Cities in a Changing World

Questions of Culture, Climate and Design

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Cities in a Changing World: Questions of Culture, Climate and Design Online

INTRODUCTION

Cities in a Changing World: Questions of Culture, Climate and Design Online

This proceedings publication is the outcome of the conference, Cities in a Changing World: Questions of Culture, Climate and Design Online, held in June 2021. It was coordinated the research group AMPS and City Tech, CUNY in New York.

A conference organised prior to an international pandemic found a prescience in setting a theme focused on cities and change. The widely observed urbanisation of the human population, despite the exposure of cities to climate impacts, places the city at the core of the human condition in our time, requiring analysis and investigation to identify and address significant social, economic, and environmental challenges that are compounding due to the intense pressures of the expansion and increasing displacement/migration of urban populations. The COVID-19 pandemic raised the stakes, provoking fundamental reconsideration of cities and the benefits but also dangers of density.

The theme of the conference, Cities in a Changing World, allowed scholars from over 30 countries to explore the nature of cities and countryside from the profound perspective of global disruption and abrupt change in patterns of daily life. In many cases, these scholars found the "new" normal exasperating ongoing challenges of climate degradation, social fragmentation and injustice, inequity and hardship. Others observed and documented creative adaptations that provide hope for critical analysis and constructive change for increased social equity and awareness/engagement with the environment supporting sustainable initiatives. Questions of the relationship of culture, climate, and design prompted scholarly investigation of place, heritage, climatic and geographic adaptation in the emerging scholarship of place-based sustainability.

This conference and the papers collected in these proceedings provide a rich exploration of cities in cultural, climatic, and geographic contexts. Theory, history, and design, separately or in combination, provide the basis for the presentation of diverse ideas that moves the scholarship of Cities in a Changing World forward.

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INTRODUCTION

This paper challenges current understandings of the role of the city in diplomacy. Traditionally scholars have employed a nation-centered approach to the study of foreign policy, but historically cities have formed an important part of national strategies as well as developing their own public diplomacy agenda. In particular, cities have used international events to promote their image as a distinct player in world's affairs. Using the New York World's Fair of 1939/40 as a case study, this paper will establish its impact on the city's rise to the international stage. It will challenge traditionalist histories of the World's Fair by arguing that its uniquely global nature remolded a Great Depression stricken New York into one of the most important sites of international diplomacy of the twentieth century. By analyzing how New York tried to influence foreign publics' perceptions of its values and identity, this paper will establish how the city developed its overall diplomatic strategy and came to acquire a distinct reputation and role from Washington DC in wider US foreign policy. The story of the World's Fair is also an opportunity to explore the impact of diplomacy on the urban and fill some of the gaps in the history of New York, whose geographic and cultural landscape was irrevocably altered by the event and its aftermath. The Fair was built on a former vast ash damp in the Corona neighborhood in Queens. The works significantly changed the topography of the area and its cultural and social landscape. It was, then, turned into a park when the exhibition closed. Present-day Flushing Meadows-Corona Park still retains much of its 1939 layout. This paper will ultimately provide an original framework to rethink the historical significance of cities in the international system.

CITY DIPLOMACY

For the first time in history, the majority of the world's population now lives in cities.[1] This growing trend has not only transformed the urban landscape but the rise of "world cities" or "global cities" as competitive and cosmopolitan economic and cultural centers has had a significant impact on the international system too.[2] The emerging literature has, however, thus far, focused on the role cities are playing in addressing twenty-first century global and transnational challenges, such as climate change, terrorism and pandemics. Little work has been done on the historical origins and evolution of city diplomacy.[3] This is because the city has always been considered as a subnational actor. Following the 1648 Peace of Westphalia, the international community established that the state is the only entity

with the financial and material resources and legal mandate to pursue foreign policy.[4] Yet cities are the oldest political institutions. And city diplomacy is as old as the city itself. From the Greek Polis of the fifth century BC, to the Italian city-states (Signorie) of the Medieval and Renaissance periods to nineteenth century Vienna, cities have acted as centers for social, economic and political transformation and innovation and cultural interchange.[5] In the realm of soft power especially, through sporting and cultural events, educational institutions, such as: museums, galleries and theatres; representation activities: such as broadcasting and culinary demonstrations; as well as positive projections of the experience of working and living in the city, cities have been very successful in promoting both local and national interests.[6]

Remembered as one of the most mesmerizing cultural events of the twentieth century, the New York World's Fair of 1939/40 is an excellent historical case study to illustrate the transformative power of public diplomacy. The vast existing literature has predominantly focused on two aspects of the Fair: 1) its support for science and technology; 2) its foreign pavilions. No attention has been paid to its impact on New York city itself.

Why a Fair?

The literature on the short- and long-term benefits of hosting international sports and cultural events, such as the Olympics and World's Fairs, (or Expos, as they are commonly referred to today), is divided. A few scholars, such as Westlund and McAlvanah, have pointed out that often times costs outweigh benefits.[7] Considerable financial investment is necessary to stage these occasions and more frequently than not, over optimistic projections turn into a revenue loss. Moreover, because of the monetary resources required, only a limited number of cities can afford to put forward a successful bid. Cities that are already in strong financial and political positions consolidate their status while the rest is further pushed to the periphery.[8] From a soft power/diplomacy point of view, however, the long term gains offset the potential short-term losses. Hosting a Fair is a unique transformative opportunity for a city. It increases its visibility worldwide, promotes economic growth and often leads to urban development and regeneration. By cooperating with a variety of governments, international organizations, non-governmental entities, NGOs and corporations, the host city has a chance to carve its own place on the international relations scene and develop opportunities for political and economic collaborations.[9] Through the fair's theme, it can also implement a new vision for the future by spotlighting and addressing important issues for the international community; thus, boosting its global prestige as well as its political and cultural identity.[10] At local level, building and hosting a Fair create new jobs, increase international and domestic tourism and generate a lasting legacy. Infrastructures, landmarks, attractions, parks, new commercial and residential areas, all add to visitors and residents' quality of life.[11]

THE NEW YORK WORLD'S FAIR OF 1939-40

The New York World's Fair opened its doors on April 30, 1939. The date coincided with the 150th anniversary of US first president, George Washington's inauguration in New York which was then the nation's capital. It was the second most expensive US world's fair (exceeded only by St Louis in 1904) and the biggest international event since the end of World War I.[12] It took place between two of the twentieth century most catastrophic events: the Great Depression and World War II. Planning had started in 1935, when the New York's financial community led by George McAneny (banker and politician), Grover Whelan (NYC's former police commissioner), and Percy Selden Straus (president of R.H. Macy and Company) had hoped to lift the city out of the Great Depression by replicating the success of Chicago's Century of Progress Exposition of two years earlier and thus, injecting much

needed dollars in the local economy. Their optimistic projections of financial gains persuaded over 120 executives and politicians to create a Fair Corporation whose headquarter was in the newly built Empire State Building.[13]

The site chosen for the Fair was the Corona Dumps in Queens. Immortalized as a "valley of ashes" in F.S. Fitzgerald's 1925 novel the Great Gatsby, the area was owned by the Brooklyn Ash Removal Company. It was a heavily polluted marshland and one of the worst breeding grounds for mosquitos. Yet its location, so close to the center of the city, transport links and extension, made it the ideal place to host what was supposed be the greatest show of the century.[14] New York City's civic authority enthusiastically endorsed the project which was in line with its development plans. Park commissioner Robert Moses, especially, had been dreaming of turning the land into a public park bigger than Manhattan's Central Park since the 1920s. By his own account, he was much more interested in the aftermath of the Fair, than the event itself. "I am waiting for another less dramatic event," he declared, "the night when the Fair closes..in another quarter of a century, old men and women will be telling their grandchildren what the Great Corona Dump looked like in the days of Fitzgerald….and how it all changed overnight."[15] He believed he could modernize and clean up New York City by building highways and public spaces. In 1931, he had led construction of the Grand Central parkway. This had made access to his first state park project: Jones Beach, in Nassau county, easier. It also kickstarted his quest to reclaim the land around the Corona Dumps. Finally, in 1935, with the support of NYC's Mayor Fiorello La Guardia, Moses brokered an agreement with the Fair Corporation. The city would fund the reclamation work in exchange for receiving the land once the Fair was over.[16]

The Fair in Numbers

Work for the largest land reclamation project in the eastern US started in June 1936. In addition to the ash dumps, homes and buildings around Corona east 111th Street were condemned and included in the site. Moses gave residents a 30 days notice to move out. 450 workers on three daily shifts worked to level the ash, create a meadow and two lakes, and divert Flushing river. Infrastructure and construction of pavilions followed. [17] In less than four years, the foul-smelling swamp was transformed into what *Architectural Records* described as the 8th wonder of the modern world[18]. It featured:

-62 miles of roads

-200 budlings

-exhibits by 60 nations and 33 states

-76 concessionaries

-310 places to eat

The Fair Corporation also made a $1.5 million investment into landscaping. By opening day, the park boasted:

-10,000 tress

-2 million shrubs

-400,000 pansies

-500,000 hedge plants

-1 million bulbs

-1.5 million bedding plants

Architect William Delano, famous for having designed some of the most impressive mansions in the Northeast, designed a garden with installations of aquatic plants, sculptures and floral specimen from around the world. This became the Queens Botanical Garden when the Fair closed. It remained in

place until 1964 when works for hosting a new fair began. Many of the trees that had been planted for the 1939 Fair were transplanted in current garden location.[19]

The money to finance this record-breaking project came from different sources. The city of New York invested $26.7 million to carry out the reclamation works and build its permanent pavilion. New York state contributed $6.2 million, and the federal government donated $3 million. Thanks to the Fair's president, Grover Whelan's impressive diplomatic skills, foreign governments contributed over $30 million. This was mostly spent to build their pavilions. The final $27 million came through redeemable bonds, repayable in 1941 at 4% interest. It was agreed among all parties that any profit from the fair would be invested in turning the grounds into a public park to be named Flushing-Meadow Corona Park.[20]

Building the World of Tomorrow

Whereas previous exhibitions had looked at the past to celebrate national achievements, the New York World's Fair of 1939 presented a new utopistic vision of the future where technology and science could make a positive contribution to a safer and more peaceful world. Many Americans blamed technological progress for the job loss of the Great Depression and had lost faith in big business and capitalism. Through the displays, the Fair's organizers wanted to show the public that technology was not the problem, but the solution. In this sense, as historian Robert Rydell, has argued, their aim was not dissimilar from all 1930s Fairs, "to restore popular faith in the vitality of the nation's economic and political system."[21] But New York did not just want to restore faith, it also wanted to introduce a new blueprint for the future where the American way of life was everybody's choice of life because of its ideals and values, and belief in progress, liberty and democracy. Underpinning this would be the strength of American capitalism. In short, an earlier version of what media tycoon, Henry Luce later called the "American century."[22]

New York would be the embodiment of this vision. This would also help in rethinking the role of the city on both the national and international scene. In the 1930s, the American people's perception of New York was far from positive. It was seen as "a highhanded, overpriced and short-stuffed metropolis."[23] The Fair's president, Grover Whelan, made revamping the city's image one of his top priorities. The goal was, he declared, to "portray New York in a true light; to show the world that this is not a cold and indifferent city, but has a warm heart and sympathetic hand."[24] This would not only attract numerous visitors and much needed business, but it would also give New York the opportunity to act as the capital of peace. In light of the escalating tensions in Europe, Whelan hoped that the Fair could become the seat of an international peace conference too where the world powers would develop a peace program. He worked closely with the US State Department to recruit as many foreign countries as possible.[25] Indeed, the Fair's official guide book described the exhibition as a forerunner of the United Nations and an improved version of the League Nations; "the presence of 60 foreign participants proves the Fair a true parliament of the world."[26]

