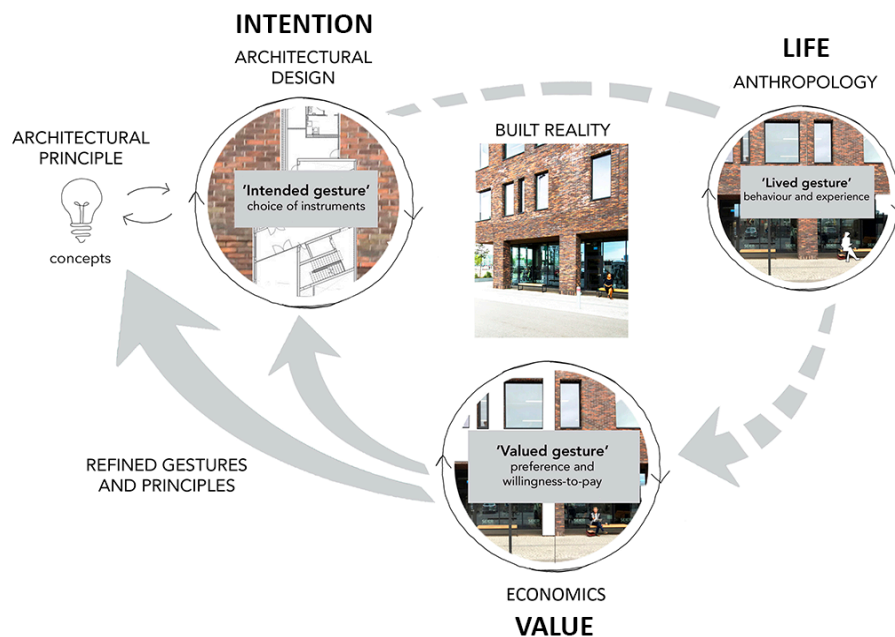


Figure 10. The tectonic methodology by Sántha et al. (2022a) describes the relation between design (intention), practice (life), and value

Emerging from previous studies focusing holistically on the “translation” of gestures from architecture to anthropology through the narratives of ‘intended’<sup>23</sup> and ‘lived’ spatial gestures,<sup>24</sup> the objective of this current study is to unfold and discuss the role and potential of architecture in creating urban life as a social value in a mixed-use building complex.

### ‘THE WAREHOUSES’ COMPLEX IN AARHUS

Initiating a redevelopment project by the city council in 1997, the harbourfront of Aarhus Bay has been an area of key importance in accommodating the growing urban population of the Danish city.<sup>25</sup> The project was guided by the sustainable compact city model, with a high potential to create social value for its citizens by making it a “desirable place to live”.<sup>26</sup>



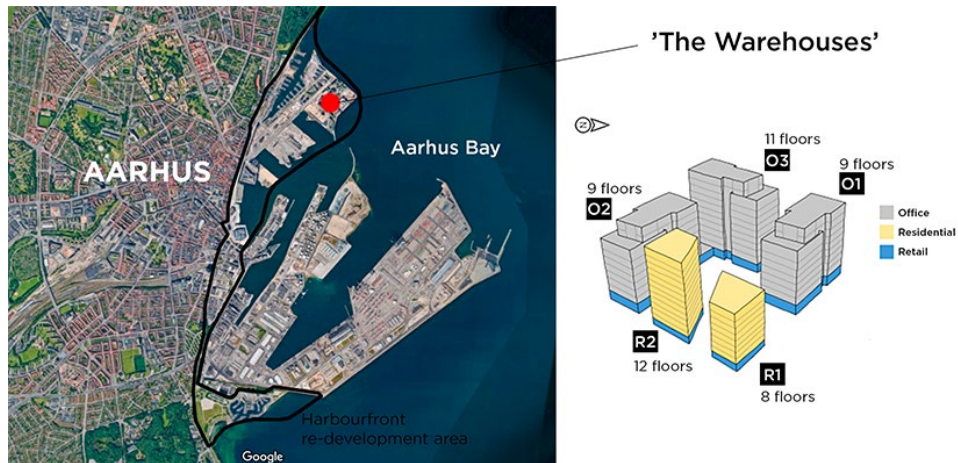


Figure 11. The map on the left shows the location of The Warehouses within the harbourfront redevelopment area in Aarhus. The figure to the right shows the buildings of the complex and their primary function. Color coding: grey = office, yellow = residential, blue = retail. The complex of approx. 45.000 sqm was built in two phases in 2016 and 2020. It was developed by Kilden og Hindby and designed by AART architects A/S in collaboration with MOE A/S engineers

This study investigates the building project of 'The Warehouses' complex, built as part of the harbourfront redevelopment on Pier 4 of the northern part of the former dockland (Figure 2). The mixed-use complex of 'The Warehouses', as a case, to investigate is chosen because it places particular demands on the building's ability to articulate spatial gestures in the transition between building and urban spaces due to its complexity in application and user groups (businesses and residents). Thus, it provides a good basis for investigating the role and potential of architecture to create urban life as a social value, focusing on the interactions and flows in a selected urban public area. In its broadest sense, public space is understood as, the space between the buildings, including the streets, parking lot, etc. as part of the built environment.<sup>27</sup> In this study, the urban area of interest comprised the space between the buildings of the complex (Figure 3).



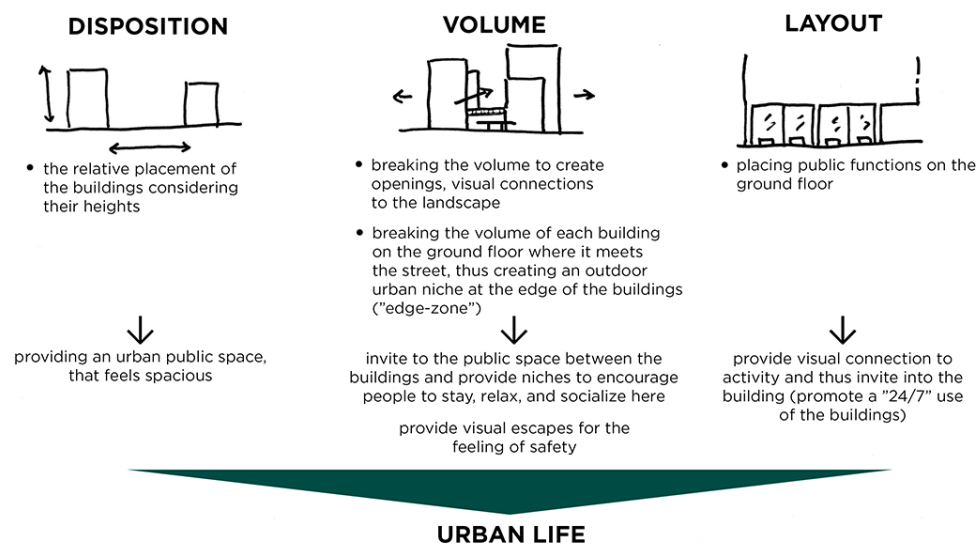
Figure 12. The investigated urban public space between the buildings of 'The Warehouses'. Photos are taken by the author in September 2020 (1-2) and June 2021 (3)

This is a more or less enclosed space, containing a parking lot, and a couple of urban niches at the bottom of the buildings. The area is quite poor in green elements; only a couple of trees and some grass in between the hollowed concrete tiles used as pavement for the parking area. At least half of the



space is mostly in shade during the day, and the main road crossing the space is often windswept, due to the tall buildings surrounding the space.

Based on the empirical evidence found in Sántha et al. (2022b), architecturally intended key spatial gestures to create urban life through a number of architectural tools are summarized in Figure 4. Apart from the inherently good intentions by the developer on the mixed-use concept, it is indeed the role and responsibility of the architect to realize those potentials the best way it's possible, given the constraints by the spatial gestures articulated through a number of architectural solutions.<sup>28</sup>



*Figure 13. Architecturally intended key spatial gestures<sup>29</sup> to create urban life as a potential social value added to the citizens of the neighborhood by architectural instruments (disposition, volume, and layout)*

How and to what extent some of these ‘intended’ spatial gestures translate to ‘lived’ spatial gestures is explored through a mixed-method inquiry, studying the urban public space between the buildings of the mixed-use complex, through the experiences and observed activities of the different user groups.

## METHODS FOR STUDYING URBAN LIFE

Qualitative data on the spatial experiences and practices had been collected in the form of audio-recorded on-site ‘walk-and-talk’ interviews,<sup>30</sup> with the occupants of the complex. These types of interviews are considered a “valuable means of deepening understandings of lived experiences in particular places”,<sup>31</sup> thus an adequate method to collect detailed qualitative data for studying the topic of urban life in this context. The interviews were conducted in a semi-structured discussion format along the participants’ free choice of route. Research questions investigated by this method and further details on data collection are shown and summarized in table 1.

Quantitative data had been collected using a selection of direct observation methods (counting, mapping, and tracing),<sup>32</sup> as a primary tool to study urban public life. Here, user groups are understood in a broad sense, comprising both the different occupant groups of the buildings as well as inhabitants of the neighborhood, visitors from another part of the city, tourists, etc. Direct observation methods do not actively involve participants, rather they become the object of the study, by mapping their activities and behavior to gain insight into how public spaces are used according to user preferences and needs.<sup>33</sup> While public life generally should be understood in the broadest sense, comprising all that is happening outside of closed walls,<sup>34</sup> activities counted, traced, and mapped were narrowed down to a list of selected movement types and stationary activities. To grasp a more “normal”

distribution, two workdays in the middle of the week were selected for data sampling. Based on the same consideration, sampling times were selected strategically to avoid morning and afternoon rush hours. Research questions investigated by this method and further details on data collection are shown and summarized in table 1.

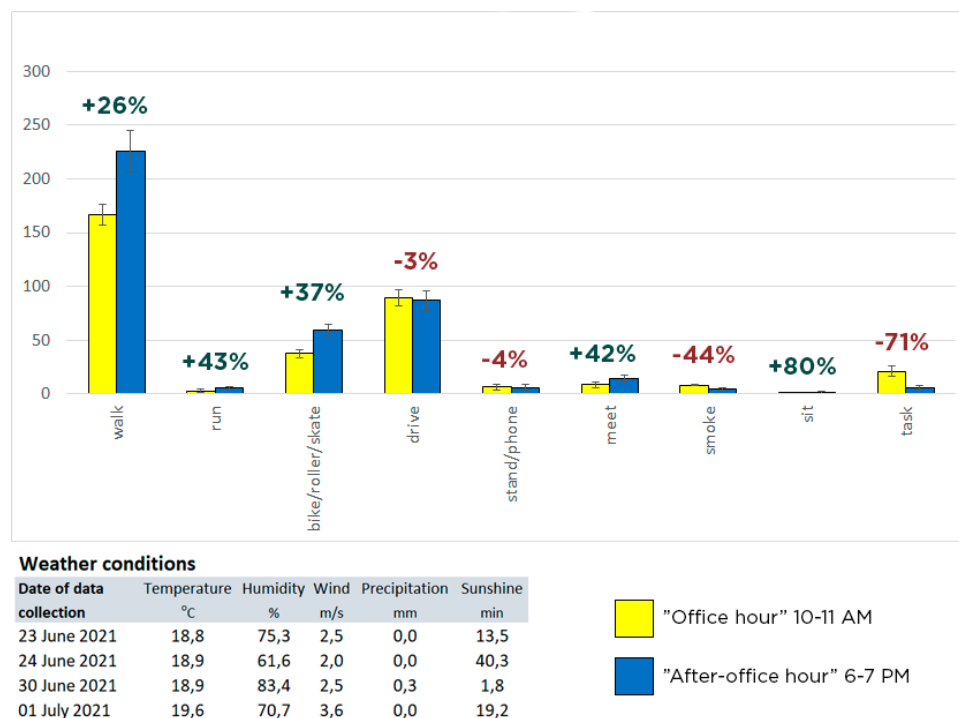
	<b>INTERVIEWS</b>	<b>URBAN LIFE RECORDS</b>
<b>Inquiry</b>	Qualitative	Quantitative
<b>Specific method</b>	Walk'n'talk	Counting, mapping, and tracing
<b>Research questions</b>	<ul style="list-style-type: none"> <li>- How do users perceive traffic</li> <li>- How do they describe urban life</li> <li>- How do they use the buildings</li> <li>- What does mixed-use mean to them</li> </ul>	<ul style="list-style-type: none"> <li>- How many (within-day variation)</li> <li>- Where</li> <li>- What (activity)</li> </ul>
<b>Data collection</b>	June-July, 2021	June-July, 2021
<b>Data sample</b>	10 informants of 2 user groups: 3 office building occupants and 7 residents  Age group: 20-68 years  60% Male, 40% Female	Counting and mapping: 4 days (Wednesday-Thursday)/2 weeks - Within office hours: 10-11 AM; - After office hours: 6-7 PM Tracing and mapping: 3 days (Wednesday-Thursday)/2 weeks - Within office hours: 11-12 AM; - After office hours: 7-8 PM

*Table 1. Summary of the details regarding the mixed-method inquiry applied in this study*

In terms of data analysis methods, qualitative data were transcribed and coded thematically using NVivo Pro. The primary quantitative data were logged manually on paper and were subsequently entered into a digital spreadsheet. Statistical analysis of the data from counting was carried out in MS Excel, while the tracing data were analyzed visually in aggregated form by overlaying them in Adobe Photoshop.

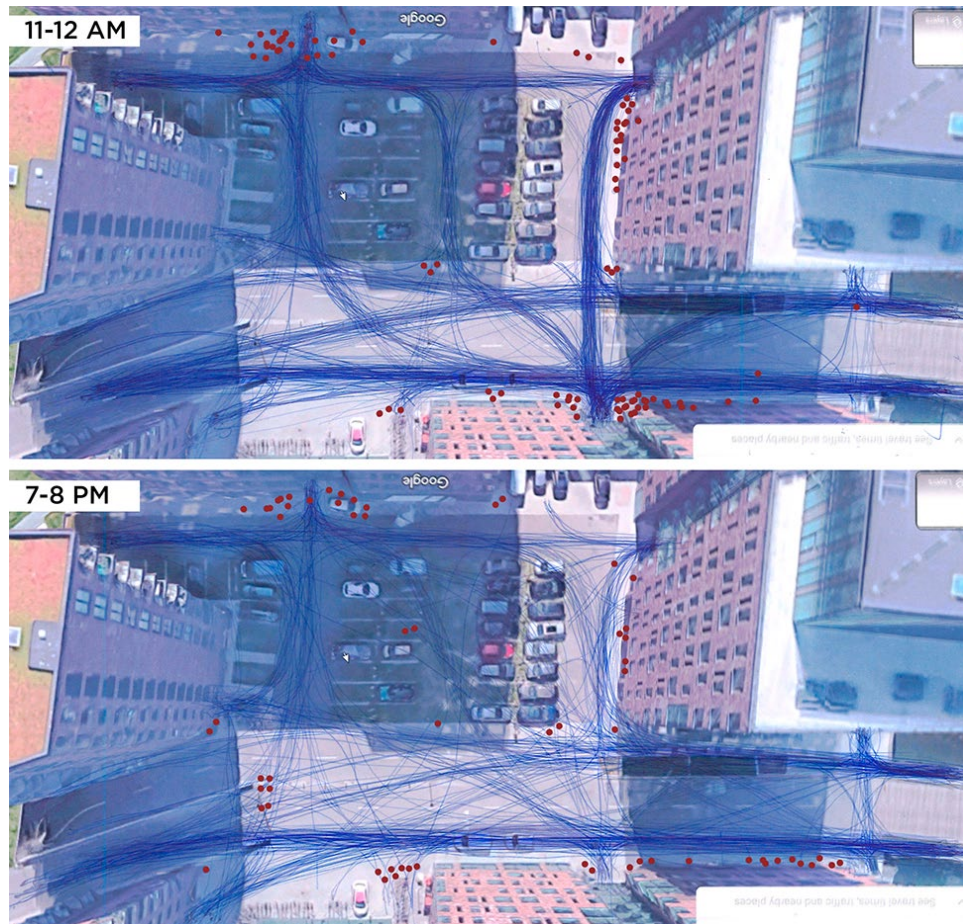
## **URBAN LIFE BETWEEN THE BUILDINGS OF THE COMPLEX**

The overall average traffic within the hours 10-11 AM and 6-7 PM of the sampled days was 376, in absolute terms. Traffic in general on weekdays, during office hours, was described by informants as busy, and heavy on transit traffic, but not disturbing, in relative terms. Based on the registrations, traffic during the after-office hour was on average 17% higher than during the office hour (Figure 5). Yet, perceived traffic during these hours was described as “calm”, “nice”, and “busy in a good way” for the same area.



*Figure 14. Average traffic in the space between the buildings. As the data on urban life recordings is dependent on the weather conditions, a summary of key measures is also included*

This is probably explained by a shift in the type of activities taking place in this space. Pedestrians traffic is still dominating in the after-office hours with an increase of 26% for walking, and 43% for running, along with a 37% increase in human-powered land vehicle traffic (Figure 5), but the transit traffic, referring to the number of people crossing the space doing a task (e.g. deliveries) combined with the number of cars coming and going, is significantly less by a total of 71% (Figure 5). This is also supported by the noticeable fewer cars parking above-ground, which is also reflected in the walk path pattern shown by tracing data (Figure 6). Pedestrian traffic comprises people walking around with different water sports equipment and accessories, as well as gym bags (indication for water sport and fitness activity) all day round, whereas in the evening there was a number of formally dressed people presumably attending an arrangement or going to one of the restaurants in the buildings. Having meeting rooms and a cantina to be shared by all the companies renting an office space in the complex also creates a significant traffic in the space between the buildings during office hours, especially around lunch time. These flows to and from the buildings and the dynamics changing between them are represented well by tracing data (Figure 6). The shift in the character of stationary activities resembles the same dynamics. From within office hours to after office hours, there is 44% less smoking, while there is 42% more meeting and 80% more sitting (Figure 5), as the space transfers from being a space for phone calls, coffee breaks, and smoking for employees to an ad-hoc meeting and resting point for people. Data also shows, that on average 36% of all stationary activities happen in the “edge zone” of office building “O1” (to the bottom right on Figure 6), indicating a slight preference towards it.



*Figure 15. Results of tracing, showing pedestrian flow and stationary activities. Each line represents the path of a pedestrian (movement) and each dot represents a registered stationary activity*

The synthesis of the quantitative and qualitative data unfolds the dynamic flow of the studied mixed-use neighborhood. The analysis of the synthesized data revealed what factors play a role in creating urban life. Key potentials to create urban life by architecture on a building level were found to lie in the abundance and quality of outdoor niches, the presence of good and affordable public services and functions within a walkable distance, as well as the characteristics of the landscape, and how the green-blue infrastructure is integrated into the space between the buildings.

#### Connection to the landscape

Empirical findings of this paper show, that the space itself studied here does not provide an adequate amount of green area. This is to a certain degree compensated by the provided visual connection and access to the nearby urban green area and water bodies (canals and the sea), which gives a “good business” of the space between the buildings, as the informants described its traffic. However, it was also explicitly expressed by the interviewed residents, that there would be a need for more of these (green) urban niches between buildings, where “life” could truly unfold in a more “relaxed” setting, especially in this compact urban fabric with dense, high-rise buildings.

#### Building edges as important outdoor niches for urban life

Findings also show that building edges, when designed as functional outdoor niches, have a high potential to be a scene for activities and a driver for urban life. Investigating the spatial gestures in these niches it becomes very clear, that it is mostly at the edge zone of “O1”, where those kinds of

activities are welcomed and encouraged; where the space is inviting the public to sit down or stand by the benches and catch the evening sunlight, or just find shelter from wind or rain. Even though in principle, space is available for the same activities in the other edge zones, there you find designated parking spots, no benches, and they are mostly in shade during the day. These spaces could easily be just as inviting as the one at “O1”, and as the data on registered stationary activities showed, there is demand for it.

### The presence of good and affordable public services and functions within a walkable distance

The case studied here can be characterized as a ‘pure mixed-use walkable area’, which provides both horizontally and vertically mixed spaces to accommodate the personal and professional needs of the different user groups, where all functions are reachable from the core activities within an approximately 10-minute walking distance. The contribution of architecture in this context to creating urban life is through the spatial gesture of inviting the public into the building, thus utilizing it “24/7”, through the “activation of the ground floor” by consideration regarding layout and materials.<sup>35</sup> Results of the present study showed how these services and functions can act as a driver for pedestrian flow between the buildings. This was also explained by an occupant of the office building, that it is not enough to simply introduce an office building to an otherwise residential neighborhood in an attempt to make it a lively mixed-use area. The informant pointed out, making a comparison to a similar harbourfront development project in Copenhagen, the importance of the placement of these public functions and services to have “more life” in and around its buildings.

## DISCUSSION AND CONCLUSIONS

Based on the findings of this study, the role of architecture in creating urban life as a social value is through careful detailing, and well-articulated intended gestures. The case studied here is a good example of architectural efforts put into social value creation through the intended gestures regarding creating urban life, comprising the design and integration of green-blue areas, outdoor niches, as well as public services and functions within a walkable distance.

However, the study also showed that there is still room for improvement when it comes to the nuances of gestures, especially those regarding the design of outdoor niches. These could have been more elaborate, more inclusive, and more inviting in general. More focus should have also been put on the provision of green areas. The right to space, and the right to green space echo in the current discourses as one of the key elements of social sustainability in sustainable urban development. This entails the fair distribution of urban public spaces, regarding both their quantity and quality in terms of ecological, social, and health promotion services.<sup>36</sup> The responsibility of architecture in this context is to focus on the different needs of different user groups. This could potentially be improved first by establishing democracy in urban planning processes, where all individuals, have the right to get involved in the development, implementation, and enforcement of policies.<sup>37</sup> However, one critique of participatory planning processes includes, that people don’t always know what they want exactly.<sup>38</sup> Also, considering the delicate balance between the multiple dimensions of sustainability the greener is not necessarily the better. Urban green areas and waterbodies as key neighborhood amenities often have a great influence on housing prices.<sup>39</sup> This raises the issue of affordability, potentially conflicting with the original notion to have the right to green space, and poses a risk for other socio-economic issues, e.g. gentrification.<sup>40</sup>

Another challenge of creating urban life is the provision of privacy considering the increased traffic and activities close to the residential areas. Urban life is not inherently “good” or desirable. Urban public spaces, as open spatial invitations are also attractive for unwanted, and in some cases even

illegal activities. As there were a couple of intended gestures focusing on the feeling of safety through the creation of visual escapes or connection to activity by breaking the volume (Figure 4), future studies on this case can be focused on the investigation of this relationship and how to improve privacy and safety, while nurturing urban life in mixed-use neighbourhoods.

To sum up, the findings of this study revealed the dynamic flow of urban public space in a mixed-use neighborhood through a mixed-method inquiry on urban life. The study contributes to closing the gap between subjective and objective interpretations of urban spaces, by focusing on both the construction of the built environment and the vibrant complex flows running through them. Thus, it provides input to the multidisciplinary efforts needed to create functional and livable compact cities in the future.

## NOTES

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## A NEW SUBURBIA IN A POST-COVID WORLD?

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### INTRODUCTION

This paper examines the post-COVID-19 impacts on the workspace and what this could mean for suburbia. Can urbanism exist outside of Central Business Districts [CBD's] in revitalized neighborhoods or suburban centers? Is there the potential to change suburbia from a dormitory to a twenty-four/seven culture?

Surveys are indicating that at least 25-30%, of the office workforce will continue to work from home in a post-COVID world. That being so, is it realistic to expect that they will be working off dining room tables or in spare bedrooms? Is there an opportunity here for remote or satellite neighborhood workspaces to become a workplace interpretation of Edward Soja's "Third Space",<sup>1</sup> a [sub]urban hybrid distributed presence between home and the office growing organically out of the necessity to provide a safe and sustainable workplace? And if a significant number of workers reduce their time spent commuting could there be potential beneficial reductions in greenhouse gas emissions as a result?

In 1996, the distinguished Canadian geographer and planner Larry Bourne suggested<sup>2</sup> "that we jettison terms such as suburb, and the city-suburb dichotomy, as well as the intellectual baggage associated with them" and replace them with "a new but as yet undefined lexicon, one based on a revised conceptual synthesis of urban development that is more appropriate to the conditions of the late 20th century" and concluded his introduction by proposing that "The need to redesign the suburbs, both old and new, may well be the next frontier in urban research and planning". This paper suggests that the time has arrived for the design community to re-engage with suburbia in the meaningful ways outlined in Bourne's paper.

**CONTEXT: GLOBAL WARMING & COVID-19***Figure 1*

The recently published “Climate Change 2022, Mitigation of Climate Change”,<sup>3</sup> prepared by the Intergovernmental Panel on Climate Change [IPCC]<sup>4</sup> presented an in-depth evaluation of the underlying evidence and agreement on potential prevention and mitigation strategies for global warming. In summary, the report looked at synergies and trade-offs between Sustainability Development Goals [SDG’s] and mitigation options for major key development sectors such as Energy Systems, Agriculture, Forestry and Other Land Use [AFOLU], Urban Systems, Buildings, Transport, and Industry.<sup>5</sup> The report’s Chapter 8, Urban Systems, is a comprehensively researched and cogent analysis addressing urban form, spatial planning and their impacts on the behavior and social structures of the residents of urban systems.<sup>6</sup> While planning professionals will agree with the conclusions of this Chapter, the focus on “urban areas” and the three urban typologies<sup>7</sup> [“established”, “rapidly growing” and “emerging”] make virtually no reference to the suburban hinterland that surrounds metropolitan areas. The only reference<sup>8</sup> notes that “Established urban areas that are already compact and walkable have captured mitigation benefits from these illustrative strategies ... Conversely, established urban areas that are dispersed and auto-centric have foregone these opportunities with the exception of urban infill and densification ...”<sup>9</sup>.

Put in perspective, the Urban Land Institute’s [ULI] data<sup>10</sup> from the 2016 “Housing in the Evolving American Suburb” study shows that in the top fifty Metropolitan Statistical Areas [MSA’s] in the United States, suburbia contains 79% of the population, 78% of households and 32% of the land area

of these MSA's. Therefore, the lack of in-depth analysis of “dispersed and auto-centric” areas is a serious omission in a document upon which governments are basing policy decisions. This is an area which needs more thought and investigation than is currently reflected in the IPCC report. As designers, we need to recognize the existence of suburbia for the foreseeable future and identify ways that suburbia can play a role in addressing the changes that are required to deal with global warming. Two years earlier, on March 11, 2020, the WHO declared the spread of the novel coronavirus 2019-nCoV as a global pandemic,<sup>11</sup>. *“If the Great Depression Is Any Indication, Things Won't Just Go Back to ‘Normal’ After the Coronavirus Pandemic Ends”*.<sup>12</sup> This Time magazine article observes that “... while the history of crises past seems to assure us that, one way or another, todays will eventually recede, that history just as surely cautions us against assuming we can anticipate what the world may look like when it does.” And reinforcing this as a global phenomenon, 72% of the 21,000 adults surveyed by Ipsos for the World Economic Forum [WEF] preferred significant change rather than a return to the pre-COVID normal, and 86% of the surveyed adults agreeing with the statement that “I want the world to change significantly and become more sustainable and equitable rather than returning to how it was before the COVID-19”.<sup>13</sup>

## THE WORKPLACE: A NEW REALITY FOR WHITE COLLAR WORKERS

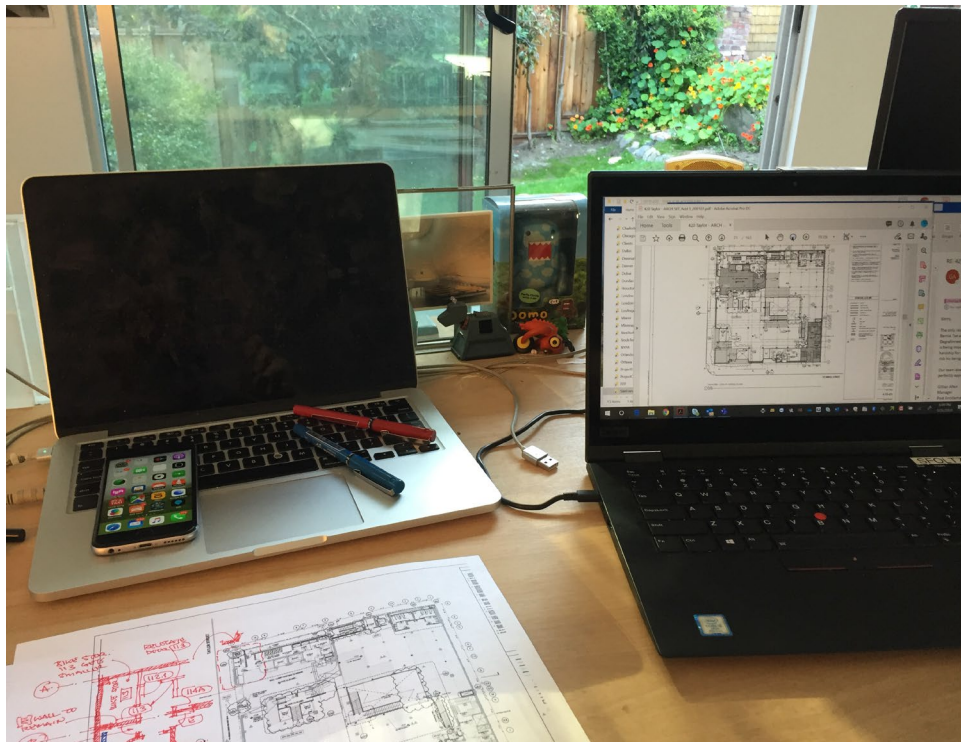


Figure 2

The reality of the post-COVID 19 “new normal” workplace is an outgrowth of the mitigation measures adopted to help reduce the spread of the virus and as COVID-19 transitions from pandemic to endemic, we need to adapt to this new reality. With the reluctance of white-collar employees to return full-time to the workplace, the impacts extend beyond space demands in CBD's, and into land-use planning and transit.<sup>14</sup>

Business surveys are indicating that the number of people responding positively to the question of working from home in a post-COVID world will be higher than the 31% cited by the Bureau of Labor Statistics [BLS] for April 2020.<sup>15</sup> As Price Waterhouse Cooper's [PwC] US Remote Work Survey

notes "... most office workers want some option for remote work. When asked whether they'd like to continue to work remotely once COVID-19 is no longer a concern, the findings are unambiguous: 72% say they'd like to work away from the office for at least two days a week. While a third (32%) say they'd prefer never to go to the office. Employees are clearly signaling interest in a range of options. As a working hypothesis up to one-third of the work force could at any given time be working remotely." Further, a November 2021 Bay Area Council [BAC] Employer Network Poll shows that during 2021, 41% of employers now expect their employees to be in the office 3-days each week and only 23% expect them to be present 5-days each week<sup>16</sup>. And a recent Wall Street Journal article notes that "In a Gallup survey last summer, for example, 52% of those who want to work remotely listed avoiding commuting time as a top reason they don't want to go to the office..."<sup>17</sup>

This survey data will result in impacts on how we program the workplace and the resultant demand for office space in both CBD's and suburban office parks. While some of those working from home may have suitable physical and internet environments, this is not so for the majority for reasons such as family circumstances, space or internet limitations. And the term "working remotely" represents several hybrid work solutions with one being an employee choosing to work only two or three days from home during the week [the preferred option], while alternatively one could work part of the day at home and part of the day in the office, commuting during off-peak hours.<sup>18</sup> This latter alternative brings a level of intentionality as to why a worker would go into the office and could also have positive transit impacts through moving commute demand onto off-peak hours.

## **REVISITING LAND-USE ZONING POLICIES:**

### **Adaptive Neighborhoods - A Potential Solution**

For hybrid-workers seeking a more appropriate work environment, better internet speed, more daily social interaction or simply a change in scenery, the following is a solution. A June 2020 study by Martin Leitner of Perkins&Will, a global architecture and planning firm, titled "Blurred Use Neighborhoods" examines the potential legacy that working from home could leave on our cities and suburban neighborhoods.<sup>19</sup> Using Los Angeles as an example it examines remote workspaces ranging from the extra-small [XS], small [S], medium [M] and retrofit [R] which are compatible with single-family, medium-density and neighborhood boulevard types of communities. The "XS" spaces are typically the dining room table / home office / garage studio, the "S" can be live-work townhomes or nearby ground-floor bottegass, while "M" and "R" would be local Main Street office space or storefront co-working space. Except for the "XS" space, all such spaces could guarantee access to quality high-speed internet, audio-visual [AV] conference space, reprographic facilities, and collaboration spaces with dedicated quiet meeting areas. Leitner takes the position that particularly for the small, medium, and retrofit spaces which create active co-working ground floor space in existing underutilized neighborhood buildings, this would lead to a better use of land, lower traffic impacts and increase local revenues, while at the same time building a day-time community. This could be the workplace interpretation of Edward Soja's "Third Space", a [sub]urban hybrid distributed presence between home and the office which builds organically out of the necessity to address the provision of a safe and resilient workplace that can adapt to our post-COVID-19 conditions.<sup>20</sup>



XS: Extra small types



Figure 3

S: Small types

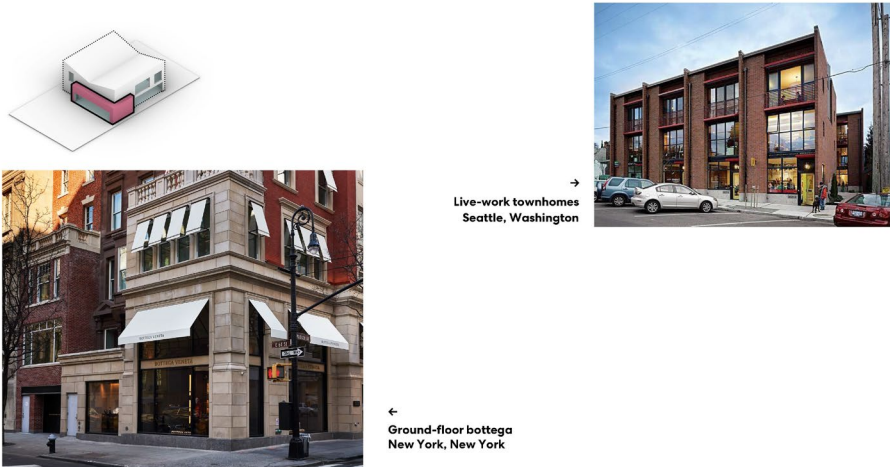


Figure 4

M: Main street types

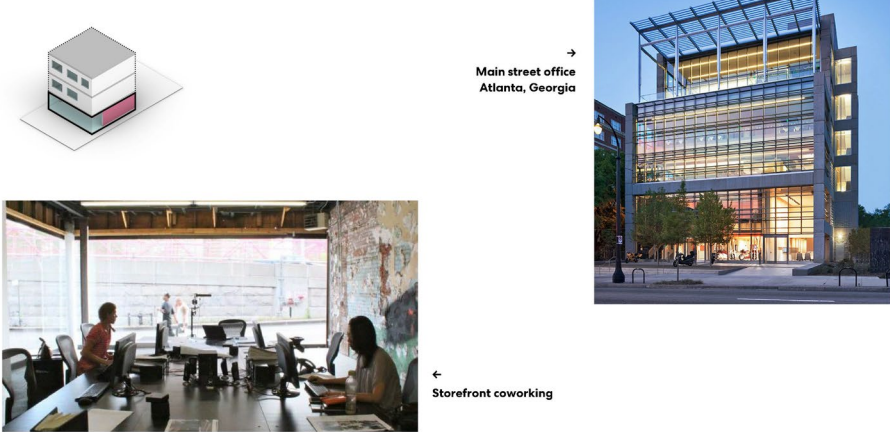


Figure 5



These “Third Space” alternatives could be located in the commercial strip of an early 20<sup>th</sup> century streetcar suburb, or the redevelopment of a failed mid-century shopping mall or even in the repurposing the original village “Main Street” around which post-war suburbs grew, or if in the UK, the re-imagining of existing “garden city” cores. The idea here is to take the 15-minute City concept and apply it to suburbia, with 15-minute walking and 5-minute bike radii<sup>21</sup>. If employees are choosing to stay away from their downtown workspaces for up to 40% of the work week by working-from-home, we need to look beyond the spare bedroom or dining room table as a sustainable work venue. Could they forgo these ad-hoc domestic venues and relocate to their local suburban “Main Street”, ideally easily accessed on foot or by bicycle, with quality transit connections to downtown.

The reinvigoration of existing village “Main Streets” around which many mid-20<sup>th</sup> century suburbs grew, creates a real alternative to the suburban shopping mall or office park. The migration of “M” or “S” Third-Space workplaces to these largely forgotten “Main Streets” could bring back weekday daytime populations with the knock-on effect of helping to make evening and weekend businesses more viable. If this Third-Space workplace succeeds, it could bring meaning and a sense of place to suburbs which had previously built their identities around shopping malls and office parks.

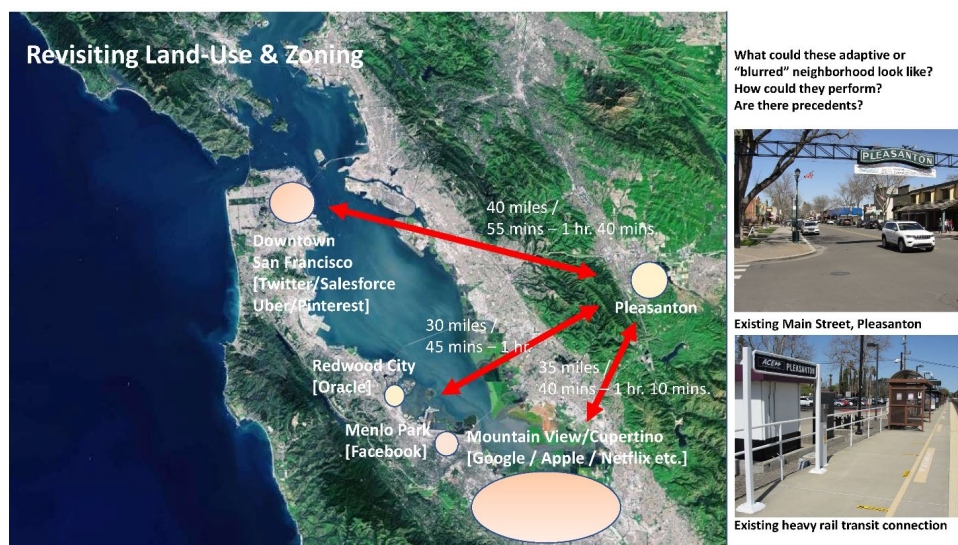


Figure 6

For instance, Pleasanton, California, incorporated in 1894 and located 40 miles east of downtown San Francisco, with a population of 79,871, has a well preserved, tree-lined shaded and walkable early 20<sup>th</sup> century “downtown” with both pre- and post-war residential neighborhoods surrounding it.<sup>22</sup> The residential streets surrounding Main Street are generally flat and tree lined, making for an attractive 15-minute walk- and 5-minute bike-shed. As an alternative to working out of their spare bedroom, a significant proportion of the residents could have an attractive pedestrian- or bike-accessible means of accessing versions of Leitner’s “S”, “M” and “R” spaces created through modest densification and adaptation within Pleasanton’s downtown facilitating a more mixed-use and integrated environment. As noted earlier “The need to redesign the suburbs, both old and new, may well be the next frontier in urban research and planning”.<sup>23</sup>

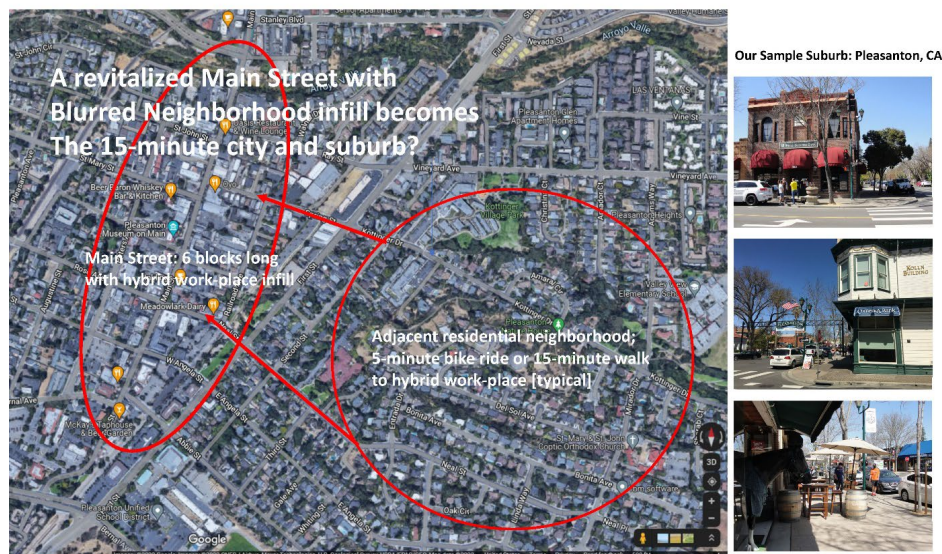


Figure 6

### [sub]Urbanism

Evidence of this happening elsewhere is noted in an Economist article titled “Suburban Life: The End of Commutreland” which comments that whereas COVID-19’s mitigation measures have been a loss for the City of London they have been a “... boon for the commuter towns near it”<sup>24</sup> Focusing on Hitchin, a market-town in Hertfordshire north of London, the article observes that while such towns used to be primarily “... a place for living ... liveliest at weekends ...”, their main street commercial activities are showing signs of increasing as people conduct retail and services activities there during the week, which typically they would have done during lunch breaks while working in London. How we respond to the current crisis offers us the chance to ask if there is an opportunity here to create a more meaningful and authentic “locus” for these suburbs?

While the notion of a balanced work-life-culture was a signature element of the “Garden City” movement conceived of by Sir Ebenezer Howard, the built reality never delivered on all three of these aspects. Remembering the sentiments expressed earlier by the adults surveyed by Ipsos, we are at a point where work-life can be more fluid and that a significant portion of this can occur within the reinvigorated main streets of a Hitchin, or a Pleasanton. Reconceptualized suburban cores could trigger a flourishing of activity, erasing the dormitory aspects of such locales, while bringing in some of the attributes that we assign to urbanism.<sup>25</sup> When we look at the lack of meaningful measures proposed by the IPCC to address where more than half the population of developed countries actually live, we cannot choose to ignore the potential to re-imagine suburbia but instead see this as an opportunity to re-engage in a meaningful way.

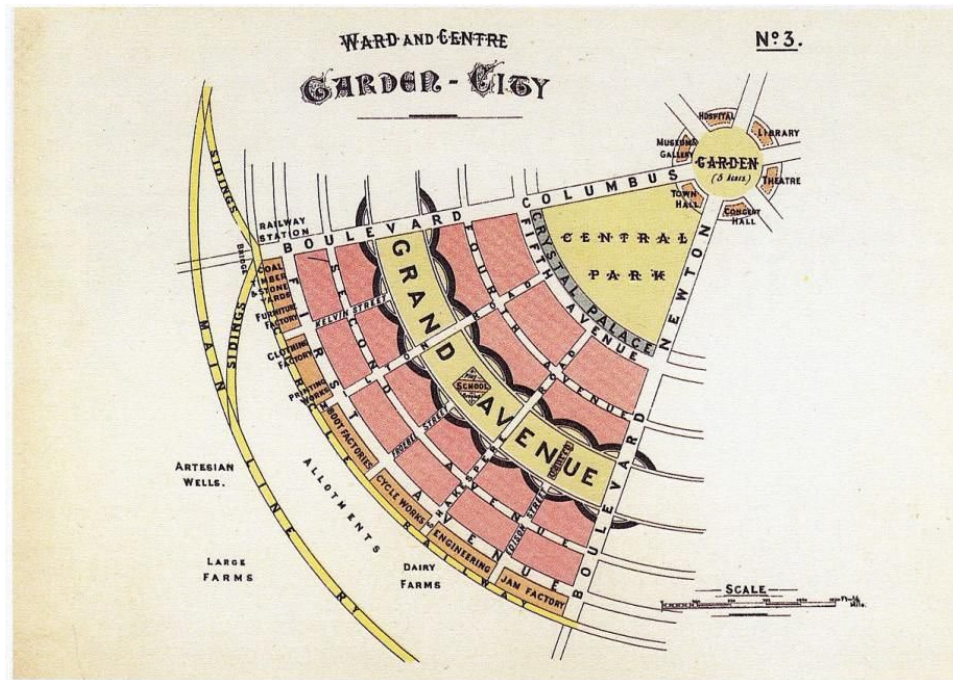


Figure 7

## CONCLUSION

Instead of looking at COVID's impacts in zero-sum terms, we need to take a holistic account of city and suburb together, creating a balanced, sustainable and equitable live-work environment. Land-use policies which segregate workplace from living, and the commute that results, are no longer appropriate. Zoning codes addressed the incompatibility of living adjacent to incompatible uses, however, during COVID we in effect brought the factory smokestack into our home. Recognizing that the spare bedroom or dining room table is neither a viable or desirable way to address the concept of remote work, we need to ask if instead that appropriate "Third Space" remote workspaces can be provided within a short walk or bike ride from home? Workers realize that in-person collaboration is more conducive to innovation and team building than its on-line counterpart, however, they are asking that there be an intentionality in our "return-to-office". They do not see the need to waste 60- to 90-minutes each day traveling to a place to answer e-mails or fill-out spread-sheets and are voting with their feet by ignoring admonitions to "return-or-else" or by simply walking away. Going forward we need to recognize that some form of hybrid work arrangement will be the norm and if that is the case, potentially up to 66% of the workforce will have the opportunity to reduce their reliance on the commute to do their job.<sup>26</sup> The successful implementation these [sub]Urban "Third Space" workplaces will require thoughtful input from the design professions – we can no longer afford to ignore suburbia.