The Future is Urban: Democracity and Futurama

Peace and democracy were reflected in the Fair's architecture too. In the words of New York Mayor Fiorello LaGurdia, "the heart of the Fair" was at the intersection of Constitution Mall and Rainbow Avenue where the Four Freedoms statues stood.[27] Created by Leo Friedlander, they represented the four basic human rights, as guaranteed by the American Constitution: Freedom of Speech, Freedom of Religion, Freedom of Press, and Freedom of Assembly. The theme would be later picked up by President Franklin D. Roosevelt in his Four Freedoms speech in January 1941 to outline the U.S. role in helping allies already engaged in WWII.[28]

From the statues' location, visitors would get a bird's eye view of the Fair's site. This was organized around seven themed zones: Transportation, Communication, Business/Consumer, International Foods, Amusement, and International Government where all foreign pavilions were built. The Theme Center acted like a hub and linked all the zones. At its center were the Trylon and the Perisphere. Designed by Wallace K. Harrison and Jacquies-Andre Fouilhoux, these two futurist structures were taller than any other buildings on the Fair's site and could be seen from the Bronx and Manhattan.[29] Inside the Perisphere, from two rotating balconies, called "the Magic Carpet", fairgoers could watch one of the most popular attractions of the Fair: Democracity. This was a 6 minutes video that recreated the Fair's organizers' view of the ideal city of the future. A green, crime-free place where quality of life was guaranteed by integrating the best the urban, rural, industrial and business world had to offer and where men and women from all socio-economic and ethnic backgrounds could live together in peace.[30]

The most popular exhibition at the Fair was Futurama hosted by General Motors. It perfectly captured the Fair's message that technology could deliver a better future and that this future was urban. Created by Del Geddes, it portrayed an optimistic vision of life in 1960. A moving sound-chair took visitors through a large-scale model that depicted a clean, open city surrounded by green spaces and connected by automated highways for semi-automated vehicles.[31] *Business Week* described the exhibition as: "a tourist's paradise.. which unfolds a prophecy of cities, towns, and countrysides served by a comprehensive road system."[32]

These two utopistic visions, Democracity and Futurama, greatly contrasted with the chaos in Europe and sent a message to the international community that the world of tomorrow was America and the city of tomorrow was New York.

CONCLUSION: The Fair's Legacy

The first season of the fair closed on October 31, 1930. A second season took place the following year between May and October, with a slightly modified theme that focused more on peace due to the outbreak of WWII in Europe.[33] Gallup poll reported that over 85% of fairgoers enjoyed the show.[34] Over 160 US and international magazines, 731 radio programs and 12 million column inches in newspapers reported enthusiastically about the Fair.[35] Yet despite the positive publicity, the Fair failed to turn a profit. Only 25 million visitors of the expected 50 million turned up. Nonetheless, despite the financial losses, the Fair was undoubtedly an early successful example of city branding. From a soft power point of view, New York benefitted immensely from hosting the event and repaired its Great Depression-tarnished reputation. Its image went from dirty and corrupted capital of crime to world capital of prosperity and peace. The Fair positioned it to become the permanent seat of the United Nations. A place in Connecticut had originally been chosen for the new world organization, but as Whelan put it, New York had become "the center of information."[36] It made perfect sense for world leaders to gather in this cosmopolitan hub to protect and preserve democracy. Indeed, the New York city building served as its temporary home from 1946 to 1950. The city did not incur financial losses because when the Fair corporation declared bankruptcy, New York enforced its contractual rights to claim income from admission, rents and concessions.[37] Overall, economic benefits and stimulus were estimated to be $1 billion from hosting the Fair. Moreover, diplomacy had an incredibly positive impact on the urban. The city benefitted from numerous infrastructure projects. There were major improvements to transport. Flushing Meadow Corona Park was built from nothing. It is now the fourth largest public park in New York City with a total area of almost 900 acres. It has become an important support for the local economy. It retains much of the layout from the 1939 World's Fair. Its attractions include the USTA Billie Jean King National Tennis Center, the current venue for the US

Open tennis tournament; Citi Field, the home of the New York Mets baseball team; the New York Hall of Science; the Queens Museum of Art; the Queens Theatre in the Park; the Queens Zoo; the Unisphere; and the New York State Pavilion. These attract millions of local, national and international visitors every year and have improved the living experience in the borough of Queens.[38] As the *New York Times* wrote on Fair's seventieth anniversary, it remains: "an extraordinary extravaganza of architecture and entertainment that no subsequent exposition in this country would be able to equal."[39]

NOTES

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[3] Very little work has been done on the historical roots of city diplomacy. This mostly goes back to the 1970s and explore the role that cities have played at the start of globalization. In recent months, new research has begun to appear on earlier periods of history. Several case studies have been published in a special issue of the journal *Diplomatica*. For example: Tessa De Boer, "Early Modern Amsterdam's Dealings in City Diplomacy" *Diplomatica,* 3 (2021), 167-179; Halvard Leira and Benjamin de Carvahlo, "The Intercity Origins of Diplomacy: Consuls, Empires and the Sea," *Diplomatica,* 3 (2021),147-156.

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[5] Michele Acuto, Anna Kosovac and Kris Hartley "City Diplomacy: another generational shift?" *Diplomatica,* 3 (2021), 137-146; Efe Sevin, "Bright Future for City Diplomacy and Soft Power" *Diplomatica,* 3 (2021), 200-209.

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[15] Quoted in Munro, 18

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[20] Gold and Gold, *Cities of Culture*, 94

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[24] Ibid.

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RACE, SPACE & URBAN RENEWAL IN NEW ORLEANS: FROM PLESSY THROUGH KATRINA

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INTRODUCTION

The cultural landscape of Louisiana is one of the most complex, if not the most complex space to research and examine, in rural North America.[1] Specifically, the New Orleans (NOLA) urban landscape and the Latin (Spanish and French) and Caribbean style architecture which provides a unique environment within the southern U.S. NOLA culture was isolated because New Orleans prior to bridge-development was for the most part an island that did not have many people entering or exiting. Due to the geography of New Orleans, contributes to the uniqueness of the region. Why is interpreting the concept of "space" important when examining race, and how does southern spatial-geography over various periods impact identity-formation and the Black body?

In urban planning, the idea that "space" impacts everything is foundational to the field: the architecture; the landscape; the people living within those structures, and structural boundaries put in place that affects society as a whole, whether directly or indirectly. Additionally, "zoning"–designated land-areas that are divided into separate sections or "zones," that allows or prohibits various forms of land-use enforced by the local or municipal governments, has lasting ramifications among local citizens and stakeholders who are invested in various neighborhoods, wards, parishes, or districts.[2] Teasing out the complex intersections between race and space provides researchers with an analysis as architectural historian Dell Upton has aptly termed, "the social experience of the built environment."[3] Especially, in the context of legalized- racial and spatial segregation that effected Blacks of Creole and African-American ancestry for nearly a century. Understanding the historical-context, will connect to discourse regarding Hurricane Katrina and the primary victims affected.

This study will investigate how intersecting connections of Blackness, space, and identity are formed and are embodied due to racial hierarchy supported by race ideology–beliefs that have been framed and are socially- constructed in order to perpetuate control within society.[4] This article will not merely discuss how Blackness, legalized-racial segregation, and space shapes identity formation, but also explain the why and for what purpose. The data collected for this article includes qualitative research methods, participant observations, and semi-structured interviews.

BACKGROUND

After the Confederacy lost the Civil War, the original three tier racial system of Louisiana transformed into the predominant White-Black racial binary during the Reconstruction period. The, "…two-caste system in the Old South drove the mulattoes into the arms of the blacks, no matter how hard some tried to build a make-believe third world for themselves."[5] Consequently, divisions among Creoles of color and Black Americans continued to persist because of race ideology–Creoles of African descent feared the loss of their status within the racial hierarchy (a privilege attained during the colonial period and persisted during antebellum NOLA) and transformation into *Blackness*–the racial underclass of American society.[6]

In the distinguished 1903 publication *The Souls of Black Folk*, Du Bois contends that the problem of the twentieth century was the problem of the color line.[7] Although the "color-line" was in existence since slavery and White supremacy was established by the European-elites in the fifteenth century, the 1896 *Plessy vs. Ferguson* U.S. Supreme Court case paved the way for further restrictive and discriminatory so-called "separate but equal" laws. A much more widespread socio-economic system of *de jure* oppression was generated to retain the racial hierarchy system in the southern states. This case was particular since Homer Adolph Plessy, was one-eighth Black and a Creole of color from New Orleans.[8] More importantly, Plessy who phenotypically appeared White and was an active member of the *Afro-Creole Protest Tradition*[9] as a civil rights activist. Plessy was an important candidate hired by the Citizen's Committee of New Orleans (*Comité des Citoyens*), used to prove the absurdity of racial segregation.[10] Plessy was arrested and forced off of the streetcar because he claimed his Blackness. In other words, no one would have noticed that he was of African descent if Plessy remained quiet and not called out his mixed-race identity. Race relations during the Jim Crow era intersected with colorism, class-friction, and discrimination among poor Whites and Blacks. Hence, social constructions of race, class, gender, and caste along with racial-discrimination and segregation, and cultural-antagonisms upheld political and economic autonomy among White-elites during the twentieth century.

Although Creoleness embodied *métissage,*[11] many Creoles of color romanced about the idea of culture and the importance of heritage and lineage over race; yet Creoles of color were restricted from White neighborhoods, displaced, and exiled from the French Quarter during the era of Jim Crow. Throughout the period of American suburbanization and *Urban renewal*,[12] also unofficially-referred to as *Negro Removal* among people of color affected throughout the 1950s and 1960s, many Whites moved out of the former inner-city neighborhoods. Few Creoles were able to move unless they either passed into White society if they were phenotypically White or moved outside of the Jim Crow southern states.

FINDINGS

The space within the French Quarter felt somber during my initial site visit, the weekend of August 20th, 2015. Probably due to the fact that I visited New Orleans on the tenth-year anniversary of Hurricane Katrina, a catastrophic event which caused tragic devastation throughout the New Orleans metropolitan area. The architecture in the French Quarter was unique and striking. A lot of White tourists and fellow visitors assumed that I was a local and asked for directions.

Congo Square, located within Louis Armstrong Park was haunting. I was trying to imagine how this space was utilized during slavery. Multicultural Africanity, predominantly West and Central African in nature, along with the intricacy of acculturation and blending of indigenous, Caribbean, and European culture established the complex nature of "Afro-Creoleness," specifically New Orleans

Creole of color identity formation. Congo Square was a space where people courted for the purpose of establishing friendships, sexual liaisons, kinship networks, spiritual and religious interactions with various ethnic groups, contributed a framework for the continuous and paradoxical nature of spirituality, religion, and debauchery practiced in New Orleans, which was intertwined and intersectional. I stood on the very ground of enslaved Africans who spent their leisure in a space and place of commerce, play, music, spirituality, culture, and creolization; this multi-engaged space, used for the main purpose of survival within a house of bondage.[13]

Congo Square separates the American tourist center of the French Quarter from the boundaries of Tremé and the Seventh (7th), 8th, 9th, and Lower 9th Ward neighborhoods. Gentrification and construction exists along North Rampart Street dividing the French Quarter from Congo Square/Louis Armstrong Park. The geographic boundaries were clear-cut and profound because the development occurred specifically on the French Quarter side of North Rampart Street. This is why participant observations which includes visiting the site locations in person, are important and key to conducting thorough research.