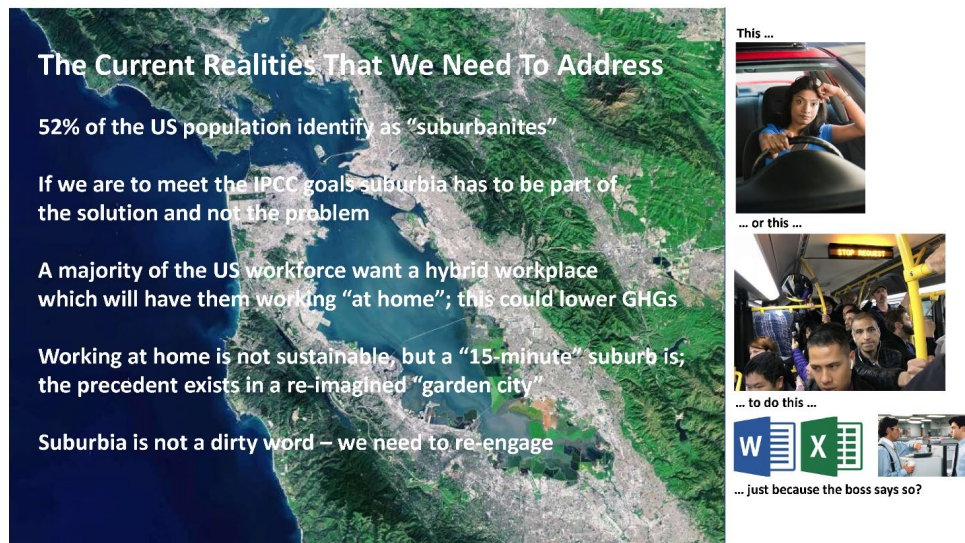


Figure 8.

## NOTES

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- <sup>2</sup> Larry S. Bourne, "Reinventing the Suburbs: Old Myths and New Realities". Chapter 2, *Progress in Planning*, (Elsevier BV. 1996).
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- <sup>10</sup> Urban Land Institute, "Housing in the Evolving American Suburb". (Washington, DC: Urban Land Institute, 2016).
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- <sup>22</sup> 2020 US Census
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# ECOTOPIA: ARCHITECTURAL ECOTOPES AS AN APPROACH TO COMBAT BIODIVERSITY LOSS

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## INTRODUCTION

The Anthropocene may be defined as a ‘post-natural’ world, in which the distinction between ‘city’ and ‘countryside’ no longer exists.<sup>1</sup> Urban expansion and rampant, unbridled “growth” have augmented landscapes and fragmented life-supporting ecological functions and habitats so extensively that we are in the midst of a Sixth Mass Extinction.<sup>2</sup> Our last remaining wilderness is disappearing, and the planet faces total biodiversity collapse if urgent changes are not made.<sup>3</sup>

Architecture is at least partially to blame for this crisis. Each new building footprint causes a small ecological massacre. With each new urban development, the steady, but certain, erosion of the planet’s last remaining wilderness occurs. Buildings - *all* buildings - erase ecological function and fragment habitat simply by being built,<sup>4</sup> yet buildings will undoubtedly keep getting built and cities will keep expanding and densifying due to economic incentive and human need. To conserve ecology, it is no longer sufficient to focus on the shrinking spaces in-between architecture. Instead, the way in which buildings (and by extension, cities) are designed, constructed and function requires drastic, and urgent reform.

This paper proposes an alternative approach to architectural design, more closely related to the systemic functions of landscapes than the anthropocentric focus of conventional architecture. Ultimately, a critical redesign of conventional architecture towards the ecocentric approach of “*Architectural Ecotopes*” may improve – rather than destroy – global biodiversity and ‘wilderness’.

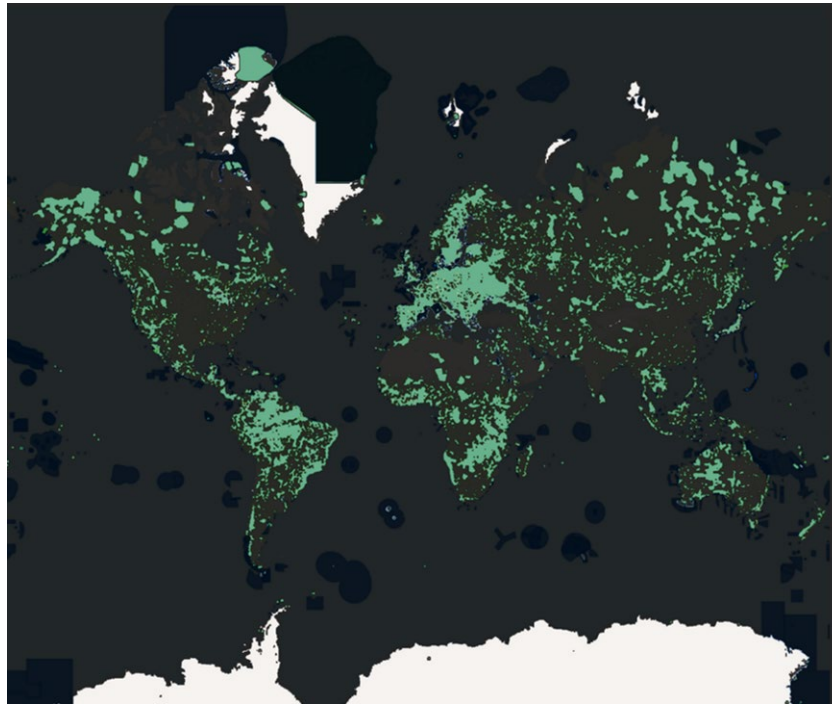
## Biodiversity Loss and Habitat Depletion.

The issue of biodiversity is often studied by, and seen as a concern of, ecologists, biologists, regional planners, urban designers, even landscape architects –yet has been largely ignored by Architects, despite their direct involvement with – and responsibility for - urban growth and consequent biodiversity loss.

Despite the efforts of urban designers and conservationists to preserve urban blue-green networks and ringfence pockets of wilderness as ‘nature reserves’, a mere 17% of global terrestrial area was slated to be protected under the 2020 United Nations Convention on Biological Diversity.<sup>5</sup> We are currently falling short of even this meagre target.<sup>6</sup> The remaining 83% of the natural world is being steadily eroded by human activity, particularly by agricultural activity and urban expansion.<sup>7</sup>



We are currently experiencing the largest urbanisation movement in history. Global population has been projected to reach 8.5 – 9.9 billion people by 2050, and 55-78% of humanity may live in urban areas by then.<sup>8</sup> To accommodate anticipated population growth and urban migration trends, global building footprints will need to double in current bulk.<sup>9</sup> By the end of the century, an additional 11-33million hectares of natural habitat may be lost, and more than one million species will face extinction by 2050 as a result of human development.<sup>10</sup>



*Figure 1. Latent Wilderness. Green areas show the last remnants of protected landscapes on the planet (by Author using data from <https://www.protectedplanet.net/en>)*

### Biodiversity Hotspots and Hotspot Cities

Certain urban areas are experiencing even more significant biodiversity loss. These regions - termed '*Biodiversity Hotspots*' - comprise of the planet's most biologically rich, yet ecologically threatened regions. To qualify as a 'Hotspot', a region should contain at least 1500 species of endemic vascular plants yet should have lost at least 70% of its primary native vegetation (mostly due to urban and agricultural expansion). Biodiversity Hotspots represent just 2.5% of the planet's land surface, yet they support more than half of the world's species as 'endemics' (ie. species found nowhere else on earth). In 2022, 36 regions on Earth are officially recognised as "Hotspots".<sup>11</sup> Within these 36 regions, there are at least 422 cities (with population centres of 300,000 or more people).<sup>12</sup> As these cities grow into hotspot regions, they will continue to erode the remarkable biodiversity surrounding them at alarming rates. Soon, the last pockets of remaining wilderness, and many of the planet's unique species, will be swallowed by urban 'growth'.

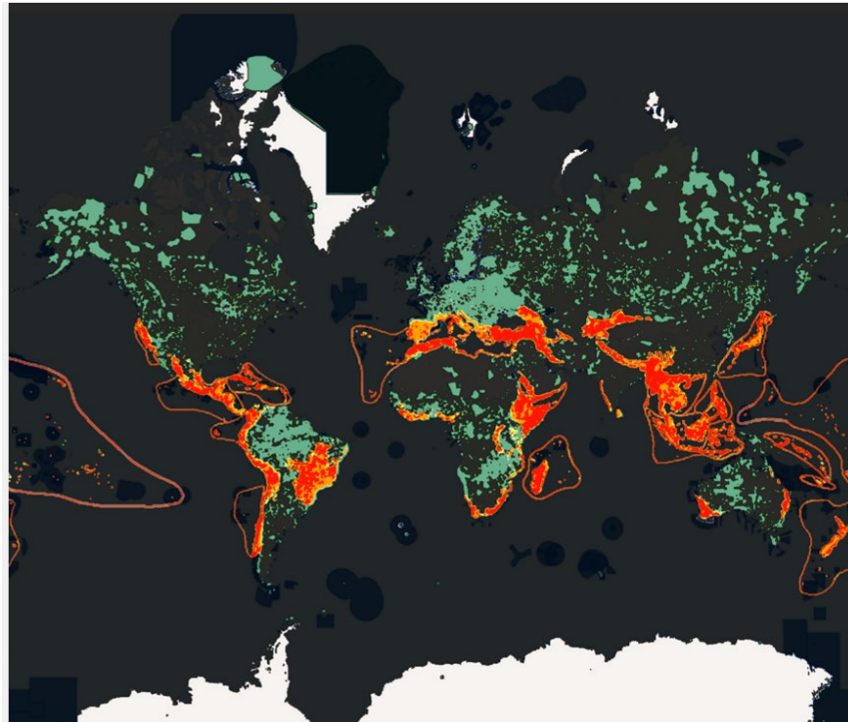


Figure 2. Expansion into Biodiversity Hotspots by 'Hotspot Cities' ( by Author using data from <https://www.protectedplanet.net/en> and <https://www.cepf.net/>)

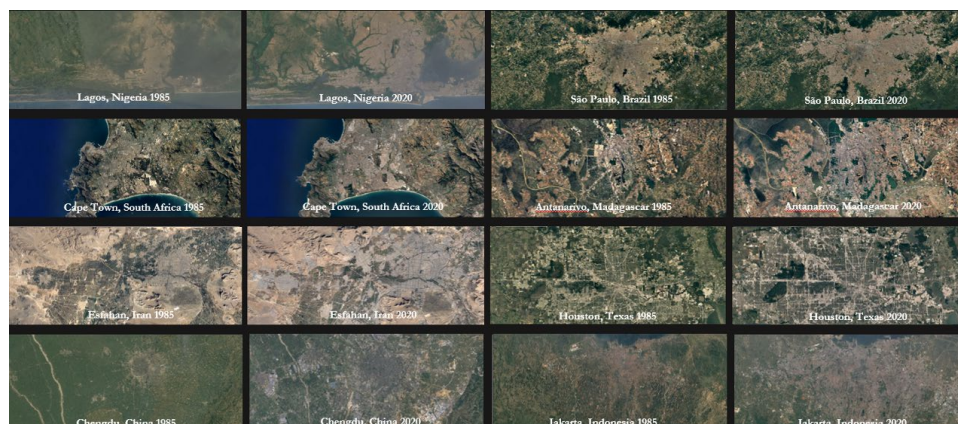


Figure 3. Hotspot Cities: eight of the estimated 422 global Hotspot Cities were mapped over 35 years to show the continued expansion into – and therefore destruction of – their surrounding biodiversity (by Author using data from Google Earth Engine)

## DESIGNING 'BUILDINGS AS LANDSCAPES'

Although urban expansion may be inevitable, the continued erosion of biodiversity may be prevented, at least to some extent, by acknowledging the role of architecture in habitat destruction and related biodiversity loss. Instead of focusing on the 'Biodiversity Issue' at as an urban, or even regional, problem, we must recognize that cities are made up of millions of individual buildings and that Architects have unique control over *how* individual structures get built. Countless *architectural* decisions, made over countless years by countless individuals, eventually aggregate to form our cities. Once Architects assume responsibility for conserving, replacing, restoring, and regenerating the nature lost during construction, biodiversity and urban ecology may be improved without needing to wait for the slow, top-down procedures of formal urban reform. By designing buildings as small,

interconnected parts of the ‘natural’ landscape, architecture may replace, or replicate, the systemic ecological functions of the natural habitat that is destroyed in its creation, forming part of greater ‘urban ecosystems’ – as constructed landscapes or ‘*Architectural Ecotopes*’.

### Ecotopes

An ‘Ecotope’ is defined as an ecologically homogenous, spatially explicit portion of a landscape – the smallest ecological land unit that remains spatially relevant.<sup>13</sup> Like ecosystems (their larger land unit counterparts), ecotopes consist of an interconnected web of biotic (living) and abiotic (non-living) elements and systems which incorporate various life-supporting ‘spheres’, including the *Lithosphere* (rocks and land forms), *Pedosphere* (soil), *Hydrosphere* (water), *Biosphere* (living things – plants, animals, fungi, bacteria), and *Atmosphere* (air, wind, temperature, climate, sunlight).<sup>14</sup>

### Architectural Ecotopes

To design buildings as ‘*Architectural Ecotopes*’, individual buildings should be viewed as small parts of much larger ‘urban landscapes.’ This approach aims to establish systemic architectural-ecological relationships by mimicking the form, function and feeling of natural ecotopes (and eventually, simulating entire landscape ecologies). It requires a paradigm shift away from conventional, anthropocentric architecture (which focuses primarily on human comfort and desire and expresses itself as isolated buildings arranged by ‘form, space and order’), towards ecologically determined architecture (which emulates natural topographic forms and establishes systemic relationships and resource exchanges between a building and its surrounding natural ecology). Since neighboring architectural ecotopes would be designed to respond to similar natural contexts, ‘natural’ systemic exchanges could eventually occur between ecotopes to establish larger constructed “architectural ecosystems”.

### Merging existing Architecture + Landscape Theory

The *Architectural Ecotope* approach builds on multiple existing design theories and amalgamates architectural theory and landscape approaches:

*Biophilic Design Theory* (developed by Stephen Kellert),<sup>15</sup> proposes the design of Architecture which establishes the immersive spatial experience of natural environments by simulating a range of ‘experiential’ qualities related to nature (dappled light, water, vegetation, daylighting, natural views etc). Buildings may ‘feel’ like natural environments, yet they do not necessarily function like ‘natural systems’ and may not even incorporate any real natural or living elements. Critically, the theory and design approach remain anthropocentric and focuses on human health and wellbeing through the application of natural experience.

*Biomimicry Theory*, (initially proposed by Janine Benyus)<sup>16</sup> in turn focuses on innovation and design which ‘echoes’ nature – architecture (and other objects) which are designed to mimic natural shapes, processes, or logic in to improve form or functionality. Biomimicry does not necessarily introduce nature as a tangible element and does not explicitly focus on improving biodiversity or wilderness. The theory remains anthropocentric and focuses on improving man-made designs through the application of natural logic.

*Regenerative Design Theory* (developed by Pamela Mang & Bill Reed),<sup>17</sup> focuses on the design of Architecture which improves damaged ecologies and landscapes by aligning human and ecological needs in mutually beneficial systems. Although Regenerative Design promotes systemic thinking and places ecological needs equally alongside human need, a regenerative approach does not necessarily introduce nature as a tangible element or spatial experience, and does not explicitly focus on biodiversity, wilderness, or the architectural design of natural habitat.

*Ecological Determinism and Regional Ecological Planning Theory* (Ian McHarg's theory on eco-centric urban design) proposes the use of science and ecology to determine appropriate locations for urban development in natural regions. Nature is seen as interconnected processes consisting of physiography, hydrology, drainage, climate, soil, vegetation, wildlife habitat, and land use. McHarg's emphasis on the integration of nature with the built environment, and the focus on natural processes as determining factors in urban development are particularly relevant in *Ecotope Theory*, yet his theories have proved challenging to implement due to their focus on large-scale urban regions as opposed to individual buildings.<sup>18</sup>

## DESIGNING ARCHITECTURAL ECOTOPES

By establishing similar life-supporting conditions present in landscape ecologies as an integral part of architectural design, (non-human) life forms may be persuaded to emerge or settle organically on buildings over time. To achieve this, *Architectural Ecotopes* should be designed to replace or replicate the unique natural functions and habitat found on their sites (and which are typically destroyed during construction). Landscape systems include (but are not limited to) the *Lithosphere*, *Pedosphere*, *Hydrosphere*, *Biosphere*, and *Atmosphere*. These life-supporting spheres form interconnected, and often inextricable living and life-supporting systemic relationships: Each one plays a unique, yet essential part in the functioning of 'life-supporting' spaces. They provide the conditions for life and are alive at the same time.

### Architectural Atmospheres (air, wind, temperature, climate, sunlight)

Although aspect has an established influence on architectural design, the true complexity of climate and its effect on the landscape is largely overlooked when designing conventional buildings. Sun angles are predominantly considered in relation to a building's internal spatial quality and experience (heat gain, daylighting, fenestration, etc), and while conventional architectural green roofs consider planting in relation to aspect and insolation, the greater complexity of architectural microclimates on building envelopes are mostly disregarded in design. Should architecture be designed to establish specific microclimates in relation to aspect, a building's ability to support various forms of life on its exterior may greatly improve.

In addition to sun, aspect also determines a building's relationship with the wind. Wind-facing facades may be more prone to capture moisture in the air, encouraging moss, lichen, and moisture-reliant pioneer plants to establish themselves on specific façades over time. Rare seeds and nutrient-rich soil may travel remarkable distances across wind channels, often redistributing biodiversity into unexpected corners of urban landscapes. (In 2021, a rare orchid – thought to be extinct in Britain – was found growing on a London rooftop; it was assumed its seeds had drifted all the way from the Sahara Desert.)<sup>19</sup>

### Architectural Hydrospheres (water)

While hydrology is increasingly being considered in sustainable construction through rainwater collection and recycling, the full complexity of hydrology is not yet reflected in architectural design. While a building's design response to rainfall patterns and responsibility for groundwater recharge may instantly connect it to the larger hydrology present in the landscape, hydrology is also essential to chemical exchanges between various elements in an ecology. Water dissolves organic compounds in materials and transfers nutrients between various biotic and abiotic elements. (Part of this is our perception of 'weathering'). By embracing natural weathering and ageing in building design (and encouraging rust, patina, erosion etc to occur over time), buildings may participate in the resource and nutrient exchanges which are essential in natural ecologies.

**Architectural Lithospheres (rocks + land forms) & Pedospheres (soil)**

The way in which architectural form relates to surrounding topography should be a primary consideration when designing Ecotopes. Orthogonality does not exist in natural landscapes; consequently, vertical walls, flat surfaces, straight lines and 90degree angles should be avoided. Instead, building forms should strive to resemble natural contours and topographic land features which organically follow the curves of the natural landscape. By ‘embedding’ buildings in their surrounding landscapes and seamlessly connecting to natural topographic context, buildings can regulate internal temperature using geothermal energy. The landscape also protects the building from exterior threats, and resource exchanges such as hydrological flows, chemical and soil movement, seed distribution and animal movement can occur between building and surrounding landscape.

A counterpart to establishing an architectural form as ‘topography’ includes a far stronger focus on, and connection to natural pedology (soil), as it is just as important as landform, climate and vegetation in landscapes.<sup>20</sup> In nature, soil is essential to all life – using vast networks of mycelium (“mycorrhizal networks”) to transfer and exchange chemicals and resource such as water, nitrogen, carbon, and other minerals between individual plants, invertebrates, and abiotic systems.<sup>21</sup> Landscapes cannot exist without healthy, extensive, and connected soil catenas (connected soil lines that follow landforms).<sup>22</sup> Without a fundamental understanding and integration of pedology as part of a ‘constructed landscape’, plants on buildings will always be on ‘life support’. Trees without connected soil catenas cannot connect mycelium networks, communicate or share resource exchanges. Plants on ‘temporary pavilions’ will not have enough time to establish equilibrium and mycelium networks in a pedosphere. It is critical to introduce, and expose, large seams of soil as part of architectural envelopes so that the form (designed as a topographic ‘landscape’), and the soil may begin to form relationships and resource exchanges with the surrounding landscape. Exposed soil (in relation to carefully designed form) may also encourage seed dispersal via wind – allowing pioneer species to establish themselves across architectural landscapes.<sup>23</sup>

**Architectural Biospheres (living things – plants, animals, fungi, bacteria)**

Although green roofs and living walls are not new concepts, they are often designed with deterministic or anthropocentric goals in mind – focusing on aesthetic design, or on internal building comfort over habitat and natural ecology. Instead, green design and living facades should focus on replacing the habitat that is lost during construction – replacing the ‘green space’ taken up by building footprints as part of the building façade. Building envelopes should be planted with living, endemic species which attract pollinators, support migratory species, and encourage seed dispersal across the urban landscape.

Architectural Ecotopes surfaces and building forms could also be designed specifically to ‘catch’ seeds, soil, and moisture dispersed by predominant wind directions to encourage the organic, self-determined emergence of pioneer plants (“weeds”, moss, lichen) on building envelopes over time – similar to the way certain cliff faces, cracks and sand dunes capture elements in relation to climatic aspect. By allowing species to settle without being planted, architecturally-driven ‘rewilding’, may be possible as part of the urban landscape.

**Embracing Time (and timelessness)**

While the systemic connections and relationships between various ecological spheres are important in landscape formation, they are always in the process of being shaped and reshaped. There is an inherently temporal quality to the landscape, and time is a critical factor needed to ensure that various chemical processes have occurred long enough for architecture to attain the patina of age, and for weathering and growth to establish a relative sense of ‘permanence’ as part of the landscape.



*Architectural Ecotopes* cannot exist as ‘temporary pavilions’, ‘instant green roofs’ or ‘pre-assembled facades’; the connections and systemic relationships shaping the architecture in relation to its landscape require time as an essential factor in their ‘design’. Slow architecture should be embraced.



Figure 4. Architectural ecotopes are made of multiple layers of systemic thinking (by Author, 2022)

## 10 Points Towards Architectural Ecotopes

- Interventions should be site-specific and contextually driven (focusing on designing for immediate micro-climatic conditions, reflecting site-specific topography, and focusing on hyper-local materiality and vegetation for chemical and resource exchanges)
- Habitat Replacement should be a core focus: Architecture should be purposefully designed to replace the habitat taken by its footprint as part of its envelope – roof, walls, courtyards etc.
- Seamless integration of architecture with natural landscape (ecological context) (goes beyond conventional green roof/green wall: hard to distinguish where landscape stops and building begins) a “constructed” landscape
- Design with and for Vegetation (and other biotic elements) – introduce endemic vegetation, as architectural skins through green roofs and living walls but more importantly, design conditions that allow life to manifest autonomously over many years (pioneer species should be encouraged to emerge in relation to seed transfers and soil movement across wind).
- Design a continuous soil substrate (catena) to host life – soil cannot be fragmented in planters but should allow mycelium, nutrients and hydrology to move freely across the surface of the building.
- Consider Hyrdology and wind patterns for resource exchanges – water runoff over buildings carry nutrients and should be designed to pool in relation to water rainfall directions.
- Design in response to land form: Nature never consists of horizontal and vertical surfaces – building facades and form should mimic (or connect to) natural topography.
- Design with Climate – Work with the wind (shelter people, but expose surfaces for seeds, moisture and soil capture); work with the sun (shelter people, daylight spaces but design exterior in relation to sunlight and aspect with other biotic species in mind) .

- Design with Time– “slow architecture” should develop over time – encourage ‘pioneer plants’, soil + nutrient movement, decay and autonomous growth/ecological development in response to the ‘building a landscape’.
- Design for autonomy: After the initial design, Architecture should be left alone to attain organic equilibrium as part of the ecological system over many years.

### THREE CASE STUDIES (TOWARDS ECOTOPIA)

Using the proposed principles of *Architectural Ecotopes*, three Case Studies have been identified. Although these buildings may not encompass all principles of *Ecotope* design, they embody many of the theoretical principles as tangible, built artefacts.

#### The Coromandel House (Marco Zanuso, South Africa, 1975)



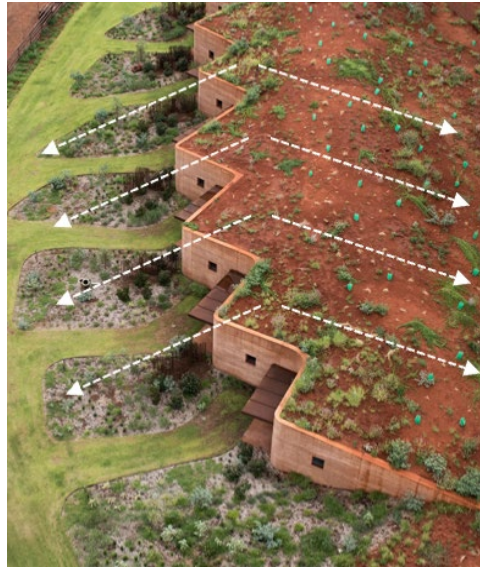
Figure 5. Architectural ecotopes are made of multiple layers of systemic thinking (by Stoffel Mentz, 2020, edited by Author)

Built in Mpumalanga, South Africa, the building is designed to follow the natural topographic fall of the landscape and capture various views of the landscape. As its stone walls extend far beyond the building envelope, structure merges with nature in a series of ‘outdoor rooms’ and ecological thresholds. The building is made from dolerite stone found directly on site, ‘discolored by thousands of years of sun and rain’.<sup>24</sup> Green roofs have, with time, enabled various pioneer trees to establish themselves on the buildings roofs and in cracks in the walls along the facades.<sup>25</sup> From above, building and landscape become almost indistinguishable.<sup>26</sup>

#### The Great Wall of WA (Luigi Rosselli, Australia, 2016)

Built in remote North Western Australia, the rammed earth building steps to organically follow the natural curve of the landscape. By inserting itself along the edge of a sand dune, it mimics a natural cut in the topography, amplified by the introduction of an endemic green roof and the use of natural materials (including rammed earth clay sourced directly from the site, and cor-ten steel). By embedding itself in the landscape, geothermal energy is used to regulate the extreme climate and will allow the building to merge with its natural surroundings over time.<sup>27</sup>





*Figure 6. Architectural ecotopes are made of multiple layers of systemic thinking (Photo by Edward Birch via Archdaily, edited by Author)*

### **The Kandalama Hotel (Geoffrey Bawa, Sri Lanka, 1990)**

The building was designed to fold around the site's dramatic cliff-side topography. The internal lobby is embedded into the natural stone boulders of the cliff, creating a cave-like stone lobby carved directly out of the landscape. The building represents an 'unwavering commitment to building climatically-appropriate architecture' and focuses on integrating natural endemic vegetation across its entire façade and roofscape. Over time, the structure has been swallowed by verdant greenery, and virtually disappears in its landscape.<sup>28</sup>



*Figure 7. Architectural ecotopes are made of multiple layers of systemic thinking (Photo via Robson, David. "Genius of the Place: The Buildings and Genius of the Place: The Buildings and Landscapes of Geoffrey Bawa, 2001. 32, edited by Author)*

### **CONCLUSION**

By designing architecture as *ecotopes* – building may merge with their landscapes as 'architectural topography' and become small but interconnected parts of much larger ecosystems. Cities may develop into life-supporting 'urban landscapes' over time, blurring conventional distinctions between

‘architecture/landscape’, ‘urban/natural’, ‘man-made/ecological’. Architectural Ecotopes may reduce, or even reverse, the current erosion of global biodiversity and ‘wilderness’ by replacing the ‘nature’ that is destroyed in its construction.

With time, buildings may begin to resemble natural landscapes more closely than the man-made architecture from which they came, eventually forming indistinguishable parts of their greater landscapes. Like landscapes, they will continue to be (and may forever be) in the process of being shaped, and reshaped.

## NOTES

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# NEURO-PARTICIPATORY URBANISM: SENSING SENTIMENTS AND TRACKING PERCEPTIONS WITH MACHINE LEARNING.

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## INTRODUCTION

Public places are enablers for diverse and desirable encounters within the city,<sup>1</sup> as evident in the growing efforts by governments in their national policy-making and by academia in their research activities that aim to create mixed-use neighbourhoods capable of supporting such socialization.<sup>2</sup> Novel architectural and urban approaches have thus evolved and developed to engage its users in a pluralistic manner. Public participation, in the form of Participatory Design/Planning, is therefore a powerful component influencing the design of public spaces, while addressing community concerns, especially when public participation in decision-making is lacking.<sup>3</sup>

## Participatory Design

Participatory design (PD) is seen to enable effective interpretation and anticipation of future circumstances through discourse in seminar activities within community groups. Computer simulations, design charrettes, and feedback instruments, extending from visual preference surveys to focus groups and citizen polls, are increasingly used in participatory design.<sup>4</sup> Yet, collectively, PD reveals a conflicting perspective due to its ambiguity.<sup>5</sup> It revolves around a connotation that a rational and democratic process is being used to arrive at a group consensus and decision. Collective unanimity, however, poses a critical stance in acknowledging the power of one party over another.<sup>6</sup> While design planning is drawn from strategic decision-making and is inclusive of subjective inputs from different actors across various phases of a project, person-environment relationships are far more complex and are in need of critical consideration.

In this paper, communities are empowered with a more active role through our integration of sentiments, creation of comprehensive expressions, and communication of design inputs using machine learning capabilities. The first hypothesis developed is as such: **To demonstrate how our methodology will facilitate the community in playing the role of a larger stakeholder during the design process.**

## Sites for Experiments

To explore the unique capabilities of Neuroarchitectural application, we are testing the opinions of locals visiting gentrified (historically preserved) versus unmaintained historical districts in Singapore. Site visits were conducted using the Gehl Institute's The Public Life Diversity Toolkit, consisting of

criteria such as accessibility and elements of the built environment, types of activities and interactions, participants' movements, and dwell time.<sup>7</sup>

### Keong Saik Road (Site 1)

Keong Saik consists largely of restaurants, bars, cafes, and stores that are more gentrified than those found in the other selected site -- Geylang. It ranges from food and beverage businesses to high-end hair salons, and from modern co-working spaces to boutique hotels.

Architecturally, Keong Saik Road's shophouses, especially the commercial shops, are often renovated and adopt a more modern, minimal, and pristine designs rather than having their traditional façades kept. They are also regularly cleaned with minimal signs of litter. Notable tactical urban design interventions can be observed, such as painted murals and parklets (Figure 1).



*Figure 1. An Urban Intervention (Parklet) Found in Keong Saik Road. (Taken By Author)*

### Geylang Road (Site 2)

Geylang, being relatively less developed, consists largely of food courts, traditional local restaurants, convenience stores and mini marts. The mini marts were set up to cater for migrant workers residing in the district. There are also KTV clubs, promiscuous stores, and services. Coats of paint and structural elements of these original traditional shophouse façades are found to be deteriorating and unmaintained. The streets are littered while the remnants of previous illicit activities suggest that Geylang was a hotbed for conducting such prohibited activities. Most commercial shops have retained the ungentrified expression, in contrast to those of Keong Saik.

These attributes have allowed the authors to better identify and select specific sections of the sites to conduct the online questionnaire and physical interviews. Preliminary visits resulted in a collection of keyframes with which is to be used during the analysis of the eye tracking data recorded from the participants. The second hypothesis developed is as such: **Whether the research can quantify and visualise participants' subjective inputs at the two contrasting sites.**



## Neuroarchitecture and the Applications of Eye-Tracking

Neuroarchitecture technology allows biometric pathways as promising means of recording and investigating how a design solution might reflect human sentiments and perception.<sup>8</sup> By studying the structures and causes of human experience, neuroscience in architecture aids in the identification of links between the brain and human behavior.<sup>9</sup>

There are techniques that can be applied to quantify and provide an in-depth analysis of these perceptual data. An example is the use of eye-tracking devices. 'Perceptual organization',<sup>10</sup> are structures of perceptual limits projected into three-dimensional spaces. Visual biometric technology analyses intrinsic and intentional regulation of eye movements which exemplifies how a 'perception-action loop' occurs in different types of sensory behavior.<sup>11</sup> There are limitations to directly analyze data from real-world events due to their complexity, such as certain implicit patterns unobservable from verbal interviews alone.<sup>12</sup>

The second part of the research sought to provide an empirical and evidence-based approach, with biometric technology to reason with the sentiment results by visualizing cognitive reactions from the public. This paper aims to generate new understanding by turning qualitative perspectives into quantitative relationship between that of the users and their environment, by implementing machine learning to complement traditional methods of data collection.

## METHODOLOGY

### Public Data Collection

Fieldwork was done to identify accessibility and elements of the built environment, to discover types of activities and interactions, to trace participants' movements, and to record their dwell time at Keong Saik Road and Geylang Road.<sup>13</sup>

### Online Surveys and Physical Interviews

The disseminated survey poses questions that revolve around shared invoked feelings, whether "positive" or "negative". Its multimedia format combines polar (i.e., closed-ended) and open-ended questions to ensure a comprehensive procedure.<sup>14</sup> Those who opted for a follow-up during the online questionnaire will subsequently go through the intercept interviews.<sup>15</sup>

### Data Analysis with Machine Learning

Machine learning-based analytical tools are employed to quantify these processes in addition to standard data collection methods. The following discusses the analytical techniques used during the research to assist in quantifying the data.

### Natural Language Processing (NLP)

Sentiment analysis is a natural language processing (NLP) approach for evaluating a text's emotional tone. It employs data mining, machine learning (ML), and artificial intelligence to mine text for sentiment and subjective information (AI). The model is built on spaCyTextBlob,<sup>16</sup> a pipeline component that enables sentiment analysis by using the TextBlob library with additional features such as tokenization and evaluations.

### Eye-Tracking Analysis (NLP)

The glasses are designed to appear discrete, that is, to not arouse public suspicion (Figure 2). The eye-tracking device is equipped with a front-facing camera, as well as internal cameras to record the user's eye movements and patterns.



Figure 2. Eye Tracking glasses worn by participant. (Taken By Author)

Heatmaps indicate the participant's location and direction of visual interests, while his gaze patterns (Figure 3) and saccades determine his first point of interest or visual focus. AOIs aid in identifying features in a public place that have successfully grasped the participant's attention, thus suggesting the true perceptual interests on site.



Figure 3. Eye tracking data: Gaze pattern analysis (Taken by Authors)

It important to note that there were factors that may have affected the study; for instance, the participants had to be in ideal health conditions to conduct the intercept interview. It was also noted that external distractions (public engagement) may affect the data collected.

## ANALYSIS AND DISCUSSION OF RESULTS

### Sentiments Collected from Questionnaire

This set of questions seek to probe the respondents on their interests/disinterests (Figure 4) in the sites. Several positive responses, including a maximum polarity score, includes praises for the diversity of cuisines, while several favoring the conserved traditional shophouses and the high foot-traffic in invoking nostalgia in Geylang Road (GS). Respondents mentioned Keong Saik Road (KS) for the diversity of international cuisines, and the urban interventions, which also serves as a photo-taking spot. The negative response for GL is due to its limited availability of parking spaces, the lack of security, and public infrastructural maintenance, such as traffic planning. Their dissent towards KS is suggestive of the site looking unauthentic or artificial, due to its gentrification.



Figure 4. Polarity results 1

Location	Responses	Max	Mean	Min	STD
Geylang	78	1.0	0.120	-0.50	0.245
Keong Saik	78	0.78	0.094	-0.275	0.199

Table 1. Polarity results 1

The following set of questions seek to prompt suggestions from respondents on the existing improvements made to the spaces (Figure 5). Respondents expressed their satisfaction with the architectural aesthetics found in KS, the cleanliness of the site and their urban interventions. Respondents also expressed their satisfaction of the architectural aesthetics found in GL, and its cultural authenticity.

However, the impracticality of narrow streets in Keong Saik road raises issues of accessibility, in addition to its lack of authenticity. GL is perceived as dangerous, especially for the elderly and children, resulting in infrastructural suggestions like the implementation of better street lighting. Apprehension towards the overall maintenance has also contributed to the negative scores. Despite the site's similarity to other conserved districts in Singapore, it has remained an informal area, leading respondents to suggest a change in its participatory planning, especially to protect the more vulnerable demographic groups.

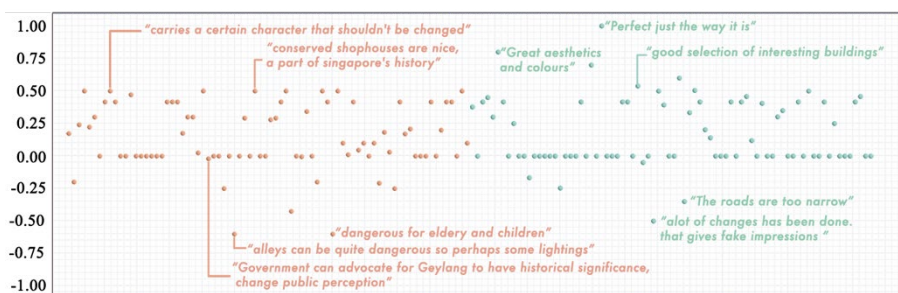


Figure 5. Polarity results 2

Location	Responses	Max	Mean	Min	STD
Geylang	78	0.50	0.040	-0.60	0.353
Keong Saik	78	1.00	0.169	-0.5	0.264

Table 2. Polarity results 2

## Eye Tracking data analysis

The results from the eye tracking analysis were further screened to align with the questions used in the online questionnaire, such as finding the rationale behind saturated areas in the heatmaps, which indicates peak arousal due to the prolonged or concentrated gaze duration.

### Subconscious sentiments in Geylang Road

Figure 6 and Table 3 suggest the respondents' lackadaisical attitude to the informal services in Geylang, tallying with comments on the site's lack of maintenance. Although deemed as a negative polarity count, it still induces quick gazes as shown from the specks on the heatmap. The respondent's pooled fixation on their safety along the main road, itself indicative in the sentiment analysis, is a result of Geylang's lack of planned traffic organization and consequential road safety issues. However, the heatmap also illustrates the public's interest in the diversity of cuisines along the rows of restaurants, in relation to positive sentiments such as "Great places to eat."



Figure 6. Heatmap and AOI: (LEFT) Informal Grocery store; (RIGHT) Shophouses along main road.

Fixation based metrics	AOI 1	AOI 2	Fixation based metrics	AOI 1	AOI 2
Respondent Ratio (%)	50	100	Respondent Ratio (%)	100	100
Revisit Count	3.5	2.3	Revisit Count	2	3
Fixation Count	18.5	16	Fixation Count	15.3	20.3
TIFF AOI (ms)	10775.5	6652	TIFF AOI (ms)	14949.2	38155
Dwell Time (ms)	1981.8	1976.1	Dwell Time (ms)	1550.8	2454.8
Dwell Time (%)	5.4	9.8	Dwell Time (%)	2.9	3.9
First Fixation Duration (ms)	80	105	First Fixation Duration (ms)	79.2	68

Table 3. Heatmap and AOI Metrics: (LEFT) Informal Grocery store; (RIGHT) Shophouses along main road.

### Subconscious sentiments in Keong Saik Road

Figure 7 and Table 4 show a fraction of the respondents were looking out for their safety on the road, suggesting pedestrian accessibility, aligning with the response: "turn Keong Saik into a pedestrian-only road." This result also aligned with comments expressing that the urban interventions Keong Saik is known for is "fake now and has lost the old charms unlike in Geylang". The public seems to have lost their interest in the heritage buildings apart from its remaining businesses (left). Although only a part of the respondents identified the iconic Tong Ah shophouse (right), as compared to the less prominent row of shophouses along the street, it is important to consider that even though some respondents have fixated their gaze on AOI2, the heatmap is concentrated on the first level, where the renowned restaurant Potato Head is located.



Figure 7. Heatmap and AOI: (LEFT) Parklet; (RIGHT) Tong Ah Building.

Fixation based metrics	AOI 1	AOI 2	Fixation based metrics	AOI 1	AOI 2
Respondent Ratio (%)	100	100	Respondent Ratio (%)	66.7	33.3
Revisit Count	0	0	Revisit Count	0.8	1
Fixiation Count	1	4	Fixiation Count	10	40
TIFF AOI (ms)	5031	8371	TIFF AOI (ms)	15224.1	336.5
Dwell Time (ms)	60	484	Dwell Time (ms)	981.4	4553.3
Dwell Time (%)	0.5	4.2	Dwell Time (%)	3.1	15.4
First Fixation Duration (ms)	60	60	First Fixation Duration (ms)	89.5	120

Table 4. Heatmap and AOI Metrics: (LEFT) Parklet; (RIGHT) Tong Ah Building.

Reassessment of Methodology

A reassessment was conducted for another round of data collection at Keong Saik Road, which allowed us to better understand and find a better correlation between the sentiment analysis and eye tracking results. Furthermore, profiling individuals will provide a more detailed demographic assessment for each site. We profiled and categorized individuals according to their age, occupation, and purpose of visit (Figure 8).

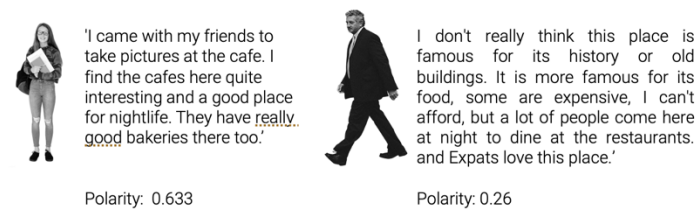


Figure 8. Quotes and sentiments from participants during reassessment.





*Figure 9 a: (left) Gaze mapping of youth participant during reassessment.*

*Figure 9b. (right) Gaze mapping of adult participant during reassessment.*

Figure 9a represents a youth's gaze pattern on a static image. The visualization portrayed randomized gazes and non-distinctive focal points. This correlates with the individual's polarity score and sole purpose of visiting Keong Saik Road, which is to wander around and to explore the street. In addition to her purpose of visit, majority of the gazes are directed towards the F&B services along the street. It is evident that this participant has also no interest in the historical aesthetics or facades of the site, given that there are no gazes that reaches above the first level.

Figure 9b represents a working adults' gaze pattern on a static image. The visualization shows consistent direction of gaze patterns with distinctive and concentrated focal points. This correlates with the individual's polarity score and purpose of visiting Keong Saik Road, which is to make his way for his lunch break. Majority of the gazes are either at the restaurants to the left or towards the end of the road. Like the youth, it is also evident that this participant has also no interest in the historical aesthetics or facades of the site, with no gazes above the first level. However, due to their difference in context, the disinterest for this individual is more likely to be a result of his familiarity with the site, thus he is already accustomed to the view.



*Figure 10: Heatmap of participants during reassessment.*

Fixation Based Metrics	Shophouse facades	Restaurant/storefronts
Respondent ratio (%),	60	100
Revisit count	1.3	2.2
Fixation count	5.3	22.2
TTFF AOI (ms)	13,798.17	7531.4
Dwell time (ms)	589.83	2,677.10
Dwell time (%)	3	10.3
First fixation duration (ms),	90.7	80.5

*Table 5. Heatmap and AOI Metrics from reassessment.*

The eye tracking metrics (Figure 10 & Table 5) from the heatmap generated matches with the polarity scores of both individuals. The bottom of shophouse facades is seen as the first area of interest and the restaurants as the second but more concentrated. During the comparison, every attribute in the table indicates that the restaurant has more desirable statistics, such as the respondent ratio and the dwell time for their gazes.

This short reassessment shows that the additional profiling aids in identifying the needs and justifying the results from eye tracking. Furthermore, we can view the demographic's main interest in the site and identify its successful and unsuccessful attributes.

### **Barriers discovered during the study**

The NLP (Natural Language Processing) tool does not fully extract the underlying sentiment of the responses due to its reliance of purely tokenized words, as compared to inferring respondents' emotions through physical interactions and verbal responses. Furthermore, this method alone is unable to recognize emotional reactions, visual attention, and subconscious reactions.<sup>17</sup> Therefore, this method is overly dependent on the respondents being as expressive as possible. As a result, the accuracy of the correlation analysis might have been affected disproportionately.

### **How are our public spaces interpreted?**

Based on the results, we can conclude that the opinions towards gentrified districts and preserving historical districts are not entirely skewed to either extreme ends of positivity or negativity, but rather the sentiments are nuanced and unique to each site. The study was able to quantify and determine the true sentiments, to identify the gaps in the design and planning processes. The questionnaire extracted perspectives, cross-referenced from the eye-tracking data collected, thus matching polarity values and their relation to behaviour.

The study has shown that the two sites, since their redevelopments, have evolved to portray different perceptions of what a "negative" and "positive" should be like. Despite often being stereotyped as an unpleasant area in Singapore, Geylang respondents enjoy its diversity in cuisine and the authenticity of the shophouses, keen on preserving the nostalgic attribute of the site. The predicaments from the lack of traffic interventions contributed to the public's concern for the level of safety at the site. The heatmaps displayed the respondent's insight on the traffic issues, producing gaze patterns that appear along the roads on the heatmaps. Furthermore, it exemplified the respondent's knowledge of the site, and their discomfort in certain areas at the site -- visualised as concentrated patterns in the heatmaps.

Keong Saik Road justified its success in its modernized reconstruction with its popular diversity of international cuisines offered on site. Majority were satisfied with the provision of services, receiving praises for the implementation of urban interventions such as artwork (murals) and parklets. However, respondents also noted its lack of authenticity. The AOI and heatmaps, displayed the concentrated



gaze patterns on gentrified buildings and interventions , rather than its traditional architectural elements. Furthermore, numerically positive polarities for sentiments such as “Great F&B options” when projected visually onto the eye-tracking results, shows the participant’s skewed perception when looking at the shophouses and the rows of restaurants.

However, the results of correlation analysis also prove that the sentiments and eye-tracking data are yet to be aligned to deduce a fully coherent relationship.

### **Furthering relationships between verbal and subconscious behaviors**

Other data collection methods should also be utilised to ensure a full scale of sentiments to be analysed against the eye-tracking datasets. For example, multimodal approaches that complements and combines with eye tracking devices. For example, Electrodermal activity sensors (EDA) will detect arousal and stress through emotional intensity, which will correlate with the peak gazes from the eye tracking data.

Categorization of participants may also be standardised. This change may prove useful when designing for specified demographics targeting sociocultural issues, such as for handicapped users versus a normal public user, or issues targeting hostile design from a socioeconomic perspective.

### **CONCLUSION**

The objective of this research is two-fold: first, in exploring the feasibility of developing a novel approach in which participants are introduced as a larger stakeholder in collaborative designs using consensus methods; and second, to explore the implementation of biometric technologies for extensive visualization and analysis of large volumes of tracked data points. Apart from that, it is a design enabler to not only verbally express, but to also perceptually visualize and cognitively quantify honest responses of the public. This finding introduces a new kind of data collection that involves comprehensive personalized datasets. The tool invites designers to retrospectively evaluate designs and proactively engage with the public as they adapt their designs according to new (visual) quantifiable behavioral insights. This might serve as either dataset for urban analysis or may inform and influence future designs.