Urban Spaces as Discussed by New Orleans Natives: Inclusion versus Exclusion

Through the process of snowball sampling, I was able to connect with one of my interviewee's family. The extended family members included his 87-year-old aunt and her son. All of them were born and raised in the Seventh (7th) Ward. However, the majority of families have since left, some during various periods of the Jim Crow era and a massive number of families left at the height of Hurricane Katrina.

Not unique to NOLA and similar to other cities throughout the U.S., the freeway system was a strategic plan that furthered Black marginalization and ghettoization throughout the 1950s and 1960s. Hurricane Katrina has also contributed to further changes in the New Orleans landscape, both environmentally and demographically. However, my interviewee's aunt was not sure if these homes were destroyed due to Hurricane Katrina or if these homes and businesses were torn down prior to the construction of the expressway during the urban renewal periods of the 1950s and 1960s. Urban renewal and suburbanization occurred simultaneously throughout the Jim Crow and Civil-Rights eras. Several 7th Ward residents afforded the opportunity to move to the suburbs, did so.

However, his cousin explained that Gentilly Woods:

…was a White subdivision. And the neighboring subdivision, not separated by anything but a local canal, was the Black subdivision, Pontchartrain Park. And we didn't work together, we didn't walk together. You couldn't walk through this area to get [to the] Black subdivision. Didn't have a bus system. And…if you walked through here, you probably got beat up, eggs thrown on you, and the police stopped you. (7)

His family moved to Pontchartrain Park in 1965 during the end of the legalized segregation era. The spatial boundaries between the wards was pivotal to clashes among people who were viewed as either insiders or outsiders. This supported the nephew's statement that Creoles are:

…not separate from being Black, but part of the reason it existed is because most of those people were not accepted in the White community or the traditional African American community. So, they kinda created their own space, and then…when that happens, people tend to…stick within their community… (12)

These spatial boundaries contributed to the cultural-cohesion of the various neighborhoods, and cultural-friction that occurred when people entered different wards. I also felt that it was important to

interview New Orleans natives who have either moved away from the NOLA region and/or were not affiliated with the 7th Ward or Creole of color community.

Gentrification: Further Circularity and Displacement

In New Orleans, the marginalized neighborhoods that are separated from the French Quarter, with a predominant Black population (which included Black Americans of Creole ancestry) were the most affected by the cataclysmic Hurricane Katrina which occurred on August 29, 2005.[14] Interestingly, my 87-year-old interviewee's nephews explained that the 7th Ward is, "…one of the few neighborhoods that's left, that isn't being…regentrified, that- gentrification is not goin' on…" (13) He further continued to explain that the 7th Ward is, "…prime real-estate 'cause noone's touching it yet..." (13) He made it clear that he would like to, "…own a piece of the Old Neighborhood." (14) I explained to him that if he had property in the old neighborhood, at least he would be able to have more of a voice to preserving the essence of the historic 7th Ward community within a post-Hurricane Katrina space.

Gentrification and cultural-appropriation are intersectional occurrences that contribute to diluting (which should be read as whitewashing and taking over) the original space of Black and African Diaspora culture in New Orleans. The mainstream diminishes the value of the particular.[15] Then, gentrification furthers the superficiality in maintaining an ideology of New Orleans as an American tourist center. This occurrence also contributes to the well-known saying asserted by the oppressed: "*the mainstream society loves the culture, but not 'the people' who created the culture.*"[16] The nephew of my 87-year-old interviewee explained that "there's one…old Creole business that…is supposed…to be redeveloping right here on Saint Bernard…is Vaucresson sausage…right across from the Autocrat…it's like a second…or third generation business." (16)

New Orleans native Vance Vaucresson, family owner of Vaucresson's Sausage Company, who describes the 7th Ward as the "Mecca of '*Creole culture*,'" states "what comes with gentrification? Property values rising. Property taxes rising. Insurance rising to the point that Creoles of color generationally can't afford to live there."[17] My 87-year-old interviewee's son added that, "…people just started movin' and people couldn't rebuild. They…couldn't get money, or they didn't have insurance. This never happened before…You had floods here, you had hurricanes, it didn't last but a day or two." (9) He continued explaining that "New Orleans had ten projects, and that was on the books in 1997 to tear the projects down. I'm sure that was 8,000 people. Now where…do you put all 8,000 people…So, they wanted it gone, and they wanted them gone." (9) Scholar-activist Angela Glover Blackwell explains that the government's failure to respond was not just because people were Black or they were poor–people were left in that crisis because they were Black and poor.[18]

CONCLUSION

In the twenty-first century, there are no overt laws such as racially-designated *de jure* neighborhoods which occurred during the colonial and Jim Crow periods. However, racially-segregated *de facto* neighborhoods, residential areas established during the race-regime periods, remains in place. African American New Orleans residents living in concentrated poverty often earn barely more than $20,000 a year and concentrated poverty is the product of decades of public policies and political measures hardship.[19] Perpetual hardship contributes to continuous socio-political consciousness among people affected, primarily people of color. The value of not only Black life, but the impoverished residents of all races and ethnic groups were ignored during times of need. Sadly, as stated by a former Lower 9th Ward New Orleans African American resident who lived in public housing, expressed his feelings of the gentrification that occurred throughout his former neighborhood: *it makes you feel horrible. It*

makes you felt like you weren't worth the investment.[20] Then, post-Hurricane Katrina gentrification contributes to the perpetual circularity of people of African descent, exiled from their former residences which maintains the White supremacist project.

The African proverb, *know thyself*, is essential for Black self-determination and maintaining Black autonomy for the betterment of humanity and society. In the long-term, this research will contribute to my scholarly advancement and a larger book project, tentatively-titled *Blurred Consciousness at the Core of a Pandemic: Blackness and Race in a COVID-19 Era,* will contribute as significant scholarship to the fields of Black Studies and Urban Planning. In short, *Blurred Consciousness at the Core of a Pandemic* primarily wants to argue how *pandemics* will always disproportionately affect the most marginalized, oppressed, and ghettoized communities.

NOTES

[1] Brasseaux, Carl A. *French, Cajun, Creole, Houma: A Primer on Francophone Louisiana* (Baton Rouge: Louisiana
   State University Press, 2005).

[2] Lamar, Anika. "Zoning as Taxidermy: Neighborhood Conservation Districts and the Regulation of Aesthetics." *Indiana Law Journal.* (December 1, 2015).

[3] Gleason, William A. *Sites Unseen: Architecture, Race, and American Literature* (New York: NYU Press, 2011), 2.

[4] Omi, Richard, and Howard Winant. *Racial Formation in the United States* (New York: Routledge, 1986, 1994).

[5] Genovese, *Roll Jordan Roll*, 431.

[6] Massey, Douglas S., and Nancy A. Denton. *American Apartheid: Segregation and the Making of the Underclass.* (Cambridge and London: Harvard University Press, 1993).

[7] DuBois, W.E.B. *The Souls of Black Folk* (Chicago: A.C. McClurg & Co., 1903), 13.

[8] *Plessy vs. Ferguson*, U.S. Supreme Court Case, 1896.

[9] *Afro-Creole Protest Tradition* was rooted in Afro-Creoles revolting against race ideology and racial-discrimination established by the White-elite in colonial New Orleans. It must be understood that the majority of New Orleans leaders that fought for suffrage rights during the Civil War, Reconstruction, and Civil Rights eras were Creoles of African descent.

[10] Reckdahl, Katy. "Plessy and Ferguson unveil unique plaque today marking their ancestors' actions," *The Times-Picayune.* October 6, 2009.

[11] *Métissage* (also referred to as *mestizaje* and miscegenation) is an ideology, a mental attitude that is rooted primarily within Latin America and "Latin" societies. Historically, *métissage* was placed on mixed-race populations by the White-elite as an overt form of divide-and-conquer among people of color within the racial hierarchy for the purpose of maintaining White privilege and supremacy. *Métissage* also produced a sense of racial- and cultural- ambiguity that projected an *in-between-ness* and *Brownness*.

[12] *Urban renewal* (known unofficially as *Negro removal*), was interlinked with suburbanization during the 1950s and 1960s in the U.S. Former jobs hubs that were moved to the suburbs and the Eisenhower administration era freeway system, affected many former self-sufficient African American and Latino neighborhoods throughout the U.S. Many housing units were destroyed and low-income families were forced into zoned and government/state/city-enforced housing projects, at times known as *vertical ghettos*.

[13] Burton, Richard D.E. *Afro-Creole: Power, Opposition, and Play in the Caribbean* (Ithaca and London: Cornell University Press, 1997).

[14] *The African Americans*, 2013.

[15] Rose, Tricia. "Loving the Gift and the Gift-Giver," *Dominican University Blues and the Spirit Symposium Keynote, May 31, 2014.* (https://www.youtube.com/watch?v=nn44Soe-CBQ)

[16] Ibid.

[17] "Story of New Orleans Creole Cooking: The Black Hand in the Pot." Louisiana Endowment for the Humanities. Durcap Films, 2016. (https://www.youtube.com/watch?v=p0ayRQA4Rgw)

[18] Gates, Henry Lewis. *The African Americans*, Documentary. PBS, 2013.

[19] Dyson, Michael Eric. "Frames of Reference: Class, Caste, Culture, and Cameras," 8

[20] "10 Years After Katrina, Has New Orleans Been Rebuilt, Or Just Gentrified?" *AJ+*

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"10 Years After Katrina, Has New Orleans Been Rebuilt, Or Just Gentrified?" *AJ+*

ANTISOCIAL BEHAVIOUR, OR JUST UNMET SUPPORT NEEDS? HOW INTERVENING IN NUISANCE BEHAVIOUR IMPACTS UNDERLYING VULNERABILITIES

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INTRODUCTION

Across many welfare provisions internationally, there has arguably been an increase in levels of welfare conditionality, with access to publicly provided social rights contingent on meeting certain responsibilities or behaviours[1]. Whilst in the context of housing, this mechanism of social control is longstanding (with tenancy agreements stipulating behaviours such as paying rent), welfare conditionality related to social housing has intensified in England and Wales with the tightening of allocation policies determining who is able to apply for and access social housing and tenancy law which outlines behavioural criteria[2]. Social housing tenancy agreements now generally include clauses to ban antisocial or nuisance behaviour within the locality of the home and hold the tenant responsible for household members and visitors[3].

Antisocial behaviour (or ASB) was introduced into policy by the New Labour Government who argued some residents (particularly those living in disadvantaged areas) were regularly suffering from harassment and intimidation, about which they could do very little[4]. Therefore, they introduced a new category of civil order to control this 'nuisance' behaviour, which could range from untidy gardens to physical assault. The first definition of ASB was provided in the Housing Act 1996, which defined it as "conduct causing or likely to cause a nuisance or annoyance to a person residing in, visiting or otherwise engaging in lawful activity in residential premises"[5]. This fairly ambiguous definition has broadened over time alongside a steady increase in the powers available to respond to such behaviour. Within this time, ASB policy and practice has begun to focus on the needs of victims who could be classed as vulnerable. Following the death of Fiona Pilkington and her daughter in 2007 after sustained ASB, strong social control of alleged perpetrators of ASB were argued to be needed to protect vulnerable victims[6]. The need to protect victims from further harm and support them following abuse became ingrained in ASB practice and discourse[7]. The provision of care for all tenants is held as a core value for social housing providers[8]. Dobson[9] argues that the rhetoric of care for tenants perceived as having multiple vulnerabilities appears to have intensified although where a vulnerable tenant's behaviour is perceived as problematic, such as behaviour resulting in a complaint of ASB, this care and support is likely to be provided alongside sanction.