## NOTES

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# CITIES WITHOUT COUNTRY: HIGH DENSITY URBAN AGRICULTURE AND THE CITIES OF THE FUTURE

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## INTRODUCTION

This paper unpacks recent speculative design research projects exploring how the uptake of high-density vertical farming and other disruptive agricultural technologies might shape future cities.

The world is urbanising at an accelerating rate. While the population expands rapidly, more people are living in cities. The dispersed megacity is the fastest growing urban form. This and human caused climate change is drastically reducing the world's arable land, jeopardising world food supplies. The future of food production lies in intensive industrialised processes that make maximum use of land and other resources. While not yet practical, or economically feasible, this future might include high-density vertical farming.

In this context, the paper has several concerns: architectural design strategies that explore the potential for emerging agricultural technologies and building typologies; architectural design strategies that allow for new economies to emerge and radically shift the way our cities are organized; the articulation of novel design research methodologies that use techniques of counterfactual speculation and scenario building as a way of uncovering and describing possible futures. These ideas will be illustrated through recent work completed through research-based architecture design studios.

## Compact cities and production urbanism

At present, Cities are responsible for approximately 60% of the world's greenhouse gas emissions.<sup>1</sup> There is a strong correlation between the density of a city and its carbon footprint. Compact cities tend to produce less emissions and perform better in sustainability indices.<sup>2</sup> Accordingly, as architects and urbanists, one of the most impactful things we can do is to find ways to design our cities more tightly. Commonly cited examples of 'compact cities' frequently refer to medium to high density first world metropolises such as Copenhagen, Amsterdam, Paris, Hong Kong, Tokyo, Singapore etc.<sup>3</sup> What these places all have in common, is for the most part they include only a small percentage of the land uses that are required for a city to operate and be inhabited. These are the sites of consumption. The reality is that for every city, compact or otherwise a vast global hinterland exists, providing food and resources, and disposing of waste. In many cases as a city becomes more dense and more compact the greater the contrast between the urban footprint and the global footprint that supports it. For compact cities to be sustainable, they must consider how the productive landscapes of the city are integrated into their design.

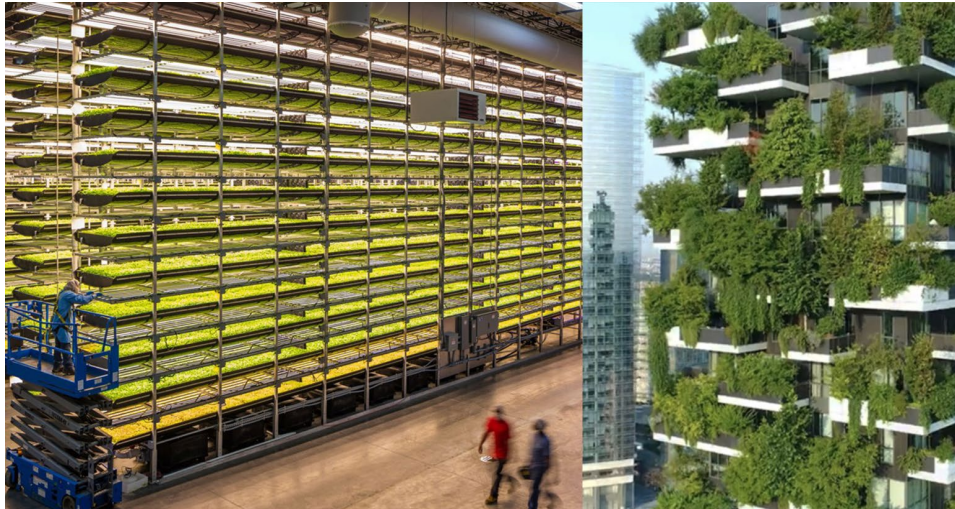


Figure 1. Aerofarms Facility Newark and Bosco Verticale by Boeri Studio.

### Introducing urban agriculture

There are many different forms of production that must be considered in the infrastructure of a city, however perhaps one of the most challenging to integrate into the urban environment is agriculture. Agriculture has traditionally required large areas of land and is highly specific in its environmental requirements. Between land use, processing and transport, food production contributes a significant percentage of global greenhouse gases.<sup>4</sup> Moreover, food production accounts for approximately 20% of a city's global footprint. In Melbourne, where this research has been carried out, this equates to approximately 11 million hectares of land – around 10 times the footprint of the city.<sup>5</sup> Most of which is grown in regional farmland surrounding the city.

This relationship becomes starker in places like Singapore, where as much as 90% of the food consumed in the city is imported from overseas. This sets up a clear distinction between the landscape of consumption in Singapore, and the urbanised agriculture of the productive hinterland that supports it. Given the many environmental, economic and ethical challenges associated with this disconnect, this paper questions what would it look like if these two systems were collapsed into a single urban compact?

Over the last century we have seen numerous examples of urban agriculture in architectural and urban discourse. These visions often view agricultural production as a form of benign ornament.<sup>6</sup> They are often presented as a bucolic counterpoint to the austerity of contemporary urban environments. With a focus on social and community benefits, rather than presenting a credible alternative to traditional agricultural models. Globally we consume around 3.7 billion tons of food annually.<sup>7</sup> It is not feasible to produce this using infill gardens only. The reality is that the way food is produced today, in cities or otherwise, more closely resembles a factory than a garden.

What if we take the idea of urban agriculture to its logical conclusion: What if all our food is grown within the city it is consumed? What effect would this have on cities? What kind of architecture would it produce?

### Speculative design as a research methodology

The methodology of this research has been one of speculative proposition, followed by reflection, analysis and dissemination.

We have developed a series of counterfactual propositions that accelerate nascent ideas, to present possible scenarios that might exist in the future. This approach has focused on techniques of narrative

and visualisation, working to render abstract ideas concrete, but also to speculate on possible imaginary scenarios where future consequences or impossibilities are tested.

‘Architects imagine, where there’s nothing, a future—a future which is highly detailed. If you look at the present in a creative way, you can also unleash futures. So, in that sense, we are not so much predictors of the future but enablers of the future.’<sup>8</sup>

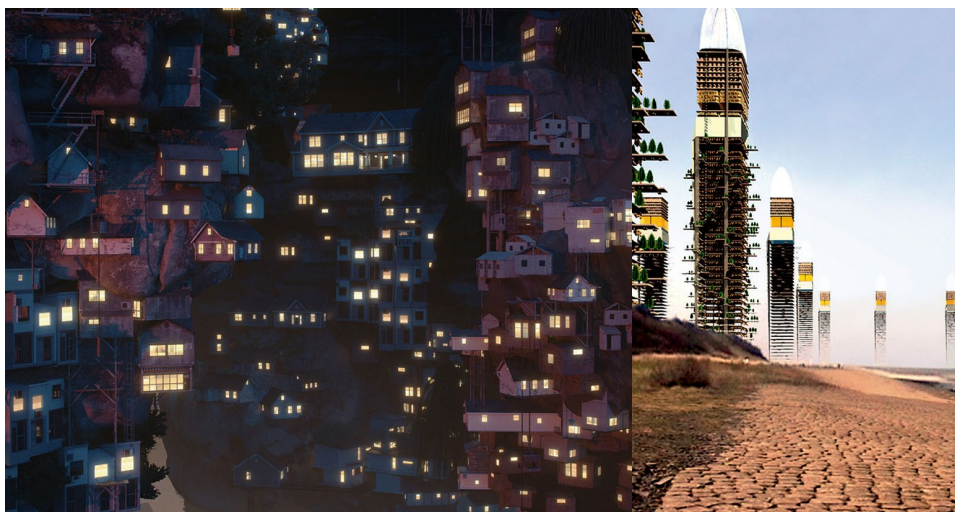
The capacity to envision possible futures is one of the most unique valuable skills of the architect. One could argue that all design is ‘to some extent, future oriented.’<sup>9</sup> In architectural research it is also perhaps the most maligned, misunderstood or simply underutilized tool we have to understand the built environment.

This paper builds upon a body of work and contends that the act of designing a possible future is in itself an act of research, producing new knowledge which did not exist prior. By bringing these visions into existence otherwise fantastical ideas become tangible and measurable for other disciplines.

Famous examples of this approach have been Le Corbusier’s Ville Radieuse<sup>10</sup> or Frank Lloyd Wright’s Broadacre City,<sup>11</sup> both hypothetical visions that have been adapted in different forms around the world. Cinema has played a significant role in developing techniques of world building. Fritz Lang’s Metropolis<sup>12</sup> developed an intricate spatial model of a future city, which presented a clear social critique of its own time. Blade Runner<sup>13</sup> and its sequel Blade Runner 2049,<sup>14</sup> along with other science fiction works such as William Gibson’s Neuromancer<sup>15</sup> have served as manifestos for a post-digital post-national urban environment.

The use of narrative, borrowed from film and other creative media has become a powerful tool for architects, not necessarily in the formation of a proposition, but rather the building of a world around a proposal – a totalising operation that necessitates the suspension of disbelief, and draws the viewer into a concept. Planet City<sup>16</sup> project, by Liam Young, builds a complete narrative around his vision of a single world city, its narrative expanded through a cast of inhabitants, complete with novel behaviours, cultures and appearance.

The development of a world allows the acceleration of ideas that otherwise would be dismissed as absurd. Planet City’s<sup>17</sup> city of 10 billion. Or MVRDV’s Pig City,<sup>18</sup> a radical vision of the future of pork meat production where spatial implications of treating animals humanely is rendered at a large scale. The power of these is the capacity to present a vision that is either drawn from data, or can be analysed to produce data, or work to do both.



*Figure 2. Planet City by Liam Young and Pig City by MVRDV*



### Speculations on Melbourne vertical agriculture

The following projects were developed through a design studio at the University of Melbourne in 2021 and 2022 called Cities Without Country. The studio explored a scenario in which the city no longer could rely on the countryside or imports for food production. The studio focused on the suburb of Fitzroy, the smallest but densest suburb in the city. The studio developed an overall masterplan for the suburb visualising what it would look like if we were to grow and distribute basic staples like wheat, vegetables, fish or mushrooms, sufficient to supply the local population. From this individual teams developed an architectural scale proposition for a site within the masterplan, developing new architectural typologies specific to food production and imagining how their implementation might change the way the city is read and used.



*Figure 3. Fitzroy Masterplan Vision, Image Credit Studio 04, Cities Without Country 2021, The University of Melbourne.*

‘Urban Parasite’ by Jing Kang and Mingxun Ma used an urban infrastructural approach in which framing structures were inserted into vacant or unutilised spaces to create a vertical neighborhood support system. The project proposed a series of interconnected towers across a city block that would change the way the neighborhood is used.

The project developed from an initial idea to grow wheatgrass vertically in order to make green juices and smoothies. Through the initial design of the system, students quickly realised how complex it would be to grow anything in the city without water or energy. This led to the insertion of an array of supporting and complementary programs that could potentially grow throughout the city supporting other types of food growing. Among them, a wheat and spinach tower were included, an egg tower, a water collection tower, a pet and visitor towers, a packaging and drone towers to name a few were included.

Using architectural drawing techniques and storytelling, visions of complex interconnected systems start to emerge. The design of the structures takes on a skeletal tectonic that seeks to celebrate the function of the complex.

While the project is highly speculative, the proposition of a hybrid system where urban agriculture works as an insert to regular built form as it exists in the city is entirely possible. The proposal triggers discussions around the role of infrastructure in public space and private space, the resource resilience of cities, and ultimately the role that architecture might play in responding to this.



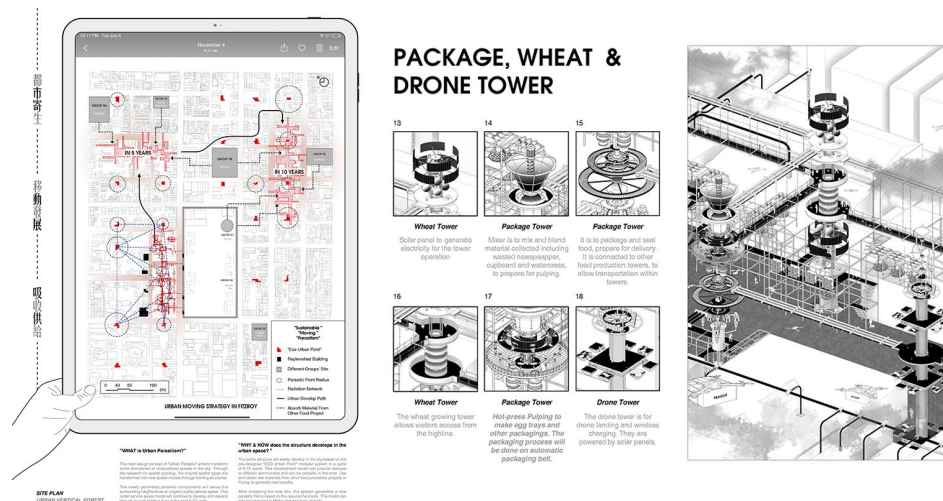


Figure 4. 'Urban Parasite' Visualisations by Mingxun Ma and Jing Kang

'Coffee Palace' by Zirui Wang and Pengcheng Yang is a facility for the growing and processing of coffee. Coffee consumption is seen as an intrinsic part of Melbourne's urban culture, with Fitzroy one of its cafe capitals.

Coffee production is extremely resource and labor intensive. The project seeks to reveal this through the architecture, with an accompanying narrative that explores the colonial and capitalist nature of the coffee industry.

Through extensive 3D-modelling, careful views and illustration, the team takes us on a tale through their 'Coffee Palace' project. Selected buildings from Melbourne and the classical canon are sampled, creating galleries made of glass and gold. The language allows the viewer to draw associations between key ideas explored in the architecture. Gold signifies the worth of the produce, and highlights the issues of land commodification, privilege and inequality. The cartoonish nature of the representation is purposefully used to visualise and imagine a different time, neither future nor past, presenting a proposition that is both utopian in its technological ambitions, while at the same time providing a dystopic vision of structural urban inequity.

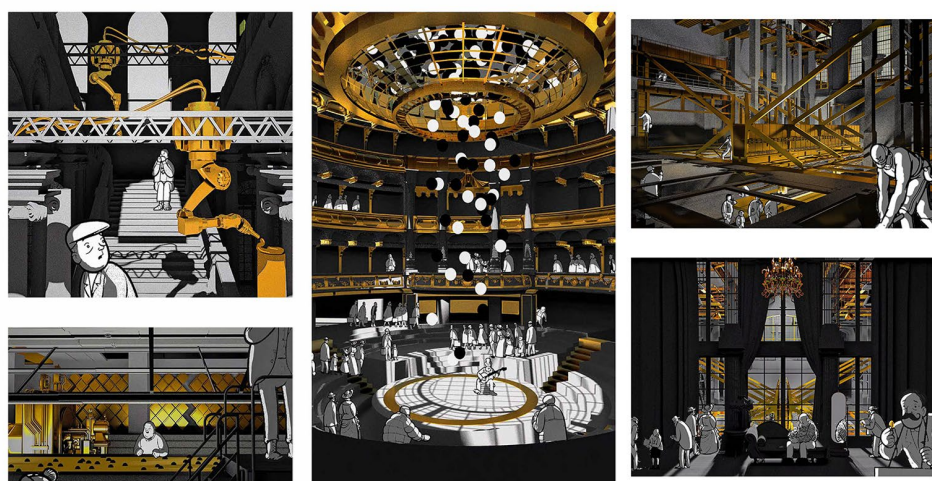
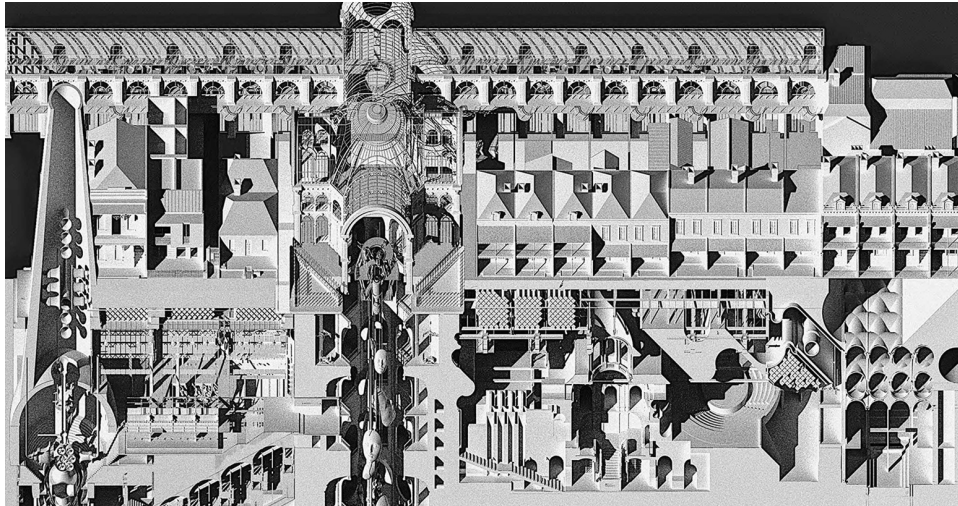


Figure 5. 'Coffee Palace' Illustrations by Zirui Wang and Pengcheng Yang

The entire intervention can be seen as an urban insertion, selectively retaining valued buildings while hiding its entire farming and manufacturing production underground. The growing and production

area is pushed underground so as not to interfere with the world above. As a speculative parallel of the contemporary world, the hinterland of agricultural production and its workforce are concealed - the price of urban preservation at the street level that serves a select few.

The project presents novel forms of architecture and urban design, while attempting to provoke a response from contemporary viewers. Ultimately the ambition of the project is to both present a future scenario, while at the same time forming a critique of contemporary agricultural economies and power structures.



*Figure 6. 'Coffee Palace' Visualisations by Zirui Wang and Pengcheng Yang*

### **Speculations on Hong Kong vertical agriculture**

The next series of projects are drawn from a research-based design studio run at RMIT University in 2017 called FarmHD. Hong Kong has one of the lowest levels of food security in the world. Over 95% of the city's food is imported, most of which comes from mainland China.<sup>19</sup> The studio explored existing and future models of high-density agriculture in Hong Kong. The studio challenged students to think speculatively and propositionally to describe possible futures in which urban farming is ubiquitous in the city.

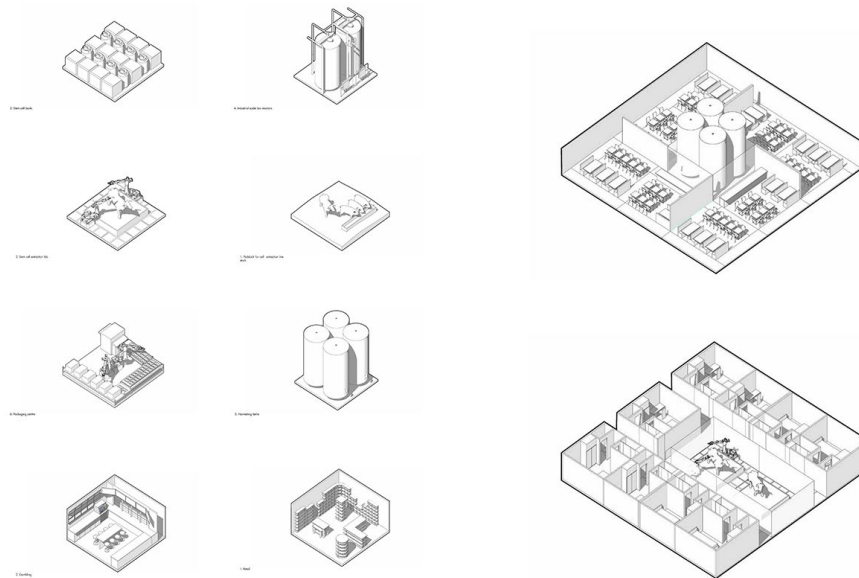


Figure 7. 'In Vitro' Taxonomy of Building Programs by Harlan Pichette and Jasmine Syed

'In Vitro' by Harlan Pichette and Jasmine Syed explored the potential for the hybridisation of a mixed-use hotel tower complex, with the industrial scale production of lab grown meat. The project was sited on the former Yau Ma Tei carparking building in Kowloon.<sup>20</sup> Lab grown meat is an emerging food technology that is currently under development. Through this process a stem cell is extracted from an animal, such as a cow, and using a biological reactor, meat is grown in different forms. At present lab grown meat is prohibitively expensive. However, considering the exploding market for alternative meat products, and that it has recently been approved for human consumption in Singapore, it is possible to imagine a future where lab grown meat is ubiquitous.

While no industrial grown lab meat production facilities exist, we can deduct from small scale examples and other agri-industrial facilities that the majority of the facility will be made up of animal housing, laboratories, cold storage, bioreactors and packaging and distribution facilities.

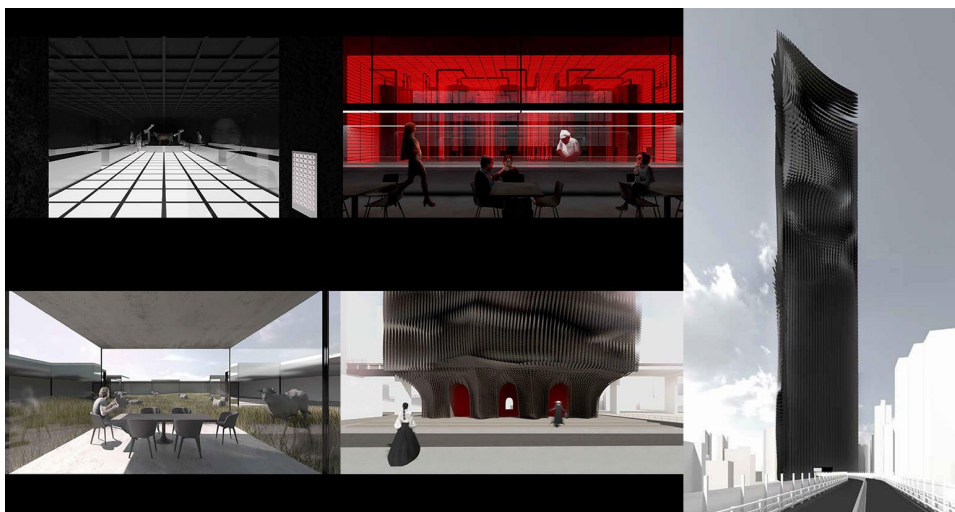


Figure 8. 'In Vitro' Visualisations by Harlan Pichette and Jasmine Syed

For this project the students proposed additional programs that are common to Hong Kong, such as shops, restaurants, hotels and gambling spaces. Complimentary programs were paired with each other



to form hybrid production and consumption spaces within the building. For example, the bioreactors and processing facilities would be co-located with shops and retail, feedlots and pasture with dining, laboratories with hotel rooms.

The ambition of this project is not only to explore the practical implications of lab grown meat production, but also questions what the social or cultural reaction to it might be. The project imagines this type of project as something that will be ubiquitous, plugged into the logistic networks of a city, With a municipal facility located within and serving every district of the city. An infrastructure that serves the city and is knitted into its fabric.

‘Fish-o-polis’, by Jan See Oi and Mei-Yan Chin is an urban scale megastructure that is capable of supplying the total fish consumption of Hong Kong. The project is sited in Tin Shui Wai, a peripheral district close to the border with Shenzhen. Tin Shui Wai is one of the densest parts of Hong Kong and was built on the estuarine landscape which used to host the kinds of fish and mollusc farming industries that have dwindled in recent years.<sup>21</sup>

Hong Kongers consume approximately 1,440,000 kg of fish daily.<sup>22</sup> To produce this amount of fish using indoor aquaculture would require approximately 270,000 tanks – each about 600,000 litres in volume. Fish farming is a complex process in which fish are hatched from an egg before growing for up to 2 years, providing fertilised eggs for the next generation before being sold to market. In addition to tanks a secondary series of equipment and program is required to support the operation. If combined into a single building this would create a massive footprint vertical mega-structure, with over 300 floors - approximately the same height as the Burj Kalifah.



Figure 9. “Fish-o-polis” Tin Shui Wai Urban Studies by Jan See Oi and Mei-Yan Chin

A more practical approach would be the distribution of this program across a network of towers using a similar footprint to the existing development. The project includes a network of growing buildings, hatcheries, grow out tanks, as well as plant and service systems, interwoven with housing and commercial program.

The outcome of this was a networked mega structure on the site that was reminiscent of the Metabolist visions produced by Japanese Architects such as Kisho Kurokawa in the 1960s. The project takes the counterfactual proposition of a fully self-contained Hong Kong fish production industry to its extreme.

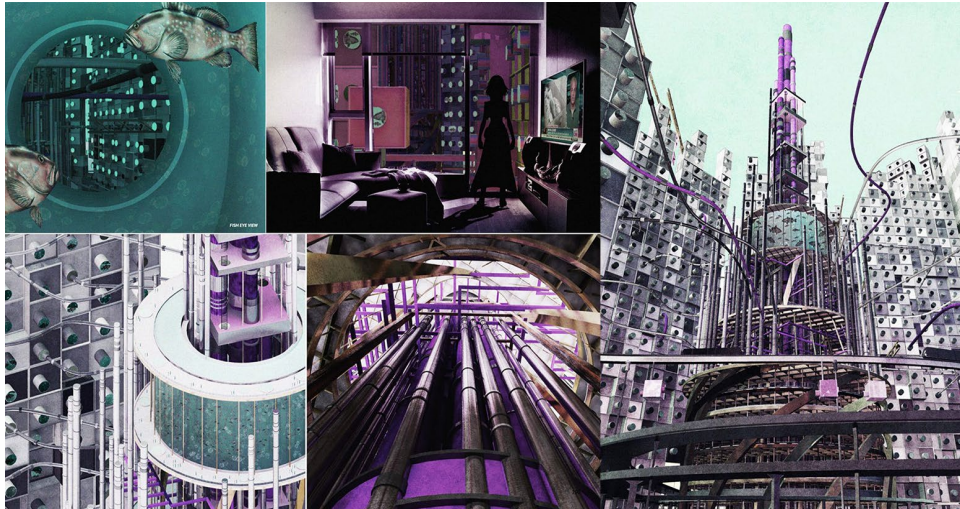


Figure 10. "Fish-o-polis" Visualisations by Jan See Oi and Mei-Yan Chin

The ambition of the project is to give physical form to the scale of fish consumption in Hong Kong. By designing out the total requirements of the city on a single site, the project takes an accelerationist position on an existing issue, not attempting to resolve it but rather rendering clear the scale of the issue. While the project is a speculation, it is one that is done with humour and beauty. No one can realistically believe that a city of fish will be built in the outskirts of Hong Kong, but the power of the project is in allowing the viewer to suspend disbelief momentarily, to be drawn into the scenario and to ultimately ponder what if?

## REFLECTION

Leaving aside the scientific, engineering or economic challenges of vertical farming, what these speculations indicate is that the adoption of intensified urban farming technologies has the potential to radically change the way our cities look and work. In the four years since the first and most recent of these projects, urban agriculture has shifted from a speculation to a reality and is undergoing huge capital growth.<sup>23</sup> What was fiction, rapidly becomes reality. As a discipline that can project scenarios based on present understandings and possible futures, architecture has the potential to allow for the development of critical responses to rapidly changing urban environments, including the development of social and economic policy. Many of these projects offer a veiled critique of interminable present day problems. A world we can see is one that we can understand, by anticipating technological change architecture opens up the possibility of a broader engagement in the authorship of our cities.

## NOTES

- <sup>1</sup> “Generating Power,” United Nations, accessed August 10, 2022, <https://www.un.org/en/climatechange/climate-solutions/cities-pollution>.
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- <sup>14</sup> Denis Villeneuve, *Blade Runner 2049*, (Los Angeles: Sony Pictures, 2018).
- <sup>15</sup> William Gibson, *Neuromancer* (New York: Ace, 1984).
- <sup>16</sup> Liam Young, *Planet City*, (Melbourne: Uro Publications, 2020).
- <sup>17</sup> Subsequent Endnote, Young.
- <sup>18</sup> “Pig City,” MVRDV, accessed August 10, 2022, <https://www.mvrdv.nl/projects/134/pig-city>.
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# RURBAN TERRITORIES AND SOME NOTES ABOUT REPOPULATION

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## INTRODUCTION

Generic readings about urban realities and rural realities tend to draw a strabismic look that tends to dissociate this binomial, sometimes in an interested way and other unconsciously. Often, the economic dynamics, advantages and limitations of small centers in rural land are explained only from the context of their immediate environment, in the same way that often the dynamics and singularities of the consolidated urban centers are defined from a strictly urban context, covering only the close non-urbanizable soils bordering, very conditioned by urban uses and activities.

To address the difficulties and specificities of small rural settlements, it is necessary to take into account the territory as a whole, understanding the synergies that are generated between these settlements and nearby medium-sized cities. That is why an open and global look is needed to underpin the repopulation, a perspective that contemplates the territorial scenario in all its aspects, and that can allow us to talk about what we could identify as the *rurban territory*, a territory where the interaction and benefit of both realities is sought without sacrificing the specificities of the rural world.<sup>1</sup>

This interaction between the characteristics traditionally called rural and urban for the search for a new shared framework was the common thread of the core subject of the Urban Planning VI course of the Higher Technical School of Architecture of Barcelona. The proposals derived from the workshop are quite intuitive and innovative, covering topics as diverse as new residential models, economic incubators, rural training, generational permanence, new technologies, rehabilitation, new economies, land management or intervention phases, among others.<sup>2</sup>

## PREVIOUS CONSIDERATIONS

### Primary taxonomy of rural centres

In any case, and with the aim of establishing intervention strategies, we considered appropriate to propose a first reflection on the classification of territorial scenarios that we can easily differentiate, with the understanding that each territorial area is unique. In this context, we propose to differentiate three scenarios, which define different readings and strategies. This classification is as follows:

1. **Periurban rural nuclei:** it would consider those rural settlements that are close to consolidated urban centers, or what we could call at least intermediate cities (fig. 1).
2. **Synergistic rural nuclei:** these would be rural settlements distant from the consolidated urban centers, which exert synergies between them, with effective connections and

complicities, and which are able to draw a relatively stable scenario of economic activities (fig. 2).

3. **Remote rural nuclei:** we would include in this group rural settlements far away from consolidated urban centres, which are difficult to access, and where synergies with neighbouring centres are limited (fig. 3).

This taxonomic proposal can show that these three territorial realities require different strategies in order to optimize their potential and minimize their problems.<sup>3</sup>

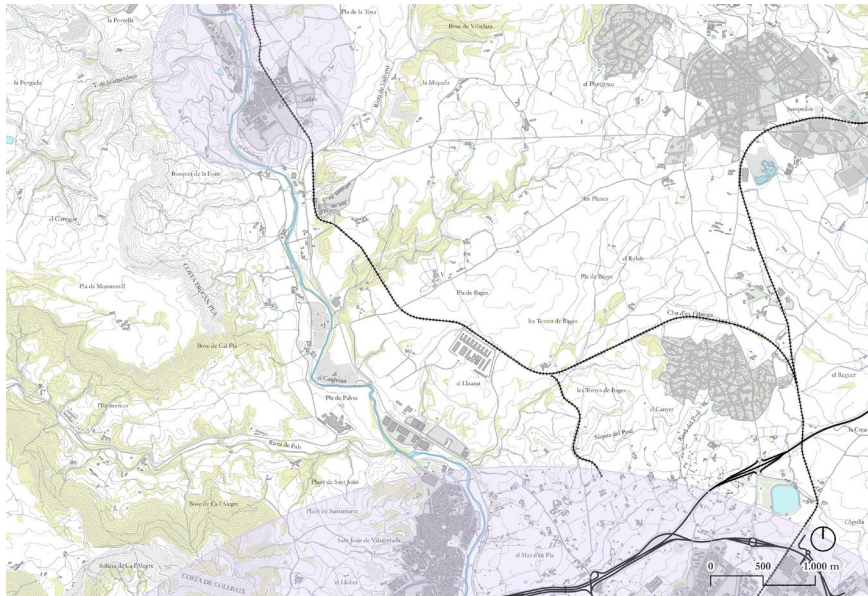


Figure 1. Periurban rural nuclei. Callús i Manresa, Bages. Source: own elaboration from ICGC.

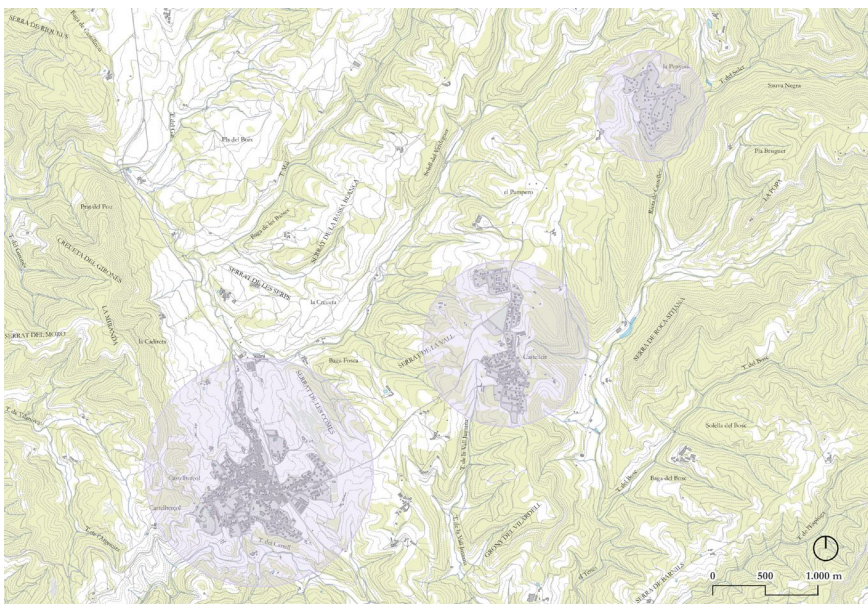


Figure 2. Synergistic rural nuclei. Castellterçol and Castellcir, Moianès. Source: own elaboration from ICGC.

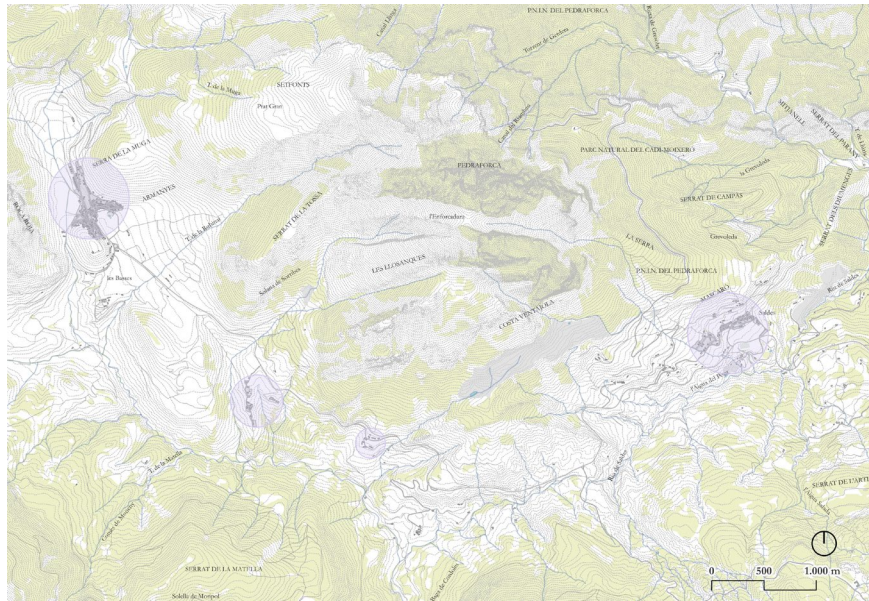


Figure 3. Remote rural nuclei. Saldes, Berguedà. Source: own elaboration from ICGC.

### Common denominators and the differential attributes of rural centers

Once this taxonomy has been established based on the relative position of rural settlements towards urban ones, it is possible to structure a transversal reading, looking for which common denominators we can recognize and respond to topics shared between the three scenarios. These topics tell us about the differential attributes of urban and rural environments, the references that we can use as precedents for new strategies, the recent impact of COVID-19 on the current value scales,<sup>4</sup> the role of the different urban aspects that must be contrasted in the understanding of territorial dynamics, as well as the necessary interscalar look at the different physical scenarios to be dealt with.

### Historical references

The strategies that are planned to be drawn on the territory should also take into account the references and previous reflections, both theoretical and practical, that can help us in the elaboration of future proposals. Human beings have long been arguing about diverse patterns for the ideal city, from the earliest ideas of antiquity and the Middle Ages, to the Renaissance period where the concept of a utopian city raised by Thomas More in the sixteenth century takes on new derivatives and interpretations in utopian socialism by the hand of Robert Owen and its application in New Lanark, where communities bounded in size and extension are proposed, which pay special attention to the natural environment. The dichotomy between the countryside and the city intensifies as a result of industrialization, mainly in Britain, where concern about the unhealthiness of cities led to Ebenezer Howard's garden city theory, where the rebalancing of the territory involves simultaneously contemplating the advantages of city and country life, thus proposing the polynuclear system of cities of precise dimensions in the search for territorial rebalancing on the one hand, and the improvement of the quality of life in settlements on the other (fig. 4). This theory provides a theoretical framework that outlines the balance between the urban environment and the rural environment specially designed for the construction of new garden cities, and that from new reinterpretation of these models we can find valuable criteria to intervene in the territory.<sup>5</sup>



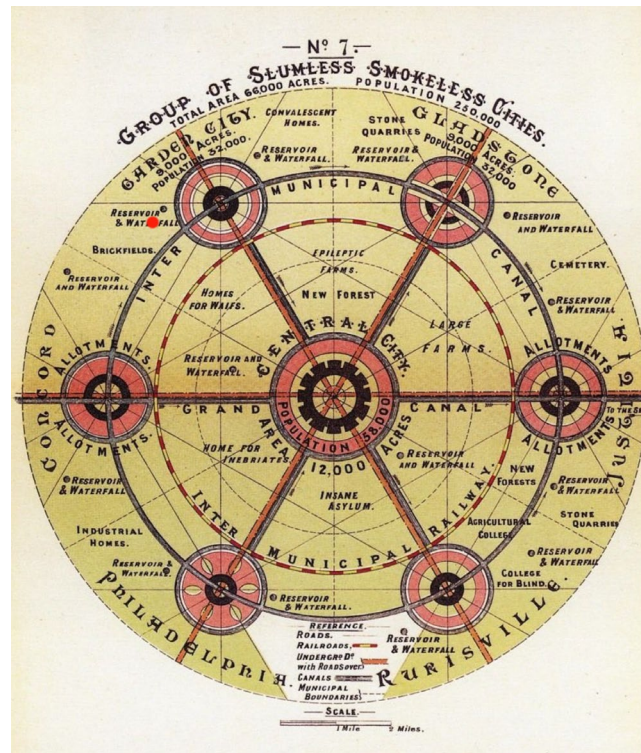


Figure 4. Diagram of the Rurban territory. Source: Howard, E., *To-morrow: A Peaceful Path to Real Reform / Garden Cities of Tomorrow*, 1898 / 1902.

## A NEW APPROACH

### The change in trend and the Covid-19 pandemic

Beyond this look at historical references, however, the current situation leads us to introduce a new inexcusable variable into the discussion: the COVID-19 pandemic. The ravages of the virus on public health have had an important consequence on domestic habits, as well as on the priorities related to quality of life that question pre-pandemic residential trends. In fact, the added value provided by living space and access to open environments has considerably increased the pressure and demand on rural areas. This demand is polyhedric and not generalizable, but it adopts different positions: from firm desires to live in rural settlements in search of a drastic change of life, through temporary stays, second homes for rent or purchase, greater pressure from weekend tourism, or even change of registration to be able to guarantee the possibility of movement in the event of a new confinement. All these derivatives, and others that are also occurring linked to work and new economies, are generating new territorial dynamics and mobilities that require an attentive look to ensure the balance of our territory. We are therefore experiencing a paradigm shift and the pandemic makes us see that this is a very pertinent time to reconsider the ancient process of depopulation of rural centers due to the new challenges that this situation is posing to us.

### Urban principles for rural environments

As a result of our conceptual and empirical approach to rural settlements, we consider that there are a series of urban themes that must be taken into account and that respond to different scales simultaneously.<sup>6</sup> These urban principles must enrich the discourse on the new balances and territorial interactions between urban and rural settlements, and are: mobility, housing, services, public space, activities and heritage (fig. 5).



Figure 5. The six items. Source: own elaboration.

1. **Mobility.** We live in a society where mobility is fundamental, and the mobility clearly can improve the links between rural and urban settlements. The infrastructure networks implemented on the territory promote the connectivity and efficiency of these links, essential to work in the territorial balance of quality. But it is not only the communication opportunities that these networks can offer us, but also the means of transport that we use to move through them. Therefore, beyond the mobility infrastructure, we must pay special attention to public transport, which is often deficient in rural contexts, and look for less conventional solutions in order to make it effective, from shared vehicles to autonomous cars, and services on demand that are supported by new technologies.<sup>7</sup>

2. **Housing.** It is necessary to attend to the new ways of living in their multiple facets in order to encourage and consolidate residential permanence in rural areas, which present deficits in diversity of supply and accessibility. For this reason, it is necessary to rethink the modes of living, from co-housing and residential complexes with shared spaces, through the urban farmhouse and the cessions of use based on reforms and the adaptation of housing to replace conventional rentals, or encouraging and substantially improving the residential offer based on the typological diversity of the homes.<sup>8</sup>

3. **Services.** Public administrations must accept that a large part of these services require budgets and investments that are often deficient due to the lack of critical residential mass. It should be borne in mind that, in addition, rural nuclei have a highly aged population, which means paying special attention to health services and compulsory travel to access them. All this leads us to look for co-services and shared services solutions, which can be substantially improved with new technologies (broadband, 3D printers or drones). In any case, the most relevant service to address depopulation is education. Schools are absolutely necessary for young families to settle in the rural environment.

4. **Public spaces.** This concept adopts very different connotations and proposes new interpretations. Careful re-readings are needed on their meaning and role within the urban structure of rural nuclei, properly interpreting their use, and understanding that proximity to open spaces gives public spaces in the nuclei another meaning of belonging.

5. **Activities.** One of the advantages of global economic changes is that it allows us to rethink new economies, understood as those that are typical of urban centers, but which thanks to new technologies can move comfortably to rural environments, with new reinterpretations. Teleworking and the various formulas of business incubators and cooperatives can encourage the firm establishment of young entrepreneurs who, at the same time, can have a positive impact on the social fabrics of these rural nuclei and boost their economies and commercial exchanges.

6. **Heritage.** Finally, it is essential to take a close look at the heritage value of these places, both from an architectural, natural and cultural point of view, since it is a relevant asset that can have an impact on stimulating their economies and exchanges, either because of their tourist repercussions or because of the quality of the rural and urban environment.<sup>9</sup>

## RESEARCH PRODUCTS

The 15 weeks of workshop and research have focused on three specific areas that respond to the three scenarios mentioned above, namely peripheral rural nuclei, synergistic rural nuclei and remote rural nuclei (fig. 6). Overall, it has meant the work of a hundred students who have carried out a first phase



of analysis of each area in order to build the project strategies to improve the territorial structures of each scenario and propose solutions to improve the quality of life of each of them.

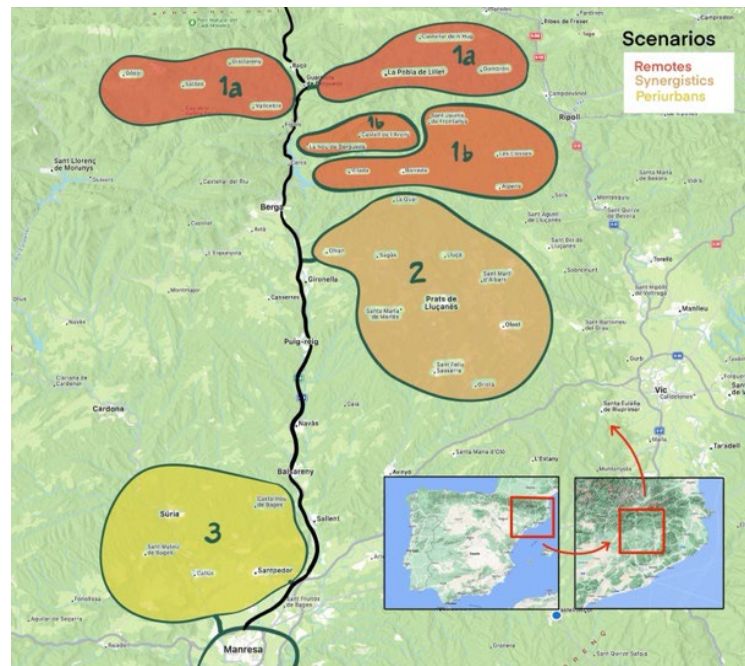


Figure 6. The scenarios. Source: own elaboration.

Here is an example of each of the cases, and in the course of the work we have been able to establish some characteristics that are unique in each of the scenarios:

**Periurban rural nuclei** have a much more stable future due to their proximity to consolidated urban centers, with more stable economies, and which they can easily benefit from. Otherwise, they tend to lose control over their own economic future and also over the value of land and infrastructure (fig. 7).