However, little attention has been given to the vulnerabilities of alleged perpetrators of ASB and how ASB interventions impact them. There is a growing body of work that suggests welfare conditionality

particularly impacts those who could be seen as vulnerable and who face increased barriers to meeting the responsibilities placed on them in order to access their social rights, including an increase in poverty and negative impacts on health and wellbeing[10]. Whilst the term 'vulnerability' is contested, this paper draws on the work of Brown[11] to apply a working definition of vulnerability which combines the lived experiences of individual, structural and situational vulnerability. In this thesis, individuals' lived experiences of vulnerability are understood as shaped by social insecurity or harm through a combination of structural inequalities and social divisions, biological fragility, institutional forces and the individual's understanding, choices and experiences as social actors.

METHODS

The data presented in this paper is drawn from the findings of a PhD research project funded by the UK Economic and Social Research Council. Ethical considerations were given utmost importance and ethical approval was granted by the University of York's Social Policy and Social Work Ethics Committee. A bottom-up approach to collecting data was taken and up to two qualitative longitudinal interviews were conducted with 15 social tenants alleged to be engaged in ASB approximately 6 to 9 months apart. Additionally, four single, qualitative, contextual interviews were undertaken with five Key Informants from four stakeholder social housing providers, including three housing associations and one local authority, all situated in the North of England. Rather than attempt to locate a complete 'truth', the purpose of this study was to accept the experiences and perspectives of tenant participants under the assumption that understanding how alleged perpetrators of ASB experience ASB interventions provides valuable insight alongside existing research from alternate perspectives[12].

DISCUSSION

Alleged perpetrators of ASB often present a number of vulnerabilities and unmet support needs such as mental ill-health, disability, addictions and poverty[13]. Tenants involved in this study similarly could be classed as vulnerable, with experiences of physical and mental health conditions, domestic abuse, alcohol use, bereavement, care responsibilities, poverty, single parenthood and extreme financial hardship. All 15 tenants reported at least one of these experiences of vulnerability with 12 tenants reporting multiple vulnerabilities. This suggests that the majority of tenants who took part in the study had what some providers and academics call complex needs or multiple, overlapping vulnerabilities which providers state they wish to provide with extra care and support[14]. As these tenants were also alleged to be engaging in ASB, this support could be expected to come alongside sanctions[15]. However, in reality, the majority of tenants reported only receiving sanctions without receiving any support.

Support for alleged perpetrators

Key Informants were asked how they consider issues of diversity, but also what support they generally offered to alleged perpetrators of ASB. One Key Informants response to the first question is presented below.

Kirsty (Researcher): How do you take account issues such as gender or race or disability when you are making decisions about how you might intervene?

ASB Manager: Nah, that's a load of bollocks [laughs]. That was a joke.

Whilst the question when framed through a lens of diversity may have caused some difficulty for Key Informants, the question of generalised support was met with more coherent responses. Key Informants suggested the majority of their support for perpetrators came through multi-agency working with the police, social services and mental health services. By signposting to other services

Key Informants felt they met their obligations of providing support without being involved in direct care provision. That being said, Key Informants' priorities were generally still to change behaviour through welfare conditionality enforcement processes rather than support provision, with little credence apparently given to the idea that support may also change behaviour in the long term.

"I still think our priority is to stop the problems." (ASB Manager, Large Housing Association).

"We want… tenants to feel supported but we do want people to behave in our properties and to have - have that balance of communities.." (ASB Manager, Local Authority)

The implied view of the ASB managers above suggests that to stop complaints or to ensure tenants comply with expectations, enforcement and sanction is prioritised over support. Only one tenant (Mel) reported receiving some form of support from her housing officer, who delivered foodbank vouchers to her when she was unwell and unable to work. One tenant reported being asked if she would like some support months after the initial complaint and after she had told her landlord she had already referred herself to a substance misuse service. The remaining tenant participants unanimously stated they had not been offered support from their landlord, either in the form of direct provision or signposting to other services. Power and Bergen[16] highlighted that individual housing officers operate with a level of discretion, allowing them to tailor the service they provide to the needs of the individual tenant. However, discretion in support services can be problematic meaning who gets the care, or who is seen as deserving of care and support, may vary[17]. In this case, it appears those alleged to be engaging in ASB are not receiving care they feel they need as focus is placed on sanction over support. It appears sanction is prioritised and support is side-lined or, even non-existent, supporting the findings of Brown[18] who argued that when vulnerability is combined with transgressive behaviour there could be a withdrawal of the status of vulnerability, with individuals reassessed as having agency and making a personal choice to behave in a deviant way, leading to a withdrawal of services or an increase in disciplinary measures

Gender and domestic abuse

The majority of tenants (10) involved in the research were women, and four of these reported being victims of domestic abuse either at the time of, or just before, the research period. The women involved in the study reported different experiences from the male participants which they felt was a result of being a woman, a single mother, or a victim of abuse. A number of female tenants felt intimidated by their housing officers. Jenny reported feeling like she was being "interrogated" (Jenny, Wave A) when she had an ASB interview in her home, a feeling that she felt was heightened because she was on her own. Rachel also felt intimidated by her landlord who she felt judged her parenting and demonstrated their power over her by sending a warning letter threatening legal action without speaking to her about any ASB allegation.

"I just feel like they try to intimidate me a bit like obviously going on about how I mother my son, my house and then it's just like, they straight taking legal action… without even pre-warning me or giving me heads up or asking me about it first" (Rachel, Wave A)

Notably, none of the men involved in the study reported feeling intimidated by their landlord. ASB interventions felt especially disempowering for women who felt they were routinely intimidated and judged by their landlord.

Four of the female tenants involved in this study had recently been victims of domestic abuse. Jenny moved into her property from a domestic violence refuge, but a week later, her violent ex-partner moved around the corner. She saw him regularly in the street which was very intimidating and scary for her. Jenny received her first warning letter because her window was smashed by her violent ex.

"I didn't smash the window, somebody else smashed the window not me and I was a victim of that. I wasn't like outside with them… they were trying to hurt me or whatever they were trying to do. So, how's that fair?" (Jenny, Wave A)

Not only does this example highlight a failure of services where a survivor of domestic abuse is left to live around the corner from her abuser, it also shows a lack of understanding and empathy for an incident Jenny found very distressing.

"It's not my fault I've been through domestic violence. I didn't say like come here and do this to me, do you know what I mean?" (Jenny, Wave A).

At the time of the second interview, Jenny had not had any further complaints of ASB made against her, however she was still having trouble with her ex-partner and continued to live around the corner from him and experienced harassment and abuse in the street from him on a regular basis. Jenny felt the lack of support she was given to protect herself and her children from her ex-partner was because services blamed her for her own abuse, supporting the findings of previous research which has argued is placed on victims of domestic violence for not preventing their own abuse[19].

Other tenants who had experienced domestic abuse similarly felt they were not offered any support, either directly or in the form of support referrals.

"They knew I was going through that situation, so, why didn't they put support in place to get myself and my child out of this property?" (Caroline, Wave B).

All tenant participant who experienced abuse in this study reported the lack of support provided to victims during and after abusive relationships, however, it was unclear if this was due to a lack of training or whether social landlords did perceive women as responsible for the abuse they were receiving, supporting the now dated findings previous research into ASB which found women were at increased risk of losing their home through ASB legislation due to the behaviour of violent partners[20].

Disability: physical and mental health impairments

Nine of the tenant participants involved in this study declared some form of physical or mental health impairment that affected their ability to live their day to day lives, including the ability manage their own or their visitor's behaviour or to engage with their housing officer and landlord. Especially prevalent were mental health issues, including depression and anxiety, which tenants reported were exacerbated by ASB interventions. 12 tenants reported negative health impacts as a direct result of ASB interventions, the majority being related to their mental health.

"I feel proper low about the matter. I've got mental health issues as it is, and having allegations made when you know a hundred percent that it's not true it's not easy to swallow." (Jason, Wave A).

Whilst for Jason, the allegation on its own impacted his mental health, for others, the ASB interventions that followed the allegation led to deterioration of their mental health.

"They've made me, a lot of times they've made me really miserable. I mean, obviously I suffer with mental health at the minute with everything that's been going on… they can make you really upset to the point when you don't want to leave your house" (Mel, Wave B)

It's interesting that for Mel, it is "obvious" that she is struggling with her mental health as a result of ASB interventions, and yet, the impact of interventions on alleged perpetrator's mental health was not mentioned by any Key Informant, suggesting it was not central to their decision-making when they decided how to manage an ASB case.

"If I didn't have my little uns, I could've topped myself, because that's how low they got me." (Rosie, Wave A).

"I just wanted to kill myself, I just wanted to end it all" (Rachel, Wave A).

One tenant, Rangers, reported attempting suicide after receiving a Notice of Seeking Possession from her landlord (the first step towards eviction proceedings). Rangers provided a particularly illustrative example of the impact of welfare conditionality in the form of ASB intervention. Rangers was a single woman who suffered from multiple physical and mental health disabilities and health impairments. At the time of the first interview, Rangers had received Notice of Seeking Possession from her landlord and multiple visitors attended her property throughout the course of her tenancy who caused nuisance to her neighbours. Additionally, she was a victim of violence from her two sons who regularly visited and brought their friends with them. There was evidence of other people being violent in her home, as outlined in her quote below.

"Somebody came into my house and tried to stab my son, a meat cleaver, and I threw myself over my son" (Rangers, Wave A)

After the Notice was served, Rangers received support from a mental health support worker and housing support worker who recognised she was being preyed on by visitors who were using her flat as a base to deal drugs and financially abuse Rangers and her neighbours. These support workers helped Rangers to stop her sons and these visitors coming to her home with the help of the police, however, the landlord had stated their intention to progress with the eviction proceedings, despite receiving no further complaints for a number of months. Rangers said she initially did not understand the severity of the complaints that were being made about her as, due to her health issues, she was unable to understand the housing officer when they came to the property to discuss them and left the room before the meeting was finished. When the Notice of Seeking Possession arrived, there were 30 reports of nuisance from the visitors who were preying on Rangers. Throughout the notice, each incident was proceeded by the phrase, "you, and or your visitors," suggesting Rangers was involved in each case. Whilst there was acknowledgement of "vulnerable neighbours", throughout the notice, there was no acknowledgment of Ranger's own vulnerability, victimhood or health issues that may have hindered her understanding of the procedure. Rangers felt that her landlord's management of the allegations of ASB had a severely negative impact on both her physical and mental health, making her feel she did not recognise herself anymore. She no longer felt able to leave the flat.

"I'll show you a photo of me before you go and it's only two years ago and look how much I've gone under since then. I just want to be happy again…" (Rangers, Wave A).

When asked what impact the involvement of her landlord had on her, Rangers described continuous fear of leaving her home, and how she now often didn't leave the bedroom. Rangers' experience highlights how social control, in the form of welfare conditionality, can especially impact vulnerable and disabled people who may be less able to meet the conditions placed on them (Reeves and Lookstra, 2017), but also highlights how, as Rangers' behaviour was perceived as deviant, her vulnerability was overlooked in favour of viewing her as both responsible for and able to control the behaviour of herself and her visitors.

CONCLUSION

Whilst the rhetoric of care and support for tenants who are perceived as vulnerable, or who have complex needs is apparently intensifying (albeit alongside sanction for those whose behaviour is perceived as problematic)[21], in practice, at least for alleged perpetrators of ASB, little effective care and support appears to be provided. This was evident when speaking to women who had been victims of domestic abuse for whom this abuse appears to routinely have been ignored, result in sanction and be allowed to continue. Disability and individual vulnerability appear to be overlooked, as well as negatively impacted, by ASB procedures and interventions, with tenants reporting significantly negative impacts on their mental health, resulting, for some, in suicidal thoughts and/or attempts. It

appears that routinely, despite the apparent intention of social landlords to support tenants, for those subject to ASB, sanction overrules supportive mechanisms, with tenants overwhelmingly reporting no support being provided by their landlord and resulting in, for some, vulnerability exacerbated.

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(RE)SHAPING BUILDINGS TO COPE WITH CLIMATE IMPACTS IN LOW-INCOME COASTAL COMMUNITIES

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INTRODUCTION

Coastal cities are by far Africa's most developed and most-populated metropolitan centres, with a heavy concentration of residential, manufacturing, commercial, educational, and military facilities.[1] Lagos, West Africa's most significant manufacturing and port centre is one such coastal city. Climate change, especially sea level rise (SLR) and flooding, are putting coastal areas at risk. These lead to consequences that amplify dangers to the built and natural environment in these areas. The impacts on buildings and how people cope with them deserves attention, and it forms the focus in this chapter.

Climate Impacts, Sea Level Rise and Coastal flooding in urban areas

Climate change is one of the serious challenges to people's lives and livelihoods in coastal areas around the world. Present threats, such as floods, storm waves, SLR, salinity interference, drought, temperature and rainfall fluctuations, are posing significant threats to the built environment as well as humanity's food, water, and health welfare.[2] For instance, a 30cm increase in sea level will result in a 45m landward retreat in some coastal areas. SLR is now causing more frequent flooding along many coasts across the world,[3] and will continue to do so in the future.[4] The frequency of flooding is prompting a global search for means to deal with it in both spatial and temporal dynamics.[5] Infrastructure and housing along the coastline are threatened by flooding, cyclones, and storm surges. Flood disasters in Nigeria poses a threat to individuals, cities, and organizations.[6] The entire Nigerian coastline region is vulnerable to flooding due to its low elevation and topography, particularly during high tides and during the rainy season. Nigeria has been identified as one of eleven countries with global port cities that are particularly vulnerable to sea-level rise and storm surges.[7] Lagos has been identified as one of the 50 cities that are highly vulnerable to SLR, with an estimated rise in population exposure of more than 800% by the 2070s.[8] Lagos is ranked thirty-first among 136 port cities in terms of the population vulnerable to floods under the present climate scenario (the situation in 2005) and fifteenth under the future climate scenario (the situation in 2050) (scenario for the 2070s).[9]

Due to the concentration of poor populations in areas that are more vulnerable, sea-level rise is expected to have major impacts on many big coastal cities. Urbanization and increase in the population have resulted in encroachment on the coastal environment with the low-income citizens

being in the majority in the unplanned places. Many cities lack the facilities necessary to survive extreme weather events. Poor infrastructure (especially sewer and drainage systems) in combination with other issues with urban governance, puts African slum dwellers at risk. [10] Low-income communities' inability to access safer places leads to these heightened risks. While industrial growth and construction often raise environmental stresses that contribute to floods, low-income communities and disadvantaged communities within settlements are disproportionately vulnerable. [11] For example, in Lagos, it is estimated that 70% of the population lives in slus with extremely poor environmental conditions, such as frequent flooding of homes that last many hours and sweeps raw sewage and waste inside. [12]

The Intergovernmental Panel on Climate Change defined adaptation as "the process of adjusting to actual or anticipated climate and its effects to minimise harm and maximise benefits." [13] The degree to which communities will adapt and keep human settlements secure from SLR, flooding and related extreme weather events, especially in the low-income population, is a key issue. While these dangers are present and projected, the picture is incomplete because adaptation is not taken into account. Adaptation has the potential to significantly prepare communities for certain coastal impacts. Furthermore, since coasts are among the most diverse ecosystems, coastal cultures have a long tradition of responding to environmental changes and local SLR. [14]

This study shows climate impacts, especially SLR and flooding that affects buildings in a low-income coastal neighbourhood within Lagos, Nigeria. It deals with how people in the community respond to these impacts by (re)shaping their buildings among other building-related measures.

STUDY AREA AND RESEARCH METHOD

The city of Lagos, within latitudes 6·23′N and 6·41′N and longitudes 2·42′E and 3·42′E, is Nigeria's commercial capital. As a coastal city, it is exposed to frequent and intense rainfall, storm surges, coastal flooding. There is a prediction of a 1.5 m sea-level rise (SLR). With these predictions, Lagos was ranked fifteenth, globally, for exposed population to flooding based on projections of the 2070 climate scenario.(Nicholas et al., 2007) SLR poses serious risks to infrastructure, housing, and the lives of around 6 million living along with the coastal areas within Lagos. [15] An estimated 70% of the Lagos population lives in areas categorized as slums or informal settlements, usually found in the oldest settled areas within the mainland, especially in marshy, waterfront areas and near the lagoons. [16]

The study area - Idi-Araba is one of the waterfront slum communities within the Oworonshoki area of Lagos. It is located by the Lagoon (See figure 1). It originated as a fishing settlement in the early 1980s and has grown significantly to become a low-income, informal coastal urban settlement. A community assessment by the Lagos state government, conducted in December 2015, shows that Idi-Araba has 33 streets, 188 houses and 516 households. [17] It consists mostly of young people – 88% in the 21-40 age group. Households are mostly 1-4 (constituting 59%) and 5-9 (constituting 39%). A 2019 Enumeration by the Lagos urban Studies Group shows an estimated population of 2456 persons within 709 households. [18]
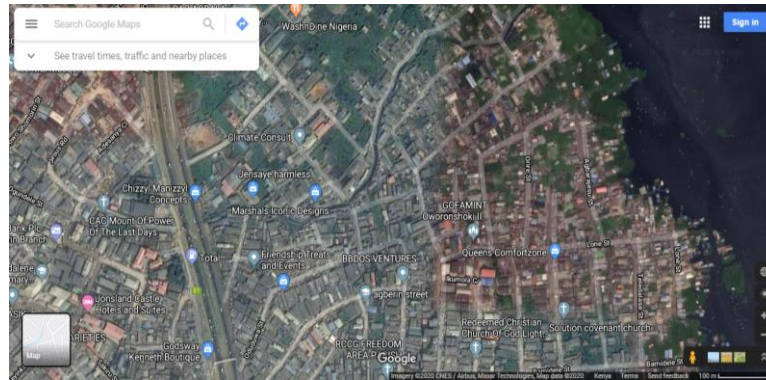
Figure 1. Satellite Image showing Idi-Araba community, Oworonshoki, Lagos.

A survey that focused on understanding climate impacts and responses were conducted in the Idi-Araba community between December 2019 and February 2020. The data collection instrument (a questionnaire) was developed through a review of literature and earlier engagements with the residents. A sample of 300 residents was taken, drawn from the 2456 estimated population in the community. Using the formula for sample size determination by Krejcie and Morgan an initial sample size of 333 was determined, at a 95% confidence interval and 5% error margin.[19] The sample size was then scaled down to 300, given the time available and resource constraints.

A group of five literate residents were trained to assist with the questionnaire administration within the community. The assistants, being fluent in English and the vernacular language, completed each questionnaire by interviewing the respondent. In some cases, they dropped the questionnaire and came back to fetch it when a respondent wanted to take time in self-completing the survey. Of the 300 questionnaires produced and given out to the assistants, 270 were retrieved. Upon screening of the retrieved questionnaires, only 247 were used for analysis. The processing of data was carried out using the Statistical Package for Social Science (SPSS) version 24.

RESULTS AND DISCUSSION
Socio-Economic and Housing Characteristics of Respondents

The socio-economic characteristics of the survey respondents are shown in Table 1. Of the 247 residents who participated, 52.8% were male, 46.8% female. The highest percentage (27.8%) are between 35 and 44 years. Most (at 48.8%) are self-employed. Only 13.7% had no form of formal education. The majority (45.2%) earned below N30,000 (US$72) monthly. This is below the national monthly minimum wage.

Attribute	Characteristics	N	%
Gender	Male	131	52.8
	Female	116	46.8
Age	18-24	21	8.5
	25-34	55	22.2
	35-44	69	27.8
	45-60	62	25.0
	above 60	31	12.5
Formal Education	None	34	13.7
	Primary	79	31.9
	Secondary	69	27.8
	Tertiary	40	16.1
Household Size	1	30	12.1
	2-4	69	27.8
	5-8	75	30.2
	Over 8	64	25.8
Employment status	Self-employed	121	48.8
	Employed	82	33.1
	Not employed at all	17	6.9
	Retired	12	4.8
Monthly household income	Below #30,000	112	45.2
	#31,000 - 75,000	79	31.9
	#76,000 - 150,000	12	4.8
	# 151,000 - 250,00	8	3.2
	# 251,000 - 500,00	3	1.2

Table 1. Socio-Economic characteristics of the Respondents

Housing characteristics of the respondents are presented in Table 2. The highest percentages are landlords/homeowners (38.8%), followed by renters at 37.6%. Most of the renters pay between ₦5,001-15,000 rent monthly. Based on the respondents, 54.7% believe their buildings only need minor repairs. By their assessment, 18.7% of the buildings are okay while 1.6% are not habitable. In terms of services, the majority of houses are connected to electricity (See Table 3). About one-third (34%) are connected to water from pipe-borne municipal sources. Another 32.4% of the people rely on community or private boreholes. The majority use a water closet located outside the house but within the compound. The houses are majorly (60%) walled with concrete blocks.

Characteristics	Description	Percentage
Tenure status	Owned/Landlord	38.8
	Rented	37.6
	Family house	23.2
	Others	0.4
Monthly rent	Less than ₦5,000	28.1
	₦5,001-15,000	43.7
	₦15,001-25,000	23.7
	₦25,001-50,000	3.0
	Over ₦50,000	1.5
Building's condition	Ok	18.7
	Needs major repairs	25.2
	Needs minor repairs	54.5
	Too bad - not habitable	1.6
Source of water	Municipal pipe-borne water	34.0
	Community/private borehole	32.4
	Well	5.8
	Tanker delivery	2.9
	River/Ocean	5.0
	Sachet/Bottled water	19.9
Sanitation	W/C within the house	32.2
	W/C outside the house	45.9
	Community toilet	5.2
	Pit latrine	10.3
	Open defection	6.4
Building's External Walls Material	Raffia palm	2.1
	Mud	6.2
	Sandcrete block	60.1
	Iron sheets	0.4
	Timber/planks	13.6
	Tarpaulin	2.9
	Burnt Bricks	1.6
	Concrete	12.3
	EPS	0.8

Table 2. Housing Characteristics of the respondents

Impacts of Sea Level Rise and Flooding on Buildings

The survey ascertained houses that had been affected by flooding and sea-level rise. As shown in Table 3, only 43.6% houses of the respondents have suffered damages caused by SLR/flooding. For the impacted buildings, the damage ranges from sinking foundation (23.9%), damaged furniture (19.1%), damage to walls (16.4%), defects in sub-structure (12.5%) (See figure 2). Building collapse due to flooding and sea-level rise was only reported by 2.5% of the respondents. Etuonovbe noted that

floods ravaging Lagos communities have left many people homeless, damaged property, affected utilities and disrupted business activities.[20]