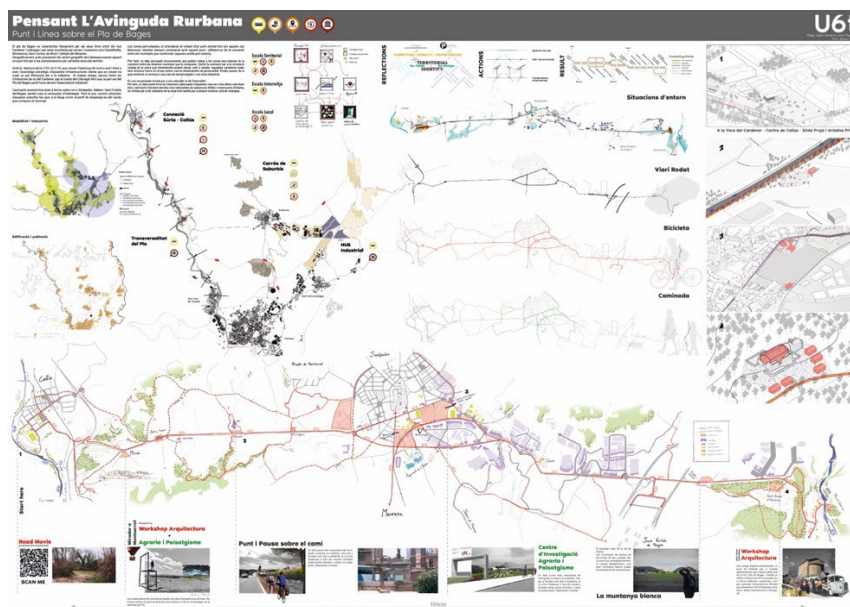
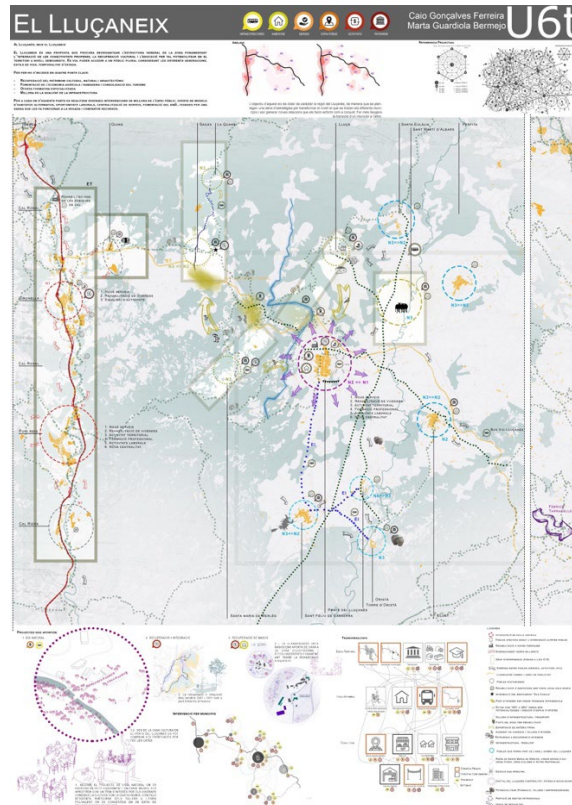


Figure 7. Periurban scenario proposal. Source: Diego López and Aran Tiepolo.

**Synergistic rural nuclei** have a high social dynamization. They are often attractive to residents of high economic level in the search for environments with a higher quality of life, but mostly as a second home. On the other hand, in these areas the public transport service is not usually optimal, and the second residence can significantly alter economic dynamics and the access to housing (fig. 8).



*Figure 8. Synergistic scenario proposal. Source: Caio Gonçalves and Marta Guardiola.*

Finally, remote rural nuclei have the advantage of the immediate natural environment and its derivatives, with specific and often qualified food productions, and are especially attractive for temporary stays. Much of its economy is linked to the territory and its direct production, although the increase in tourist pressure is both modifying the base economy and hindering access to housing. They are nuclei where depopulation has been a constant since the mid-twentieth century. In addition, their economies are very vulnerable to global economic changes, therefore subject to many ups and downs, and they have a very low connectivity between settlements and also to services, making their maintenance very deficient (fig. 9).<sup>10</sup>

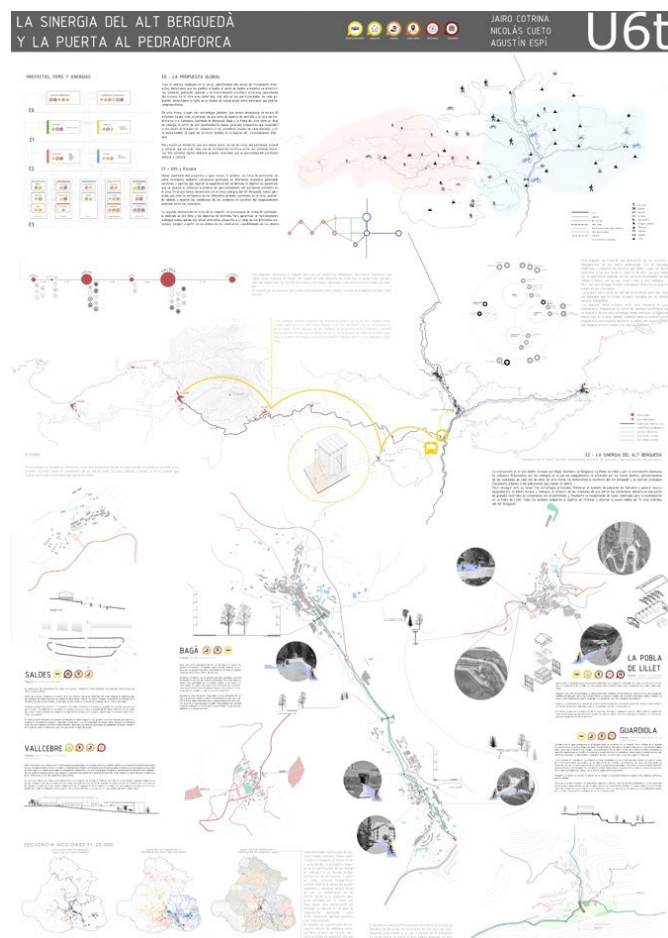


Figure 9. Remote scenario proposal. Source: Jairo Cotrina, Nicolás Cueto and Agustín Espí.

### Guidelines for the sustainable future of the rurban territory

These urban principles –mobility, housing, services, public spaces, new economies and heritage– are essential to be able to build a new reading of the territory, where the differentiation between the rural and the urban leads to the joint development of the rurban territory. Besides, the paradigm of innovation and technological change can have a decisive impact on depopulation, insofar as they resolve the distance to the economic and labour markets of rural settlements, reducing the expenses derived from these distances and strengthening their resilience capacities. In addition, they can significantly improve measures against climate change, reduce social differences and improve gender balance. In this sense, rural settlements are crucial to achieve those global objectives aimed at respecting and enhancing biodiversity, natural resources, food and local raw materials.

### CONCLUSIONS

The work carried out throughout the course has allowed us to establish some previous conclusions that allow us to guide in some way the intervention criteria on these territories that could help to alleviate the problem of depopulation, while energizing their economies and orienting them towards a territorial balance.

1.The problems derived from the rural environment show that this territory is of very high **complexity**, since it requires attending simultaneously to many different aspects in order to be able to

establish strategies of interest and effective to solve the problems of depopulation and its fragile economic dynamics.

2.The solution to the problem of rural nuclei involves understanding that urban centres must form part of the strategic equation. It is necessary to eliminate the reading of the existence of a binomial, rural and urban, to understand that both spheres are part of the **same reality**, and that one cannot be addressed without the other.

3.It becomes clear the need to carry out a prior classification of these territories, as this work has focused. Thus, the taxonomy used that distinguishes **three scenarios**, namely peripheral rural nuclei, synergistic rural nuclei and remote rural nuclei, is entirely relevant and effective in the study of these territories.

4.To address the strategies to be implemented in these territories, it is essential to distinguish previously the **structural role** of each municipality within its territorial context, based on the number of inhabitants and their economic dynamics. Thus, it seems very effective to establish at least three levels of importance of these rural nuclei within their territorial scope beforehand, for the subsequent definition of the strategies to be implemented. This makes it easier to identify sensitive areas and areas of opportunity.

5.It has been key to identify and clearly distinguish, for each of the areas, their **local singularities** from the **generic characteristics**, which would be more closely linked to each of the scenarios.

6.The importance of **scaling transversality** has become evident. Thus, the strategies have addressed three scales simultaneously: (1) the local scale, associated with each rural nucleus, (2) the intermediate scale, associated with different rural nuclei and their interrelationships, and (3) the territorial scale, associated with each scenario.

7.It has been shown that interventions at the local level are always aimed at **retro-feeding** the strategic criteria of the intermediate scale, and that these must always be aimed at retro-feeding strategies of territorial scale. Establishing this criterion of intervention guarantees exponentially the effectiveness of the strategies in each of the scales.

8.The strategy of **thematic transversality** seems to be fundamental to ensure the coherence of the proposals. This means that it is necessary to address at the same time, and for each of the scales, the issues of mobility, housing, services, public spaces, economic activities and heritage (architectural, landscape and cultural). This does not hinder some strategies from being able to focus more intensely on one of these 6 items, but it is key to address them all at once.

9.It therefore seems clear that the **synergies** that can be established between the different local, intermediate and territorial interventions are more important than each of these projects read individually. The all-encompassing reading of strategies is much more effective than the sum of their parts.

10.Within a **generic reflection** on the three scenarios, remote nuclei call for more specific interventions and a higher level of knowledge of their singularities. At the same time, it becomes more difficult to establish strategic criteria of territorial scale than in the case of peripheral nuclei, where these territorial strategies can be much more effective, and where decentralization criteria are more reasonable. In the case of synergistic nuclei, the identity role is especially relevant.

11.Rural territory is an area based on contrasts, and has become especially evident in the search for a balance between **globalization and uniqueness**. Finding this balance between being interconnected with global dynamics, while being competitive in strengthening local resources has been a very important constant in the development of proposals. In this sense, cross-readings between bottom-up and top-down and the identification of their points of contact seem more than important to solve the problems faced by rural nuclei.

The ***rurban territory*** is, at the end, one that prioritizes the synergies and complicities between rural and urban centers through a global perspective that covers the fundamental ingredients that affect its territorial structures, while being sensitive to the new trends derived from the pandemic, and that contemplates the diversity of scales simultaneously, all this with the aim of achieving new territorial balances that provide us with a better quality of life.

## NOTES

- <sup>1</sup> In 2019 there was an exhibition in the New York Guggenheim leaded by Rem Koolhaas with a specific view of the countryside problem (*Countryside. A report*).
- <sup>2</sup> The course had an extension of three months, and it had the participation of more than 100 students in the elaboration of the projects, leaded with 6 teachers.
- <sup>3</sup> There is still a fourth scenario, related with the nuclei which have lost all the citizens. These settlements have a lot of buildings still remaining, and opens a new scope and new opportunities, but they are not analyzed in this paper, because open a new debate.
- <sup>4</sup> The pandemic period has opened new debates on the open country. The discussion about the migration from the cities to the countryside in post-pandemia scenario is always on the news, and we are living in an historic moment to face the territorial equilibrium.
- <sup>5</sup> The theory of the garden city has been the stimulus of many projects and many ideas on territorial balance. Many of these ideas were very suggestive at their time, but they require reinterpretations in order to adapt to the singularities of our territories in accordance with new socio-economic trends.
- <sup>6</sup> It is obvious that, prior to the assessment of these 6 items, it is necessary to carry out a careful analysis of the scope of the work, since the territory is not neutral, and requires to properly assess its singularities before making any project decisions.
- <sup>7</sup> Mobility speaks of communication, and in this sense we must take into account the importance of digital technologies and internet connections, since they are essential to be able to manage the development of rural environments and establish new population in accordance with the economic expectations they can offer.
- <sup>8</sup> Two additional problems must be taken into account: the large number of uninhabited homes that are not put on the market, and the second home market, which substantially alters the economic supply of housing and causes a significant rise in prices that make them inaccessible for people looking for a fixed home.
- <sup>9</sup> It is indisputable that one of the most important values of rural areas is the environment. But so is cultural values, since these settlements base their uniqueness not only on the landscape environments in which they are located, but especially on the identity of communities that is often based on their cultural expressions.
- <sup>10</sup> In the elaboration of the projects, the students previously carried out some study work of some initiatives developed in rural environments in other places. Some of the initiatives studied can be found in the journal a+t, issues 53 to 55, entitled "*Is this Rural?*", 2020.

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# CONVIVIAL DESIGN: CIVIL ENGINEERING CASE STUDIES

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## INTRODUCTION

Civil engineering is so named because it is the branch of applied science which addresses ordinary citizens and their fundamental concerns. But does the current practice of civil engineering actually concern itself with the needs of ordinary communities in the context of their proximate surroundings? Civil engineering design currently is guided by life-safety, cost and increasingly carbon minimization requirements. These metrics result in safe buildings that meet an economic requirement, but little else. In response, this paper introduces the idea of ‘convivial’ engineering as a design approach which values place, history and community engagement as essential elements of design for human flourishing. Human flourishing is taken as: design that helps people meet their basic needs, develop meaningful purpose and relationships while maximizing expression and creativity without adversely impacting the ability for others (both in the present and the future) to achieve the same. Convivial design, particularly in the civil and architectural realm, is the idea that relationships within local communities across time are essential to human flourishing and should be actively supported by self-limiting growth and consumption. This necessitates a series of ancillary conditions including local widespread ownership and collective input into community decisions.

This paper situates current design theories in context of conviviality and provides civil engineering examples that highlight traditional communities and convivial civil technologies compared to modern techno-centric solutions. Rather than develop an exhaustive theoretical framework for convivial civil engineering design, the case studies are meant to highlight easily recognizable characteristics and provide a starting point for ready application of convivial design. The first scenario compares traditional Incan rope bridges to modern suspension bridges. Secondly, the role of watershed management is investigated from the perspectives of control versus accommodation. These examples show the mediating effects of convivial design and highlight the reliance on local community and simple technology.

## Design Theories

There is need for ongoing development of robust design theories for the built environment.<sup>1</sup> Indeed, designers have grappled with the development of applicable theories for decades.<sup>2</sup>

Due to growing awareness of environmental impact there has been an increase in the role of sustainability in design decisions. Hiller<sup>3</sup> has argued for the role of sustainability in design and provided a framework for design theory through his ‘space syntax’ method.<sup>4</sup> Such theory can be used to identify environmental optimality and then look for social and built environment design which best achieves this. But, note that the bulk of Hiller’s work focuses on urban design and has not been

applied to civil and architectural structures.<sup>5</sup> Additionally, while practical insights are gained at the macro-level of urban planning and layout, there is less tangible guidance for designers of buildings, and infrastructure.

An alternative approach that seeks to include social and environmental considerations is that of the ‘capital approach’. In this, Atkinson focuses on how sustainable development is directly related to wealth<sup>6</sup> (i.e., all assets in an economy – *especially including natural resources*). This method is often used in conjunction with the well-known “triple bottom line” (TBL) of impact assessment. TBL is designed to direct planning and decision-making considering three dimensions: people, planet and profits.<sup>7</sup> These methods have been widely adopted but suffer from a market positivism that excludes social and environmental impacts that are not readily converted into fiscal components for consideration.

In response to the various approaches to design theories, there has been calls to develop more unified theories.<sup>8</sup> Cairns<sup>9</sup> provides a survey of various philosophical approaches in an attempt to 1) summarize existing approaches and 2) address the selective or capricious manner these theories may be applied. Indeed, the sheer quantity and diversity of these theories leads to intractability for most designers. Such investigations can provide a robust theoretical foundation, but likely possess a level of abstraction that is unhelpful to the engineer or architect seeking tangible guidance.

### Progress Traps and Convivial Design

Engineers have long deferred to techno-solutions (i.e., use of novel technologies to address current problems) as a default design approach. Designers paint over impoverished designs with improved technology. For example, rather than consider building materials, site situation, solar angles and prevailing winds for human comfort, designers increase R-values and install smart thermostats connected to high-efficiency air conditioners.<sup>10</sup> Thus, designers fall into a “progress trap”, using improved technology to address issues caused by the last iteration of technology.<sup>11</sup> Progress, in this narrow sense, is marked by increases in cost efficiency and decreases in embodied carbon which often satisfy the metrics of the design theories discussed previously. In response, this paper submits “convivial design” as a framework for evaluating the built environment. Conviviality as coined by Illich in the context of technology and society has not been used in the context of the built environment.<sup>12</sup> The working definition of conviviality is a society defined by “responsibly limited tools (i.e., technology)”. This is descriptively presented as an arrangement in which each member of society has ample and free access to community resources and is limited in this freedom only in favour of another’s access. Such a society must be both distributive and participatory to allow all members autonomous action by means of tools that are least controlled by others.<sup>13</sup> The convivial society allows for member participation in the actual development of community that will necessarily balance short- and long-term needs. In this sense, the health of the community is the ultimate measure of human flourishing as individuals maximize freedom within local and communal constraints.

### INCAN ROPE BRIDGES – KESHWACHAKA (QUEUE - HUINCHIRI, PERU)

*“There is a land of the living and a land of the dead and the bridge is love, the only survival, the only meaning.” — Thornton Wilder, The Bridge of San Luis Rey<sup>14</sup>*

The central Andes mountains are the longest mountain range in the world. These mountains are tall and narrow resulting in deep chasms with fast flowing rivers and large spans – resulting in a geography that is inescapably vertical in nature.<sup>15</sup> As a result of this unique geography, construction of suspension bridges flourished under the Inca Empire of 1,000 years ago with most surviving until the 19<sup>th</sup> century. This land and these bridges served as the inspiration for Thornton Wilder’s “The Bridge of San Luis Rey”. As the solution to connecting multiplicity of diffuse villages, the bridges

relied on sophisticated engineering and holistic community engagement. As a result, at least 200 bridges some of which could span up to 30.5 m were constructed. The bridges had the longest spans in the world at construction and held the title until nearly 500 years later. The maintenance of the bridges was a function both of regional taxes and local cultural participation – including bridge keepers (Chakacamayoc). Components of the Incan bridge system included: rope as the roadway, braided rope cables for load carrying capacity, and stone abutments and vertical ties to anchor the system at each end. When present, the masonry roadway served as additional mass to resist the tensile forces and distribute loads to supports.<sup>16</sup> This structural performance is shown in Figure 1.



*Figure 16. Keshwachaka in Peru<sup>17</sup>*

As an example of the combination of Incan technical sophistication, environmental sustainability and social cohesion, take the Keshwachaka between Quehue and Huinchiri. This ending grass bridge has persisted for at least 500 years and is one of the last remaining bridges of this kind.<sup>18</sup> Notably, the braided grass rope does not last 500 years. In fact, the material lifespan is about 2 years. To address this, the bridge is completely reconstructed annually. Over the course of a 3-day festival over 500 people from each village completely rebuild the bridge. This is a significant festival during which: 1) sustainable ropes are fabricated by hand from the local Icchu grasses, 2) the old bridge is cut down and four new braided cables are installed between the stone abutments and 3) the Chakacamayoc (a position passed down within a family for over 300 years) braids and weaves the walking surface of the bridge.<sup>19</sup>

Production of the bridge requires production of over 15,240 m of locally sourced and renewable grass cord. During the first day of the festival, the 457 mm long grass is twisted into 9.5 mm diameter cords that are subsequently turned into 50.8 mm diameter rope which comprise the 203.2 mm diameter cables. The second day consists of adult male members cutting loose the old bridge and replacing the six 203.2 mm diameter primary cables that form the structural system of the suspension bridge by anchoring them to large masonry abutments and pulling them taut. The final installment of the festival is primarily the community members eating, drinking and watching the Chakacamayoc finish weaving the walking and rail portions of the bridge.<sup>20</sup>

Modern structural analysis has confirmed what centuries of Incans knew: the bridge can support significant loads. In fact, the bridge is estimated to be able to carry 56 people at a time. Strength of a single grass cable was determined by tensile material characterization as 18415.64 kN and by full scale testing as 17881.85 kN.<sup>21</sup>

### Lessons Learned

In the context of convivial engineering technology, the example of Keshwachaka illustrates how engineers can develop technologies that have low initial costs, relatively weak, but locally abundant materials, routine maintenance needs and community support.<sup>22</sup> This approach to whole-life design provides a different framework for engineering solutions one that meets the functional engineering demands with local sustainable materials with community engagement. The result is a symbiotic relationship which results in structures that persist for centuries with nominal environmental impact. Comparing the Keshwachaka to modern suspension bridges highlights the convivial distinctives. Consider that modern bridges are designed and constructed by a few individuals out of millions within society. They are funded nationally with most money coming outside the community. There is no community participation in design, construction or maintenance. Moreover, the design life of these modern structures is typically 50 years with the road surfaces lasting ~8 years. The bridges themselves are reflective of the broader transportation systems which amplify the difference between convivial walkable/bikeable communities and techno-centric multi-lane highways.

### LEVEES AND BEAVER DAMS

*“One who knows the Mississippi will promptly aver—not aloud, but to himself—that ten thousand River Commissions, with the mines of the world at their back, cannot tame that lawless stream, cannot curb it or confine it, cannot say to it, ‘Go here, or Go there, and make it obey.’” – Mark Twain “Life on the Mississippi”<sup>23</sup>*

### Sinking Sands and Rising Tides

Southern Louisiana is known for music, Mardi Gras and cuisine, and also, unfortunately, for flooding. In fact, New Orleans flooded within the first year of its establishment in 1718.<sup>24</sup> Throughout the ensuing 300 years the banks and mouth of the Mississippi have grappled with regular flooding and the concomitant property damage and life safety hazards. More recently, the flooding and failures of levees in 2005 due to Hurricane Katrina resulted in the flooding of over 100,000 homes and businesses.<sup>25</sup> However, this is but one of the more noticeable technology vs nature struggles that occurs at the great North American delta. In addition to the flooding, New Orleans and surrounding areas in general, and Plaquemines in particular (Figure 2), are documented as being one of the fastest disappearing places on earth.<sup>26</sup>



the exact opposite – the BDA's are designed to slow and spread rivers accentuating natural development of wetland and sediment build-up as shown in Figure 3.



Figure 18. Beaver Dam Analogues in Washington State

Historically, the North American beaver created unique habitats along rivers that provide many advantageous ecosystem benefits, especially in Western US regions where water is increasingly a limited resource.<sup>31</sup> By establishing dams along rivers, beavers decrease stream velocity, increase channel complexity and extend residence times which allows for greater groundwater recharge, cleaner stream flow,<sup>32</sup> improved persistence of year-round flows<sup>33</sup> and ancillary benefits to wildlife and ecosystems up and down the watershed.<sup>34</sup>

Unfortunately, in a pincer-movement of progress, the loss of beaver populations and changes in land (and water) use<sup>35</sup> left many streams vulnerable to incision and degradation.<sup>36</sup> This is because beaver dams likely minimized or even alleviated stream channelization and incision as they reduce streambank erosion, reduce sediment transport (by trapping sediment behind BDA), create ponds, pools, and wetlands all while remaining passable to fish and improving floodplain connectivity.<sup>37</sup> For example, Figure 4 shows the positive benefits as presented by reduction of phosphorus on two creeks in Eastern Washington state after only a single month of BDA's.



Figure 19. Mississippi Delta, New Orleans and Surrounding Area

Rather than relocate beaver populations (which has been done in the past) BDA's use: vertical wooden posts, willow or pine branches to weave horizontally between the vertical posts as well as vegetation, rocks, mud to finish the construction.<sup>38</sup> In order to construct the BDA, only hand tools are required and the cost can be as low as several thousand dollars per dam. Installation is completed by a



couple people in hip-waders in the stream, weaving pine through wooden posts and then compacting them by stomping on them.<sup>39</sup> This method is shown in Figure 5.



*Figure 20. BDA Construction*

### Lessons Learned

Recently, there has been growing acknowledgement that the techno-solution water works along the Mississippi cannot be designed to hold back the river and address the land-loss. Some have started to call for removal<sup>40</sup> and transitioning to a more accommodating approach.<sup>41</sup> In comparing the Mississippi levees with the BDA's, the convivial nature of the later becomes apparent. The levees are complex, highly engineered infrastructure that are largely funded, constructed and controlled by those outside the communities where they are built. The materials are not local and there only community involvement occurs when the levees fail and people flee to higher ground.

The convivial aspects of BDA's are obvious in that they are a local solution often deployed on private land directly by land-owners and conservationists without any local government involvement. The design and construction of BDA's are simple, human-scale and use local, sustainable materials in an effort to repair and return to an undeteriorated state. The installation is typically done by people directly involved and does not require specialized training like the highly engineered concrete levees on the Mississippi. BDA's are anti-fragile in that they have proportionally greater impacts as flood waters increase.

### CONCLUSION

Convivial design focuses on scale and sustainability to promote and strengthen the local community. In the cases presented, convivial design stands in contrast to the historical hubris of engineering techno-solutions by acknowledging that as the power of technology increases the individual is diminished to the detriment of local society. Convivial design is judged by the extent that it can be experienced by everyone in the community as much or a little as wished and strengthens human flourishing by means of limiting growth, consumption and scale in favor of humane living. In the examples presented, convivial design requires community engagement and support, relies on local materials, small scale and simple design. In an age of design efficiency and optimization of global systems, convivial design promotes sustainability based on locality and culture.

## NOTES

- <sup>1</sup> Lauri Koskela, "Is a theory of the built environment needed?." *Building Research & Information* 36, no. 3 (2008): 211-215.
- <sup>2</sup> George Cairns, "Advocating an ambivalent approach to theorizing the built environment." *Building Research & Information* 36, 3 (2008): 280-289.
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- <sup>5</sup> Claudia Yamu et al., "Bill Hillier's legacy: Space syntax—A synopsis of basic concepts, measures, and empirical application." *Sustainability* 13, no. 6 (2021): 3394.
- <sup>6</sup> Giles Atkinson, "Sustainability, the capital approach and the built environment." *Building Research & Information* 36, 3 (2008): 241-247.
- <sup>7</sup> Timothy F. Slaper and Tanya J. Hall, "The triple bottom line: What is it and how does it work." *Indiana business review* 86, no. 1 (2011): 4-8.
- <sup>8</sup> Julienne Hanson, *Decoding homes and houses*. (Cambridge University Press, 2003).
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- <sup>10</sup> Sarah Williams Goldhagen and Andrea Gallo, *Welcome to your world: How the built environment shapes our lives*. (New York: Harper, 2017).
- <sup>11</sup> Daniel Brian O'Leary, *Escaping the progress trap*. Geozone Communications, 2005.
- <sup>12</sup> Ivan Illich, *Tools for conviviality*. (New York: Harper and Row, 1973).
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- <sup>14</sup> Thornton Wilder, *The Bridge of San Luis Rey*. (Penguin UK, 2006).
- <sup>15</sup> Lydian M Boschman, "Andean mountain building since the Late Cretaceous: A paleoelevation reconstruction." *Earth-Science Reviews* 220 (2021): 103640.
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- <sup>17</sup> John Ochsendorf, "Sustainable structural design: lessons from history." *Structural engineering international* 14, no. 3 (2004): 192-194.
- <sup>18</sup> John Ochsendorf, "Sustainable structural design: lessons from history." .
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- <sup>20</sup> John Ochsendorf, "Study of the Last Incan Bridge." *IBC Student Paper, Cornell* pp. 12-15. 1996.
- <sup>21</sup> John Ochsendorf, "Study of the Last Incan Bridge."
- <sup>22</sup> John Ochsendorf, "Engineering Analysis for Construction History: Opportunities and Perils." In *Second International Congress on Construction History*, pp. 89-107. 2006.
- <sup>23</sup> Mark Twain, *Life on the Mississippi*. (Penguin, 1985)
- <sup>24</sup> Elizabeth Kolbert, *Under a white sky: The nature of the future*. (Crown, 2021).
- <sup>25</sup> G. L. Sills, et al., "Overview of New Orleans levee failures: Lessons learned and their impact on national levee design and assessment." *Journal of Geotechnical and Geoenvironmental Engineering* 134, no. 5 (2008): 556-565.
- <sup>26</sup> Elizabeth Kolbert, *Under a white sky: The nature of the future*. (Crown, 2021).
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- <sup>38</sup> Sue Niezgoda and Peggy A. Johnson, "Modeling the long term impacts of using rigid structures in stream channel restoration." *JAWRA Journal of the American Water Resources Association* 42, no. 6 (2006): 1597-1613.
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- <sup>41</sup> Warren Cornwall, "Unleashing big muddy" *Science*, April 22, 2021.  
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# BIOMIMICRY THINKING: FOSTERING QUALITY OF LIFE AND SUSTAINABILITY BY DESIGN

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## INTRODUCTION

Throughout the technological progress conquered by humanity, postures of dominance and control over nature were undertaken, giving rise to harmful consequences for the survival of both human communities and other species. Thus, numerous systems and infrastructures that were developed with high environmental costs must now be urgently redesigned.<sup>1</sup> Therefore, it is necessary to readapt urban spaces, constructions, and artifacts and also to rethink the creative processes involved in their planning and production.<sup>2</sup>

From this perspective, it is relevant to seek proposals that consider aspects of environmental preservation, sustainability, and ecosystem regeneration.<sup>3</sup> Adopting interdisciplinary knowledge in new designs is a path for addressing such complexity of requirements.<sup>4</sup> According to this perception, studying the biosphere and its evolutionary trajectory has the potential to stimulate the emergence of innovative creations.<sup>5</sup>

Among the various approaches to bioinspiration, biomimicry deserves special attention. In recent decades, this field has sought to provide subsidies for the development of solutions related to human challenges and needs through the investigation of natural forms, processes, and systems.<sup>6</sup> According to this approach, biological knowledge is transferred to the creative area (e.g., design, architecture, and urbanism).<sup>7</sup>

There is no direct interference with the material resources of nature: in biomimicry researchers and designers embrace a theoretical and abstract approach that can include a diverse set of data sources,<sup>8</sup> such as on-site observations, database and literature investigations.<sup>9</sup> In this way, new designs emerge without aggravating the damage to ecosystems.

There is a wide variety of creations in which it is possible to distinguish the convergence of design practices and biological knowledge. As an example, some biomimetic projects will be presented:

a) Originally, the *Shinkansen*, or Japanese bullet train, emitted loud noises that impacted the neighborhood as it passed through tunnels. To resolve this issue, Eiji Nakatsu was inspired by the shape of the kingfisher's beak. Its shape allows the bird to pass easily between two mediums of different densities (air and water), without producing ripples or splashes when it dives to capture its prey. The proposal to redesign the front portion of the train (Figure 1a), by incorporating this biomimetic aspect, solved the matter of noise pollution while also resulting in a 15% reduction in the energy used for its operation.<sup>10</sup>

b) The 30 St Mary Axe building, also known as the Gherkin Tower (Figure 1b), is a work by Norman Foster, inspired by the structure of the Venus' flower basket sponge. This animal has an elongated and cylindrical shape with an internal structure made of a hexagonal mesh that provides resistance against the action of ocean currents. By implementing these bioinspired notions, an ogival-shaped building was created, with glass panels superimposed on a resistant truss diagrid structure. The building also has solutions for passive ventilation, thermal regulation, and natural lighting.<sup>11</sup>

c) The Eden Project is a large greenhouse developed by Grimshaw Architects and Michael Pawlyn (Figure 1c).<sup>12</sup> Various elements, such as radiolaria, dragonfly wings, soap bubbles, and carbon molecules, inspired the designers.<sup>13</sup> Based on such abstractions from nature, the chosen formal solution was a structure of interconnected geodesic domes, composed of a steel mesh covered by a polymeric membrane.<sup>14</sup> The variation in the diameter and position of the spheres allowed for a good topographic adequation and facilitated the solar orientation. The superstructure created is lighter than the air mass it contains and uses passive solar heating resources to maintain its temperature stable.<sup>15</sup>

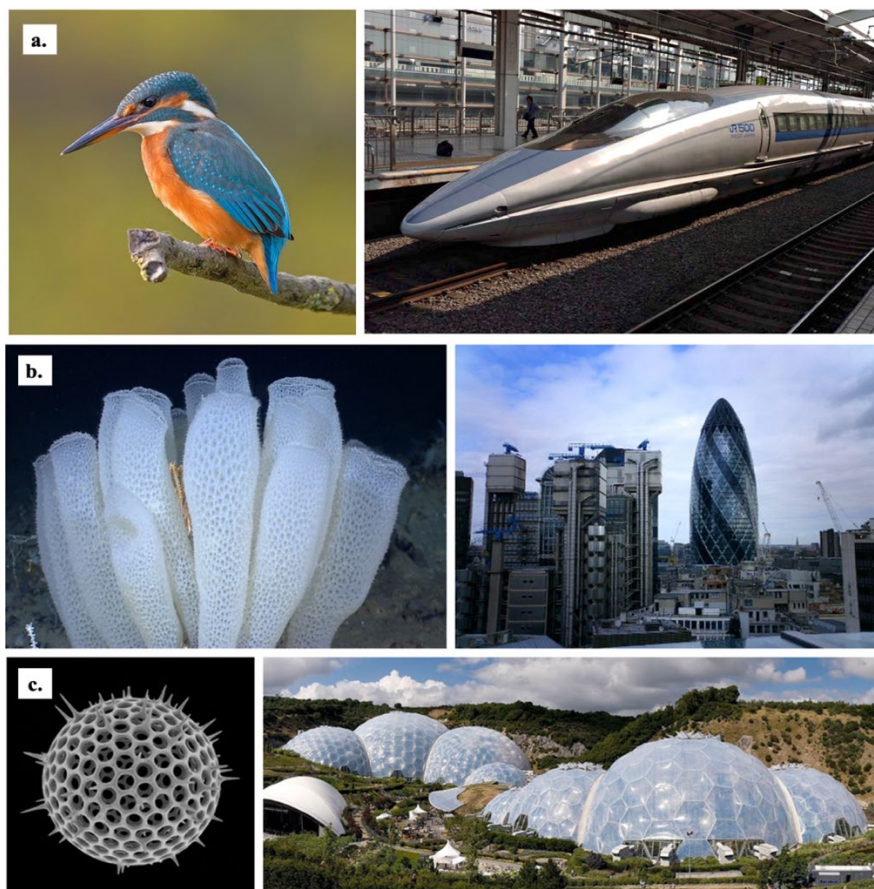


Figure 1. a) Kingfisher<sup>16</sup> and Shinkansen<sup>17</sup>; b) Venus' flower basket<sup>18</sup> and Gherkin Tower<sup>19</sup>; and c) Radiolaria<sup>20</sup> and Eden Project<sup>21</sup>.

These examples emerged from specific biomimetic processes and resources. Considering that, it is pertinent to investigate biomimetic tools<sup>22</sup> — defined as theoretical instruments used to structure steps and processes to generate ideas, analyze problems, and guide design activities in biomimetic proposals.<sup>23</sup> These resources lead to creations with sustainable and regenerative potential.<sup>24</sup> There are many biomimetic tools highlighted in the literature,<sup>25</sup> such as: Biomimicry Thinking,<sup>26</sup> Life's Principle's Diagram,<sup>27</sup> Biomimicry Taxonomy Chart,<sup>28</sup> iSites,<sup>29</sup> Ask Nature Database,<sup>30</sup> and BioTRIZ.<sup>31</sup> This work will explore the particularities of the Biomimicry Thinking Tool.<sup>32</sup>



## Biomimicry Thinking Tool

This tool includes steps related to the entire development of a project and has multiple nomenclatures in the literature, such as: Biomimicry Thinking; Biomimicry DesignLens;<sup>33</sup> Biomimicry Design Spirals; Challenge to Biology and Biology to Design.<sup>34</sup>

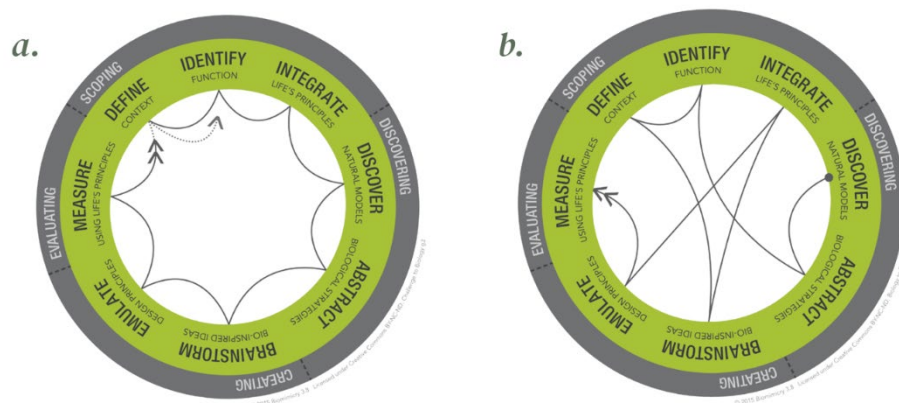
The first approach, the Challenge to Biology (Figure 2a),<sup>35</sup> comprehends the development of a design briefing, in which the challenges to be solved are established. Then the desired functions are identified. An auxiliary tool, the Life's Principles Diagram,<sup>36</sup> is integrated into the design considerations to assist in the search for forms, processes, and natural phenomena that may provide solutions.<sup>37</sup>

After the research, biological strategies are abstracted through brainstorming and their particularities are transformed into design functions to construct the projects. The characteristics of the chosen natural element are integrated during the emulation stage. Finally, the results are measured through a new application of the Diagram to identify potential project improvements.<sup>38</sup> The Biology to Design approach (Figure 2b) proposes a similar process but in a different order. It begins with free and extensive research on natural elements, whether through literature searches or observations, which are then transformed into design projects. This second path requires a greater familiarity with biological knowledge to be implemented.<sup>39</sup>

Since the Biomimicry Thinking Tool<sup>40</sup> guides the overall development of a project, it is common to use complementary resources<sup>41</sup> in some of its stages, such as the aforementioned Life's Principles Diagram (Figure 3).

The Diagram, frequently used in the Integrate and Measure stages of Biomimicry Thinking,<sup>42</sup> provides patterns abstracted from natural systems to guide decision-making throughout the design process. The resource allows to establish priorities and determine whether the creations are sustainable and contextually appropriate.<sup>43</sup>

Given what was previously presented, it was considered relevant to investigate applications of biomimetic tools in design and architecture. The present work aimed to describe, analyze and discuss the use of the Biomimicry Thinking tool in projects committed to sustainability.



*Challenge to Biology*

*Biology to Design*

*Figure 2. Biomimicry Thinking Tool and its two approaches.*<sup>44</sup>



Figure 3. Life's Principles Diagram.<sup>45</sup>

## METHOD

The multiple case study methodology was chosen as it enables the investigation of contemporary phenomena in the real world by analyzing a set of stages and actions, as well as their outcomes and impacts.<sup>46</sup> Interviews, observations, documents, images, and graphs, among other sources of information, can be used in this methodology.<sup>47</sup> It is worth noting that, in case studies, it is not possible to interact, manipulate, or interfere with the object of study; thus, the researcher has restricted control over the investigated scenarios.<sup>48</sup> From this approach, it is possible to analyze the set of gathered information, establishing new relationships and interpretations of the studied phenomena.<sup>49</sup>

Taking into account the chosen methodology, three cases of architectural projects that used the Biomimicry Thinking Tool in their development were chosen. As a result, the search was conducted using data from the Ask Nature database, as well as general literature available on platforms such as Google Scholar and ResearchGate. First, a description of the individual cases was undertaken, followed by a comparative analysis of the set.

## CASE 01

The Eastgate Center was designed by Mick Pearce and his team and inaugurated in 1996.<sup>50</sup> This project aimed to create a large building in Harare, Zimbabwe, which is a region known for its high temperatures.<sup>51</sup> Due to such conditions, in this location, it is common for buildings to use air conditioning systems throughout the year, incurring significant financial and environmental costs.<sup>52</sup> In this way, the design team intended to seek sustainable and cost-effective strategies for developing an efficient cooling and thermal comfort solution for the building.<sup>53</sup>

Research was undertaken, and the designers concluded that the most suitable inspiring biological element for their project was the termite mound (Figure 4a),<sup>54</sup> which inside has a complex system of

ducts and vents that the insects open and close throughout the day. This system regulates ventilation and humidity, allowing the internal temperature to remain stable despite large external temperature variations.<sup>55</sup>

The following step involved abstracting the biological strategies and brainstorming. Based on this conceptual stage, ventilation and thermal comfort strategies were developed and implemented in the commercial center.<sup>56</sup>

The chosen solution for the building featured a series of chimneys, an atrium, and a set of low-energy fans that, when combined, allow the fresh night air to enter and pass through the structure while expelling the hot air accumulated over the day through the top (Figure 4b). Also, there are interconnected openings between the floors that improve the ventilation (Figure 5). Furthermore, the structure has a multifaceted external surface made of high thermal mass materials that aid in thermal comfort and provide additional shading for the openings of the building.<sup>57</sup>

Finally, a performance analysis of the building was carried out. According to Mick Pearce, the Eastgate Center is based on a low-energy system that uses approximately 35% less energy than conventional full HVAC-equipped buildings in Harare. Moreover, the ventilation system also operates passively, allowing it to function even if there is a power outage in the city.<sup>58</sup>

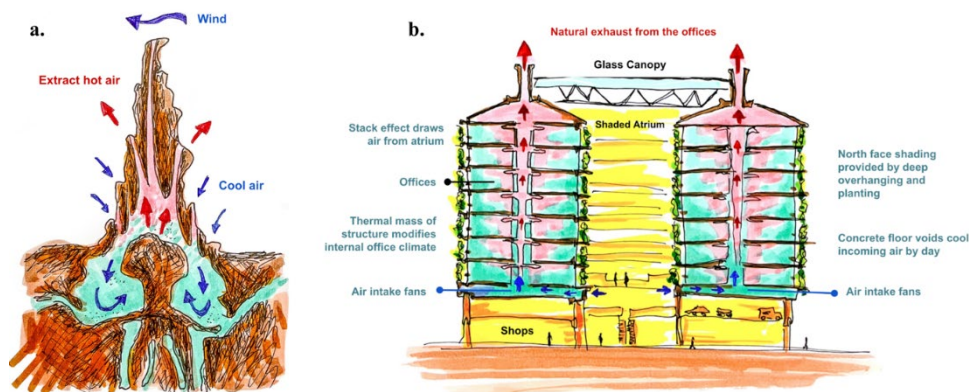


Figure 4. a) Termite Mound;<sup>59</sup> b) Overall ventilation system of the Eastgate building.<sup>60</sup>

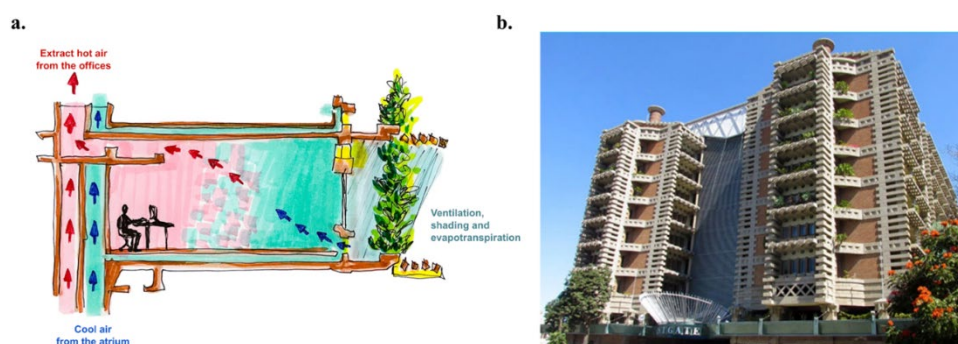


Figure 5. a) Section of a floor showing the ventilation system;<sup>61</sup> b) Eastgate Center.<sup>62</sup>

## CASE 02

The Aeonium is a fog catcher (Figure 6) designed by Allaire-Côté and collaborators as a solution for regions experiencing prolonged droughts and extreme heat, where access to water sources is difficult, creating scenarios of vulnerability for the population.<sup>63</sup> In Burkina Faso, this situation requires people

(particularly women) to walk long distances to access water, spending many hours a day doing so, making it difficult to maintain educational and social activities.<sup>64</sup>

The main goal of the project was the development of a site for water collection and storage that was closer to the villages in Burkina Faso.<sup>65</sup> This would improve the quality of life of the community, which would thus benefit from safe access to water, be able to maintain irrigation of small areas for food production, and have more time available to devote themselves to studies.<sup>66</sup>

During the research stage, the authors selected xerophilous plants, specifically those of the *Aeonium* genus as inspiration (Figure 6a). These organisms have a high-performance metabolism adapted for dry and hot climates, resulting in cells with a unique configuration for water storage. Additionally, it allows the plant to perform photosynthesis during the day but exchange gases at night, reducing water loss through the opening of the stomata at lower temperatures (Figure 6b). Some xerophilous plants are covered in microscopic hairs (trichomes) that direct water droplets to their surface assisting in water absorption (Figure 6c). This system also helps to reduce plant surface temperature through evaporation.<sup>67</sup>

Considering these elements, the team created a digital prototype of a dome-shaped fog-capture system (Figure 6d) composed of four elements (capturing, protection, filtration, and conservation). The water-capturing element, inspired by the trichomes on the surface of the plant, condenses droplets from the air using a fine nylon mesh. As the water droplets accumulate, they flow through a tubular structure to a central reservoir (conservation). An outer layer of wooden modular pieces covers the structure of the dome and performs passive opening and closing movements due to the anisotropy of the material. This element was inspired by the stomata and protects the reservoir from evaporation. The quality of the water stored at the basin is maintained through filtration by phyto-purification.<sup>68</sup>

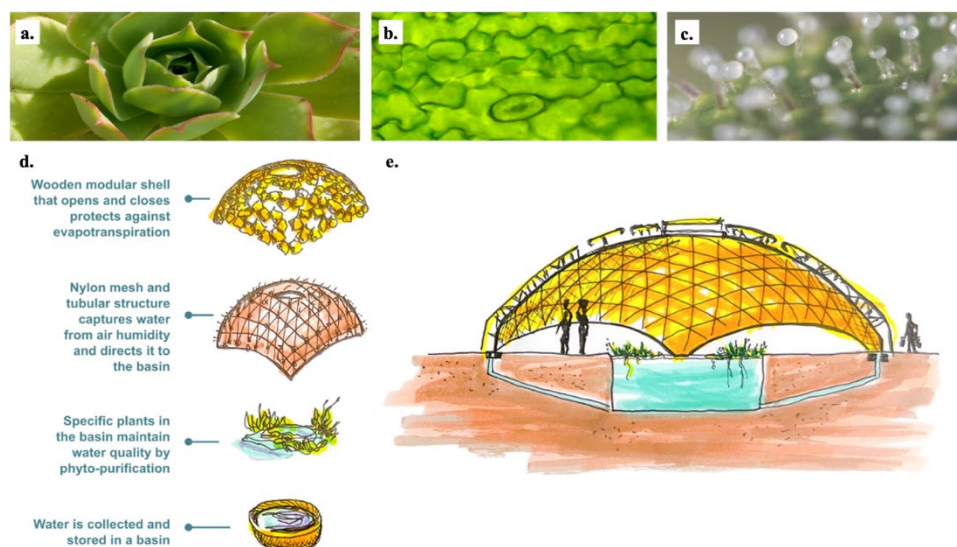


Figure 6. a) *Aeonium* plant;<sup>69</sup> b) stomata;<sup>70</sup> c) microscopic filaments of a plant;<sup>71</sup> d) main elements of the project;<sup>72</sup> and e) *Aeonium* Fog Catcher.<sup>73</sup>

### CASE 03

Osama Al-Sehail designed the Three Twisting Towers as part of his research on Biomimetic Structural Form (BST) to achieve sustainability in tall architecture. According to the author, the BST results from the emulation of natural forms that have remarkable sustainable performance through the creation of an efficiently designed flow system with multi-level solutions that has optimal internal configurations and a balanced interaction with the external environment.<sup>74</sup>



Thus, the context of this project encompasses the creation of a large building (60 stories) in Mississauga, Ontario. The author intended to create a visual landmark in the city that could spark interest in the region. In addition, the project was based on the search for a balance between functional, environmental, and aesthetic requirements.<sup>75</sup>

The structural model of a palm tree trunk (Figure 7a) was chosen as the biological element to guide the project. This plant has several types of interesting interconnections and geometry, such as: the central core with bundles of vascular strands that carry nutrients; an intricate network of roots; a bark whose tissue is formed by two layers; and an outer surface made of a phyllotactic spiral pattern. The capacity to wrap, twist, taper, climb and balance are additional aspects of this organism that were relevant to the design.<sup>76</sup>

During the abstraction and brainstorming phases, Al-Sehail determined that his project would be divided in two layers inspired by the palm tree: an internal one for the flow of people and activities, and an external one for the flow of loads. Each would have its own geometry, such as a steel diagrid system for the outer layer, and a steel-framed tube for the internal layer - which would be combined with steel-framed floors to form the overall system of the building. In addition to the general features already mentioned, the project integrated supplementary geometry such as taper, wrap, and twist to compose the final volumetric solution.<sup>77</sup>

The emulation phase involved creating a generative digital prototype in 3D Max and Revit (Figure 7b). In addition to the structural solution, the author added a rainwater harvesting system to the building, which mimics the functions of transporting liquids associated with the trunk of the palm tree, further reinforcing the biomimetic aspect (Figure 7c). Due to the use of this Biomimetic Structural Form, the building also had a good ventilation and irrigation system.<sup>78</sup>

The final stage consisted of measuring the generated prototype and its performance. Based on this analysis, a decrease in the use of structural materials of between 20 and 40% was observed, resulting in a reduction in the amount of waste produced. The adopted formal solution allowed to control the solar gains while also using natural light. The overall performance estimate of the project indicated a 30% reduction in the carbon footprint.<sup>79</sup>

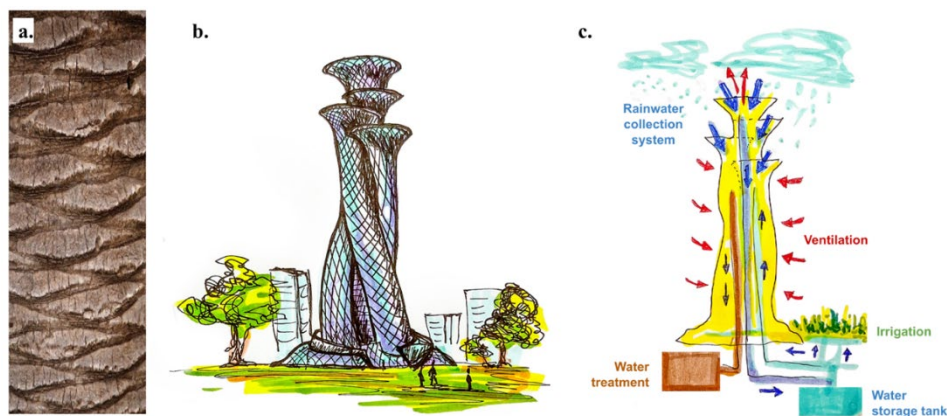


Figure 7. a) Palm tree bark;<sup>80</sup> b) Three Twisting Towers;<sup>81</sup> and c) various systems that integrate the building.<sup>82</sup>

## COMPARATIVE ANALYSIS

The characteristics of the three cases were summarized and distributed in Table 1, which presents a classification according to the design approach, natural inspiration, and aspects of the Life's Principles Diagram.