SLR/flooding affected houses	
	Percent
Yes	43.6
No	56.4

Table 3. SLR/flooding affected houses
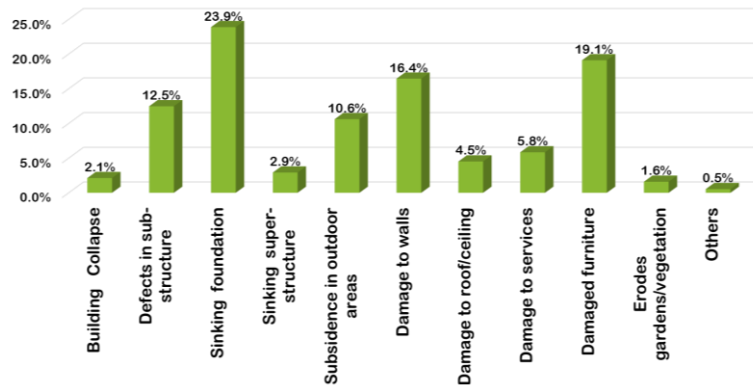
Figure 2. Impacts of flooding and SLR on buildings in the community

Responses and Coping Strategies

This work investigated action(s) taken when SLR/flooding affected their house. The survey shows that many respondents (40.8%) remained in the affected building, 43.3% repaired the affected part of the building especially when the damages are minor. Notably, 4.4% relocated permanently from the damaged building. Some tenants are forced to relocate permanently due to the gravity of the damage. Some (11.6%) relocate temporarily for the flood to subside before returning to their property. Investigation about repairs of damages and/or fortification against future occurrences were carried out shows that the majority of the respondents (88.2%) personally financed the process. There is however a small proportion (11.8%) who utilized other sources for financing.
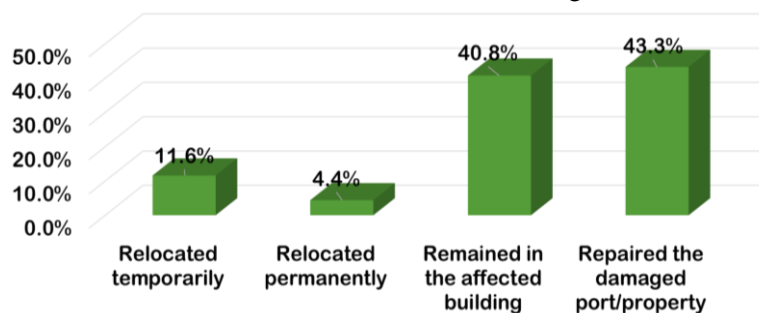
Figure 3. Action when SLR/flooding affected building

Coping and adaptation strategies for SLR/flooding was investigated. Adaptation measures can be classified according to the types of strategies employed.[21] Both structural and non-structural measures were put in place by the residents for adaptation to SLR and flooding (See Table 4).

Structural measures against SLR/Flooding	Percentage
Place valuable goods/furniture on a higher level	17.9
Raise ground floor level of the building	8.9
Raise the height of the house's platform (or stilts)	5.3
Erect a barrier/embarkment	3.4
Construct drainage (culvert/gutter)	7.4
Clear/de-silt drainage	4.9
Drain stagnant water	8.7
Create a pathway for water around the house	11.2
Sand-fill surrounding of the house	11.3
Construct wooden bridge	3.7
Add another floor to the building	3.0
Use weather-resistant materials on building before the rains	5.1
Create outlet on houses for easy outflow of water	6.8
Plant trees/grasses/shrubs	0.3
Cut down vegetation	1.9
Other measures	0.2
Non-structural measures against SLR/Flooding	Percentage
Obtain information following weather forecast	16.5
Store goods safely beforehand	2.5
Join self-help group/saving scheme	2.1
Join a social/religious organization	0.8
Seek assistance from family	2.5
Seek assistance from social/religious groups within the community	0.4
Develop evacuation mode	0.4
Move to safer ground	0.4

Table 4. Adaptive measures to SLR/flooding in the buildings

The most-reported measure (17.9%) is placing valuable goods/furniture on a higher level. Water is kept away to avoid or minimize damages to valuable properties. Respondents (11.3%) also sand-filled their surroundings to keep away excess runoff from reaching and entering the building. In the same vein, some (11.2%) create a pathway for water around. Efforts are also made to drain stagnant water (8.7%) and raise ground floor level (8.9%). Higher floors and higher plinths at the entrances (See figure 3) prevent the flood from gaining access to the building. While some of them (5.1%) used weather-resistant materials on the building before the rainy season, a small proportion (0.3%) of the respondents planted trees, grasses or shrubs around their property. Some respondents (1.9%) cut down vegetation to cope with floods.

Figure 4. Reshaping existing building and higher floor for a new building.

Regarding non-structural measures (See Table 4), some of the respondents (16.5%) obtained information on the weather forecast to be abreast of the season, time, intensity and gravity of rainfall and possible SLR/flooding occurrence in the area. This enabled them to prepare adequately before the flood event took place. Some respondents (2.5%) stored goods (e.g. water, food) and valuables safely before rainfall occurrence, since damage to goods kept indoors, was one of the most reported impacts shown in figure 2. Others sought assistance from family and friends where necessary (2.5%), joined a self-help group/saving scheme to access finance when necessary (2.1%), joined a social/religious organization for support whenever the need arises (0.8%).

From the result, it can be deduced that cities employed a variety of strategies to mitigate their exposure to sea-level rise and flooding.[22] Dolan and Walker opined that the determinants of adaptive measures include access to and delivery of wealth, technologies, and information; risk perception and awareness; social capital; and relevant supporting structural features.[23]

CONCLUSION

Climate change has significantly impacted the built environment. This has brought about changes in rainfall patterns and sea-level rise (SLR), with resultant flooding in the coastal environment and damage to buildings and their contents. The vulnerable groups within the low-income areas have recorded losses from flood events. Their self-help efforts are notable but inadequate and at times ineffective. An important point also is that majority of these people never abandoned these vulnerable communities. It shows elements of coping and directions that adaptation should face. It is therefore recommended that attention should be shifted to the low-income dwellers living around the coast to empower them for incremental investment in housing upgrading and provide basic infrastructures to ensure they are resilient to future extreme weather events.

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THE VACILLATING SOURCES OF AUTHORITY – THE CASE OF THE OLD TOWN IN TURKU, FINLAND

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INTRODUCTION

Heritage forms a highly complex part of urban planning. It is also historically conditioned, meaning that history, and therefore culture, is a pre-requisite for its existence. Heritage is also one of several creative forces which, sometimes clashing and sometimes consonant, shape urban space. These forces can be construed of in terms of power and of the authorities controlling that power.

In this article, the concept of *authority* is used to refers to the ability to make decisions regarding the cityscape. Such authority is considered to be communally invested, meaning that it is conferred by the mutual consent of the society in question. In this way, authorities may include the city's administrative, cultural, and financial institutions, as well as various interest groups. Authorities are also created by the everyday actions of urban residents and visitors, when these become routine or almost automatic. The authorities affecting urban space can become established as administrative institutions and thus remain apparently unaltered for long stretches of time. Even these, nevertheless, can be reshaped by changes in legislation and policy, or by fluctuations in the economy, in public opinion, or in social values. In this article, we pose the question of how heritage acquires authority and affects urban planning, and what role heritage can play at a time when the established and traditional authorities of urban space are in flux. The article is based on the research project 'The Heritage of the Old Town of Turku as Dreams, Conflicts, and Urban Space' funded by the Turku Urban Research Programme.

From a historical perspective, cities and especially city centres are frequently designed and built to materialise authority. This includes constructing monumental architecture and designing the city layout. As suggested by Michel de Certeau, the very manner in which cities are organised can be considered authoritarian.[1] The twentieth-century's high-modernist approach to urban planning is an extreme expression of such attempts to institute a built-in authority within urban space.[2] In the early twenty-first century, by contrast, the modern foundations of authority are being re-evaluated, as the late modern era's consumer culture, globalisation and environmental crisis continue to corrode the fabric of national states.[3] Sources of authority have thus become increasingly multi-temporal and diffuse, and do not always manifest themselves in the same manner within different urban communities.

Among the authorities under scrutiny in the twenty-first century are modern heritage institutions. Heritage can be seen as a discourse that carries authoritative power. This allows communities to

organise around and attach themselves to heritage, while simultaneously investing heritage with significance. To function in this way, however, heritage requires authorities and respective institutions to shape and actualise this discourse.[4] In some quarters of society, this role is primarily filled by museums and heritage professionals, while in other quarters of society, these do not hold the same importance. Through the analysis of such disparities, the study of urban heritage can reveal major shifts in the contemporary sources of urban authority.

Our research project focuses on Turku and how its heritage has emerged as a field shaped by the dynamics of power and authority. Turku is a coastal city of 192,000 inhabitants located at the south-western corner Finland. Founded in around 1300, it is the oldest town in the country, and served as the country's capital and seat of political authority before this was shifted to Helsinki. Turku's city plan is divided in two by the Aurajoki River, which provides the city centre with a scenic setting (Figure 1). In 2017, the Turku Centre 2050 vision group work, commissioned by the City of Turku, published its conclusions in a book entitled *Towards New Turku: Vision for the City Centre 2050*.[5] The group introduced a new concept, that of the 'Old Town'. This comprises of the oldest quarters in the city, and serves to emphasise the city's international character, setting Turku on a par with other Nordic cities that possess historical centres. Importantly, the 'Old Town' has also been a feature used in the city's advertising and tourism industry. Using diverse sources – including local histories, archaeological and architectural texts, photographs and other representations of the urban environment, as well as interviews with professionals and residents – we will now examine how the Old Town of Turku has come to be considered as heritage and, as such, invested with authority.

Figure 1. The Aurajoki River provides the Old Town of Turku with a visually pleasing environment. Photo by Visa Immonen.

HISTORIOGRAPHICAL RESERVE

Among the institutional strategies that determine power within an urban structure is the definition and control of *value*, i.e., identifying something as significant or useful. Value requires a process by which it is both recognised and constituted. This process can be termed *value creation*. Value has different modalities, like 'economic', 'environmental', and 'social', with elements of the urban environment accorded various types and degrees of value and treated accordingly.[6] One of these modalities of

value is 'historical value'. This term, along with that of 'culture historical value', is a catchword frequently utilised within urban heritage management.

Historical value is primarily associated with the past. Among its gatekeepers, therefore, are disciplines and professionals examining the past. When the findings of historical enquiries and scholarship, or historical fiction related to the urban environment, are presented as texts, visualisations, or other media, these become sources of *historiographical reserve*. The concept of historiographical reserve refers to an intellectual and cultural repository of multiple possible meanings and explanations given to local history. This is also essential to the value creation of any built urban environment. Through the concept of historiographical reserve, historical value creation and urban heritage are powered not only by the writing of historical works but also by the process of reading and learning from them.[7]

The translation of historiographical reserve into historical and heritage value is particularly apparent is such urban environments as *old towns*. In her study, Anna Sivula scrutinises the historiographical reserve of the Old Town of Turku and explores its chronological layers. She does this by selecting historical publications available in the public libraries of Turku, including works of non-fiction and of fiction. From these texts, Sivula then picks out historiographical samples and analyses how the past built environment is textually constructed and identified in these. In particular, she asks how the Old Town of Turku has previously been documented and represented.

Among the conclusions of Sivula's analysis is that the affective style of these historical texts varies greatly. Travel accounts of Turku written by individual tourists, as well as texts written by antiquarians and collectors from the early twentieth century, appear highly emotional, whereas the attitude of historical studies from the 1960s to 1980s appears critical and subdued. This is in clear contrast with the emotional tone of post-modern neo-monumental texts of the late 1990s and early 2000s. Lastly, the most recent historiographical layer, from the 2010s, reveals that some present-day authors revisit critical and antiquarian approaches from the past in their texts. In all, the launch of the Old Town of Turku in 2017 draws, perhaps inadvertently, on a repository of historical writings, and this historiographical reserve is vigorously utilised in the historical and heritage value creation processes.

ADMINISTRATIVE TENSIONS

The value of urban heritage can vary for the different actors in the cityscape, even among the professionals working in its administration. If these conflicting attitudes and values are examined comparatively, heritage can offer a lens through which to visualise the interconnected problems of urban space, and see it shaped by contemporary authorities. An historical example of this is explored by Tiina Männistö-Funk's study of the paradigm change in value assigned to heritage by urban planning in Turku and how this took place after the mid-twentieth century.

In around the mid- twentieth century, technocratic modernism was a powerful ideal shared by architects, planners, and politicians alike. Olavi Laisaari (1907–1982) was one of the first architects to specialise in urban design in Finland. He was responsible for designing zoning plans for several cities, including Turku.[8] Laisaari was a vehemently functionalist planner, inspired by the planning of American car cities. He saw traffic planning as the key solution to urban problems. This necessitated the radical reform of city centres, essentially the demolition of old buildings to create space for an unfettered flow of urban traffic.[9]

Laisaari's plan for the redevelopment of Turku would eventually clash with the emerging interests of urban conservation. Laisaari's main opponent, the archaeologist and art historian Carl Jacob Gardberg (1926–2010), personified the authority of heritage professionals. Gardberg worked at the Historical Museum of Turku, compiling in 1955 the very first listing of buildings marked for conservation in

Turku. This triggered a dispute between him and Laisaari. Their public conflict showed of how the rediscovery of historical Turku as an idea challenged and questioned the international urban renewal regime of the 1950s.[10] The case also demonstrates that the authority of heritage conservation was weak and forced to define itself under pressure from modernist planning and development projects. Since there was no applicable legislation, the only way to challenge the planning authority was to launch public discussions and raise public opposition. Eventually as many as 25 of the 63 culturally important buildings on Gardberg's list were demolished.[11] Despite the poor success of these early attempts of heritage conservation, the heartfelt need to express such concerns and actively negotiate with city authorities was nevertheless a formative stimulus, giving birth to a public discourse that gained authority in later decades.[12] Similarly, the idea of protecting Turku's urban milieu was formulated in response to the threat of redevelopment in the 1950s. In Turku, milieu protection radiated from the Old Town, which Gardberg saw as an entity comprising the street network and buildings around the cathedral, and the streets along the riverside leading from the cathedral towards the sea.[13]

URBAN ARCHAEOLOGY - FROM UNDERGROUND TO PROMINENCE

Archaeologists have been active in the cityscape of Turku since the early years of the twentieth century. It was around this time that urban archaeology emerged as a material practice, drawing on the historiographical reserve accumulated in previous centuries, and began to shape the urban environment. In addition to conducting fieldwork, archaeologists in Turku have actively created concepts and shaped narratives for archaeological heritage to be recognised as something valuable, in order to support their own efforts. According to Visa Immonen's analysis, archaeology in Turku has established itself as an authority in urban space, first, by making archaeological heritage a matter of scholarly concern in the early twentieth century, and secondly, since the 1980s, by making archaeological heritage visibly available for public engagement within the urban environment.

In Turku, the idea that archaeologists play a valuable role in the examination of urban heritage was introduced in the early years of the twentieth century. The idea was based on the slogan *Underground Turku*, which the archaeologist Hjalmar Appelgren (1853–1937) introduced in an article published in 1902 in both Finnish and Swedish, the former in a local newspaper and the latter in a scholarly series.[14] Appelgren pointed out the historical and cultural potential lying beneath the surface of the city, under the very feet of its inhabitants, and that the city, as it had once existed, was still there to be found. For centuries, the history of the city had been the preserve of historians only, but now, argued Appelgren, the archaeological record could also be recognised as a relevant resource for research, able to reveal Turku's past in a way that other disciplines could not.

The concept of Underground Turku created the image of a treasure trove from the past waiting inside the earth. This, in turn, inspired a desire to secure and acknowledge the scholarly value of this material. Appelgren's idea found some success, and several sites in Turku were archaeologically documented, with the results incorporated into the city's historiographical reserve in the early decades of the twentieth century. However, none of the medieval structures found in these fieldworks were preserved. Instead, they were demolished as part of construction activities.[15]

A new kind of interest in the archaeological heritage of Turku emerged in the 1980s, when the narrative around urban archaeology began to emphasise the high standards of modern fieldwork. It was declared that investigations done in the early twentieth century were unreliable, and only now were the very first 'scientific' excavations being conducted in Turku. Reference to the standards and rigour of the natural sciences thus became the leading justification and conceptual framework for archaeology. Even more importantly, a number of the medieval structures unearthed in the city were

not simply removed as a matter of course. Instead, these ruins were intentionally preserved. This development culminated in the 1990s, when medieval structures found in the city centre were transformed into a well-known tourist attraction, the Aboa Vetus Ars Nova Museum, which combines *in situ* remains with exhibitions of contemporary art.[16] In contrast to the early twentieth century, archaeological heritage had emerged from below ground and thus became a visible part of Turku's urban space.

URBAN COMMUNITIES AND INTANGIBLE HERITAGE

As heritage and heritage management have established themselves as authorities with power over urban space, the views of scholars and heritage managers on the character and effects of heritage have started to change in Northern Europe. This development, which has also altered how urban heritage is studied in Turku and how residents are listened to as authorities of their own heritage, is examined by Aura Kivilaakso and Maija Mäki.

Crucial to the emergence of a new heritage paradigm has been the introduction and spread of the concept of *intangible* heritage. This has not only directed attention to heritage phenomena such as customs, stories, and memories, but also demonstrated that there is a fundamental link between intangible and tangible heritage: buildings, museum objects and other forms of tangible heritage require values, meanings and emotions, i.e. intangible heritage, in order to become established as heritage.[17] For instance, when scholars have studied the attitudes and views of members of the public regarding the urban environment in which they live, they have realised that it might in fact be the *stories* that places and buildings prompt in the minds of their audience which are valued, rather than the built structures themselves. The shared stories that circulate around an urban environment are therefore pivotal building blocks of communality, which reveal the importance of communities and their participation in heritage processes.[18]

In Finland, heritage management is in the process of adopting the novel perception of heritage as intangible and communally defined,[19] and therefore requiring new kinds of management ideals and values. If heritage professionals want to preserve heritage within the urban environment, platforms for communal engagement and egalitarian discussion are required.[20] Creating these, in turn, requires a new kind of scholarship that focuses on heritage communities. In her contribution to our project, Piia Pentti examines everyday engagements of Turku's residents with the city's urban heritage. She conducts her fieldwork by providing a harness and body camera to selected members of the public. These are then requested to take a stroll in the city centre and record places that they personally consider to represent important heritage. The analysis of such rich visual and oral records can therefore reveal how individuals and communities conceptualise and value their heritage environment.

CONCLUSION

Changes in the relationship between urban heritage, heritage authority, and the city's inhabitants have an immediate effect on urban space. Despite their apparent swiftness and novelty, such transformations are the outcomes of long-term historical processes. As we have argued in this article, they include the accumulation of historiographical reserve, as well as the negotiation of the conflicting values attributed to heritage within urban planning. As a result of such processes in Turku, archaeological heritage has been established as a visible urban element, and communal views on heritage have gained increased currency both in heritage management and in scholarship.

In a time of eroding authorities, established heritage institutions still control, to a certain extent, the urban space within the Old Town of Turku. These are challenged, however, by increasingly dissonant voices, both local and global, which reflect different kinds of values and conceptualisations of

heritage. This increasing diversity means that the future of Turku's urban environment is unfolding as an outcome of both professional and communal participation, affected by changing patterns of authority over urban heritage.

NOTES

[1] Michel de Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984).

[2] James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 2005); Per Lundin, *Bilsamhället: Ideologi, expertis och regelskapande i efterkrigstidens Sverige* (Stockholm: Stockholmia, 2008).

[3] Joel H. Crawford. *Carfree Cities* (Utrecht: International Books, 2000).

[4] Laurajane Smith, *The Uses of Heritage* (New York: Routledge, 2006).

[5] Aleksi Randell, Markku Wilenius, Timo Hintsanen, Riitta Birkstedt, Eero Lundén, Maija Parviainen and Carmen Lee. *Towards New Turku Vision for the City Centre 2050* (Turku: City of Turku, 2017), https://www.turku.fi/en/development-city-centre/vision-city-centre-turku (accessed: 06.07.2021).

[6] On the value of monuments, see Alois Riegl, "The Modern Cult of Monuments: Its Character and Origin," *Oppositions* 25 (1982), 20–51. On the process of urban heritage, see Jonathan Stanhope Bell, *The How and Why of Preservation: Protecting Historic Neighborhoods in China* (Los Angeles: UCLA, 2014), 46–48, which draws heavily on Smith, *The Uses of Heritage*, 3. On the relationship between symbolic value and tangible cultural products, see Denis E. Cosgrove, *Social Formation and Symbolic Landscape* (Madison, WI: University of Wisconsin, 1984), 59. On value generation in general, see Heiko Wieland, Kaisa Koskela-Huotari and Stephen L. Vargo, "Extending Actor Participation in Value Creation: An Institutional View," *Journal of Strategic Marketing* 24 (2016), 210–226.

[7] Sivula coined the concept of *historiographical reserve* in 2021 to serve the needs of her *historiographical operation analysis*, see Anna Sivula, "Tilaushistoria identiteettityönä ja kulttuuriperintöprosessina: Paikallisen historiapolitiikan tarkastelua," *Kulttuuripolitiikan tutkimuksen vuosikirja* 1 (2015), 61–75; Anna Sivula, "Turun Tuomiokirkko historiografisen operaatioanalyysin kohteena," in *Metodikirja*, ed. Rami Mähkä et al. (Turku: Turun Historiallinen Yhdistys, 2021).

[8] Olavi Laisaari, *Turun yleiskaava ja kaupungin kehittämisohjelma* (Turku: Turun kaupunki, 1952).

[9] Olavi Laisaari, *Tehokas kaupunki – The Smooth-running Town* (Turku: Turun kansallinen kirjakauppa, 1962).

[10] Christopher Klemek, *The Transatlantic Collapse of Urban Renewal: Postwar Urbanism from New York to Berlin* (Chicago: The University of Chicago Press, 2011).

[11] C. J. Gardberg, "Byggnadssydd i Åbo på 1950-talet," in *Rakennettu aika: ICOMOSin Suomen osasto 25 vuotta*, ed. Maija Kairamo et al. (Helsinki: ICOMOS, Suomen osasto, 1993), 57–61.

[12] C. J. Gardberg, "Rakennetun miljöön suojelu," *Suomen Turku* 1977(4): 11–13.

[13] Gardberg, "Byggnadssydd i Åbo på 1950-talet".

[14] Hjalmar Appelgren, "Maanalainen Turku," *Uusi Aura*, February 22–March 5, 1902; Hjalmar Appelgren, "Det underjordiska Åbo," *Finskt Museum* 1901 (1902): 49–65.

[15] Jussi-Pekka Taavitsainen, "Piirteitä Turun arkeologian historiasta," in *Kaupunkia pintaa syvemmältä: Arkeologisia näkökulmia Turun historiaan*, ed. Liisa Seppänen (Turku: Suomen keskiajan arkeologian seura, 2003), 9–22.