Categories	Case 01	Case 02	Case 03
Approach	Challenge to Biology	Challenge to Biology	Challenge to Biology
Completed all steps indicated in the tool	No	No	No
Reported final step	Measure	Emulation	Measure of Prototype
Implementation	Completed	Prototype	Prototype
Mimicry	Behavior	Form	Form
Inspiring organism	Termite Mounds	Aeonium plants	Palm Tree
Natural principle	Passive cooling	Water harvesting	Reinforcing structure
Life's Principles Diagram	Locally attuned and responsive; Resource efficient (low energy, multi-functional, form, and function); Integrate development and growth (modular); Adapt to changing conditions (decentralization)	Locally attuned and responsive; Life-friendly chemistry; Resource efficient (low energy, multi-functional, form, and function); Integrate development and growth (modular); Evolve to survive (reshuffle information); Adapt to changing conditions (diversity, variation, redundancy, and decentralization)	Locally attuned and responsive; Resource efficient (low energy, multi-functional, form, and function); Integrate development and growth (modular); Evolve to survive (reshuffle information); Adapt to changing conditions (diversity, variation, redundancy, and decentralization)

*Table 1. Classification of cases.*

When analyzing the table, it is noticeable that all projects started from the Challenge to Biology approach, which begins with the definition of a problem in the field of design.

It was considered that none of the cases completed all the steps indicated in the Biomimicry Thinking Tool, since there was a lack of information on the procedures for the application of the resource, especially about the development of specific stages, such as the use of the Life's Principles Diagram, Brainstorming, and Measuring. Also, it was observed that Project 2 incorporated the most Life's Principles Diagram characteristics.

Regarding sustainability, it was noted that the biomimetic design process stimulated the incorporation of the local climate aspects, as well as a preference for the use of recyclable, resistant, and durable materials. This approach also prioritized the installation of passive systems for natural ventilation, cooling, and daylighting, leading to significant energy savings and a reduced environmental impact. It should be noted that the projects were also based on the use of modular and multifunctional elements.

The authors combined the biomimetic tool that guided the conceptual development of the project with 3D modeling resources (generative software) that allowed the exploration of organic and complex forms found in nature. It was observed that the biomimetic tool contributed to the convergence of the social, economic, and environmental needs of the projects, which, in turn, resulted in innovative solutions for construction challenges.

In summary, it was evident that the Biomimicry Thinking Tool provides a distinct approach to design projects. By adopting knowledge from nature and applying related resources such as the Life's Principles Diagram, it is possible to stimulate new sustainable projects that provide quality of life. Thus, the use of biomimetic tools represents a significant complementary resource for creative professionals.

## CONCLUSION

The current multiple case study allowed for an assessment of the application of the Biomimicry Thinking Tool in building design and its contributions to the creative process. It was noted that, when aspects of nature and biomimicry are considered, it is possible to obtain multiple benefits, such as the adoption of economic and passive systems, waste reduction, and use of materials and forms that are better suited to the climatic conditions of the implantation sites.

Thus, it has become evident that nature-inspired projects tend to stimulate sustainable proposals that are adequate to the quality of life, given that in this approach, designers frequently combine their



research on the complexity of organisms and ecosystems with multifactorial aspects that permeate the functional, social, and environmental needs of their projects. As a result, the use of biomimetic tools has been found to be an effective complementary resource for creative professionals. More research is required, such as the development of more experiments and case studies with the Biomimicry Thinking Tool and with other biomimetic resources in design projects.

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# REFLECTING ON THE URBAN AND THE REGIONAL: DESIGNING FOR A POST-COVID FUTURE

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## INTRODUCTION

As a rapidly developing nation, Australia is a study of the consequences of ill-conceived urbanisation, with a lack of foresight in the planning of built environments leading to inappropriate siting, exponential urban sprawl, environmental degradation, and socio-spatial fragmentation. Historically Australia has followed and appropriated the influences of external planning movements, exposing negative ramifications of applying external design concepts to local conditions. With two-thirds of the population living in capital cities they have become increasingly unaffordable. Australia's regional and rural areas are generally small in population, however, movements towards decentralisation and regional development are gaining momentum, and are increasingly seen as the way forward to reduce uncontrolled growth in major cities. This shift in thinking has further come to the forefront with the onset of the COVID-19 pandemic. With many employers and businesses adapting successfully to remote models of work, there has been increased demand for properties in Australia's regional areas, leading to increased rents, costs of housing, and housing supply shortages in some regions. If regional development is seen as the way forward, it is imperative that regional areas do not fall victim to the same short-sighted planning mistakes as our heavily populated cities.

## UNDESIGNED SETTLEMENTS: REFLECTING ON THE URBAN

Australia's current population of twenty-five million people is projected to increase to between 37.4 and 49.2 million people by 2066.<sup>1</sup> The vast majority of the country's population live along the coastline, with 90 percent of Australians occupying only .22 percent of the country's land area. Two-thirds of these live in a capital city, with urban growth rapidly expanding into peri-urban areas impacting both the environment and the availability of farming land.<sup>2</sup> Along with the country's projected growth and increased urban footprint comes expanding requirements for infrastructure, resources, housing, transportation, water, food, and energy production, in turn correlating to increased consumption, pollution, waste and resulting environmental impact. Henri Lefebvre conceived the urban fabric as all-encompassing, extending beyond the city and reflecting upon the broader relationship of humans and environments, as the urban continues to invade and envelope the rural, villages, towns and cities of all sizes.<sup>3</sup> The changing face of Australia's settlements requires consideration of future conditions of risk that will arrive in each community.

Whilst Australia's unique environmental, geographical, and climatic conditions require handling with care, the tendency to follow influences of external planning movements in the design and construction



of our built environments has done untold damage. Some are vulnerable through economic disparity, sociospatial segregation and disconnection of communities. Others are vulnerable through overpopulation, suburban sprawl, and poor planning decisions. In 1902 Ebenezer Howard presented a utopian vision of a modern social city in *Garden Cities of Tomorrow*, suggesting a concept of new, small suburban towns, surrounded by agricultural land, and providing the best of town and country.<sup>4</sup> While Howard's conceptual framework, including the common ownership of land, was never fully realised, the influence of the Garden City movement nevertheless became the basis of a planning model in Britain and the United States.<sup>5</sup> By 1914 the Garden Suburb had also become a dominant planning model in Australia, with the concept of living in affordable housing on large blocks of land and commuting to work proving extremely popular.<sup>6</sup> By the early twentieth century, the concept of owning a free-standing house on a quarter acre block in the suburb was firmly entrenched in Australia's culture, and the roots of Australia's suburban sprawl were planted.<sup>7</sup>

In 1944 Sir Leslie Patrick Abercrombie's developed "The Abercrombie Plan of London," including eight satellite towns, each beyond a greenbelt to contain urban sprawl, leading to the development of the New Town in the United Kingdom.<sup>8</sup> Again Australia followed suit with a similar model to Abercrombie's satellite towns proposed for Sydney's "Country of Cumberland Plan" in 1948. By 1968, any concept of a greenbelt was abandoned entirely in the face of rapid population growth, and a new "Sydney Regional Outline Plan" was developed with a linear railway corridor linking a series of New Towns that are the sprawling suburbs of today.<sup>9</sup> Other population centres followed suit, and despite numerous attempts to solve issues of population growth through planning, attempts to slow the advent of continuous urban sprawl have failed. Today, satellite towns continue to grow on the edges of Australia's cities, however, a continuing lack of employment opportunities, despite attempts to encourage job creation out of the city centres, has led to higher commuting rates and further pressure on struggling infrastructure. Chris Butler contends that this model of zoning should be recognised as an anti-urban, anti-community strategy — a shift from inhabitation to the logic of habitat, where what is being defined is the lowest possible "threshold of tolerability." Promoted by policy, new suburbs and satellite towns have been developed to the bare minimum of the social tolerance threshold.<sup>10</sup> This sociospatial fragmentation by design serves to negate the formation of functioning and cohesive communities across Australia's sprawling urban and peri-urban zones.

While greenfield developments continue to expand, there has also been an increase in inner-city brownfield developments in Australia since the 1980s and 90s, again following international models such as Docklands in London. Old industry waterfront areas have been redeveloped as manufacturing has shifted to outer industrial zones. Located on prime real estate adjacent to the CBDs of capital cities, with a mix of retrofitted character buildings, contemporary architecture, and entertainment precincts, these areas have proved extremely popular with young urban professionals. A further move to increase population density in the inner and middle suburbs can also be seen in infill developments, following the New Urbanism mode of planning developed in the United States in the 1980s. Developments such as these are an attempt to return to an urban village way of life, with walkable neighbourhoods, main street ambience and community lifestyle, combined with clusters of contemporary high-density apartments and the convenience of mixed-mode public transportation links to the CBD. As a result, many of Australia's inner urban areas have become gentrified, with inner-city real estate becoming increasingly unaffordable, pushing lower-income families out to the commuter suburbs. While Australia is fortunate to have one of the highest standards of living in the world, housing affordability has now become a significant concern.<sup>11</sup> Home ownership has become increasingly unreachable, with younger generations struggling to break into an inflated housing market whilst dealing with higher costs of living. With the country's obsession with obtaining either owner-occupied or investment property, there has been a shift in levels of housing debt over the last

decade. The International Monetary Fund has warned that Australia's extremely high levels of household debt leaves the nation exposed to global economic shock or banking crisis.<sup>12</sup>

### **CONDITIONS OF FRAGILITY IN A CHANGING CLIMATE**

Historically, many of Australia's settlements were sited inappropriately along low-lying rivers and waterways on our coastlines to access fresh water and transportation. They remain vulnerable to such widespread issues such as flooding, sea-level rise, and severe storm events exacerbated through the clearing of vegetation and subsequent erosion, excessive construction and hard surfaces, and inadequate drainage. Some settlements were founded inland as early agricultural and stock hubs, many of which are now subject to ongoing drought, downturns in agriculture, and extreme heat. Others have been established in extreme high fire risk zones and now face severe levels of risk, as seen in the devastating 2009 and 2019 to 2020 bushfire seasons. This reflects a historical lack of planning in recognition of the larger issues of unfolding risk within our human settlements, and as populations grow, levels of risk increase exponentially. In this context, planners and facilitators of built environments have a lot to learn.

Climate change and the escalation of severe climate events further heightens the vulnerability of such inappropriately sited towns and cities. The Intergovernmental Panel on Climate Change's (IPCC) "Fifth Assessment Report" confirms that Australia's regional climate is warming, a trend virtually certain to continue through the twenty-first century, consistent with global scenarios.<sup>13</sup> Australia's climate is erratic and heavily influenced by ocean currents, and there is little doubt that the continuing cycle of warming of the planet has served to accelerate these already unstable conditions, with increased extreme weather events, more intense and frequent heatwaves, fire, floods, storm surges, and droughts, increased sea-level rises.<sup>14</sup> Today, there is a recognition that Australia's national policies on planning urban environments are seriously inadequate, particularly for tackling the climate crisis.<sup>15</sup> With decades of climate change knowledge poorly translated into policy, climate action is now urgently needed via mitigation in the reduction of greenhouse gas emissions (with built environments responsible for more than 60 percent of global emissions),<sup>16</sup> adaptation, and transformation to ensure human settlements can respond to present and future climate change impacts. As the planet continues to warm, negative consequences for Australia's population centres continue to escalate. Not only is climate change making Australia less liveable, it negatively affects the housing sector and property values in high-risk areas, such as communities constructed on flood plains or in bush fire zones.<sup>17</sup> According to the Reserve Bank (RBA), approximately 3.5 percent of Australian properties are currently considered to be at 'high risk' from climate change.<sup>18</sup> The value of Australia's real estate market is currently estimated to be AU\$9 trillion. According to the Climate Council, climate change and extreme weather events are projected to reduce this figure by \$571 billion by 2030, \$611 billion by 2050, and \$770 billion by 2100.<sup>19</sup> In coastal areas, particularly in northern NSW and south-east Queensland, this value reduction is concentrated as a result of additional risk from coastal flooding and storm surge. With properties at risk increasingly difficult to insure, the question arises as to whether developments should continue to be approved in locations of heightened vulnerability to climate-induced disaster, whether bushfires, heatwaves, sea-level rise, increased storm and cyclone intensity, or flooding.

### **POST-COVID FUTURES: REFLECTING ON THE REGIONAL**

As opposed to Australia's sprawling cities, regional and rural areas are generally small in population with relatively few large population centres. There has been some movement towards decentralisation in the past, but this remains largely underdeveloped to date. With regional development increasingly seen as the way forward to reduce expanding populations in major cities, it is imperative that our

regional centres do not fall victim to the same short-sighted planning mistakes. This is increasingly urgent, with a recent shift of city dwellers to Australia's regions since the onset of the COVID-19 pandemic necessitating action now to make this trend sustainable. The quarterly flow of people from capital cities to regional areas during 2020 and 2021 was 15 percent higher, on average than the previous two years, according to the latest data from the Regional Australia Institute (RAI).<sup>20</sup> For some, pandemic-related health concerns and disruptions may have heightened dissatisfaction with living in heavily populated cities. For others, working from home may have provided opportunities to consider alternative living arrangements, with many employees and businesses having adapted exceptionally well to remote work. Australians have recognised the time-saving benefits of removing daily commutes, along with the health and lifestyle benefits of living and working outside of the major cities. With new modes of work/life balance developing, there has been increased demand for 'sea-change' and 'tree-change' properties in many of Australia's larger well-serviced regional centres, leading to increases in rent and costs of housing, housing shortages, strain on existing infrastructure, and a critical need for rethinking current planning approaches in growing regional areas.

On average, housing prices in Australia have risen significantly since the beginning of the pandemic, led by regional areas. Several factors have contributed to these gains, including record low mortgage interest rates, buyer incentives, the shift to working from home, and lower than average sales listings. Since the mid-2000s, population growth in Australia has grown on average 150,000 people per annum. Housing supply however has failed to keep up with this growth, resulting in a chronic housing shortage.<sup>21</sup> Recent data shows that Australia's soaring property values have corrected slightly since the beginning of May 2022, due primarily as a result of rising interest rates.<sup>22</sup> Regional Australia however has proven to be more insulated, with banks in regional areas reporting that hikes in interest rates have largely not affected the number of people applying for home loans. Housing shortages, escalating house prices, and corresponding rising costs for property investors have translated into increased cost for renters. Regional rents are 18 percent higher than they were two years ago, at the beginning of the COVID 19 pandemic according to a recent report from the Australian Council of Social Service and the University of New South Wales, (ACOSS/UNSW), making regional rental affordability significantly worse than before the pandemic.<sup>23</sup> This places those on low incomes or receiving income support payments in regional areas under additional financial stress due to rental increases significantly higher than the national average.<sup>24</sup>

Despite these cost-of-living concerns, the Regional Australia Institute predicts that people will continue to move from capital cities to regional areas.<sup>25</sup> Policy and planning responses will need to rise to the challenges brought about by growing regional populations and shifting sociospatial patterns, tailoring individual approaches to specific regional circumstances. As opposed to larger well-serviced regional centres, many smaller, more remote towns in Australia are facing population decline, as younger generations leave due to lack of employment, services and educational opportunities. Australian towns and regions are increasingly interconnected, as individuals and businesses conduct activities across larger areas with improved mobility. However, in a globalised world, the wider market created has resulted in a scenario that does not necessarily translate into economic benefits for individual places. Both large regional centres and small towns need to be competitive providers of goods and services to survive, however, the relationship between industry and small towns is in a slow state of decline.<sup>26</sup> Assisting engagement with local industries, building on local competitive advantage, diversification of economies, improving services and infrastructure, and increasing local skills training and education, are just a few of the areas crucial in supporting struggling towns. It is essential therefore, that each location's unique circumstances are ascertained on the ground, with an in-depth understanding of climatic, environmental, economic, and sociospatial conditions. Decisions regarding the future and sustainability of settlements of all sizes should not be

made on the run, or through the appropriation of externally designed one-solution-fits-all planning approaches applied in the name of expediency.

## **CONCLUSION**

There is an urgent requirement to transform planning policies in Australia appropriate for urban and regional communities of all scales to meet the challenges to come. Australia is highly vulnerable to climate change, with broad ranging repercussions already clearly evident. The vast majority of Australians have been affected in some way by severe weather events (flooding, cyclones, hail storms, drought, and devastating bushfires) which have dominated the first quarter of the new decade.<sup>27</sup> This has been further exacerbated by the outbreak of a global pandemic, which has made us rethink our relationship with the built environment and where we choose to live and work. With the increasing popularity of regional areas, many of which face heightened levels of risk from inappropriate siting and vulnerability to climate change, it is necessary to take action now to address present and future challenges of population growth, the expanding urban fabric, and correlating environmental damage in these regions. Doing so in a way that addresses socioeconomic insecurity, rising costs of housing, and the urgent requirement for affordable available housing solutions is critical. Complex issues such as these have ecological, economic, and sociopolitical ramifications for each city, region, and community, and cannot be addressed in isolation. Reframing ways of constructing and inhabiting built environments as a matter of urgency is therefore crucial. This involves learning from past mistakes, translating climate knowledge into climate action, and exploring alternate ways in which to envision the long-term futures of our built environments.

## NOTES

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- <sup>4</sup> Ebenezer Howard, *Garden Cities of To-Morrow*, new rev. ed. (Eastbourne: Attic Books, 1985).
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- <sup>7</sup> Cox, Graus, and Meyer, *Home: Evolution of Australian Dream*, 78–80.
- <sup>8</sup> Cox, Graus, and Meyer, *Home: Evolution of Australian Dream*, 44.
- <sup>9</sup> Cox, Graus, and Meyer, *Home: Evolution of Australian Dream*, 97–98.
- <sup>10</sup> Butler, *Henri Lefebvre: Spatial Politics, Everyday Life and the Right to the City*, 92, 117.
- <sup>11</sup> "Human Development Report 2020," United Nations Development Programme, accessed January 3, 2021, <http://hdr.undp.org/en/composite/HDI>.
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- <sup>25</sup> Building the Good Life: Meeting the demand for regional housing, 2022.
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## **CONCEPTS FOR LINKING THE CITY WITH THE REGION . THE IDEA OF A GARDEN CITY IN WROCŁAW (BRESLAU).**

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### **INTRODUCTION, THE IDEA OF GARDEN CITY**

In an attempt to realise the utopian vision of the ideal city at the dawn of the 20th century, the Garden City concept, formulated and promoted by Ebenezer Howard, was put into practice. The Garden City idea was intended as a solution to the problem of overpopulation and low living standards of the inhabitants of large cities. Howard's publication *To - morrow: A Peaceful Path to Real Reform* was published in London in 1898 and fitted in with the current political and economic situation in England, where the socialist party was becoming increasingly popular, and the scope of housing policy was being debated. In 1902 a modified edition was published - *Garden Cities of To - morrow*. According to Howard, who presented his concept concerning London, the realisation of the Garden City was to be a way of eradicating overcrowding in large cities. In addition, the realisation provided people with optimal living conditions of health and tranquillity, but above all, it guaranteed jobs in a satellite city. Howard illustrated his idea with a diagram of three magnets. The first is the city, with a description of all its disadvantages (high rents, polluted air, ...) and advantages (well-lit streets, social life, ...). The second is the countryside, with advantages such as the beauty of nature, fresh air and low rent, but on the other hand the lack of social life, low wages. The third magnet is precisely the 'Town-Country', dubbed the Garden City, which combines all the advantages of the city and the countryside while eliminating their disadvantages. The Garden City is an organised, independent structure a few dozen kilometres away from the big city but conveniently connected to it.<sup>1</sup>

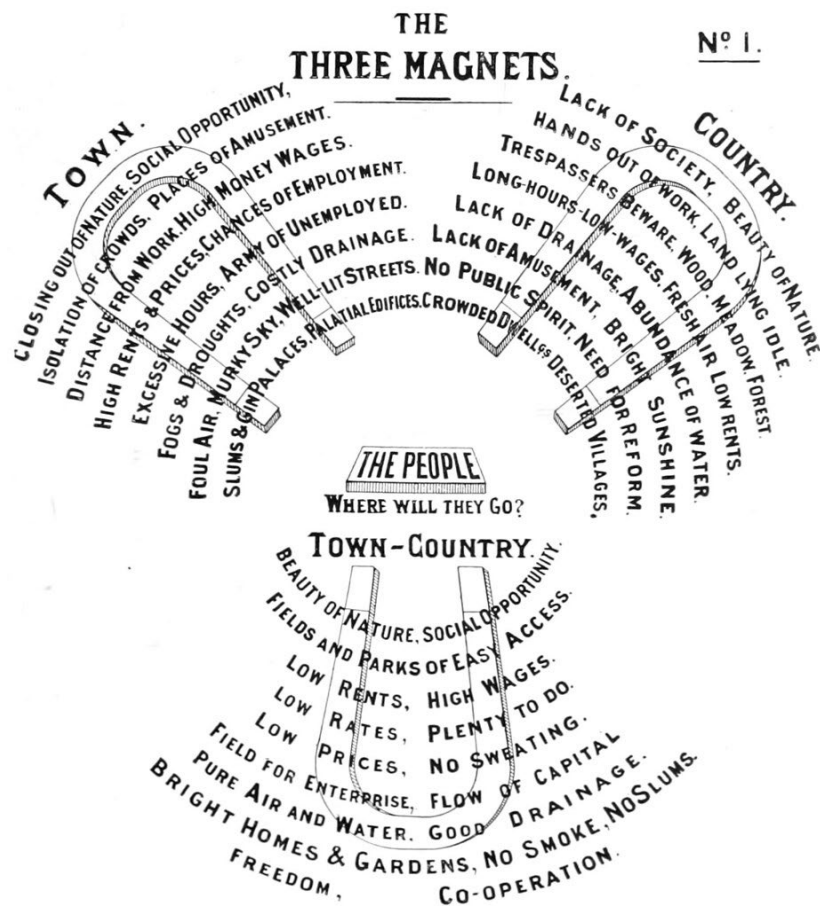


Figure 1. The three magnets diagram by Ebenezer Howard

### Letchworth Garden City

The first attempt to realise a single satellite town in the vicinity of London was Letchworth Garden City, whose construction began in 1903 according to plans by two architects: Barry Parker and Raymond Unwin. Howard's abstract diagram was modified by the need to adapt to the specific site, which was about two-thirds of the postulated 2,400 hectares. In addition, the design, created following Howard's recommendations, had to consider the existing railway line running through the middle of the land earmarked for development - the station was to be a vital point in the town, linking the road system and the nearby industrial zone. As Howard advised, a square sits at the centre of Letchworth, which forms the hub of the premise. The first Garden City was laid out along a north-south axis (defined precisely by the 30-metre wide Broadway), with the above square at its centre. From here, narrower streets radiate out, where single-family houses with gardens are not too densely spaced. No more than 30 houses were to be built in an area of one hectare, and each garden was between 3 and 5 acres. The inclusion of green space around undeveloped areas (green belts) and a great many parks, squares and tree-lined avenues made Letchworth resemble a country house development while at the same time having the right to be called a garden town. Both middle-class and working-class people could have lived in such an environment, as the lease terms were supposed to be favourable and the fees very low. However, this did not happen, as speculatively increased prices accompanied the increased demand for land. Despite the favourable circumstances, the first garden city developed slowly in residential and industrial areas. The slow development was interrupted by the outbreak of

the First World War. After the end of the war, state aid was needed to enable the city to develop further.<sup>2</sup>

### **GARDEN CITIES IN WHAT IS NOW GERMANY**

The response to Garden Cities of To - morrow was instantaneous in Germany. Originating in England, the garden city movement resulted in the founding of the Deutsche Gartenstadtgesellschaft (1902). The organisation's activities resulted in numerous realisations. However, these concerned only garden estates and not the construction of entire satellite cities. Their list began with Hellerau near Dresden (1907), erected on the initiative of the Werkbund to a design by Richard Riemerschmid (1868-1957) under the artistic patronage of Hermann Muthesius (1861-1927), Theodor Fischer (1862-1938) and Heinrich Tessenow (1876-1950). The great enthusiasts of the movement, Bernard Kampffmeyer, the first chairman of the Deutsche Gartenstadtgesellschaft, and Hans Kampffmeyer, the association's general secretary from 1906 to 1910 and a member of the Werkbund, made an undeniable contribution to the spread of the idea of garden cities in Germany.<sup>3</sup>

### **Popularity of the garden city movement**

However, what made the garden city movement (Gartenstadtbewegung) so famous? First, it is essential to remember what the housing situation was like at the end of the 19th century in German cities - overcrowding, land speculation and rental houses (so-called Mietskaserne) with poor sanitary conditions and fees were disproportionately high to the value of the cramped dwellings. At the same time, public criticism of the situation at the time began - the movement of hygienists and advocates of social policy became active. One should also not forget the growing support for socialism (including utopianism) and Karl Marx's concepts, especially those concerning collective life. Criticism was becoming widespread, and an effective solution to the housing issue had to be sought. The Garden City and the functional and comfortable English house interiors were seen as such a solution. A house of this type, set amidst greenery and adapted to the owner's needs, was to become a source of tranquillity and vital energy for the inhabitants. As the activists of the Deutsche Gartenstadtgesellschaft argued, the garden city was to be a place where people would be brought up in community through exposure to art, crafts and music - in a word: through all the surrounding space. A great promoter of English housing was Hermann Muthesius, former cultural attaché at the German Embassy in London - author of *Das Englische Haus*.

The German Gartenstadtbewegung movement differed from the English garden city movement's pragmatic and realistic approach. What was needed was a quick and effective antidote to the existing housing situation. In Germany, the adaptation of Howard's concept in its complete, idealistic form was abandoned in favour of more practical and cheaper garden suburbs (Gartenvorstadt), linked to the city structure and often connected to factory sites.

The German architects were fascinated by the urban planning solutions proposed by Raymond Unwin, Richard Barry Parker and Louis de Soisson (author of the second garden city, Welwyn) - the Cul de Sac motif.

### **Two concepts for the development of Wrocław**

In Breslau, as in the rest of Germany and other European countries, two fundamental ways of expanding the city competed: the first through territorial expansion, decentralisation and relaxation - proposed by Max Berg. In opposition to this idea was the idea of expanding the city using satellites, promoted by Ernst May and his colleague Herbert Boehm.

### Decentralisation of the city according to Max Berg

Berg planned a decentralisation of Breslau much more extensive than the outlying settlements contained within the city limits. <sup>4</sup>In the pages of *Schlesien*, he called for the incorporation into the city of closer suburbs (small communities close by, e.g. Osobowice - Oswitz, Różanka - Rosenthal, Krzyki - Krietern) and other towns of great scenic value such as Sobótka - Zoboten or Leśnica - Deutsch Lissa. Both Wrocław and the individual towns would benefit from such an arrangement. Wrocław would benefit from the income taxes of these localities, while they would strengthen their position and gain influence on urban planning, greenery and communication. Above all, they would influence land policy, thus counteracting the destruction of the landscape by planless parcelling resulting from land speculation. <sup>5</sup>

Berg believed that by building high-speed transport links, every suburb - whether closer or further away - could be considered part of a great city. He paid particular attention to the Sleza (Zobten) region. He drew up a settlement plan for the entire region on a scale of 1:25 000. Together with Paul Heim, he drew up a development plan for Sobótka on a scale of 1:2500, as an example of a complete, spatially mature concept, supported by perspective sketches. <sup>6</sup>

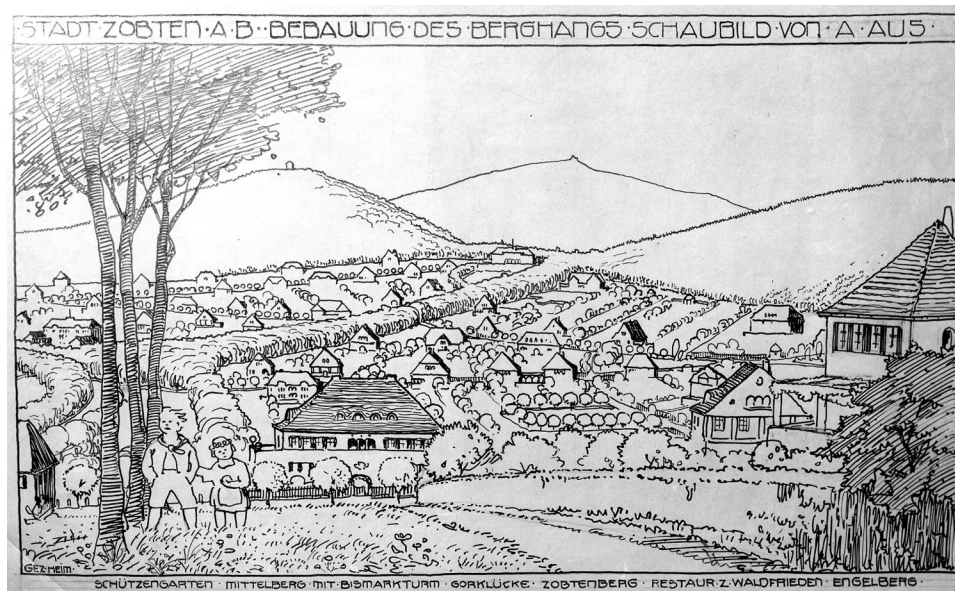


Figure 2. Sketches of Sobótka's development by Max Berg

Berg's promotion of decentralisation coincides with the construction of the first so-called garden cities near Wrocław, such as Biskupin and Karłowice. The latter project had the government's support, as evidenced by the person in charge of the whole thing, Paul Schmitthenner (1884-1972), who at the time held the architect position at the Ministry of the Interior in Berlin. <sup>7</sup> It was also the result of the efforts of the German Werkbund and the Gartenstadtgesellschaft. <sup>8</sup>

### Garden city Karłowice

The design for the garden city of Karłowice included an elaborate programme for public buildings centred around the envisaged market square. The author of the urban plan, Paul Schmitthenner (chief architect of the Wrocław branch of Eigenheim Baugesellschaft), lived in Karłowice to oversee the proper implementation of the project. Schmitthenner's original plan has probably not survived. However, a sufficiently accurate idea of the intended layout of streets and squares is given by a fragment of the 1913 plan of Wrocław with the project plotted in the area of Karłowice. The central axis of the layout was Kasprowicza Street (Corso - Allee), along which there were already

magnificent gardens at the beginning of the century, as well as the neo-Gothic St Anthony's Church with a Franciscan monastery, built to a design by Joseph Ebers (1900) and the Ursuline Convent (1905).<sup>9</sup>

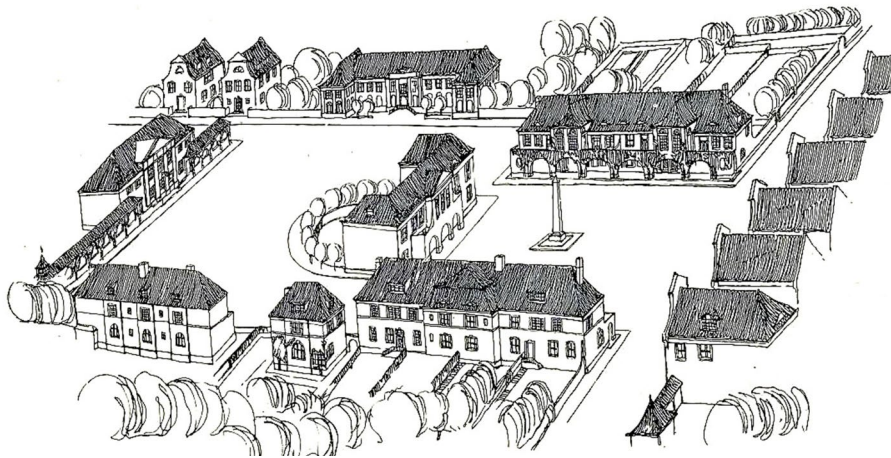


Figure 3. Karłowice market square in a bird's eye view. Competition design (1st prize) arch. W. Hoffmann, Wrocław 1913, *De Staedtebau* 11 (1914)

Investors from the Frankfurt-based *Eigenheim Baugesellschaft* had the opportunity to introduce a completely new architecture to Breslau. They could create the first such urban space here, in line with the garden city concept developed by German architects. Paul Schmitthenner's aspirations and severe approach to the whole project were evidenced by the involvement of great authorities from the architectural world, such as Hans Poelzig and Hermann Muthesius. They supported the important design activities undertaken for Karłowice.<sup>10</sup> In 1913 they were invited to serve on the competition's jury for the market square. The winning design by Willy Hoffman from Breslau was never realised, and the market square was built according to a design by Erich Grau, completing the work in the 1920s.<sup>11</sup>

For Schmitthenner, *Gartenstadt Carlowitz* was his first independent project. He could use the experience he had already gained, but above all, to try out new ideas concerning introducing a housing module and creating a consistent and homogeneous urban layout in Karłowitz.<sup>12</sup> Unfortunately, he did not fully succeed.

Schmitthenner left because of a conflict with the management of *Eigenheim Baugesellschaft*, caused primarily by the architect's innovative concepts - ideas of social housing and a desire to introduce typification to standardise all buildings. This ran counter to the company's idea of building villas according to the tastes of the future owners. An additional incentive to break off cooperation was the choice of design for the development of today's Piłsudski Square - incompatible with the choice of the jury, which, in addition to Schmitthenner, included Hermann Muthesius, Heinrich Tessenow, Hans Poelzig and Felix Henry, acting in Silesia on behalf of the *Deutsche Gartenstadtbewegung*. After this affront, Schmitthenner, having the support and recommendations of Poelzig, left for Berlin, where he became the first architect of the Staaken estate planned for the munitions factory workers.

*Gartenstadt Carlowitz* appeared on plans of Breslau in 1913 and continued to function even after the First World War, when Karłowice began to develop into a villa district with heterogeneous architecture and no healthy thought-out urban plan.



**Ernst May's idea of satellite cities**

In opposition to Berg's ideas was Ernst May's idea of developing Breslau through satellites.

In 1921, the Breslau magistrate announced a competition for a building plan concept for the city of Breslau and its suburbs. Many of the submitted entries showed the latest trends in the effective use of building ground in metropolitan housing - instead of garden estates with one- and two-family houses (single-storey buildings), which had been regarded as the ideal solution for two decades, there was the concept of flats in multi-storey buildings with extensive green areas. However, Ernst May and his colleague Herbert Boehm proposed, following the example of Raymond Unwin's garden city, to move the expansion into a zone of new low-rise housing estates which, as satellites with their infrastructure, would surround the parent city in a ring form at a distance of 20 to 40 km.<sup>13</sup>

May, who, as head of the *Schlesisches Heim*, supported rural and suburban construction in the suburban municipalities,<sup>14</sup> At the same time, as a disciple of Unwin and a socialist, he promoted a model of urban development, giving - in his view - the only chance of a healthy existence for the inhabitants. He argued that Breslau and the pre-city boroughs were not so closely linked economically and in terms of construction as making them into one large borough. According to Howard and Unwin's ideas, both mother cities and satellite cities should be spatially limited. The satellite towns, surrounded by green areas with a population of 5,000-10,000 people, would act as industrial or residential towns with their food zone and basic administrative, economic and cultural facilities. They would be connected to the central town by convenient transport. The solution to May's transport problems was proposed by a special bus.<sup>15</sup>

The jury awarded the project a special prize but at the same time ruled that Wrocław, and the Oder river basin within the city, were too small for this idea. Critics such as Martin Wagner and Adolf Rading, who lecture at the Wrocław Academy, pointed out the rigidity of the satellite system.<sup>16</sup> Ernst May spoke out against plans to incorporate the surrounding areas into city areas, something that Breslau, like all major European cities at the time, was aiming for. In the memorial *Denkschrift des Landkreises Breslau Zur Frage der Eingemeindung von Vorortgemeinden in die Stadt Breslau* he promoted his concept as a strong alternative. A dispute ensued with many Breslau architects who had previously worked with Ernst May. It was not without personal insults. In turn, the city issued its memorandum on the issue of incorporating the surrounding land into the borough. To whom Ernst May complained, Raymond Unwin advised a compromise: *You cannot radically change the character and development of a growing city simultaneously. It would be wise for you not to push the matter too much but to seek a reasonable compromise. Then you will undoubtedly succeed in developing satellite towns and suburbs closer to the centre and no longer so invariably enclosed.* Ernst May's appointment as city architect (Stadtbaurat) for Frankfurt am Main, which he accepted in July 1925, was very much in his favour in this situation.<sup>17</sup> He took Unwin's suggestion to heart when planning the New Frankfurt.<sup>18</sup>



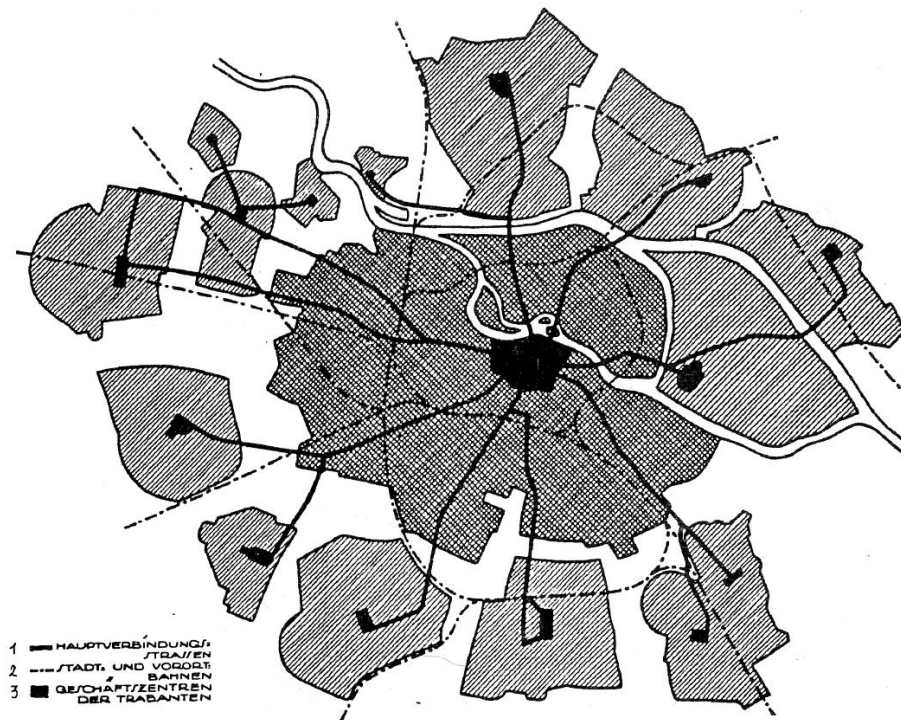


Figure 4. Ernst May's satellite idea

## SUMMARY

May's concept, although not awarded, gained notoriety in Europe. At the invitation of Peter Behrens and Herman Muthesius, Unwin gave a lecture in Berlin on the expansion of cities by the satellite method, illustrating it with May's competition design. In the end, the master plan developed based on the competition designs by Fritz Behrendt showed that one of the most critical tasks when planning a city is to reconcile the tendency to relax with the tendency to combine its elements.<sup>19</sup>

Wrocław of the inter-war period appears as a testing ground for innovative urban planning activities, both in theory and practice. Despite the lack of victory for May and his green satellite cities, the garden city movement originated in England and brought about realisations in Wrocław. Garden cities continue to be popular with residents, who, to this day, by Howard's concept, enjoy the delights of city life while marvelling at the beauty of nearby nature and timeless architecture. These solutions have been used all over Europe but have most often appeared in Germany. The idea of the garden city has stood the test of time, and its value has been recognised by the inclusion of individual garden cities on the list of city monuments, and even some of them on the UNESCO list (such as Falkenberg, Berlin).<sup>20</sup>

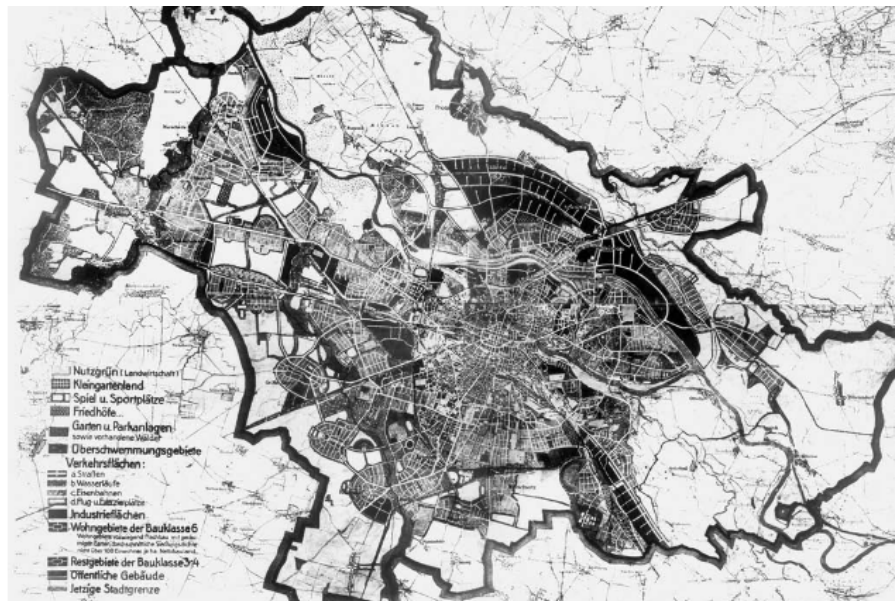


Figure 5. Masterplan of Wrocław by Fritz Behrendt, 1924.

## NOTES

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- <sup>9</sup> Sławomir Brzezicki, "Kościół pw. św. Antoniego i klasztor franciszkanów", w: *Leksykon architektury Wrocławia*, red. Rafał Eysymontt et al. (Wrocław, Via Nova, 2011), 1021 – 1022.
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- <sup>11</sup> Beate Stoertkuehl, *Modernizm na Śląsku 1900-1939 Architektura i polityka*, (Wrocław, Muzeum Architektury we Wrocławiu, 2018), 71.
- <sup>12</sup> Beate Stoertkuehl, *Modernizm na Śląsku 1900-1939 Architektura i polityka*, 70.
- <sup>13</sup> Beate Stoertkuehl, "Ernst May 1886-1970", w: *Ernst May i Schlesische Heimstaette*, red. Jerzy Ilkosz et al., (Wrocław, Muzeum Architektury we Wrocławiu, 2012), 28.
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- <sup>20</sup> Falkenberg garden city, accessed August, 17, 2022, <https://travel.syggic.com/en/poi/falkenberg-garden-city-poi:9036>.

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# DESIGNING FOR SUSTAINABLE COMMUNITY TRANSFORMATION: AGE-FRIENDLY COMMUNITIES FOR THE FUTURE

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## INTRODUCTION

With the accelerated ageing of the world's population, countries are focusing on solving various life issues of seniors through the power of diverse communities to spend their twilight years in quality. In the context of active ageing and community transformation, this study explores sustainable design strategies for age-friendly communities based on the theory of Design for Sustainability (DfS). The Sustainable Transformation of Age-Friendly Communities (STAFc) indicator is the analysis criterion. Case studies of ageing communities in four countries of China, the USA, Spain, and Italy are analyzed in the following four areas: Outdoor space and buildings, Transport, Social participation, Civic participation, and employment. The positive role and impact of the theory in design planning strategies for ageing communities are demonstrated, illustrating future trends in sustainable ageing community design planning, and providing references for future research.

The world's population is ageing. The number and proportion of seniors are growing in almost every country.<sup>1</sup> According to data from *World Population Prospects: the 2019 Revision*, by 2050, one in six people in the world will be over age 65 (16%), up from one in 11 in 2019 (9%). By 2050, one in four persons living in Europe and Northern America could be aged 65 or over. New measures and concepts of population ageing are of great significance in assessing the living conditions and living arrangements of seniors, their productive and other contributions to society, and their need for social protection and healthcare.<sup>2</sup>

Cities and communities are currently facing enormous challenges of ageing. In the context of the increasing number of seniors and the ensuing demands on infrastructure and service policies, existing community environments are no longer able to meet the daily needs of seniors. Many old communities lack inclusive environments, accessible infrastructure and humanized community services, making life difficult for seniors.<sup>3</sup> Therefore, there is an urgent need for a new way of thinking and approach to emerging in communities today, transforming them into more age-friendly environments to enhance the quality of life and experience of seniors in their later years.

### Age-Friendly Community

Population ageing is poised to become one of the most significant social transformations of the twenty-first century, with implications for almost all sectors of society, including labor and financial markets, as well as demand for goods and services such as housing, transport and social security, and family structures and intergenerational relations.<sup>4</sup> Increasing urbanization and policy discourse to support ageing in place raises the urgency of creating and planning for an age-friendly environment.<sup>5</sup> National policies and measures to safeguard the lives of the ageing population will directly bear the quality of life of seniors in their later years. Seniors' standards and requirements for the environment, facilities, policies, and services in which they live need to be adjusted due to their physical and psychological changes, and designers are paying more attention to their experience and adopting a more inclusive approach based on the principle of fairness and respect to include them in mainstream daily life.

The discussion of “age-friendly” communities is based on the World Health Organization's definition of an age-friendly community as one where “policies, services, environments and structures support and enable active ageing”.<sup>6</sup> Policymakers and service providers are increasingly aware of the importance of providing “age-friendly” services or products to seniors, and this trend has spread globally. The concept of “age-friendly communities” is the latest manifestation of this trend in policy and discourse on ageing. The creation and maintenance of age-friendly environments are widely recognized as core components of a positive approach to the challenges of population ageing.<sup>7</sup>

### DESIGN FOR SUSTAINABILITY (DfS) IN GLOBAL AGE-FRIENDLY COMMUNITY TRANSFORMATION

Design interventions play an increasingly significant role in today's social problem solving and social transformation. In recent years, disciplines such as Green Design, Systems Design and Social Innovation Design have become better known and developed a wide range of applications. It is easy to see that the current trends in the design field are becoming more focused on the harmony and balance between people, the environment, and society, as well as integrating other disciplines and taking a longer-term view on how to improve people's lives in the future. Sustainable age-friendly community transformation is building on the concept of “community” and integrating the multiple attributes of a community with a longer-term vision of development, providing opportunities for the residents living in the community, especially seniors, to continue to grow and develop, as well as a harmonious, balanced and equitable place to live, so that seniors can age healthily, with dignity and autonomy.

### An Overview of Community Planning and Management Models in Different Countries

There are significant differences in community planning and models across countries. In China, the government and companies build gated communities with a combination of buildings, with multiple gated communities forming a more extensive community, to achieve a model where ageing at home is the mainstay, with community-based care as an adjunct.<sup>8</sup> In the United States, the “solar system” is the best-known form of community spatial layout: a community where senior housing, food and shops, recreation centers and health care facilities form a unified whole, where seniors have access to a full range of services<sup>9</sup> and can mobilize the spontaneity of residents to protect their “bottom-up” model of community governance.<sup>10</sup> In Spain, the *Community Development Plan* implemented by the Autonomous Community of Catalonia in 1996 uses participatory processes to meet the needs of communities and improve their quality of life,<sup>11</sup> emphasizing the importance of a process of political decentralization will allow communities to “achieve real and sustainable social change by promoting neighborhoods, municipalities, regions, community organizations, and citizens”.<sup>12</sup> The long history of



Italian civil society has led to the development of a diverse network of organized reciprocity and civic solidarity, resulting in several active community organizations. These “civic communities” have embraced the spirit of citizenship, promoting solidarity, civic participation and integration, working in partnership with regional governments to manage communities and building on a strong base of civic participation.<sup>13</sup> Sustainable transformation should be based on local political, economic, and cultural contexts and characteristics, with locally adapted strategies and pathways for maximum impact.

### **DfS in Transformation**

DfS is a design approach that aims at sustainable management of economic, social, and ecological aspects. It emphasizes system planning and holistic design.<sup>14</sup> The transformation of sustainable development requires structural changes in society, and the way it interacts with nature and the built environment.<sup>15</sup> For the transformation of communities, it is also necessary to consider how the economic, social, and ecological transition of communities can be sustainable in a holistic manner. According to German sociologist Ferdinand Toennies, the meaning of community for people is not limited to space but also includes the satisfaction of emotional needs that are essential to life.<sup>16</sup> DfS follows two aspects of community transformation design: the design of the physical environment of living space and the design of the human-emotional environment of community life. Thus, the sustainable transformation of age-friendly communities is the application of DfS concepts, taking the community as a whole to address systemic issues faced by communities in the process of transformation in the context of active ageing by design.

### **Methods**

Based on the framework *Global Age-Friendly Cities: A Guide*,<sup>6</sup> the Sustainable Transformation of Age-Friendly Communities (STAFC) indicators were developed by combining the Age-Friendly Communities domains and suggested spatial indicators<sup>5</sup> with Sustainable Development Theory<sup>17</sup> (see Table 1). To analyze the role and impact of DfS in the planning strategies of age-friendly community design in China, the USA, Spain, and Italy, the STAFC indicator was used as a criterion for analysis. One representative case study in each domain of the indicator was selected for analysis as a basis for demonstrating the widespread application and positive impact of DfS on a global scale. Each case is a systematic and holistic design, encompassing multiple areas of planning and strategy design. This study focuses only on the domains of STAFC indicators.

STAFc Environment	STAFc Domains	Suggested Indicators for STAFc Assessment and Monitoring
Physical Environment	Outdoor Spaces and Buildings	<ul style="list-style-type: none"> <li>● Walkability for transport</li> <li>● Systematic landscaping</li> <li>● Accessible buildings and design</li> </ul>
	Transport	<ul style="list-style-type: none"> <li>● 400 m radius of the settlement</li> <li>● Access to public transport with Disability Standards for Accessible Public Transport</li> <li>● Humanized transport service system</li> </ul>
Human and Emotional Environment	Social Participation	<ul style="list-style-type: none"> <li>● Access to and use of shared spaces</li> <li>● Access to community services</li> <li>● Access to interaction with people in the community</li> </ul>
	Civic Participation and Employment	<ul style="list-style-type: none"> <li>● The proportion of the population aged 60+ years regularly volunteering or working for pay in the community</li> <li>● The proportion of the population working beyond the official retirement age</li> <li>● Opportunities to be paid as a stakeholder through community activities or work</li> <li>● Opportunities to contribute to society as a stakeholder through community activities or work</li> </ul>

*Table 1. Sustainable Transformation of Age-Friendly Communities (STAFc) Indicators*

## Outdoor Spaces and Buildings

Walkable communities are significant for seniors because they enable people to reach destinations with commercial and social opportunities.<sup>18</sup> Walking is also associated with maintaining functional independence<sup>19</sup> and better cognitive function.<sup>20</sup> It is also essential to have open spaces that are easily accessible on foot and Accessible Design facilities that allow seniors to move independently, have access to the common space, and use the facilities, which helps to promote daily exercise and social interaction activities for seniors.

Sustainable landscape planning in communities also plays a role, taking into account water resources, energy use, building materials, waste, the “inner environment” and health, whether it is “designed to last,” the “quality of space,” and the mobility of transport, etc., to assess the environment as a whole.<sup>21</sup> Such mechanisms that balance socio-cultural, ecological and economic values with the built environment can lead to more sustainable community development.

Beijing Oriental Sun City, China, is a new type of senior community that builds an ecologically green, eco-friendly, and energy-saving community (Figure 1). The site is located on a riverbank and woodland, with a natural base of flat terrain, rich vegetation and diverse ecological landscapes, and a

closed ecosphere with large green areas, lakes and vegetation. The community comprises seven components that follow the principle of open space: the community is divided into neighborhood units, which are arranged around a sub-level green landscape system, creating a spatial system that transitions from the public realm to the private space in a gradual manner.<sup>22</sup> Meanwhile, the topography is used for its advantage, with sewage flowing through special pipes into a nearby low-lying green space, leading to a treatment station, where it can be treated and recycled.

In addition, the community transport system was graded to consider the safety of the seniors on foot. Primary roads link communities from south to north, secondary roads link main roads to communities, and bicycle lanes have been created to promote the use of bicycles. The pedestrian system provides a comprehensive, safe and convenient link between residential units, public spaces and various green spaces in the landscape. At the same time, accessible lifts and ramps for the disabled are provided in the community flats and public spaces, and ample seating is provided in the communal areas of the community for seniors to rest. The open space system enables the community to open up the living space to the landscape space from the whole to the local spatial form at all levels, making the operation of the entire community sustainable and humane.



Figure 1. Oriental Sun City, Beijing, China<sup>23</sup>

## Transport

Community transport is an essential link between seniors and their social networks and activities<sup>24</sup> and is one of the critical determinants of health.<sup>25</sup> It has a significant impact on seniors' access to local services, participation in paid and unpaid productive activities, maintenance and development of social networks and support, and participation in social and recreational activities.

Mobility is essential for the social participation and well-being of seniors.<sup>26</sup> Public transport is essential for seniors with reduced driving abilities. In addition, the establishment of a complete transport service system also influences the community experience and frequency of travel for seniors. A good service experience will increase the mobility of seniors and promote safer mobility while reducing the stress of travelling and providing a sense of dignity.

In the United States, road standards have been changed in some areas to encourage connections between blocks up to approximately 150m in length to enhance walkability and accessibility by public transport.<sup>27</sup> "Complete Streets" designs have also been introduced for safety reasons.<sup>28</sup> In addition to

emphasizing “Accessible Design Changes”<sup>29</sup> in the construction of public, commercial, and government facilities in strict compliance with the Americans with Disabilities Act standards, it focuses on roadway design improvements for older drivers and pedestrians (Figure 2), including at least five areas:

- ① Networks designed for proximity better accommodate older drivers and pedestrians.
- ② The combined pedestrian crossing uses zebra stripes to attract the attention of drivers but keeps the walking surface free of paint to reduce falls by seniors during rainy weather when the paint is slippery.
- ③ Given the lower vision and increased reaction time of elderly drivers, continuous mid-turn lanes increase the chance of vehicle conflicts and measures such as raised grass medians are used to restrict vehicle turning to a defined position.
- ④ Generally, intersections are located outside the sight of drivers, making it easier for older drivers with stiff necks to integrate into traffic by adding bicycle and pedestrian facilities and reducing turning radius.
- ⑤ Other transport infrastructure improvements such as signals, pavement lighting, streetscaping facilities, and fixed interval placement of benches and rest areas to better meet the needs of seniors, who often have visual or physical challenges.

As can be seen from these five areas, US measures have increased the comfort and safety of older residents and enhanced the travel experience through visual guidance, material features, changes to the physical environment and overall planning.



Figure 2. Complete Streets Road Design Improvements for Older Drivers and Pedestrians<sup>28</sup>

## Social Participation

Previous research has shown that social participation can contribute to the health and well-being of seniors.<sup>30</sup> Meaningful social relationships and participation are essential for good health, which is defined as a social phenomenon among the social determinants of health.<sup>31</sup> For seniors, social participation provides greater life satisfaction,<sup>32</sup> protects against cognitive decline<sup>33</sup> and contributes to resilience.<sup>34</sup>



It is vital that seniors have independent access to and use of shared community spaces without barriers, and that they can access the services independently. Shared spaces are essential social infrastructure.<sup>35</sup> They are critical to seniors' access to appropriate community services and experiences and a public platform to connect with others, share emotions, and access information, which significantly affects seniors' social participation and physical and mental health.

An eco-friendly retirement home and day center located on a wedge-shaped plot in the village of Blancafort in northern Spain (Figure 3), designed by architect Guillem Carrera.<sup>36</sup> The passive building is intended to allow retired residents of Blancafort and its neighboring towns to come and socialize. Considering that older adults may have difficulty walking or even use wheelchairs, internal walkways are gently sloped with very few steps, reducing the possibility of falls and injuries. Architects have used solar panels and thick layered walls to ensure year-round thermal regulation to minimize the ecological impact of buildings. The materials used were locally sourced stones wherever possible. The larger courtyard is surrounded by the social spaces used by the day center, while the smaller courtyard is used by the care home.

This eco-friendly retirement home is not only considered to be in harmony with its surroundings, energy-efficient, and environmentally friendly, but also has good accessibility facilities, making it possible for seniors to access the services and better experiences of the community. Meanwhile, it provides shared and equal space for seniors in the neighborhood, the opportunity to make new friends, helps with information exchange and reflection. It has an emotional impact on participants and provides an excellent reference in terms of increasing the active social participation of seniors and maintaining their physical and mental health.



Figure 3. Guillem Carrera's Care Home, Blancafort, Spain<sup>37</sup>

### Civic Participation and Employment

Empowerment, autonomy and control,<sup>38</sup> and employment conditions<sup>39</sup> have been important influences on actual and self-reported health. The idea of controlling one's own destiny has also been proposed, consistent with the understanding that health is influenced simultaneously by the individual, the local and community context, and the larger social context.<sup>40</sup>

Civic participation and employment are important influences on agency and autonomy in society. Therefore, it is important to know how many seniors in the community are engaged in paid and

unpaid productive activities. Based on previous research, it has been found that the importance of seniors' participation in problem-solving processes as stakeholders in age-friendly communities is well known, especially in areas such as policy and governance, environmental issues, retrospection and conflict resolution<sup>41</sup> but it has not been incorporated into most traditional design-led approaches.<sup>42</sup>

*A Restorative Garden Project* in Milan, Italy, working sustainably with seniors, provides a vivid case study. The research team selected a green area in the Ortica district that was included in a Community Garden (CG). Based on three essential items that can improve the quality of life of seniors: Prosthetic environment, Regenerative place and Ecosystem value as design criteria. Using co-design as a means to include seniors as stakeholders directly in the decision-making process, the project is dedicated to designing a sustainable and restorative garden for seniors.

The focus groups were analyzed using text-based codes for the general content of the neighborhood and Attention Restoration Theory (ART) for the specific content of the garden: Compatibility, Being away, Extent, and Fascination. Analysis of the data revealed that the familiarity of the three groups with CG was partially heterogeneous, but the debate around Flora, Fauna, Human artefacts and General issues was effectively conducted in all focus groups. ART results obtained from the focus groups are presented in Table 2. Compatibility received the most attention from respondents.

ART Factors	Total	Focus 1 District Inhabitants	Focus 2 Local Associations	Focus 3 Nursing Homes Hosts
Being away	25.00%	7.14%	25.00%	45.83%
Compatibility	36.25%	50.00%	35.71%	20.83%
Extent	8.75%	14.29%	7.14%	4.17%
Fascination	30.00%	28.57%	32.14%	29.17%

*Table 2. ART Factors Emerging from Focus Groups<sup>43</sup>*

Subsequently, the researchers developed a conceptual plan for the design based on the previous results (see Figure 4). (1) A multifunctional garden, matching the needs and attitudes of the identified objectives, in line with the compatibility factor of ART. (2) A garden capable of creating contact with nature, consistent with ART's distance, extent, and charm factors. The master plan was defined next, detailing the works as a whole, including the entrances to the gardens, the wildlife path, and other areas (see Figure 5).



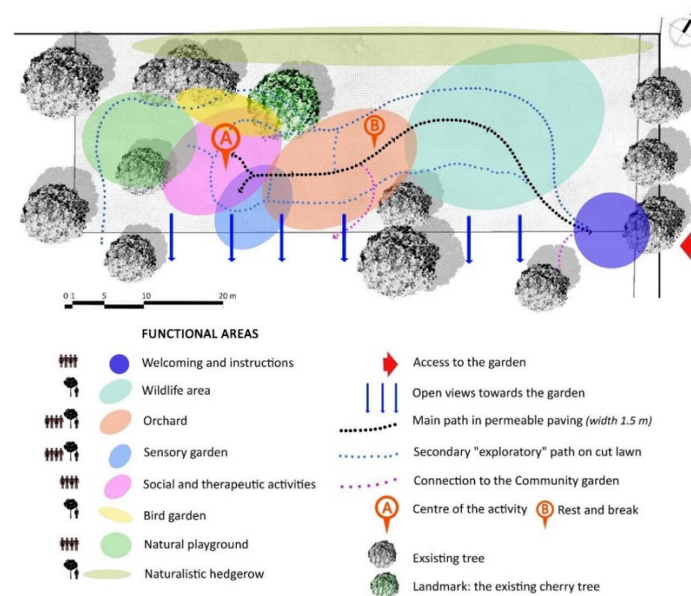


Figure 4. Concept Plan

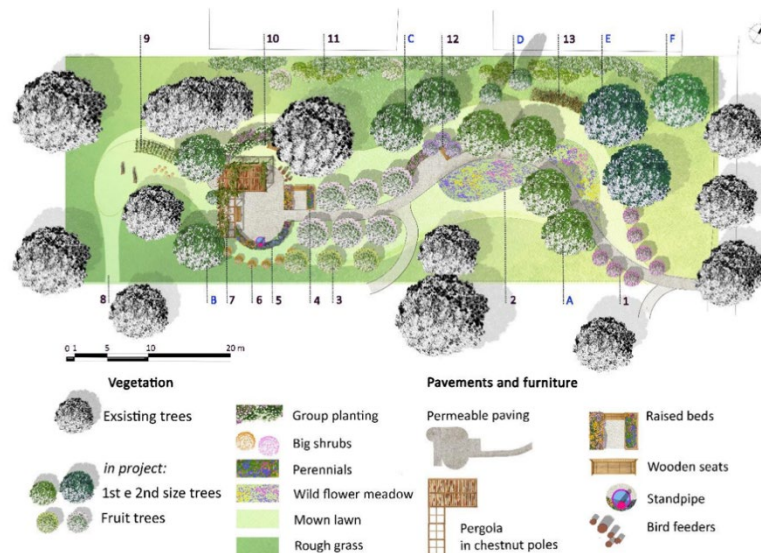


Figure 5. Project plan

This study outlines the specific features and functions that restorative gardens should meet based on the results of potential users and focus groups involved in the design process. Seniors highlighted the need for regenerative space. The project shows us how seniors are involved in the sustainable planning of communities and have transformed and influenced the community environment, demonstrating the active and important role they play in the design process. Seniors can create a more significant contribution to the ecological and human environment of their communities and gain physical and psychological well-being.

## CONCLUSION

Planning strategies for age-friendly communities involving DfS provide a pathway for future community transformations. The STAFIC indicators need to be further expanded and deepened in the future to suit different national contexts and environments, and the current indicator elements could be applied and tested in a range of locations. This may include, but is not limited to, international

comparisons and cultural differences, regional characteristics, climatic conditions, policy influences, economic impacts, geography, etc. to explore additional factors that could be added to the indicators. The main objective of this study is to demonstrate the importance and positive impact of the DfS theory in planning strategies for future age-friendly communities by proposing a set of basic, objective STAFc indicators that can be applied on a wide scale and can be used for design interventions. The importance of DfS in a design-oriented sustainable future society is illustrated by highlighting sustainable trends in community transformation concerning specific cases in four countries.

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# THE SUSTAINABILITY OF URBAN RUINS—SHOUGANG GROUP INDUSTRIAL PARK

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## INTRODUCTION

A long time ago, people began to think about planning and managing cities rationally and more inclusively in a sustainable way. As an essential part of the city, the industrial ruins have attracted much attention. Industrial ruins emerged after the 21st century, and the society transformed from an industrial into an information society at that time. In this context, many abandoned factories have appeared.<sup>1</sup> Most of these factories have been abandoned for years and even ignored by citizens for a long time. Until recent decades, many of them have been redesigned based on the concept of sustainability. Examples include the transformation of a former chocolate factory (Figure 1) in San Francisco into a comprehensive shopping mall focusing on commerce and catering, the change of a former gas factory (Figure 2) in Vienna into a multifunctional building integrating commerce and housing, and the transformation of a decrepit and abandoned industrial area (Figure 3) into a cultural and art centre in Ruhr, Germany.



*Figure 1. The chocolate factory.*



*Figure 2. The gas factory.*





Figure 3. Aerial view of the Ruhr area.

The design activities undertaken for urban ruins are mostly renovation rather than overturning and rebuilding. This is one of the manifestations of sustainable development and an essential mean of preserving urban memory.<sup>2</sup> In addition, the functional redevelopment of distinctive urban ruins can also promote certain areas' economic growth, attracting tourists and citizens with a demand for the relevant functions. In many places, the renovated industrial ruins thus contribute to the local branding of the city as a unique landmark. One such example is Shougang Industrial Park (SIP). As once the most enormous wasteland in Beijing and a forgotten corner of the city, SIP has attracted much attention in recent years by taking the opportunity of holding the Beijing Winter Olympics in February 2022. Thus, in the context of sustainable design, this article explored how the SIP was transformed from a barren site to the integrated creative park it is today, with a focus on sports and a combination of commercial, artistic and high-tech industries park. In particular, this study focuses on what factors impact the renovation, and how the inherent cultural image of SIP was explored and presented.

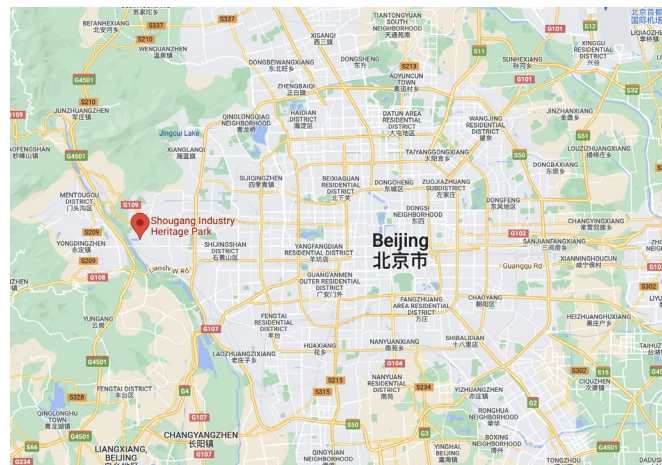


Figure 4. the location of Shougang Industry Heritage Park

SIP is located west of Beijing, where the westernmost end of Chang'an Street (the most crucial street in Beijing, runs through the city). Built in 1919, it was initially China's famous state-owned enterprise, the Shougang Group (producing iron and steel). As the first modern steelworks in the People's Republic of China (PRC), it covers a vast area, with a total land area of about 83 hectares and a total construction area of about 1.2 million square metres, including parks, workers' accommodation, and industrial factories. It could be said that this park has witnessed the development

of China's modern history. In 2005, in preparing for the upcoming 2008 Olympic Games, and considering environmental protection, the Shougang Group was relocated to the neighbouring Province of Beijing--Hebei. Since then, the industrial park in Beijing has been abandoned. For a long time, the overgrown and rusty SIP was described by many media as Beijing's most enormous wasteland and a hot place for many adventure lovers.

### **Renovation about the Ruin**

In 2016, China took the right to host Winter Olympics, and SIP was selected as the official venue for the committee and most competitions. Since then, the renovation has been underway. The Winter Olympics in February 2022, which has drawled global attention to the area, arguably is a gathering to test the renovation results. According to statistics, the renovation of SIP has boosted the local economy and achieved a certain degree of success. The following shows some relevant data:

- In the first half of 2021, Shijingshan District (the area where SIP is located) achieved revenues of RMB 111.32 billion (USD 15.86 billion) from high-tech industries;
- In the second half of 2021, Shijingshan District was awarded the second batch of the national "Industrial Transformation and Upgrading Demonstration Park", with revenues of RMB 165.415 billion (USD 23.57 billion).

In addition, according to the published data, SIP has also performed well in attracting investment. By 2021, 120 enterprises had moved into the park, including 70 artificial intelligence, and other technology-based enterprises, 12 sports-related enterprises and 38 service support companies. Many world-known technology companies have moved in,<sup>3</sup> such as Xiaomi and Huawei.<sup>4</sup> They use the park not only as a display area for their products but also as a research and development centre for their products research and development. The large area and outstanding location make the park popular with many businesses.

In addition to attracting business investment, SIP has hosted many events to expand its visibility and attract public attention,<sup>5</sup> such as the Trade Fair and the China Science Fiction Conference.<sup>6</sup> During the 2021 China Science Fiction Convention, more than 500 experts from Mainland China and abroad were invited and attended.

Overall, the renovation of SIP has contributed to the region's economic development. In addition, the special background--as what was once the most significant industrial ruin in Beijing is now an industrial heritage park, also made SIP as a unique city card for contributing the city's image. It can be said that, at this stage, the park's transformation has achieved a phased success. Therefore, this paper aims to take Shougang Industrial Park as the core object of analysis and to explore how it has been transformed in a way that makes full use of sports, cultural creativity and high technology as the three points. In other words, this study attempts to summarise and analyse the reasons behind the success of its renovation to come up with recommendations that can be applied to renovating industrial heritage in other regions.

### **Theoretical Framework**

The "creative centers" means a clustering, includes the creative class that moving away from traditional corporate communities, working class centers, and even many Sunbelt regions. It provides all forms of creativity--artistic and cultural, technological and economic etc.<sup>7</sup> The proposed idea "creative city",<sup>8</sup> further developed related concepts of contemporary urban creative transformation. It is an essential strategic factor in urban development and provides advice for improving the living experiences of its citizens.<sup>9</sup> Based on this concept, breaking inherent/old frameworks and improving the cooperation between disciplines should be the aims of urban planning. As for SIP, it takes three key factors--sports, culture and creativity, as well as technology, as the core focus, combined with the

current innovative and creative urban transformation methods such as the *Wanghong economy/Internet celebrity economy*,<sup>10</sup> social media, etc., to carry out relevant design transformation of the abandoned Shougang Industrial Park. As mentioned above, the park's transformation has already started to bear fruit and has achieved a certain degree of success in attracting investment and public attention. This is also in line with the creative city theory, which emphasises the importance of intellectual culture and related hardware to create an excellent creative atmosphere, attracting talented people and enhancing the city's overall social, cultural and economic performance.

In addition, the renovation of the SIP has also taken advantage of theories related to city branding. City branding is an evocative story that aims to educate audiences to 'see the city in a particular way'.<sup>11</sup> More research is needed on city branding, but much can be gleaned from the limited literature.<sup>12</sup> As experience and culture gain importance, cities worldwide construct images and representations of their locations by these new trends.<sup>13</sup> Therefore culture-led and experience-oriented have become popular references for policymakers considering urban branding. The etymology of the word branding literally implies the notion of burning, but we have left behind the idea of burning cattle and are now dealing with burning people's minds.<sup>14</sup> Through the discussion about global shifts and transformations, creativity and culture have gained weight and importance on the agenda. There is an international discourse on the creative city, which gains currency using articulation and re-articulation amongst citizens, developers, politicians, planners and other urban stakeholders. New planning frameworks for cultural planning,<sup>15</sup> and increased awareness of the importance of innovation, art and creative capacities in cities are much in evidence.<sup>16</sup>

In brief, the transformation pathway of SIP was first using theories related to urban branding, then combined with the branding advantages of the Beijing Winter Olympic Games, some of the competition venues such as Big Air Shougang (Figure 5) and the hockey rink, have been renovated into hot landmarks to attract more attention for promoting the development. At the same time, the industrial style of the park has been strengthened to distinguish it from the urban style of downtown Beijing, creating a strong contrast and a landmark attribute for the park. Also, the detailed construction of the park is based on the theory of creative cities, making full use of the celebrity effect to promote its unique architectural style and park environment. Famous KOLs such as bloggers @Tiny Moss/小小苔藓 (1.9M followers), @Walker Wind and Thunder/行者风雷 (2.2M followers) and @Lost Little Seven/迷途的小柒 (1.8M followers) have all written relevant promotional blog posts.



Figure 5. The big air Shougang.



Figure 6. Digital art gallery.

## DISCUSSION

After a preliminary analysis, combined with the official public documents of SIP, I have made a preliminary summary of the cultural factors used in the park's transformation, which are 1 Sport - the core point, 2 Cultural creativity - creating buzz, and 3 High-technology - the internal driving force for

sustainable development. These three elements complement each other, from the initial motivation of the park's transformation, which was centred around sport, to the use of cultural creativity ideas to transform the form, attract public attention, and raise awareness for the park's renovation. Finally, to use high-tech technology to create a new image for the park, the renovation of SIP has formed a complete, multi-faceted branding image.

The opportunity for the transformation of SIP is undoubtedly the Beijing Winter Olympic Games to be held in early 2022. Thus, sports should therefore be at the top front as a cultural factor influencing the park's transformation. At the outset of identifying SIP as the committee for the Winter Olympics and the main competition venue, IOC President Bach commented, "This is a particularly great idea ..... which achieves a complete combination of competition venue with industrial heritage reuse and urban regeneration." As a world-class sporting event with worldwide attention, the Winter Olympic Games naturally carry great attention and discussion. The core of the transformation of SIP is to use this brand to connect with domestic and international attention and to continue attracting business investment and ordinary people's attention to this area. With the Winter Olympics as an opportunity, the park has already attracted many sports-related companies, with well-known Chinese sports brands, including Anta,<sup>17</sup> Li-Ning etc.<sup>18</sup>

#### Sport—the core strategy of publicity

The concept of sport as the core of the park's construction not only fits the park's identity as a venue for the Winter Olympics but also contributes to the sporting image of Beijing. It is common practice in city image planning to focus closely on one or several keywords and create a cultural and creative identity.<sup>19</sup> Strung together with the keyword, it can quickly make a name for itself in a short period and make its positioning clear to audiences.<sup>20</sup> However, it is worth noting that the significant disadvantage of this is that it tends to solidify the image of a particular region's culture. Therefore, in concrete practice, SIP combines cultural creativity and high-tech elements in its renovation and construction to avoid falling into a specific set of stereotypes.

#### Cultural Creativity

Cultural creativity is the main guiding principle in the renovation of SIP and is used throughout. The vast chimneys, exposed pipes and factory buildings give the park a post-industrial feel. The rust 's patina reveals a sense of historical beauty with years of erosion. This post-industrial style and the surrounding native natural landscape present a strong contrast. Therefore, these qualities were fully utilised during the renovation process, with well-known attractions such as the Immersive Digital Art Gallery (Figure 6) and the Art for All Bookstore (Figure 7) being created. In addition, some of the Winter Olympics competition venues have also gained great attention, such as the *Sangao Furnace* (Figure 8) being transformed into a cultural museum and the Big Air Shougang (Figure 5) also was retained and has become a venue for the public to visit and learn about skiing.

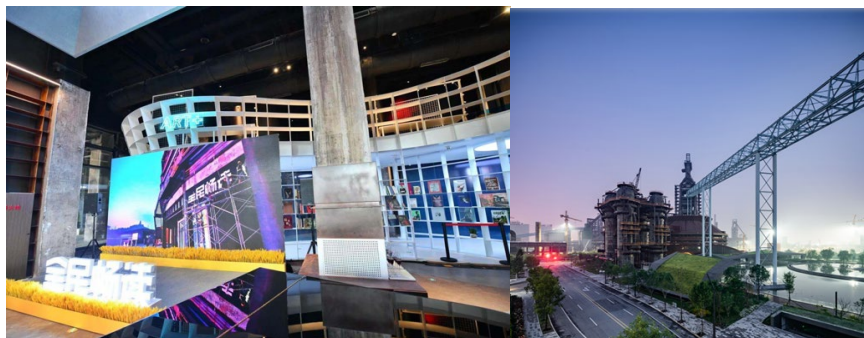


Figure 7. The art for all bookstore.

Figure 8. Sangao furnace.

Many internationally renowned cities have long been branded with culture, and examples include Amsterdam, New York, and others. Unlike the comprehensive and complex nature of city image building, SIP, as a distinctive industrial area, only needs to make a reasonable assessment of its strengths (having a large area of abandoned factory buildings) and then build its image (creating a cultural and artistic area), as well as building a sustainable development model (attracting businesses/high-tech enterprises to move in), to form a closed-loop sustainable development circle.<sup>21</sup>

#### High-technology

SIP has taken special care to create its high-tech, intelligent image during the renovation process to distinguish itself from the traditional image of a heavy industrial site. Early this year, this area was selected as the self-driving demonstration area. All buses in the park are driven by driverless technology. In addition, Baidu, the world's largest Chinese search engine, and Alibaba Group, China's number one e-commerce platform, are also setting up offices in the park.

In recent years, mainland China has been moving toward intelligence, accelerating the support of various related industries. The development of high technology plays a vital role in promoting economic growth and improving residents' quality of life. Therefore, SIP, the venue for the Winter Olympic Games, has naturally become a showcase for China's advanced intelligent research results. At the same time, the construction of a related supporting community in the park has been in progress, forming a circular economy model that integrates research and development, exhibition and sales. Both large areas of abandoned land and government funding for this park made the area a favoured location for high-tech companies.

### CONCLUSION

In summary, the SIP has been successfully transformed over the years. As a typical industrial heritage of modern China, there is much to be learned from branding construction. In a nutshell, it has used the sports brand of the Winter Olympics to aware the public's attention, then used cultural creativity as the leading guide for the renovation to attract sustained discussion, and finally took advantage of high-tech elements to completely reverse the traditional, backward and decaying image of the abandoned industrial site.

Meanwhile, the renovation is also still ongoing. Statistics show less than 200,000 square metres of buildings have been renovated, and the northern part has 1.82 million square metres.<sup>21</sup> As can be seen, a large area is still awaiting renovation. However, with the end of the Olympic Games, the search rate on SIP has dropped sharply, only one-eighth of what it was at the time of the Winter Olympics. It is not uncommon in other areas. The £7.13 billion stadiums and ancillary facilities built for the 2004 Athens Olympic Games were underutilised, and some were even abandoned after the Games. It is no doubt that ruins will be generated after massive events. The SIP needs to consider how to reuse them sustainably. After all, skiing is a seasonal sport. In addition, the economic losses caused by the delay in the resumption of many ski resorts in winter 2022, due to the COVID lockdown policy, also affect further development.

Finally, the construction of creative centres is inextricably linked to the inclusiveness of urban development.<sup>7</sup> The Winter Olympics has completed its mission as a sporting brand that helped open up the visibility of SIP. Next, to sustain its long-term development, it will have to be integrated with areas favoured by a wide range of audiences. Only by combining it with industries with a broader audience, such as technology and the creative industry, will SIP be able to go further in the future. The challenges--deepening the relevant renovation design and maintaining the existing renovation achievements, still exist in the post-Olympic era.



## NOTES

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# **MAPPING OF SOCIAL INITIATIVES AS A MODEL OF LOCAL DEVELOPMENT AGAINST DEPOPULATION IN RURAL AREAS. THE VALLE DEL GENAL CASE (ANDALUSIA, SPAIN)**

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## **INTRODUCTION**

The cultural heritage of many rural areas, such as the villages of Valle del Genal in Andalusia, is endangered. Factors such as the depopulation suffered in the last 25 years have prevented the knowledge transfer from the elderly to the young. This paper focuses on mapping the social, economic and habitat resources as a preliminary step to the implementation of measures and policies against the abandonment of these areas. The aim is to create a map regarding the cultural identity and idiosyncrasy of each village in the valley. The mapping of these local entities is carried out through a combination of participatory work with the communities in the area and the data tracking from geo-positioning and social networks applications. During the identification and inventory process, the relationship between different citizen initiatives and social groups are analysed. This cartography pretends to offer a base of accessible knowledge for inhabitants and visitors. Data dumped on a unique web GIS platform ([www.platic.es](http://www.platic.es)) lets analysing the plausible connections among these initiatives and, therefore, recognizing some shared interests and concerns. The collected data emphasizes the need to integrate qualitative information (as socio-economic and cultural ones) in the planning and regeneration processes against depopulation. The mix of participatory processes with digital resources provides an innovative tool that makes it possible to make visible and to qualify depopulated rural areas.

## **OBJECTIVES AND METHODOLOGY**

### **Objectives**

The general objective of this work is to identify and understand the factors and processes that favor associationism and relationships between associations, groups and local communities within rural territories as a strategy for social cohesion. At the same time, its innovative objective is to implement ICTs to carry out the study of these relationships between agents and territory.<sup>1</sup> The specific aims are as follows:

- Identify, describe and make visible urban local participatory processes involved in the life of the neighbourhoods and towns.
- Promote the use of ICTs as a tool to involve citizens in neighbourhood life, especially towards the youngest.
- Analyse the factors that facilitate the construction of synergies between different groups related to common aspects.
- Analyse the factors that facilitate the creation of governance networks.
- Analyse and determine what meeting spaces should be like where local participatory processes with the administration can be promoted.

## Methodology

In order to achieve the goals, the methodology focuses on recognizing and researching networks of agents and groups of people on the territory of Valle del Genal. These networks are visualized on a virtual web GIS platform as a methodological tool.

Throughout this process, the methodology makes emphasis on the study of three concepts acquired from *cultural mapping*: places, agents and uses. ‘Places’ refers to locations where social initiatives or projects seeking to face up with depopulation of rural areas issues are proposed. ‘Agents’ means groups of people proposing those social initiatives or projects. And ‘uses’ underlines existing local resources.

It is necessary a first approach in order to learn about the territory idiosyncrasy and its active groups. Then, it is done a subsequent analysis for understanding their relevance and how they work. And, finally, it is been created a network of “informant agents”. This let us examine relationships among them and their level of activism, dividing this work into three different parts.

### First approach

The first step consists of collecting information about active associations or social groups on the territory. It is carried out an initial research through traditional media, social networks, official bulletins, subsidized association registers and "grey literature" <sup>2</sup>. The aim of this chore is to locate those groups and initiatives generating activity on the territory.

### Analysis and verification

The preliminary collection of data allows us to find out the main characteristics of these groups and the activities they bring out. Therefore, it is possible to make up a database of active associations and groups for analyzing participation processes and movements in the associative network regarding to territory and its available resources.<sup>3</sup> In consequence it has been analyzed jointly direct and indirect sources of information.

### Network jumping

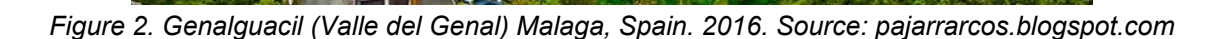
With this new database, it is possible to make a list of “informant agents” <sup>4</sup>. Then, it can be discovered new active groups not found out during the first approach. Therefore, it constitutes a sort of “territorial virtual weave informally established by associations”, that is, a “network jumping” web.

It means that it has been used a new methodological process based on meetings and semi-structured interviews <sup>5</sup> with informant agents and active groups. This work was possible thanks to the ‘network jumping’ methodology. It consists of informant agents giving us some useful information about active associations, and those associations giving some more useful information about other ones, constituting a web of weaves. This process takes advantage of the existing virtual network <sup>6</sup> in the territory. So, the operation is repeated, like jumping from one association to another. The result

This work is already been brought about in the city of Málaga, which is not a rural area but an urban one, in order to test the platform. Afterwards, it has been adapted to the Valle del Genal.



## Depopulation process

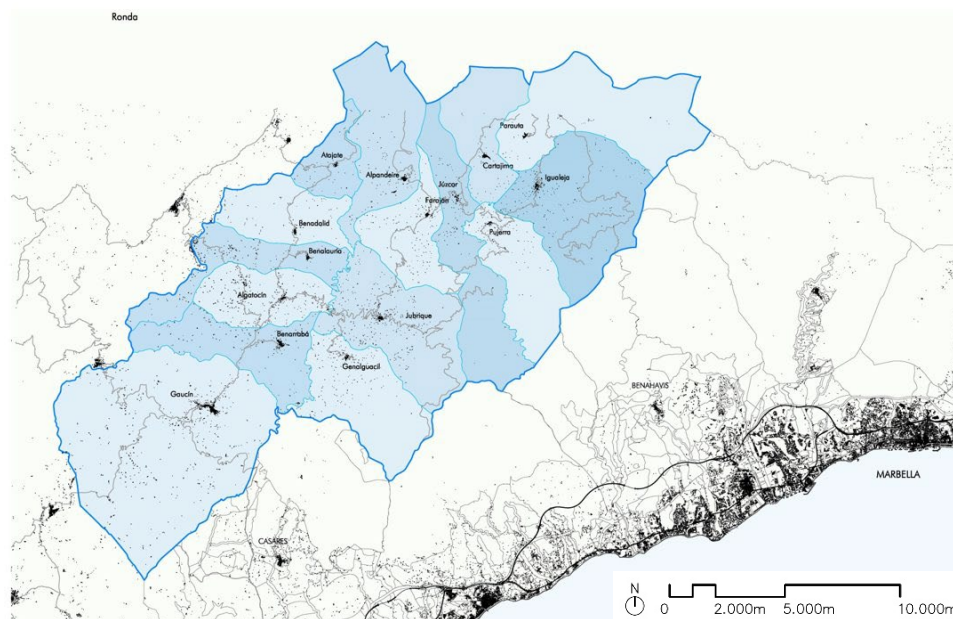


### Causes and consequences of the depopulation of the valley

Valle del Genal is made up of 15 towns distributed according to altitude (see Table 1). “Alto Genal” includes the municipalities of Igualdeja, Pujerra, Parauta, Cartajima, Júzcar, Faraján and Alpendeire, and “Bajo Genal” includes the municipalities of Atajate, Benadalid, Benalauría, Algatocín, Benarrabá, Gaucín, Jubrique and Genalguacil.<sup>10</sup> According to data from the Spanish Population Census (INE, 2022), the valley is in serious demographic decline. Between 1996 and 2018 there has been a population decrease of 18.4%,<sup>11</sup> being Genalguacil (37.02%), Jubrique (35.4%) and Benarrabá (29,2 %) the most affected. This decrease is due to aging of the population, drop-in birth rates and abandonment of countryside due to emigration to the neighboring Costa del Sol. In addition, there are other problems such as the difficult access to basic services (education and health) and the deficient road system and telecommunications infrastructure. Some consequences have been the lack of maintenance of forests, the disappearance of paths and the increase of scrubs, causing a mayor risk of fires,<sup>12</sup> like that one of last September 2021 burning more than 7,400 hectares with significant losses of forest mass, fauna and flora,<sup>13</sup> affecting local economies that used to depend on the exploitation of natural resources.<sup>14</sup>

Valle del Genal	
Alto Genal (2.294)	Bajo Genal (4.653)
1. Alpendeire (261)	8. Algatocín (825)
2. Cartajima (259)	9. Atajate (179)
3. Faraján (250)	10. Benadalid (236)
4. Júzcar (235)	11. Benalauría (436)
5. Igualdeja (740)	12. Benarrabá (438)
6. Pujerra (298)	13. Gaucín (1.595)
7. Parauta (251)	14. Jubrique (553)
	15. Genalguacil (391)

*Table 1. Municipalities of Valle del Genal (2021 Population). Source: Own elaboration based on data from the Spanish National Institute of Statistics (INE - 2022).*



*Figure 3. 'Valle del Genal' map, Malaga, Spain. Source: Own elaboration*

## RESULTS AND DISCUSSIONS

### People, places and uses

The ‘informant agent’ network has been done through two different kinds of agents: people who act independently by themselves and create associations, and collaborations with people working at Guadalinfo centers, known as local innovation agents. Guadalinfo is an Andalusian public network of centers in towns with less than 20,000 inhabitants. They focus on implementing policies regarding digital skills, open innovation and Internet access by advising people on their social projects and promoting collective initiatives for social revitalization, community awareness and promotion of the environment. Some of its work areas are employability, digital literacy, citizen participation, entrepreneurship, business digitization and electronic administration. So, there is an existing network of people, places and uses, whose concepts has been taken from ‘cultural mapping’,<sup>15</sup> that has been used as a database to elaborate a map of active social initiatives. It is intended to generate new synergies of citizen participation by establishing new relationships between these existing initiatives.

On this purpose, it has been elaborated a new document we have called *table of validation of indicators*.<sup>16</sup> The aim of this document is to be able to choose accurately those citizen initiatives that can help to identify common threads with other initiatives and then, to create new synergies between groups of people, places and uses.

All these data are uploaded in the web GIS platform of platIC. So, the mapping process is divided in four phases (see figure 4). Phase One consists of choosing what to map and where. This work implies a preliminary work of identification of people and places. Phase Two consists of interviewing people at the leading of associations in order to know its grade of maturity. Phase Three consists of filtering these associations by applying the indicators document and categorizing them. Finally, Phase Four consists of mapping the initiatives.

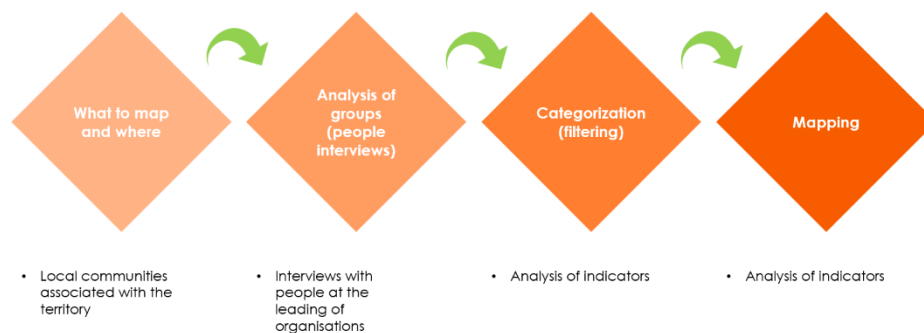


Figure 4. Mapping process

In order to establish some Sustainable Development Goals, *cultural mapping* also introduces three dimensions: environmental, economic and social.

The environmental dimension provides a vision of citizen participation linked to rural territory. For this reason, one of the aspects proposed in the project is to map all those initiatives that aim to protect rural environments through the citizen empowerment. This is remarkable for the economic development of the territory because the protection of the environment has a strong relationship with the creation of new start-ups and cooperatives generating new economic activities. And, finally, the social dimension of cultural mapping is determining because it pretends to transfer knowledge from a generation to the next, reason why it has been mapped in the platIC platform. This work contributes to have a completed visualization of the cultural map in the territory.



## Mapping

For the mapping of citizen initiatives, first, we organized meetings with the local innovation agents from Guadalinfo centers. The first meeting was held with the territorial coordinator, the person who helps manage the projects that every Guadalinfo center carry out. This initial work has made possible to learn about the most relevant citizen participation projects in the Valley and, afterwards, to contact each of these agents in order to reach a deeper knowledge of the particular projects in each municipality. It should be noted that this work is under constant construction and, therefore, unfinished. Among the initiatives mapped, the following should be highlighted:

-*La Voz Rural* (The Rural Voice). It is a participatory process promoted by Guadalinfo center that brings together several municipalities in and outside the Valley (Alpandei, Atajate, Cartajima, Faraján, Gaucín, Genalguacil, Jubrique, Júzar, Montejaque and Pujerra). It is a podcast web where people living in the territory can narrate their daily lives, their concerns and their proposals to improve the Valley. The radio recordings are usually made by older people who have been trained in new technologies thanks to abilities learnt at the Guadalinfo centers. Therefore, they are people already empowered and prepared to carry out these actions.

-*Genal Sin Plásticos* (Genal Without Plastics). This initiative is carried out by people from Genalguacil, Jubrique and Algotocín. They organized a series of awareness-raising sessions on the environment and social networks. Through this training, groups of people were later organized, mainly aimed at children between 14 and 18 years old, to clean the garbage from the Genal River. The event was a complete success because symbolic acts were organized to exchange kilos of garbage for ecological coins that were used to “buy” trees from a local nursery garden.

-*La Gran Vuelta* (The Grand Tour). This event is carried out thanks to Club Puraventura Genal mountaineering association. The mapping process has two parts: the route of La Gran Vuelta, which is a mountain race that lasts 48 hours and passes through the 15 municipalities of the Valley, and the mapping of the refreshment points of the runners, which are organized by people who prepare characteristic local foods in the village centers. It is a way of invigorating the Valley by involving citizens in the organization of this event. This project has become one of the most important events of the year. It is a magnificent example of regeneration of economic activity in rural areas since the runners spend the night in the Valley at different times of the year to go to train for the race.

In addition to these projects, it is remarkable to say that Valle del Genal has many important natural resources. Those initiatives that promote the development and protection of these local resources are very interesting for the project. Here are some examples. Its types of trees mean that, for example, there is a bee (known as the ‘Moorish bee’) that produces a unique honey. In this sense, it is *Alpabeja Association* that promotes a cooperative of beekeepers to produce honey with *Denomination of Origin*. There is also the blond pig production,<sup>17</sup> unique in the world, which is a pig that only feeds on locally produced chestnuts. During the autumn season, the Valley takes on a reddish hue thanks to the chestnut trees, popularly known as “copper forests”. This has allowed the birth of *La Dehesa de Los Monteros*, a company that produces a unique Iberian ham. In addition, another notable local resource is cork, thanks to the predominance of cork oak trees. All these existing resources could provide the Valley with new opportunities, still untapped, through industrial activities that generate new economic activities to attract population and effectively combat rural depopulation. These projects, together with other touristic initiatives such as the organization of wheelchair accessible mountain routes, create a cultural map through the platIC platform, whose final objective is to visualize all these process in order to generate new synergies of citizen participation.

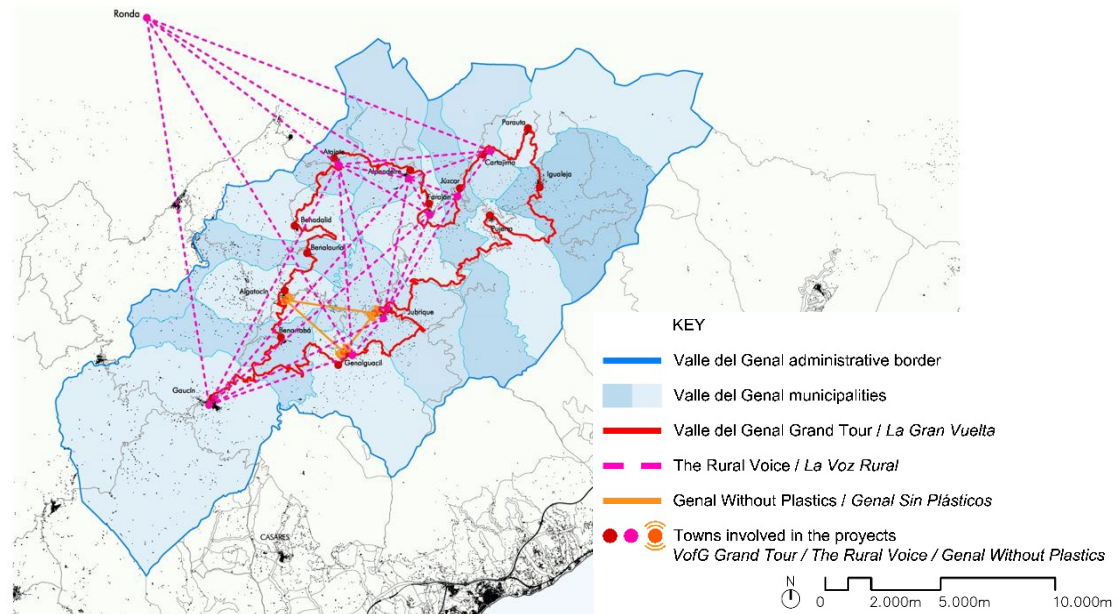


Figure 5. Valley of Genal mapping process. Malaga, Spain. Source: Own elaboration

## CONCLUSIONS

*Cultural mapping* can be used as a previous tool for the recognition of the territory. It makes possible to design and plan new strategies against rural depopulation based on a deeper knowledge of the territory and how it works. This process allows to work in the territory by creating new proposals adapted to local characteristics (to what already exists) and taking advantage of resources as a basis for future urban and landscape planning. This will generate new strategies linked to its inhabitants, attending to their needs and opportunities, and bringing on new economic networks connected to the territory by establishing population and valuing the place idiosyncrasy.

At the same time, the mapping carried out during this work lets establish relationships between different initiatives, groups and existing resources, to put in value the associative network. It allows the creation of new connections and new threads. The platform facilitates, in the same way, that initiatives with the same concerns can get to know each other and collaborate. Having a platform like platIC, where all this information about a territory is displayed, allows the transfer of this kind of knowledge: established social relationships between people, local landscape resources and related productive initiatives, cultural and environmental values, events, etcetera. The Project wants to value this type of web tools and a methodology of approximation and analysis of territorial environments with depopulation problems as a source of knowledge, and to protect heritage values in danger. These tools could be used as knowledge transfer that younger generations will be able to use in order to face the demographic challenge.

## NOTES

<sup>1</sup> This work is part of the project “Redes - Network of Social Empathy. WebGIS digital platform for mapping citizen initiatives and promoting interactions between associations, groups and local communities” is a digital consultation platform for all citizens where different neighborhood initiatives, groups and associations are registered. In this way, anyone can check what initiatives are taking place in their area, or what issues and interests concern groups and citizens in general.

<sup>2</sup> “Grey literature”, also called non-conventional, semi-published, invisible, minor or informal, is any type of document that is not disseminated through the ordinary channels of commercial publication, and therefore poses access problems. Some characteristics of ‘grey literature’ are: i) in the case of printed documents, they are of limited production and have print runs of few copies; ii) they do not necessarily follow the norms of traditional editions such as books and magazines; iii) the content is aimed at specialized readers; and iv) does not comply with bibliographic control standards (ISBN, ISSN, Impact Indexes). ”

Source: <http://dx.doi.org/10.4067/S0718-50062011000600001>

<sup>3</sup> We use the concept of “active” to refer to those groups with real activity and presence in the territory.

<sup>4</sup> People capable of providing information about other active groups and initiatives thanks to their experience and its presence on the territory.

<sup>5</sup> Semi-structured interviews are scripted conversations in which the interviewee has the possibility of adding all the information he would consider appropriate.

<sup>6</sup> With the concept of “existing virtual network”, we refer to a network that already exists but it is not been developed.

<sup>7</sup> PlatIC: Plataforma de Iniciativas Ciudadanas ([www.platic.es](http://www.platic.es)).

<sup>8</sup> Joaquín Márquez Carrero and José Jesús Delgado Peña. “Caracterización Geográfica Del Valle Del Río Genal (Málaga): Relieve, Clima y Agua.” *Baetica. Estudios de Historia Moderna y Contemporánea* 30 (2008): 41–62. <https://doi.org/https://doi.org/10.24310/BAETICA.2008.v0i30.200>.

<sup>9</sup> Instituto Andaluz del Patrimonio Histórico. “Paisaje Agrario Del Alto Genal.” (2016):1–20.

<sup>10</sup> Rafael Yus Ramos and Oscar Gavira Romero. “Los Escarabajos de Las Semillas (Coleoptera: Bruchidae) Del Valle Del Genal (Málaga, España).” *Boletín de La SEA* no. 49 (2011): 119–26.

<sup>11</sup> “Plataforma Sierra Bermeja, Parque Nacional.” 2007. <https://www.sierrabermeja.es/2019/01/24/continua-la-despoblacion-del-valle-del-genal-datos-actualizados-a-2018/#>.

<sup>12</sup> Rafael Delgado Artes. “Análisis de Los Patrones de Evolución de Las Coberturas Forestales En La Provincia de Castellón En Los Últimos 50 Años.” Universidad Politécnica de Valencia, 2015.

<sup>13</sup> <https://elpais.com/espana/2021-10-24/el-incendio-de-sierra-bermeja-se-da-por-extinguido-46-dias-despues-y-tras-arrasar-casi-10000-hectareas.html>

<sup>14</sup> Martín, José María. “El Fuego Que Arrasa Sierra Bermeja y El Valle Del Genal Ha Quemado Ya 7.400 Hectáreas.” *Diario Sur Online*, 2021.

<sup>15</sup> Pillai Janet, Ester van Steekelenburg, Faisal Abd. Rahman, and Elizabeth Cardosa. “Cultural Mapping for Place and Community Planning.” Webinar: Cultural Mapping for Place and Community Planning. 11 Julio 2020. [https://www.youtube.com/watch?v=XZWan\\_IAbuY](https://www.youtube.com/watch?v=XZWan_IAbuY)

<sup>16</sup> The table of validation of indicators is a document used for the analysis and diagnosis of the factors that favor the creation of a ‘network of empathies’ between social groups in accordance with the 2030 Sustainable Development Goals. Among the data collected, the following should be highlighted: how was born the association and what it is its mission, the analysis of its area of influence, what infrastructure it has and what is its organizational chart, how they carry out formation courses, what relationship they have with the territory and what projects they are currently bringing about.

<sup>17</sup> The Rubio Dorado (“gold blond”) is a 100% Iberian pig native to the Serranía de Ronda that was almost extinct and has been recovered with the joint effort of the Meragem Group (PAI AGR-158) of the University of Córdoba, the C.E.A.G. of the Diputación de Cádiz and the Algaba Center in Ronda. More info: <https://elpais.com/economia/2021-01-22/el-cerdo-pelirrojo-que-triunfa-en-asia.html>

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# **PARTICIPATORY METHODOLOGY FOR THE INVENTORY OF INTANGIBLE CULTURAL HERITAGE IN URBAN NEIGHBOURHOODS. CASE STUDY IN MALAGA CITY**

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## **INTRODUCTION**

The identification of intangible cultural heritage was defined in Paris Convention by UNESCO (2003). According to the text of the Convention, it is recommended that expert agents and the local community participate in the process of inventorying this type of heritage. However, there is a lack of consensus to establish a methodology that involves both in these processes. Previous works show the identification of intangible cultural heritage from the city scale, but they do not focus on the importance of the local neighbourhood network and social communities.

This research allows the implementation of a methodology for the identification of intangible cultural heritage through the collaborative participation of expert agents and local community from the neighbourhood scale. Thus, a consensual process has been followed with the stakeholders involved based on semi-structured interviews and workshops. Once the participatory actions take part, a collaborative document has been drawn up for the inventorying of intangible cultural heritage according to Annex 2 of Guidance Note on Inventorying Intangible Cultural Heritage by UNESCO.

This method has been tested in Fontanalla neighbourhood, in Malaga, where the crafts of pottery and stained glass have been identified as intangible assets in this area of the city. The inclusion of the inventory in an official website of the municipal cultural heritage has enabled its dissemination in different educational areas for the citizenship.

## **STATE OF THE ART**

The concept of Intangible Cultural Heritage (ICH) is relatively recent, which has gained great relevance and attention from governments, entities, practitioners and researchers since UNESCO declared its value and impact on local communities in 2003.<sup>1</sup> The ICH is made up of the set of cultural expressions, knowledge and practices that these communities recognise as part of their identity. Traditionally, this knowledge has been transmitted from person to person between generations, and in many cases, through oral language. New technologies have transformed the dissemination and access to ICH.<sup>2</sup>

### **Problems in the elaboration of ICH inventories**

Due to the lack of inventories of Intangible Cultural Heritage and the proliferation of records of tangible heritage values, most of inventories group put them together as Cultural Heritage. However, there is a perceptible imbalance of records between both, as a consequence of the recent trajectory of ICH recognition. In general, these inventories offer information about the most relevant intangible assets on a city scale, in many cases omitting intangible elements due to the lack of access to knowledge and information. The integration of local communities in the process of elaborating the inventories is presented as the tool to access to these assets, because the protection and dissemination of traditions and knowledge over time is guaranteed by the local communities.<sup>3</sup> Thus, their involvement is necessary for the correct identification of the assets. There are some interesting research showing the participation processes and actions with the aim of involving local agents in the management of their Cultural Heritage.<sup>4</sup> For example, the *Digital Guide to Andalusian Historical Heritage*<sup>5</sup> is a digital inventory that brings together the Tangible and Intangible Heritage of the region of Andalusia (Spain). Although it integrates all types of heritage, ICH records are less numerous in relation to the other categories.

### **Lack of consensus on the integration of the local community in ICH identification and inventory processes**

The lack of integration and participation of local communities in the creation of the content shown in these inventories must be taken into consideration as a gap to deal with. Many local governments have been preoccupied with creating the expected images of their municipalities in order to promote tourism activity there, instead of developing effective tools that allow local communities to tell their own story and build a collective memory.<sup>6</sup> Faced with this lack of participation by local communities in the identification and management of their intangible cultural heritage, both in physical and digital environments, this research focuses on the need to combine participatory methodologies and fieldwork with the creation of online inventories.

### **Main contributions**

Due to the lack of consensus on the participation of the local community in the processes of identification and inventory of the ICH and its approaches from the city scale, this research provides a methodology for the identification and inventory of the ICH involving local communities from the neighbourhood scale. This paper shows the experience and results obtained from applying several processes of citizen participation for the recognition of intangible assets in the Arrabal de Fontanalla neighbourhood in the city of Malaga (Spain). The contributions are summed up in the following two assessment with respect to other works: participatory actions for the recognition of the ICH by the local community; the process of elaborating files of the elements of intangible value together with the social agents involved for their inventory.

### **METHODOLOGY**

The methodology is based on the identification and inventory of ICH through the local community at the neighbourhood level:

#### **Phase 1. Stakeholder identification**

##### **Action 1: Identification of social actors**

Creation of a working group made up of social agents from the neighbourhood: associations, entities and other external actors with experience in participatory methodologies, PCI management and knowledge of the neighbourhood. This phase has been developed in previous works<sup>7</sup> which detailed



how the mixed working group is composed of researchers from the University of Malaga, and experts in heritage in the Fontanalla neighbourhood in the field of history and archaeology. The local community is represented by different entities such as the Arrabal Fontanalla association of neighbours and shopkeepers, the Museum of Glass and Crystal of Malaga, and the VIARCA glass atelier.

## **Phase 2. Process of identification of the ICH**

### **Action 2: Participatory actions with social agents**

Expert guided tour of the neighbourhood with the participation of social actors to disseminate the main elements, histories and traditions of the neighbourhood.

### **Action 3: Informal meetings with mixed groups**

Through brainstorming by the social agents of the neighbourhood, possible elements susceptible of being recognised as intangible assets are identified.

### **Action 4: Participatory actions**

Workshops and activities have been carried out by the social agents of the neighbourhood to identify the intangible assets consolidated in the neighbourhood thanks to the local community.

## **Phase 3. Inventory of ICH**

### **Action 5: Preparation of inventory sheets for intangible assets**

Development of a fillable document based on the UNESCO Annex <sup>8</sup> to obtain the necessary information for each asset from the participatory actions.

### **Action 6: Semi-structured interviews**

Semi-structured interviews are conducted with associations, entities, neighbourhood associations and other expert external actors in order to complete the fillable with the information required by UNESCO.

### **Action 7: Inventory of intangible elements**

A single consensual form is created from the different interviews carried out and the data collected from the completed fillables. The assets recognised by the local community are posted on a dissemination website.<sup>9</sup>

## **Case study: La Fontanalla**

The methodology above-described has been tested in the Arrabal de Fontanalla (La Fontanalla) neighbourhood located in the city of Malaga, with the aim of identifying its main intangible assets <sup>10</sup>. La Fontanalla has its origins in the new population centres outside the walls of the city of Malaga in the 11<sup>th</sup> century. It was characterised by the proliferation of kilns for the production of ceramics and pottery, as productive sectors from the Muslim period. However, this activity went on the decrease in the 15<sup>th</sup> century. It is highlighted that various buildings were built with wall-painted façades throughout the 18<sup>th</sup> century. Today, this characteristic craftsmanship of the constructions of the period still survives on the façades of many buildings. At the end of the 20<sup>th</sup> century, the VIARCA stained glass atelier was established in the neighbourhood, where pioneers in the execution and restoration of glass and stained glass develop their activity. In addition, this was accompanied by the opening of the Museum of Glass and Crystal of Malaga in an area close to the atelier. Nowadays La Fontanalla neighbourhood is a meeting point for this type of craft. The local cultural diversity related to crafts

has a historical origin through the centuries up to the present day. It has contributed to the neighbourhood being known as the neighbourhood of artisans.<sup>11</sup>

## RESULTS AND DISCUSSION

The methodology described was tested in La Fontanalla neighbourhood by preparing an inventory of the following intangible assets: (1) the traditional craft of stained glass; (2) the traditional craft of pottery; (3) the history, stories and historical figures of the neighbourhood; and (4) the craft of mural paintings.

### Identification of the intangible assets of La Fontanalla neighbourhood

Actions 2 and 3 of the methodology were carried out in the case study on the basis of a guided tour of the neighbourhood. It was proposed by the local community over 120 people, including residents, representatives of local entities, neighbourhood associations, local administration and some outsiders interested in La Fontanalla neighbourhood and its ICH. The visit led to many spontaneous testimonies from the participants about their own experiences in the neighbourhood: memories in certain places, tributes to people known to many neighbours, and singular stories that made it possible to identify the assets in a first step (1, 2, 3).

On the basis of the elements identified, and with the aim of putting in value the intangible heritage potential shown by the local community, the working group has proposed to take part in a series of participative actions, -Action 4-. between artisans, neighbours and students:



Figure 21. Glass workshop, Pottery workshop and Guided visit

#### Glass workshop between artisans, neighbours and students

A session was held on the decoration and execution of stained glass windows using the fusing technique in the neighbourhood glass atelier. This action is part of the strategies to raise awareness of the importance of the glassmaker's craft as an intangible value in the school environment. The students have the opportunity to have an immersive experience trying out these techniques learning about the existence of this craft in the neighbourhood too (1).

#### Pottery workshop between artisans, neighbours and students

Several sessions were held on the decoration of ceramic pots in order to promote the dissemination of the so-called "Malaga style" in the school. This action is part of the strategies of being aware of the importance of the craft tradition as an intangible value in the school environment and the importance of involving teachers from the school concerned about ICH into the teaching programmes in several subjects (2).

### Guided visit by informing agents to students

Through an itinerary in La Fontanalla neighbourhood, the students knew the main local heritage assets, as well as its history (3, 4). It is highlighted the tradition of trades and crafts typical in the neighbourhood: pottery, wrought ironwork, glass, and mural paintings, among others. The pottery tradition is explained through the history of some families and traditional architecture, as well as a visit to some of the archaeological sites of existing pottery kilns. It was also showed the practice of glass making, including a visit to the glass and crystal museum in the centre of the neighbourhood, and the mural paintings that adorn many of the façades of the house and buildings from the 18<sup>th</sup> and 19<sup>th</sup> centuries.

### Inventory of the intangible assets of La Fontanalla neighbourhood

In order to carry out the inventory of the assets, a fillable document, Action 5, was created to collect the identity elements with intangible cultural value, such as the glass and ceramics crafts, as well as a file with stories and histories of the neighbourhood.

The recommendations of UNESCO <sup>12</sup> have been taken into account in its preparation. The general contents included are the following: 1. Identification of the element; 2. Characteristics —associated tangible and intangible elements, forms of transmission, and origin of the element according to the perception of the local community—; 3. Agents related to the element —performer, depository transmitters, and other transmitters—; 4. State of the element —dangers, threats and measures—; 5. Social agents involved in the elaboration of cards.

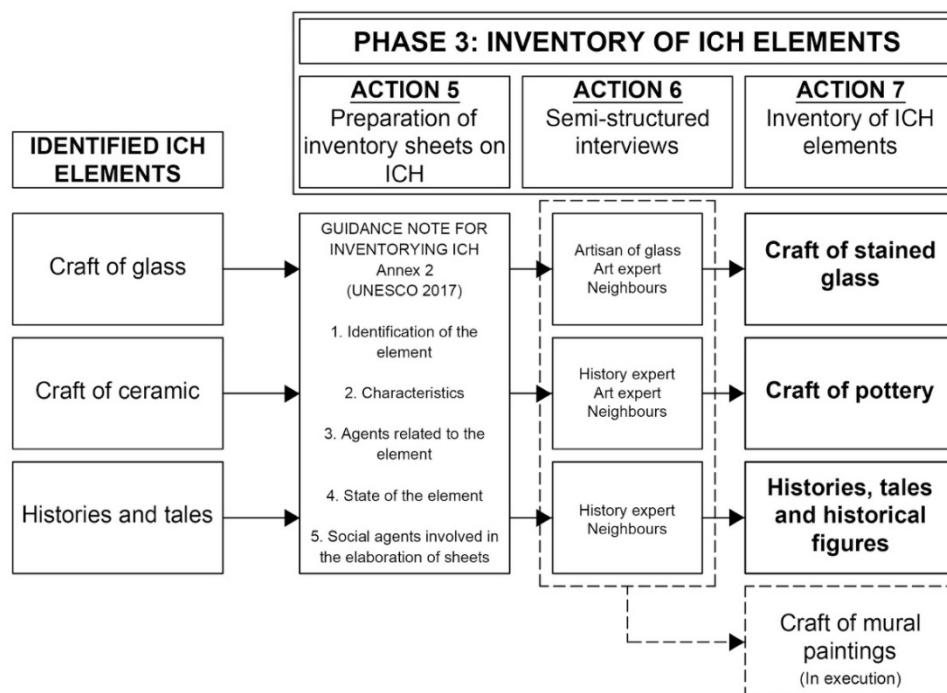


Figure 2. Phase 3 of methodology in La Fontanalla neighbourhood

The completion of the files was based on semi-structured interviews, Action 6, which allowed experts in history and art, craftsmen, and neighbours to be involved not only in the identification of the ICH but in the inventory phase too. As a result of the information gathered in the interviews, it has been possible to complete and unify the asset files, correcting and complementing all information.

## CONCLUSIONS

The participatory actions carried out have improved social cohesion in the neighbourhood. In addition, the direct work with the local community has made it possible to identify intangible assets that are not perceptible on a city scale, due to the lack of accessibility to them. The testing of the methodology has contributed to a greater dissemination and learning about intangible assets among the neighbourhood and the students, which before the experience was low. On the other hand, the research can be progressed because there are assets whose relevance covers areas larger than the neighbourhood scale, so it would be necessary to contribute a new phase to the methodology. Furthermore, in some cases, there was a lack of consensus in determining the unified inventory sheet due to the diversity of approaches provided.

The application of the proposed methodology has allowed the identification and dissemination of intangible assets based on the participation of the local community throughout the whole process, facilitating actions of citizen participation and improving the social cohesion of the local communities in the neighbourhoods. In order to consolidate the practice of the methodology over time, two aspects must be taken into account:

- The determination of the inventory as an open document, which can be modified in the future according to the experience of the local communities and its evolution over time.
- To continue the positive results, local communities need to be empowered to develop these ICH recognition processes. The local administration should assist and support these practices to consolidate their future viability.

## ACKNOWLEDGEMENTS

This work is part of the research project *Strategies for the recovery of public space and residential use against gentrification and touristification in Malaga* (UMA.20.01) belonging to the call of the Junta de Andalucía —Consejería de Fomento, Infraestructuras y Ordenación del Territorio. Servicio General de Vivienda— and the project *Exhibition on Urban Crafts and Intangible Cultural Heritage in La Fontanalla. Participatory Methodology and Actions of Beautification and social-urban improvement with the local community* (B3-2019\_15) belonging to the call of the University of Malaga —Grants for the Promotion of Research Projects and Social and Legal Sciences, Humanities, Architecture and Fine Arts—.

It also shows the results of the agreement *Exhibition on Urban Crafts and Intangible Cultural Heritage in La Fontanalla. Participatory Methodology and Actions of Beautification and social-urban improvement with the local community* between I.E.S Vicente Espinel "Gaona", Association of Neighbours and Shopkeepers Arrabal Fontanalla, Museum of Glass and Crystal of Malaga, VIARCA, Artistic Glass Cascón and the University of Malaga.

## NOTES

- <sup>1</sup> UNESCO, "Guidance Note for Inventorying Intangible Cultural Heritage Under the 2003 Convention for the Safeguarding of the Intangible."
- <sup>2</sup> Cameron and Kenderdine, *Theorizing Digital Cultural Heritage: A Critical Dic-Course*.
- <sup>3</sup> Frieri, *Manual de Herramientas Participativas Para La Identificación, Documentación y Gestión de Las Manifestaciones Del Patrimonio Cultural Inmaterial*.
- <sup>4</sup> Loza Ibarra, "Procedimiento Para La Identificación de Actores Sociales: Custodios Del Patrimonio Cultural Inmaterial En Ciudades Patrimoniales."
- <sup>5</sup> IAPH and Consejería Cultura y Patrimonio Histórico, "Guía Digital IAPH."
- <sup>6</sup> Paskaleva-Shapira, Azofín, and Chiabai, "Enhancing Digital Access to Local Cultural Heritage through E-Governance: Innovations in Theory and Practice from Genoa, Italy."
- <sup>7</sup> Nebot-Gómez de Salazar, Morales-Soler, and Rosa-Jiménez, "Metodologías Participativas y Patrimonio Cultural Inmaterial En Los Barrios."
- <sup>8</sup> UNESCO, "Guidance Note for Inventorying Intangible Cultural Heritage Under the 2003 Convention for the Safeguarding of the Intangible."
- <sup>9</sup> Universidad de Málaga, "PCI FONTANALLA 20-22 - Inicio."
- <sup>10</sup> PTVMálaga, "Tu Barrio: Arrabal de Fontanalla."
- <sup>11</sup> Asociación Arrabal Fontanalla, "Asociación Arrabal Fontanalla."
- <sup>12</sup> UNESCO, "Guidance Note for Inventorying Intangible Cultural Heritage Under the 2003 Convention for the Safeguarding of the Intangible."

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# ARCHITECTURAL INVESTIGATION OF URBAN VILLAGES IN SHENZHEN AND WUHAN IN RELATION TO RURAL-URBAN CHINESE MIGRATION

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## INTRODUCTION

With the significant development of China leading to a wide range of urban developmental evolution since the 1980s, there has been a growing issue of unequal resource distribution between urban and rural areas. A significant proportion of the population has migrated to cities. This process created a new urban spatial type: the “Urban Village.” However, the urban villages are faced with radical demolition-based redevelopment programmes where they face replacement with ‘formal’ conventionally planned neighbourhoods.

This paper explores the function and value of urban villages in cities from the perspective of architecture by investigating the informal architectural practices and building forms in two different Chinese urban villages. In addition, this study aims to emphasize the significance of informal architecture practice as a bottom-up approach that contributes to the housing crisis, the diversity of the community and spatial justice in the process of urban development.

## Background of the Urban Village

The “Urban Village” is originally translated from the Chinese term “Chengzhongcun”, which means “the village that is surrounded by the city”, which accurately describes the common location of the urban village. In the 2000s, two English translations of Chengzhongcun have been used in academic studies, “Urban Village”<sup>1</sup> and “village in the city,”<sup>2</sup> the former being more widely used among scholars. This new spatial category is largely determined by the combined facts of population movement<sup>3</sup> and rural-urban household and land policy.<sup>4</sup> Due to the limitations of urban intake capacity and the food crisis in the late 1950s and early 1960s, the Chinese government created an urban development policy entitled “Controlling the Size of Core Cities” and implemented the “Hukou” system (rural-urban household policy) to limit population mobility from rural areas to cities.<sup>5</sup> In 1986 the restriction on the Hukou system was gradually eased, which can be considered one of the most important reasons that promoted mass migration in recent decades and prompted urban structure in China to undergo a large shift.<sup>6</sup>

As a sort of informal settlement, there is a noted public assumption of the urban village as a negative side of the city. This impression mainly comes from unregulated physical expansion. Most buildings in urban villages are not built or designed by professionals and the extremely high density of self-build houses and chaotic electric and telecommunication wires between buildings could lead to



various issues with the living space and conditions such as a lack of ventilation and daylight. This unique architecture is jokingly referred to as “Handshake Buildings” on Chinese social media because residential buildings are built close to one another, so people may be able to shake their hands from different buildings.<sup>7</sup> Nonetheless, urban villages have played an important role in providing affordable housing services for low-income migrant workers in cities. These large-scale high-rise buildings are considered supplementary to the dual rural-urban system, which diversified the social, economic, and spatial composition in China.<sup>8</sup>

### Dimension of Urban Regulation

Unregulated high-density residential buildings and migrant tenants are characteristics that can be used to easily link the urban village with other informal settlements such as slums. However, there are some significant differences between them. In terms of slums, the settlements usually follow spontaneous occupation by migrants on edge of cities or boundaries of a region, for instance, Cañada Real Galiana of Madrid<sup>9</sup> and the Kowloon Walled City of Hongkong.<sup>10</sup> Migrants not only illegally occupied land but also built illegal structures on the land themselves. They are actually able to decide how to make and change their living space.

In terms of the urban village, the condition is more complex. Firstly, according to the Chinese Constitution, General Principles of the Civil Law and Land Management Law, urban land is owned by the state. As the urban village area is categorized as rural land, they are owned by local villagers collectively and individually which means urban villages are regarded as a form of informal urbanization, in which land is formally owned, while the constructions and trading operations are illegal. Even though village committees belong to an official part of the Chinese government structure, local governments have no jurisdiction in urban villages.<sup>11</sup> This disputable regulation of ownership in rural land provides space for villagers and migrants to transgress the state’s regulation in terms of formal urban planning, tenure, and construction.<sup>12</sup> Therefore, these villagers are able to construct highly self-built and self-managed neighbourhoods to accommodate large numbers of migrants.

### Dimension of Basic Space Form

In the context of the urban village, informal urbanization is mainly divided into two forms; firstly, unapproved self-build houses, which usually occupy land and vertical space without legal authorization.<sup>13</sup> Secondly, the unclear regulations on the management of rural land.<sup>14</sup> Those two types of informalities result in different scales of overcrowded building blocks and unregulated construction. Figure 1. illustrates a comparison of building density between formal the urban space and the urban village neighbourhood. From this diagram, it is clear that the distance between buildings in the urban village is much denser than in the formal urban space.

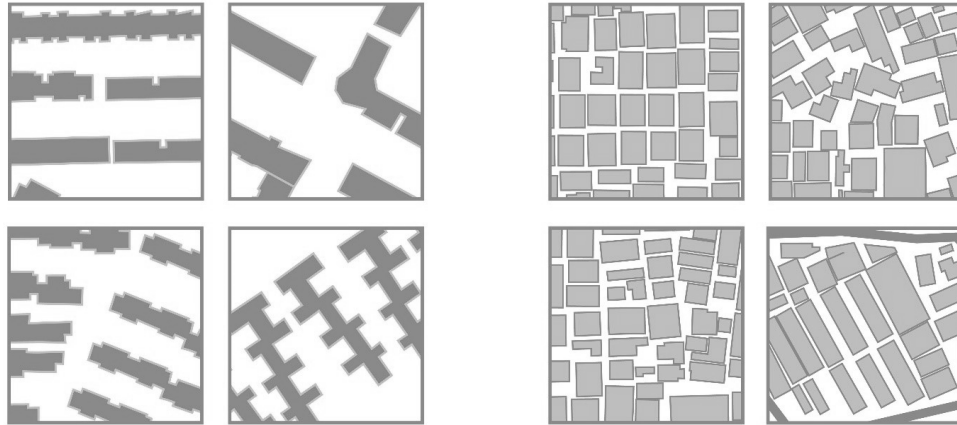


Figure 1. Building density of formal urban space and urban village.

In terms of architectural scale, the typical urban village construction forms could represent illegal occupation of construction both horizontally and vertically. The majority of houses exceed the high restrictions and requirements of the local government. The local villagers would maximize their building footprint and maximize rental profit. To make each of the houses more accessible, they may create various bridging structures to link buildings too. In addition, those constructions barely retain their original form permanently, they may be remodelled and enlarged flexibly by users to fit their spatial demands in daily life.

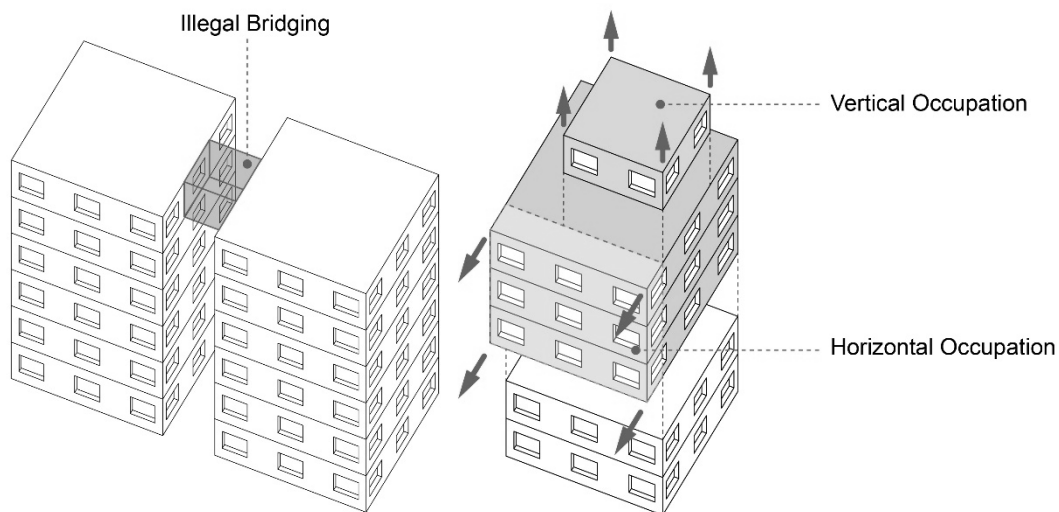


Figure 2. Illegal construction in Urban Villages.

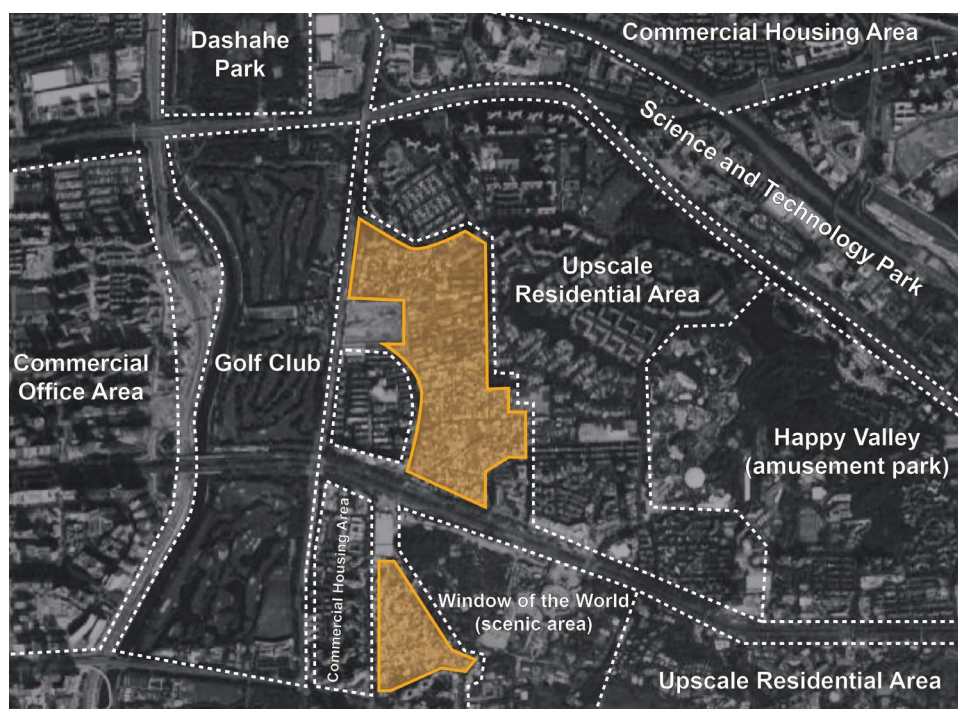
## URBAN VILLAGE CASE STUDY

In this section, two specific urban villages in Shenzhen and Wuhan will be discussed in detail by zooming in on particular streets and daily life scenes. An investigation of how people use and make spaces will be the main point of the case study.

### Baishizhou of Shenzhen

As the most densely populated area in the centre of Shenzhen, Baishizhou is combined with five urban villages and is located in the traffic hub of the Nanshan district. 0.6 sqm total area contains over 2500 dwelling houses and 2310 stores.<sup>15</sup> Within resides a population of over 140,000. About 90 per cent of residents are from other parts of China.<sup>16</sup>

As one of the most expensive areas in Shenzhen, the Nanshan District has prices that are significantly above average for housing expenditure. According to housing trading websites Anjuke and Loupanwang, the average selling price of standard residential property in Nanshan reached over 140,000 RMB (about 157,00 pounds) per square meter as of April 2021. On the other hand, in terms of the rental market, the monthly price of a standard apartment rental was about 124 RMB (about 13.9 pounds) per square meter. However, based on the newest data from the Shenzhen Municipal Bureau of Statistics, the average wage in Shenzhen was about 12,600 RMB (about 1415 pounds) per person per month in 2019. This means the housing rental price requires a large proportion of wages for the majority of people who live in the Nanshan district. Although living conditions in urban villages are very low compared to standard residential areas, their convenient transportation links and predominant location still attract a large number of migrant workers to live there. It is worth noting that rental prices in Baishizhou are half the standard commercial apartment rent, giving much more economic flexibility to low-income households.<sup>17</sup>



*Figure 3. The aerial view of Baishizhou urban village in Shenzhen.*

Figure 4 shows the main street view of Baishizhou urban village is visually quite similar to the formal city centre area, especially the skyline and the various stores on the ground floor. Due to the relatively bigger width of the main streets, which are able to accommodate crowds and traffic streams the main thoroughfares serve as the most commercial dynamic areas in the neighbourhood. However, it is rare to find national brands in this place, and the majority of stores are individual operations, which makes the average daily cost of living in Baishizhou lower than formal city area.



Figure 4. Main street view of Baishizhou Urban Village.

Besides, most parts of Baishizhou are pedestrian-friendly, the Figure 5 well represents the everyday scene of residents in the deeper urban village. This narrow road makes it difficult to allow the passage of vehicles but people are free to walk and cycle. Because a great number of residents do not own a car, public transportation is the main method for them to travel if they need to go somewhere outside Baishizhou. Moreover, this narrow alley network is also primarily used by small vendors and family workshops for commercial activities. Fresh vegetables, fruits, and various types of meat are the main products of their business, as well as other food products.



Figure 5. Inner street of Baishizhou urban village.

In the dimension of architecture, the typical architectural form in Baishizhou usually includes both residential and commercial functions. Generally, the ground floor is for commercial use and comes in great varieties adjacent to the street, including shops, clubs, restaurants and leisure centres. The upper floors are usually residential. This type of architecture makes the whole neighbourhood highly accessible and employs mixed-use urban space. It could benefit migrant tenants who are time-restricted to have efficient access to dealing with their daily routines such as shopping and other necessary services.



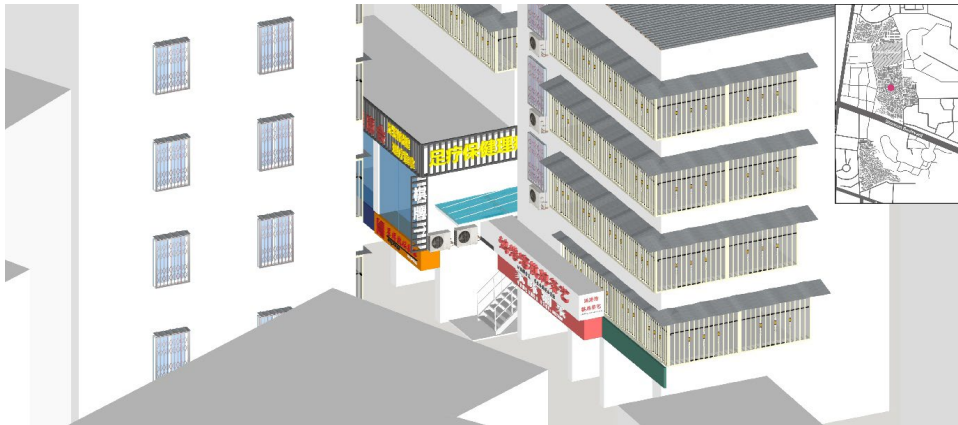


Figure 6. Typical architectural form in Baishizhou Urban Village.

Surprisingly, there are some gated communities inside Baishizhou. In China, most of the residential areas in cities are gated. Throughout interview and relevant research, a general consensus is revealed that physical borders may enhance security and avoid potential crime. Walls and gates can also bring residents a sense of security psychologically.<sup>18</sup> On the other aspect this also means although Baishizhou urban village is an unregulated community, some villagers still displayed awareness and consideration for the security needs of their tenants.

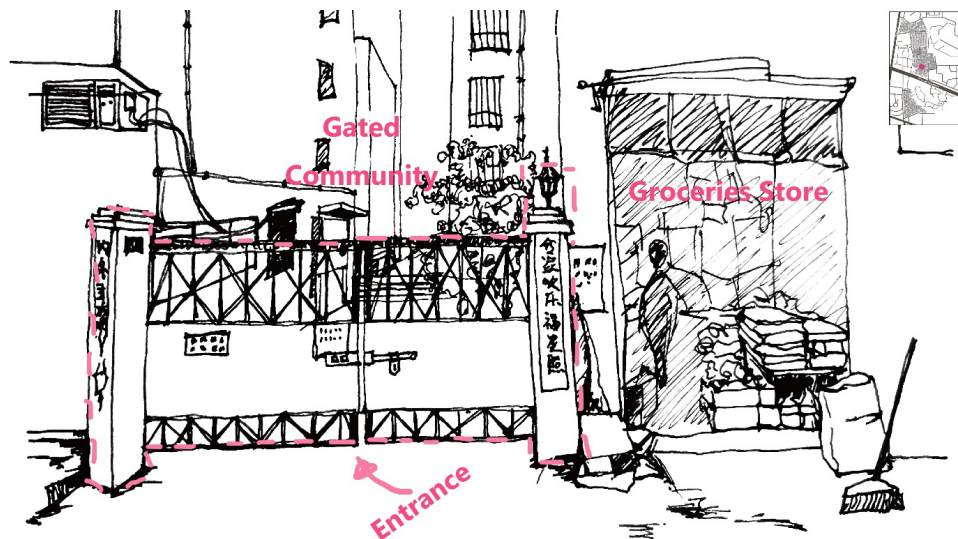


Figure 7. Gated community in Baishizhou Urban Village.

Since 2014 a gigantic redevelopment project of Bishizhou is under progress and it may take decades to complete. The whole urban village will be fully demolished and replaced with formal urban space in the future,<sup>19</sup> with the majority of migrant tenants having to relocate to other places. They will face the choice of having to find a more expensive regular apartment in the same district or moving to other remote areas. If any of them run a business in Baishizhou they would have to close it too. Based on the present regulation the landowner could receive compensation from “urban renewal” caused relocation. However, there is no policy to support migrant tenants to find other places to live.

### Huaanli of Wuhan

Huaanli, is well known as the ‘Wuhan version of Kowloon Walled City’ on Chinese social media. This is the biggest urban village in Wuhan with 1.08 square kilometres total area and over 2000 self-built houses. In the most active period of the clothing manufacturing industry, the population reached 100 thousand<sup>20</sup> and the majority of the population in it are rural immigrants. As a relatively independent community, Huaanli is distinguished from other commuting-friendly urban villages because it is isolated from other urban areas by railway lines. People and vehicles can only enter and exit this area through one tunnel. This is the main reason why people referred this place as “walled city.”



Figure 8. The aerial view of Huaanli urban village in Wuhan.

Spatially, its overcrowded buildings and labyrinthine road network shape the Huaanli into a high-density neighbourhood. The substandard living conditions are frequently criticised for the lack of sunlight and the chaotic environment by residents. In addition, the large volume of people who need to get in and out of the community and the extremely limited access to Huaanli constantly causes traffic congestion. Nonetheless, there is still a great number of migrant workers who would rather choose Huaanli as a living place for affordable rental expenditure. In the opinion of a migrant worker interviewee, just across the road, the rental prices of opposite apartments could increase several times or even more than 10 times. For low-income migrant groups, Huaanli is an acceptable deal.<sup>21</sup> This suggests that the rental price is still the top consideration for most of the tenants, they would give up comfort and accessibility as priorities if necessary.





*Figure 9. The tunnel of Huaanli urban village in Wuhan.*

Additionally, Huaanli also offered space for employment demands. In fact, there are three main types of employment and livelihood in Huaanli: The first one is landlords who rely on rent out their own houses for a living; the second one is the small factory workers in the community, those factories mainly work for inner needs of Huaanli; the third one is the retail business, including food, groceries, clothing and other individual business. This ranges from store owners to street vendors. These vendor commercial activities could provide certain job opportunities for rural migrants because obtaining a stable job in the city would be difficult for most of them.<sup>22</sup> Whether in any form of business, their livelihoods are highly bound to the existence of the community.

Nevertheless, like the challenge of most Chinese urban villages, Huaanli will ultimately face redevelopment in the future, the 'informal' will transition to 'formal', and the residents have to face the problem of finding another place to live. Predictably, with the development of cities and the evolution of urban villages in cities, such affordable housing resources will continue to face decline and the increasing living expenditure may become a serious obstacle for migrants to stay in their host cities.

## CONCLUSION

Overall, the contemporary urban space is dominated by its creators. This group mainly consist of people who are in control of authority, capital and professional knowledge. They believe spaces are designable and manageable. The extreme rational of planning and the organization of space from centralized power bears down on urban village society with significant force, not only as a political ideology but as a spatial practice facilitated by technology. In this process, modern urban planning has

become an unconscious social discipline for the city's inhabitants and has shaped their daily reality, whether it is big scale like airports and theme parks or small scale like theatres and shopping malls, each place will privilege some activities and restrict others.<sup>23</sup> It can be argued that this approach intensifies social hierarchies and economic inequalities. More importantly, this trend may dictate the direction of architecture, and urban study barely gives a clear reflection on the practice of existing spaces with which to direct further research.

Therefore, the characteristics of a highly self-built and self-organized community made the urban village a valuable example of bottom-up urbanization in contemporary Chinese cities. According to cases of Baishizhou and Huaanli urban villages, it is demonstrated that despite the absence of professional planning and design, the urban village has not fallen into disorder and chaos condition, but has instead developed a unique ecosystem that is distinguished from the regular urban environment. Mostly, there are no strict restrictions on how the architectural space of urban villages should be utilized, so the ordinary residents can not only pass through or participate in this area, they possibly change and create spaces themselves too. It reflects the right to the city of ordinary people to some extent. Furthermore, it is usually more efficient to respond to the needs of individuals in the urban village space since it does not require permissions and decisions from government sectors. The formal urban space may benefit from its flexibility and resilience.

From a long-term perspective, this paper argues the way of demolition-based urban village redevelopment. This practice approach would be devastating for both the right to live in a city for migrants and urban economies that rely on labour-intensive industries. Essentially, the urban village is not only a spatial problem for architects and planners but also a manifestation of social problems reflected in the physical world. When architects and planners take “design” and “planning” as solutions to solve urban space problems but neglect consider sociological implications, there are a variety of ongoing and future issues that may be largely overlooked by them. This may result in some disadvantaged groups being excluded by cities. Thus, redeveloping the urban village requires more comprehensive methods and multidisciplinary cooperation.

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# INFRASTRUCTURE: EXPLORING THE URBAN AND ARCHITECTURAL DESIGN OF SMALL-SCALE COMMUNITY INFRASTRUCTURE HUBS IN CENTRAL JAVA

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## INTRODUCTION

This paper explores the urban and architectural implications of the provision of a network of small-scale decentralised community infrastructure hubs in Central Java, Indonesia.

Working from previous studies, the paper identifies critical infrastructure challenges in Central Java, specifically a series of critical interchange points between the high-volume high-speed intercity road infrastructure, and the small-scale local peri-urban ‘desakota’ landscape of Central Java, between Magelang, Yogyakarta and Surakarta that is unsuited for traditional logistics.

In response, a number of top-down conventional infrastructural solutions to this challenge have been proposed. These include the implementation of large-scale manufacturing and logistics hubs on the periphery of cities, and the upgrading of local/rural road networks to accommodate decentralised industrialisation and development. The island of Java, and Central Java in particular is home to a highly specific form of fine grain rural-urbanism, described as a desakota. These solutions would have a dramatic and negative impact on the existing form of desakota urbanisation in the region.

In contrast to large scale and hard infrastructural solutions, this paper will explore the implementation of a distributed network of architectural scale intermodal logistics interchanges located at key nodes in urban fabric that facilitate transition from existing local road networks to intercity highways, providing access to national and international markets for communities within desakota environments serviced by existing small roads, lanes and tracks. The ambition of this approach is to develop architectural prototypes for logistics hubs that provide economic uplift to communities, while limiting damage to this unique form of metropolis.

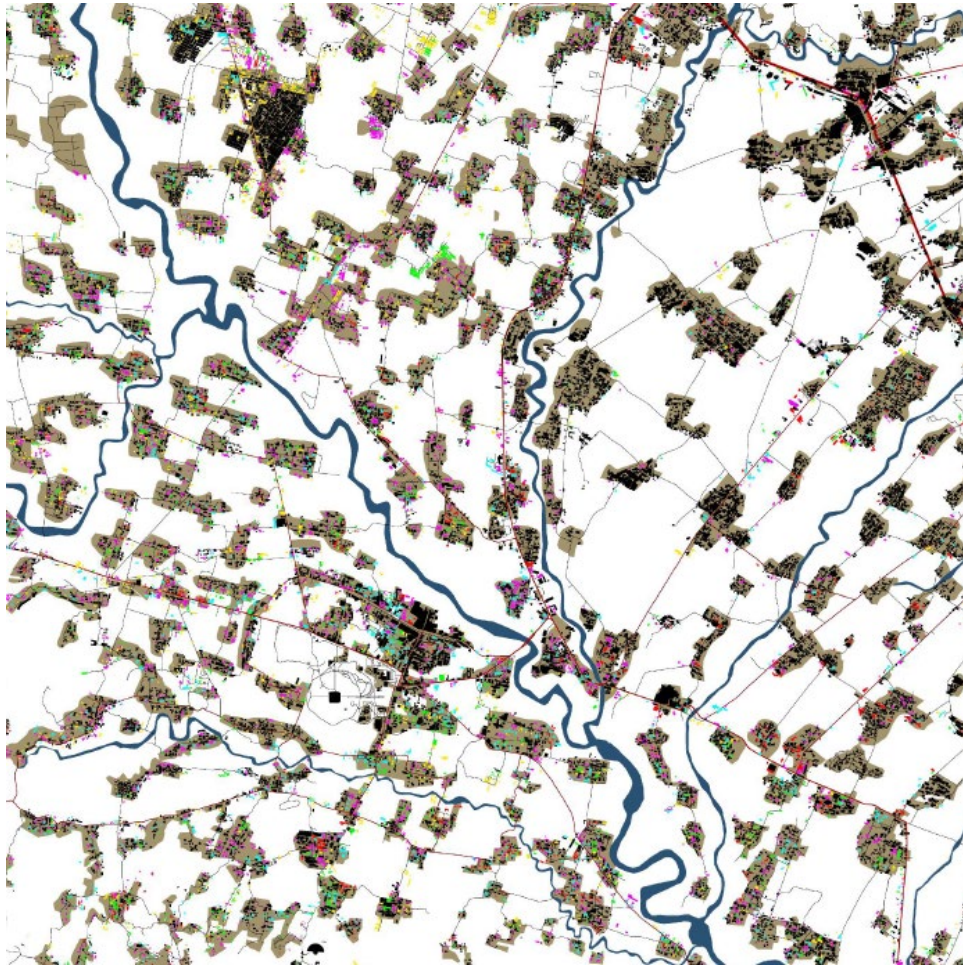
Indonesia is the 4th most populous country in the world.<sup>1</sup> Java, one of the islands in the Indonesian archipelago is the most populous island in the world.<sup>2</sup> Java is home to the capital of Indonesia, and 7 of the 10 most populous cities in Indonesia.<sup>3</sup> 56.7% of Indonesians live on Java. With a population of approximately 145 million, if it were a country, it would still be in the world’s top 10 – with more people than Russia. As an average across the island, it is extremely dense. With a population density of approximate 1000 people per km<sup>2</sup>, it is twice the density of Melbourne.<sup>4</sup>

This is astonishing when we consider that a substantial portion of the island’s landmass is mountainous, and or subject to volcanic hazards. The island is home to a unique form of rural-urban system that geographer Terry McGee describes as ‘Desakota’ – a term that combines the words for village & town in Bahasa. This term describes the in between condition between small, detached



villages and the consolidated areas of cities. This condition is most pronounced in rapidly urbanising countries where peri-urban sprawl extends out to absorb villages – such as has been seen in several of the cities in China’s Pearl River Delta.<sup>5</sup>

In Java there is an extraordinary consistency to the level of density across the island. A patchwork of small dense villages are spread evenly within walking distance of one another. Urbanisation has taken place in a radically different way to other emerging economies. Growth and industrialisation takes place along linear corridors, loosely following the filigree of rivers running down from mountains and between green corridors of agricultural and woodland. These fingers of urbanisation form a distinctive pattern in the landscape that resists centralisation and consolidation.



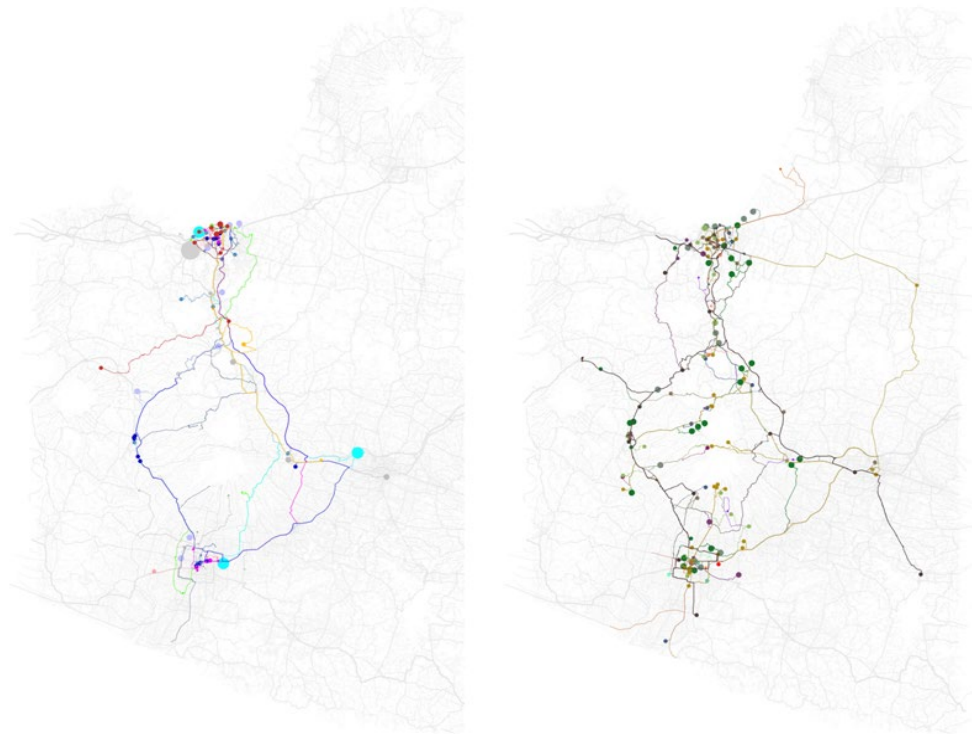
*Figure 1: Mapping the footprint of small villages in Central Java’s desakota*

While the urban population has steadily increased over the last 30 years, it has not exploded at the same rate as was seen in places like China.<sup>6</sup> Instead, there has been a tendency towards urbanisation in place. This has been in part fuelled by the rapid uptake of digital technologies. Connectivity to cell phone and internet networks in rural Java is superior metropolitan Australia for example.<sup>7</sup> While the major cities have consolidated in their cores, the consequence of this urban morphology is that cities bleed out at their edges, seamlessly stitching into the island wide patchwork to the extent that is often unclear where the city begins and ends. If urbanity is defined in part by the proximity of people and given the ubiquitous nature of this condition on Java, it is reasonable to understand the island as a continuous urban-rural system, or decentralised metropolis.



## INDUSTRIALISATION IN CENTRAL JAVA

Recent work has focused on the region of Central Java. The urban population of Indonesia is approximately 154 million people – around 56% percent of the total population live in cities.<sup>8</sup> Central Java by contrast has an urbanisation rate of 48%, lower the national average and the lowest rate of any of provinces on Java.<sup>9</sup> More than half the population of the region live outside of cities, distributed in the urban-rural *desakota*. The province has been earmarked by the central government as a location for intensive industrialisation, with the potential for significant foreign investment. However economic development has been focused principally on a large-scale approach or top-down approach, with industrial precincts that are modelled on examples of other emerging economies in the region. The outcome of this has been the development of industrial precincts, such as the Batang Park, located on southern outskirts of Semarang.<sup>10</sup> These kinds of developments invariably require massive road, and other hard infrastructural investment to enable the scale of production required to justify the massive concentration of industrial production in a single location. The trans Java toll road, which connects the length of the island, is a core infrastructural spine along which many of the future infrastructure precincts are planned, however much of the island's population is not served by this road.



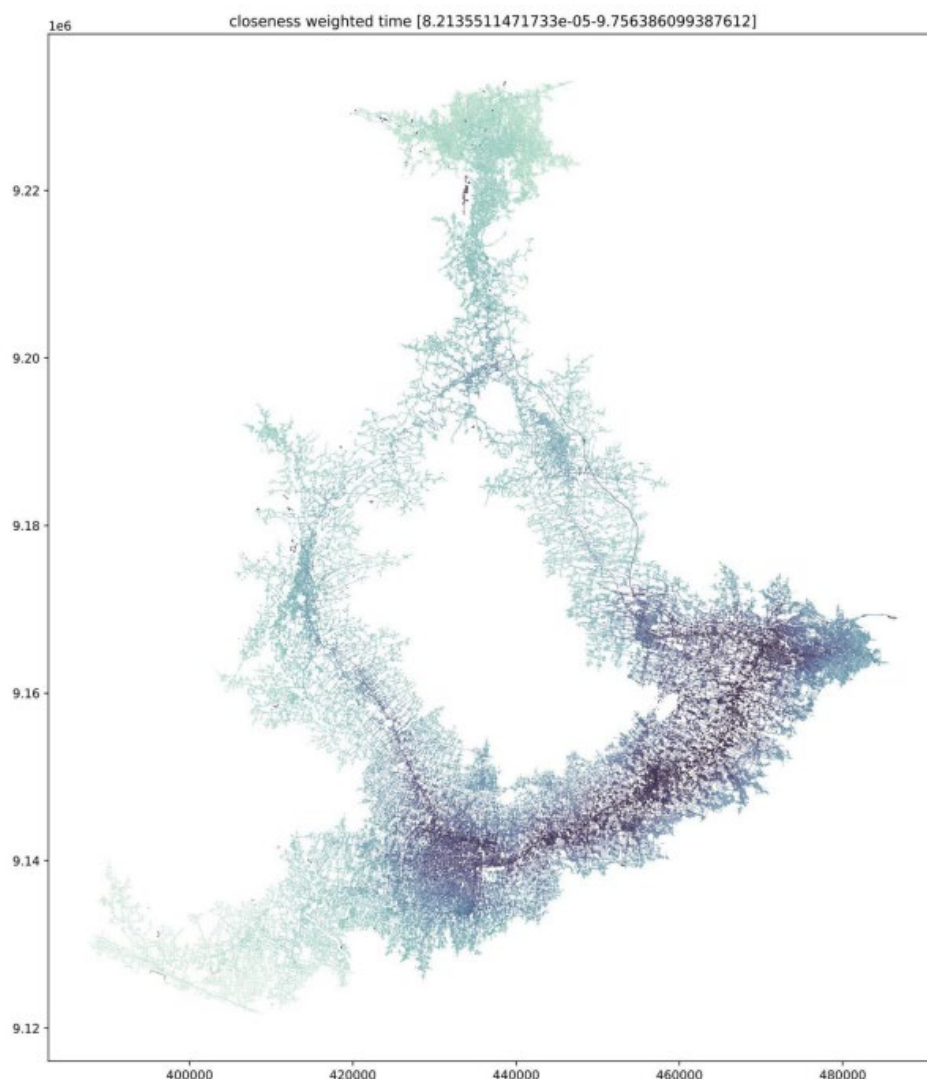
*Figure 2: Infrastructural requirements of large footprint global development (left) compared to small footprint local development (right).*

An example of this is the southern areas of Central Java – in particular Yogyakarta, which is a popular tourist destination but is not served by a major toll road. At present, a toll road is being planned to connect Yogyakarta either side of Mt Merapi.<sup>11</sup> Doubtless this will provide new opportunities for industrialisation, however by itself it is limited in its capacity to service rural-urban industries.

In 2021 RMIT Architecture conducted an analysis of approximately 400 commercial and institutional sites located around Central Java. These sites were loosely categorised into large scale global program and small-scale local program. The analysis focused on what we described as the accessibility profile

of these programs – how far goods produced and consumed need to travel to and from the site. Likewise, how far users of the site needed to travel (including staff, visitors, students etc). This indicates that large footprint, global program was incredibly concentrated around major centres, almost only using major infrastructural corridors. By contrast the small-scale local programs were incredibly distributed, serving the highly decentralised urban-rural population.

A computational analysis of the region's road network conducted by the Dynamic Cities Foundation and The Sino-French Institute in Engineering at Shanghai University (taking into account road and vehicle speeds & congestion) indicates the existence of a regional loop with a high degree of fine grain connectivity. This diagram illustrates connectivity within a one-hour travel envelope, the darker colours indicating closer proximity.<sup>12</sup> Interestingly this modelling follows an almost identical path to the as of yet unbuilt Yogyakarta extension to the toll road. Clearly mobility is possible within this network – the question remains as to what extent this network is capable of supporting industrial development.



*Figure 3: Mapping of possible journey's within one hour in Central Java (Neville Mars & Fabien Pfaender – Dynamic Cities Foundation & UTSEUS Shanghai University)*

Building upon this analysis, in 2022 RMIT Architecture conducted a close analysis of the capacity of the road network at key points. To do this we first developed a taxonomy of the kinds of goods

transportation vehicles currently operating in Central Java. This included the motor scooter, single axle truck or unimog, double axil truck, triple axil truck and b-double semi-trailer. These types were compared in terms of the carrying capacity. An assessment was made as to the categories of roads that were capable of supporting these vehicle types. Focusing on a series of small cities and towns in southern central Java, we understand the capacity for the road network to handle larger vehicles, and therefore large volumes of freight. In Yogyakarta there is no access for the largest vehicles, and only 14% of the area's roads are reachable by triple & 3-axle trucks. In Surakarta only 7% of roads that are accessible to large trucks. In Magelang its only 14% that is accessible to large trucks. In Condongcatur, very large trucks run through the city, but around 90% of the town is inaccessible to them.

A triple axel truck is required to move shipping containers, the standard unit which gives access to international trade without requiring a third-party logistics facility. Without this capacity, it is extremely difficult to move goods at scale. What this indicates is that regardless of whether the toll road exists, and despite very high levels of point-to-point connectivity, only a tiny fraction of the region's towns have immediate access to transit infrastructure that would allow the movement of goods globally and at an industrial scale. Traditional transport infrastructure project can provide international connections to single point urban developments, to provide access to the majority of the population would require urban migration on a massive scale, or the radical readjustment of the desakota landscape. This would be a social and ecological catastrophe.

## **SPECULATIVE TYPOLOGIES**

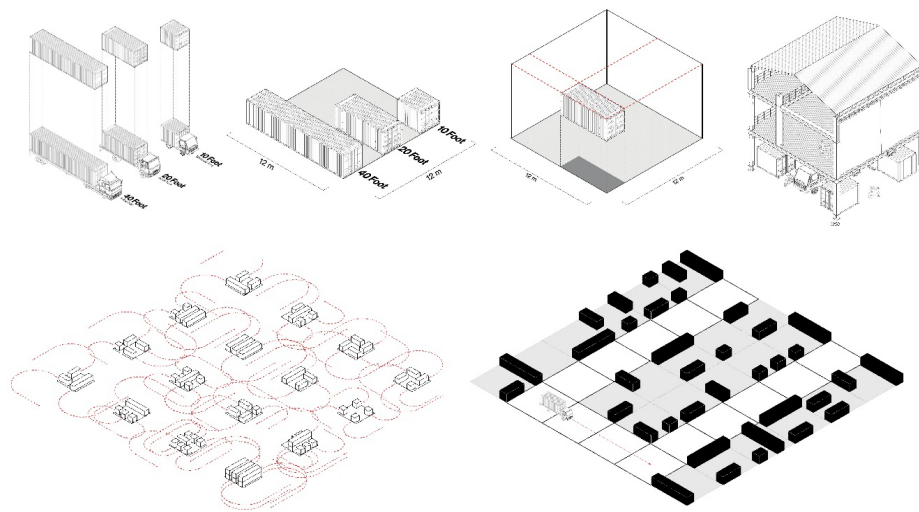
In 2021 the researchers developed a Master of Architecture design studio at RMIT that tasked teams of students with developing novel architectural typologies that would provide access to national and international markets for goods produces within identified Desakota environments in Central Java. In the context of the studio brief this market access is facilitated by enabling logistics transition from small-scale vehicles including, cargo bikes, mopeds and 'unimogs' to large scale vehicles such as three-axle and B-double trucks, capable of traversing the national highway system.

Four key sites in Yogyakarta, Muntilan, Kartasura and Sentolo were selected from a list of nodal sites that maximized interface between local roads and national highways identified in earlier research by Neville Mars and Fabien Pfaender. Each student team then developed radically different approaches to both the vehicle scale transition logistics problem and the potential for social occupation of these new types of buildings.

The first proposal that we will examine was on a site currently hosting an intercity bus terminal in Kartasura, a sub-district of the Sukoharjo Regency and a satellite city to Surakarta. The design solution for this site developed a 'slow load' logistics strategy that aimed to maximize economic and social benefit to the community, rather than emphasizing through-put of shipping containers. The key to the strategy was a simple logistics solution where trucks arrive with empty shipping containers, hoist them off and leave them on the site to be slowly filled. This strategy concentrated economic and social activity at the logistics site, rather than suggesting that the facility would catalyse activity within the wider precinct, arguing that the resulting larger facility produced more social and economic opportunities that would emerge at this larger scale rather than smaller scale distributed facilities.

The proposed system is based on a 12 by 12-meter grid, derived from the dimensions of standard shipping containers, which it then in turn informs the hoist system, which is deployed across the site, allowing for vehicle turning and access. Vehicle access within the site is differentiated by vehicle size across various times of the day. Small vehicles (cargo bikes, mopeds and 'unimogs') have access throughout the entire site, 24 hours a day. While large vehicles can access the perimeter of the site and

the bus station in the north of the site 24 hours a day, and the central zone for loading and unloading only at night.



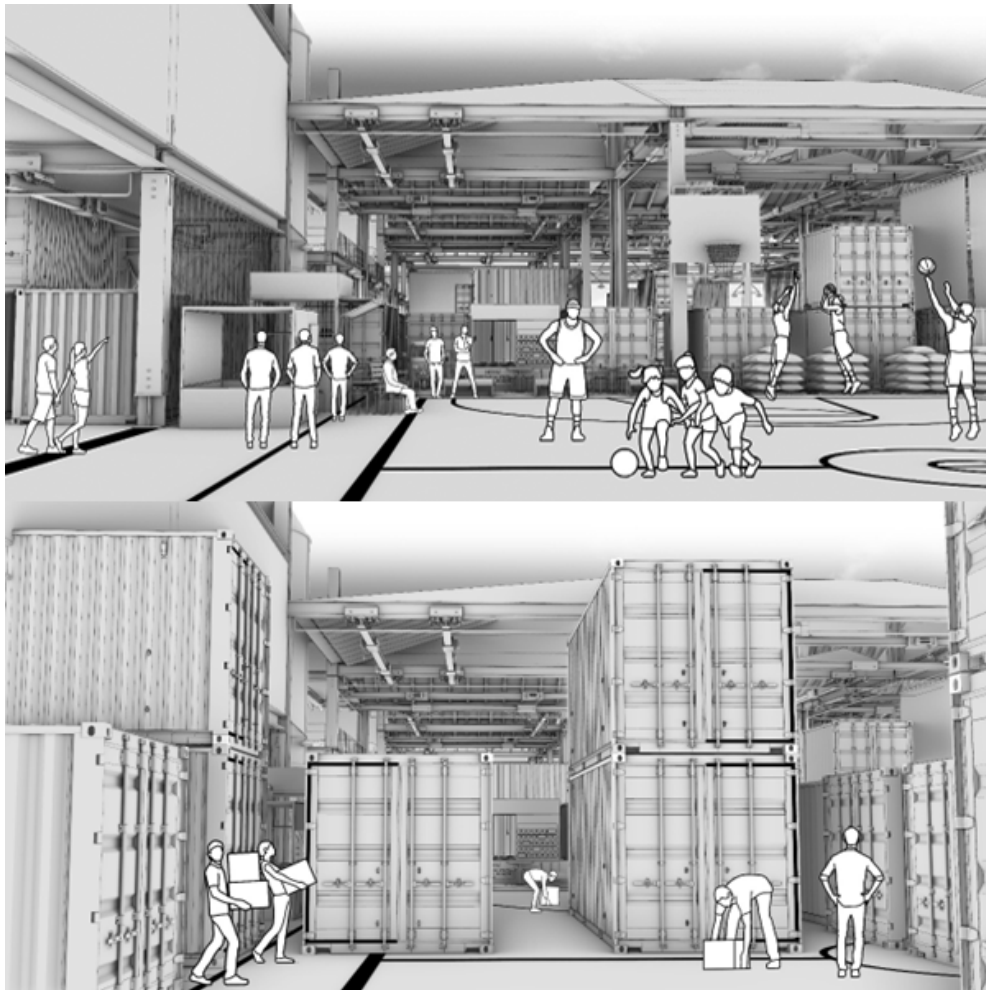
*Figure 4. Kertasura 12x12 logistics system diagrams*

Figure 5 illustrates the progressive filling of shipping containers on the site. But more importantly, this alternative animation illustrates the emergence and shifting of voids between shipping containers within the site as they progressively fill and depart the site. The emergence of these voids suggests that there are areas within the site that have opportunities for social occupation which shift over time. The design proposal also suggested that the number, size, and locations of these voids vary at different times of the year, reflecting seasonal harvest of rice and other seasonal production within the broader environment, providing different amounts of opportunity for social and economic activation throughout the year.



*Figure 5. Mapping incremental site occupation at Kartasura*

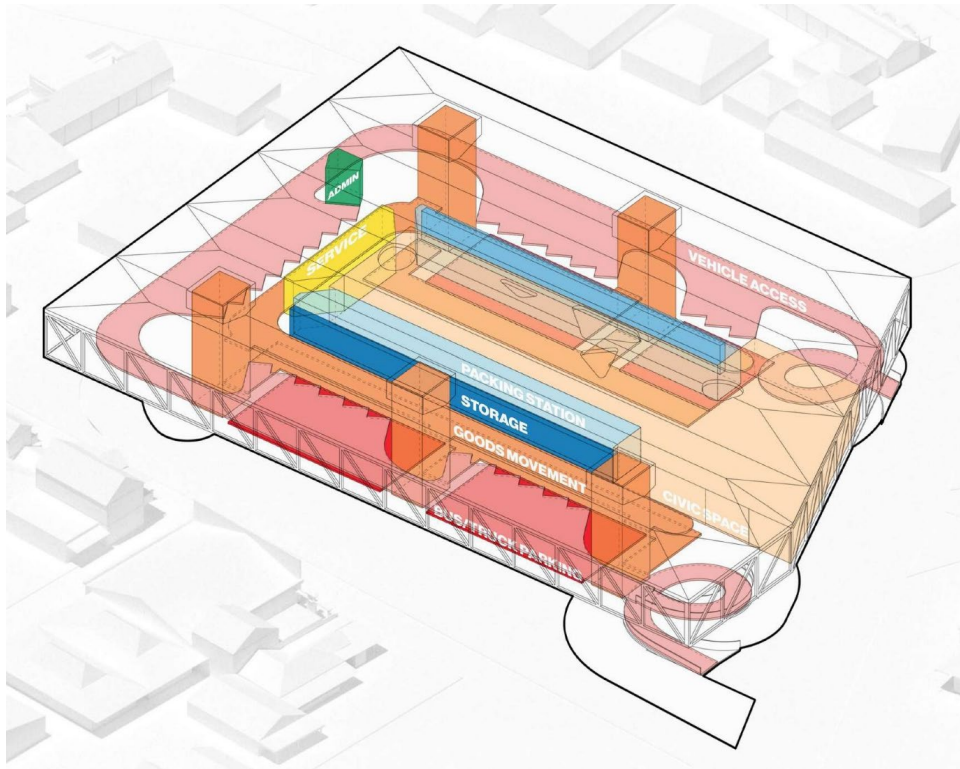
Existing building typologies within and around the site were examined, identifying a range of vernacular roof forms. These vernacular forms were then adapted to produce a catalogue of open sided sheds to provide cover for the shipping container hoisting and packing system. This catalogue of sheds was then deployed across the site producing a large scale low height covered space across the majority of the site. The use of existing buildings as the source material for sub-components of the proposed much larger scale aggregate-like building, facilitates the use of locally available skills and materials during construction, maximizes economic benefit for the local community, both during development and operation of the facility. Occupation of the site was investigated through speculative perspective views (Figure 6), both at low density when there's minimum shipping containers on site, but also in high density conditions where the shipping containers have started to fill these areas, illustrating the temporal emergence and social occupation of voids within the site.



*Figure 6. Kartasura, programable void illustrating low and high container occupancy*

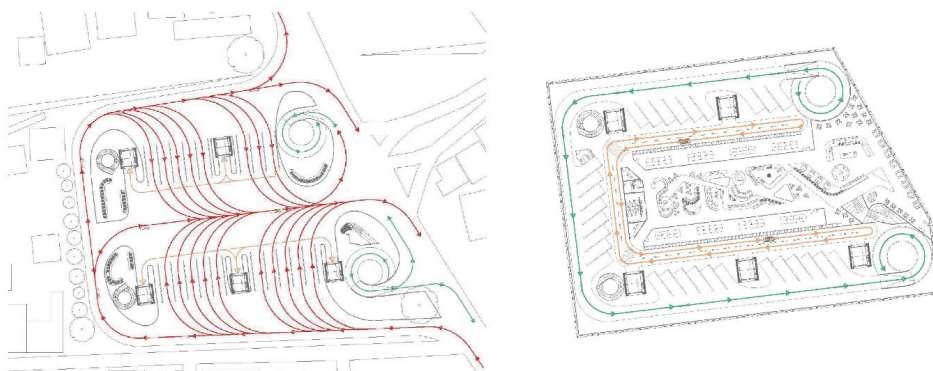
The second student group investigated a site in Sentolo that was significantly smaller than the other three sites investigated as part of this study. In contrast to the proposal for Kartasura described above, this proposal focused on maximizing throughput of logistics while facilitating the production of a new type of social and economic space within the facility. The limited site area forced this group to critically engage with the turning circles for large vehicles, as one of the largest constraints for this type of building. The design solution for the interface between small vehicles and large vehicles in this case proposed large format lifts to move goods and people between bus and truck turning, parking, and loading on the ground floor; and the small-scale vehicles and pedestrian waiting areas located on the upper level, as illustrated in Figure 7 below. This allows the ground floor to be entirely dedicated to large vehicles movement; with bus arrivals and departures occurring during the day while B-double trucks and three-axle trucks, load, and unload shipping containers at night.





*Figure 7. Sentolo, lift transfer strategy*

On the upper level, goods and people arrive via small vehicles that are separated from the large vehicles on the lower level increasing safety and amenity. People congregate in the central area, providing commercial and social opportunities on the elevated covered deck, while goods are dropped off, sorted, palletised, and moved by forklift around the perimeter to the perimeter oversized lifts, where they are transported to the ground level heavy vehicle zone. Loading and unloading is bidirectional and can occur simultaneously, maximizing the throughput of the facility and its economic catalysing effect for the surrounding area.



*Figure 8. Sentolo, Vehicle Movement Strategy*

The third group investigated three separate logistics interchange conditions around the perimeter of Yogyakarta. The site in the west focused on the interchange of rail and highway systems.; to the east, looked at the interface of air freight logistics and local road networks; and to the south, investigated the transformation of a large-scale national bus terminal to integrate with a logistics interchange node.

The most interesting of these projects was the western node, where the group identified a range of economic activities in the surrounding precinct that would benefit from access to wider markets, and then identified the built infrastructure required to add value to these activities prior to engagement with national and international markets.

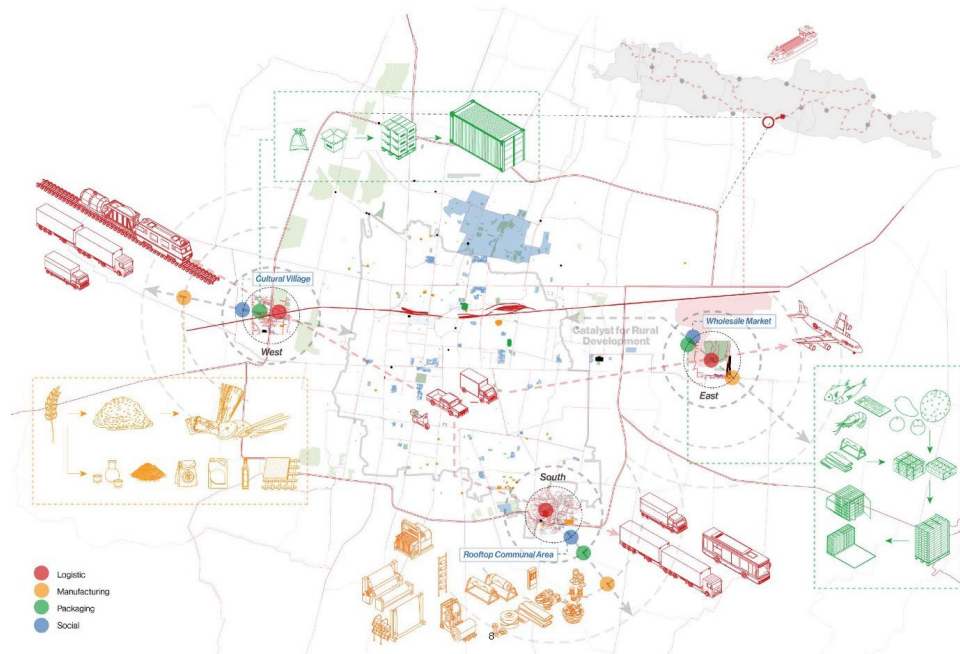


Figure 9. Yogyakarta site and logistics type mapping

Proposed new infrastructural elements included a gantry crane to move shipping containers from the rail network, space for unloading and loading containers, rice processing and packaging facilities, which were then deployed on site as indicated as the first phase of development in this precinct. Secondary processing was proposed in stage two, including processed rice warehousing, preparation of packaged foods, fabrication and office spaces providing services to the larger scale businesses. From observation of the small-scale economic activity within existing *desakota* environments, a final layer of occupation identified that interstitial spaces between the formal and large-scale activities, would provide opportunities for informal economic activity, including food selling, small repair workshops and other types of micro-enterprise that provide social opportunity within the precinct. This layering of macro and micro enterprise allows the facility to provide both economic and social benefit within the rapidly growing peri-urban environment that is currently under-serviced within both the perimeter of Yogyakarta and the wider *desakota* environment.

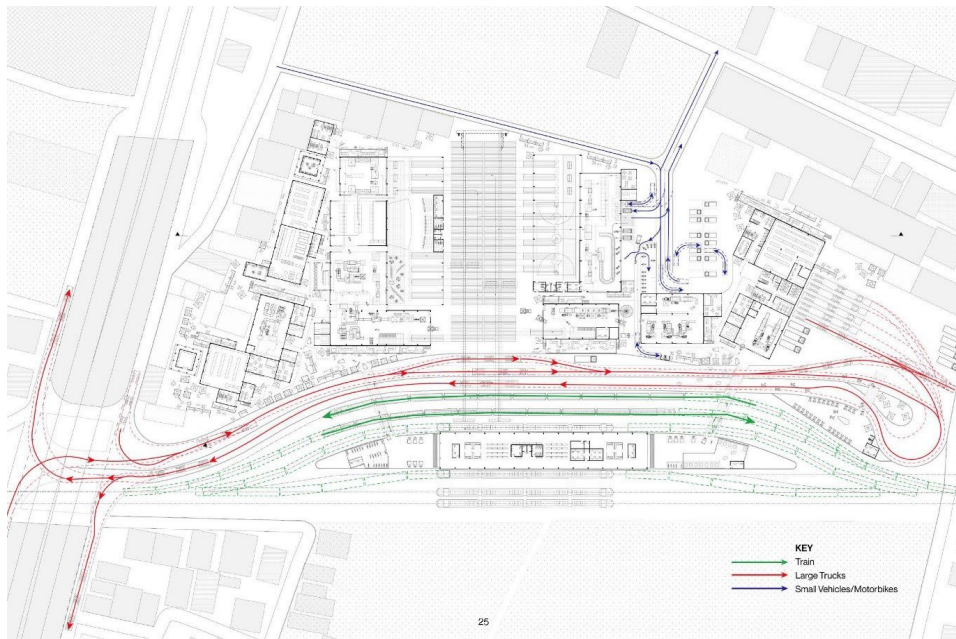


Figure 10. Yogakata West Node site plan & vehicle movement mapping.

## CONCLUSION

Central Java is home to a unique urban-rural system, that has proved remarkably resilient. Industrialisation is an inevitable component of economic development for the region, however the *desakota* is unsuited to large scale centralised urban industrialisation, as it is typically understood. However, the region's intricate network of tracks, lanes and roads, servicing agricultural and small industrial production can be adapted for access to global markets through the implementation of small-scale decentralised logistics hubs that efficiently connect the hinterland with the larger infrastructure road network.

The proposals explored above are intended to be understood as a suite of prototypes – preliminary designs that explore the potential for these sites to play host to a small-scale logistics interchange hub. The approaches are highly specific and carefully wrought speculations on the brief, with a differing interests and ambitions. The diversity of these responses suggest that the implementation of these hubs would support the development of secondary, socio-cultural benefits, such as community facilities, small-scale commerce, and innovative approaches to architecture and construction in the Indonesian vernacular.

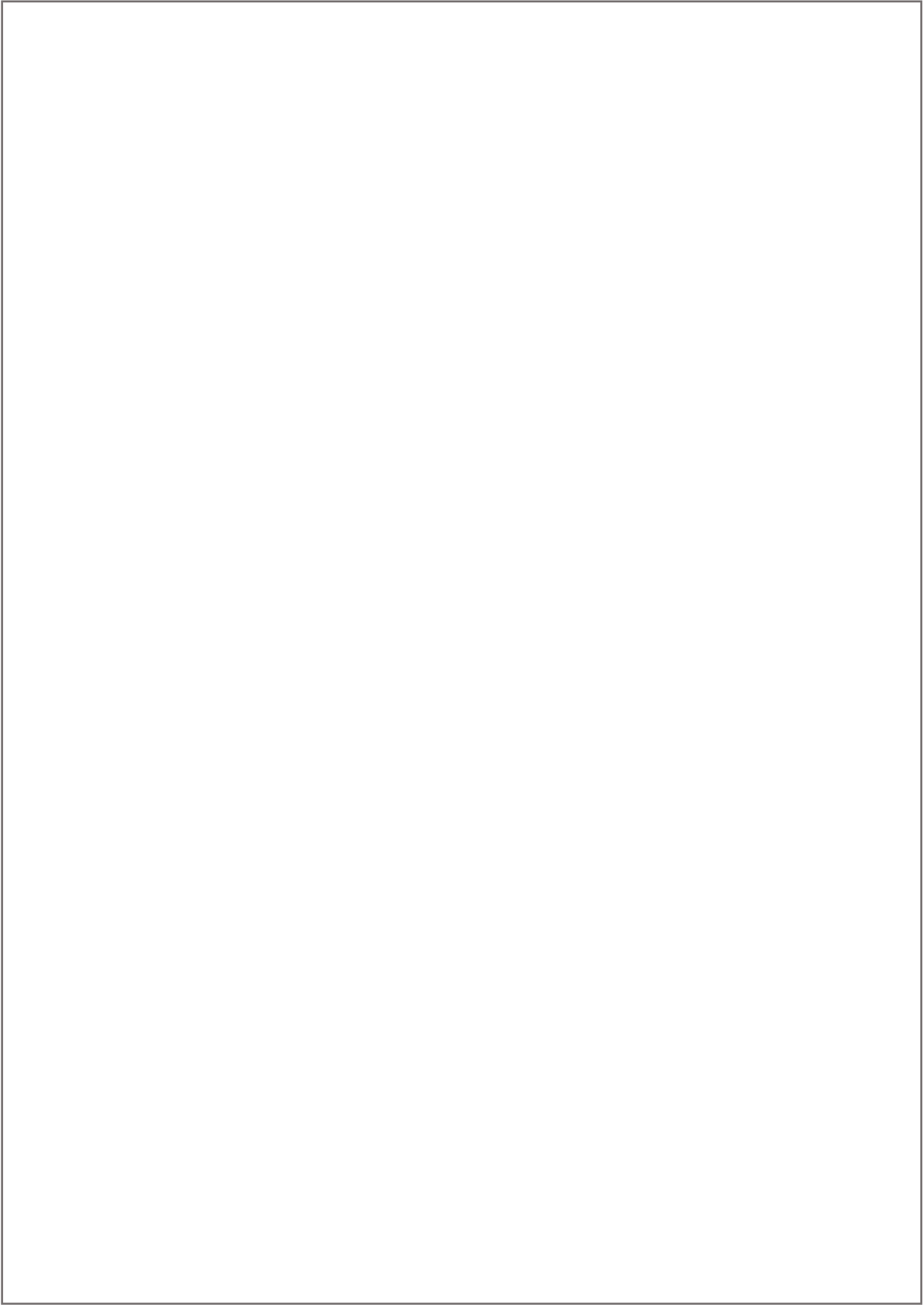
Ultimately the ambition of this project is to develop a new model for infrastructural development in Indonesia. While it is imperative that an economic modelling of the cost and benefit of these proposals is carried out, what this project suggests is that development at the scale of architecture has the potential to provide a low-cost infrastructural solution to developing rural-urban environments.

## NOTES

- <sup>1</sup>“List of countries and dependencies by population,” Wikipedia, accessed August 10, 2022, [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_and\\_dependencies\\_by\\_population](https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_population)
- <sup>2</sup>“Java,” Wikipedia, accessed August 10, 2022, <https://en.wikipedia.org/wiki/Java>
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- <sup>4</sup>“Melbourne,” Wikipedia, accessed August 10, 2022, <https://en.wikipedia.org/wiki/Melbourne>
- <sup>5</sup>Terry McGee. “The Emergence of Desakota Regions in Asia: Expanding a Hypothesis.” *Implosions /Explosions* (2021): 121–37. doi: 10.1515/9783868598933-010.
- <sup>6</sup>“Urbanization in Indonesia,” Statista, accessed August 10, 2022, <https://www.statista.com/statistics/455835/urbanization-in-indonesia/#:~:text=Urbanization%20in%20Indonesia%202021&text=In%202021%2C%2057.29%20percent%20of,in%20urban%20areas%20and%20cities.&text=In%202010%2C%2051%20percent%20of,population%20lived%20in%20rural%20areas>.
- <sup>7</sup>“List of Countries by Smartphone Penetration,” Wikipedia, accessed August 10, 2022, [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_smartphone\\_penetration](https://en.wikipedia.org/wiki/List_of_countries_by_smartphone_penetration)
- <sup>8</sup>“Urbanization in Indonesia,” Statista, accessed August 10, 2022, <https://www.statista.com/statistics/455835/urbanization-in-indonesia/#:~:text=Urbanization%20in%20Indonesia%202021&text=In%202021%2C%2057.29%20percent%20of,in%20urban%20areas%20and%20cities.&text=In%202010%2C%2051%20percent%20of,population%20lived%20in%20rural%20areas>.
- <sup>9</sup>Wiwandari Handayani. “Rural-Urban Transition in Central Java: Population and Economic Structural Changes Based on Cluster Analysis” *Land* 2, no. 3 (2013): 419–436. doi: 10.3390/land2030419.
- <sup>10</sup>Dzulfiqar Rahman, “What you need to know about Batang industrial zone development,” *The Jakarta Post*, accessed August 10, 2022, <https://www.thejakartapost.com/news/2020/07/14/what-you-need-to-know-about-batang-industrial-zone-development.html>.
- <sup>11</sup>“Indonesian Toll Road Project Construction,” *World Highways*, accessed August 10, 2022, <https://www.worldhighways.com/wh10/news/indonesian-toll-road-project-construction>
- <sup>12</sup>Neville Mars and Fabian Pfaender. “The Java Model — a time-weighted network analysis of the desakota,” *The Evolving Scholar | IFoU 14th Edition* (2021). doi: 10.24404/6155dbc224a29800097051ff

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