[16] Minna Sartes, "Rettigin palatsin tontista tuli Aboa Vetus -museo," in *Kaupunkia pintaa syvemmältä: Arkeologisia näkökulmia Turun historiaan*, ed. Liisa Seppänen (Turku: Suomen keskiajan arkeologian seura, 2003), 77–85.

[17] Smith, *The Uses of Heritage*; Laurajane Smith, *Emotional Heritage: Visitor Engagement at Museums and Heritage Sites* (New York: Routledge, 2021).

[18] Eeva Karhunen, *Porin kuudennen osan tarinoista rakennettu kulttuuriperintö* (Turku: Turun yliopisto, 2014); Laurajane Smith and Emma Waterton, *Heritage, Communities and Archaeology* (London: Bloomsbury, 2009).

[19] Tanja Vahtikari, Aura Kivilaakso and Pauliina Latvala, "Kaupunki, kulttuuriperintökokemus ja osallisuus," in *Humanistinen kaupunkitutkimus*, ed. Tanja Vahtikari et al. (Tampere: Vastapaino, 2021), 380–381; cf. Tuuli Lähdesmäki, "Conflicts and Reconciliation in the Postmillennial Heritage-Policy Discourses of the Council of Europe and the European Union," in *Dissonant Heritages and Memories in Contemporary Europe*, ed. Tuuli Lähdesmäki et al. (Cham: Palgrave Macmillan, 2019), 35–40.

[20] E.g., Vahtikari, Kivilaakso and Latvala, 365–368.

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"DESIGN AND ORGANIZATIONAL CHANGE: EMERGENT SKILLS IN PUBLIC ADMINISTRATION" INTERCONNECTING TWO SCIENTIFC AREAS TO UNVEIL EMERGENT SKILLS IN THE CONTEXT OF LISBON'S CITY HALL

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INTRODUCTION

This paper approaches the question of the interconnectivity of cities, integrating Design and Organizational Change in the context of a PhD research project, having as subject, five cases studies from Lisbon's City Hall (LCH).

Inquiring into the intersection of the two scientific areas of Design and Organizational Change identified a surprising, interrelated research field: skills.

Research on how design relates or contributes to organizational change has been expanding in scope and depth over the past decade,[1] including how, Design's human centric approach, shifted the focus from just the output, towards the relation between it and people,[2] hence, highlighting collaborative and interdisciplinary systems, and by that, adding to the systemic orientation in the context of Organizations, and their change.[3]

The turn to design comes as traditional approaches to organizational change have a success rate of less than 30 percent and there is growing consensus that to increase that rate, novel approaches are needed.[4] Design may be part of the solution as it implies change,[5] while organizations may be a subject of design.[6]

The increased recourse to design by public organizations[7] for better assessing citizens' needs and improving their engagement through service design,[8] up to co-creating policies,[9] assists a movement away from New Public Management (NPM) towards New Public Governance (NPG).[10] Provocatively, NPM has been a transitory stage in the evolution from traditional Public

Administration (PA) to NPG. [11] Our research is part of, and contributes to, the development of this new model of governance in the public administration.

Furthermore, Design's collaborative approach within the public sector, conveyed by multi-stakeholders' open frameworks, resources sharing and co-creation activities in "pursuing the goal of «common good»" to cocreate citizen-centric outcomes,[12] has been, consequently, highlighting the combination of distinctive skills.

Correspondingly, this movement from NPM to NPG, emphasizes that change in PA is needed, as its organizational design is unfitting for contemporary social challenges and citizens expectations.[13] The current pandemic has reinforced this idea.

Change, in this overarching and complex public setting, further requires an increasingly collaborative setting and calls for special attention to "the role of leadership, which is necessary to link people, resources and ideas". [14]

In this frame, we have directed the research into identifying skills that result from the encounter between designers and change leaders, and propose to validate if and which skills are emerging in this context.

Moreover, acknowledging change as a process and not an event, also means that it comprehends different stages, that in turn may demand different sets of skills. And so, may its leadership.

The present paper will not cover all these variables, instead it reflects an inquiry on a specific backdrop and moment in time.

SKILLS

Today, beyond factories' assembly lines, what Braverman highlighted as the deskilling of work, [15] organizations in general must manage significantly more information and complexity in face of an increasing pace of change and uncertainty. Too much to be controlled exclusively by the top management. [16] Hence, demanding novel approaches and ever-updated skill sets from most employees. Therefore, skills can't be detached from the context under observation, as they are unveiled, developed, or even as Braverman criticized, disconsidered accordingly.

In this vein, taking LCH five case studies, we are inquiring if and how the combination of skills from Design and Organizational Change, contribute to designing organizations more adjusted to today's challenges.

We have then performed an exercise on bridging change leaders' skills with designers' skills, in the search for answers.

Change leaders' skills

On this subject, Organizational Change literature highlights change leadership as an increasingly valuable dimension in face of today's pace of change. While Griffith-Cooper and King[17] address a top-level description of change leadership's definition, Kanter[18] breaks it down to the skills a change leader should possess (Table 1). Arguably, Kanter's suggested skills echo skills for designers.

At the core, Kanter seems to highlight empathy, creativity, and communication. Firstly, empathy as a key ability to analyze the same situation from multiple stakeholders' perspectives, which are arguably steppingstones towards human centricity and collaboration. Two determinant dimensions, considering the overarching nature of Public Organizations. Secondly, creativity, the ability to coming up with both new questions and answers. Lastly, communication, for engagement goals, from inspiring to coalitions building, transferring ownership, and celebrating, it is key to tell the right story at the appropriate moments to the relevant audiences. And accepting that change is constant,[19] leading change should be assumed as an ongoing duty.

Tuning in to the environment	To actively collect information that suggests new approaches
Challenging the prevailing organizational wisdom	To question their assumption about how pieces of the organization, the marketplace or the community fit together
Communicating a compelling aspiration	To make a compelling case
Building coalitions	To involve people who have the resources, the knowledge and the political clout to make things happen
Transferring ownership to a working team	To allow teams to forge their own identity, build a sense of membership, and enjoy the protection they need to implement changes
Learning to preserve	To assume change leadership as an ongoing role
Making everyone a hero	To recognize, reward and celebrate accomplishments

Table 1. Rosabeth Moss Kanter change leaders' skills Source: Kanter (2000, p. 32-36)

Designers' skills

Kamil Michlewski brings a fresh and critical view onto the impact design and designers have in organizations, shifting from focusing on methods or processes of designing, to the culture, attitudes and values of designers.[20]

We are taking his approach as our starting point on designers' skills, due to Kamil's challenging and thoroughly constructed attempt to clarify this matter, through organizing characteristics and skills in six dimensions (Table 2). Furthermore, he understands skills, and their combination to be bounded to specific contexts, in line with a driving principle of this exploratory exercise.

In this vein, considering the background of public organizations increasingly cocreating citizen-centric outcomes, and on a preliminary assessment, interpersonal and organizational skills are then under the spotlight. Moreover, and with regards to change and uncertainty, designers' cognitive skills and personal traits indicate a relevant fit, supported by the nature of their ambiguous, exploratory and emergent processes.

Practical Skills	Drawing, visualizing, manipulating, artefacts in three dimensions, gathering and using information, presentation building, report writing, researching, working with different media
Cognitive / mental skills	Visual thinking, manipulating spatial relations, associational fluency, reflectivity, synthesizing, critical thinking, creativity, visual memory, inductive reasoning, perceptual speed, gestalt closure, flexibility, lateral thinking, holistic thinking
Interpersonal skills	Communicating verbally and non-verbally, listening, relationship building, persuasion, delivering presentations, social integration, flexibility, sense of dialogue
Organizational / business skills	Understanding and balancing stakeholders' requirements, business and commercial sense, project management, planning, scenario building, strategic thinking, consumer/customer focus, team orientation
Designers' personal traits	Risk taking, opportunism, originality, feeling, intuiting, pursuing freedom of expression, future focus, exploration, perception, extraversion, sensitivity to problems, optimism, enthusiasm, self confidence
Nature of the process / method	Ambiguous, exploratory, emergent, experimental, abductive, opportunistic, rhetorical, risky, reflective, integrative, convergent, divergent, reconstructive, constructive, innovative

Table 2. Kamil Michlewski designers' skills Source: Michlewski (2015, p. 45)

Bridging skills

Pursuing the inquiry around the combination of skills, we've set to identify bridges between Kanter's and Kamil's approaches (Table 3). We took Kanter's change leadership skills as the starting point and reorganized Kamil's designers skills accordingly, since we're exploring contributions to designing organizations more adjusted to today's challenges. We've then identified the following:

Empathy: a crucial skill when navigating complex and uncertain environments while aiming to citizen centric outcomes. A dimension common to the design narrative, has been gaining predominance in the organizational setting as we assist the shifts from PA to NPM and NPG.

Creativity: in raising questions and finding new answers that challenge the status quo. While another obvious skill for design, organizational change also demands novel approaches.

Story telling: to be able to convey clear messages verbally and visually, physically and digitally, regardless the audience and the communication goal, is highlighted in both fields.

Multi and transdisciplinarity: both from an organizational coalition building perspective and a design understanding of different stakeholders' requirements when framing challenges, collecting multiple perspectives is growing in relevancy.

Co-creation: Clearly closer to design, breeds co-authorship and co-responsibility, dimensions bound to the success of most organizational transformations.

Iterative project management: as change is constant, so must flexibility be on any long-term project management, such as in organizational change efforts.

Inspiration: there is no citizen centricity without human centricity. It is not just about the outputs in face of change and uncertainty but also how one manages multiple stakeholders getting there.

Kanter change leaders skills	Bridge	Michlewski designers skills
Tuning into the environment	Empathy	Listening, relationship building, sensitivity to problems
Challenging the prevailing organizational wisdom	Creativity	Critical thinking, lateral thinking, scenario building, risk taking, exploration, innovative, divergent
Communicating a compelling aspiration	Story telling	Communicating verbally and non-verbally, persuasion, delivering presentations, visual thinking
Building coalitions	Multi and transdisciplinarity	Understanding and balancing stakeholders requirements, sense of dialogue,
Transferring ownership to a working team	Co-creation	Team orientation, social integration, integrative
Learning to preserve	Iterative project management	Flexibility, project management, planning
Making everyone a hero	Inspiration	Relationship building, integrative, optimism, enthusiasm, constructive, innovative

Table 3. Rosabeth Kanter change leaders' skills with Kamil Michlewski designers' skills Sources: Kanter (2000, p. 32-36), Michlewski (2015, p. 45)

LISBON'S CITY HALL - FIVE CASE STUDIES

Acknowledging the considerably innovative footprint of LCH, to select five case studies, we searched for departments and projects that appeared having a strong digitalization premise and design principles imbedded, such as civil participation and collaboration, multidisciplinarity and interdisciplinarity, as well as open innovation. We've then selected the following:

Made of Lisboa – an open network of Lisbon based Innovators, managed and promoted by the Direction of Economy and Innovation.

Participatory Budget – a twelve-year-old pioneering project in Lisbon, consisting in a yearly open call and voting for proposals, aiming at improving citizens lives, has been covering different thematic, namely culture, mobility, outdoor spaces and sports. The transformative success of it, lead to

becoming a reference across LCH regarding civil participation and to be at the foundations of a new Direction: Organizational Innovation and Citizen Participation.

BIP/ZIP – inspired by the Participatory Budget groundings and managed by the Direction of Local Development, this program is focused in neighborhoods of most need, through supporting third sector associations' projects.

In My Street – an interface between citizens and LCH Interventions Units, allowing easy reporting of occurrences in Lisbon through a mobile application.

LxDataLab – the most recent organizational unit among the five cases, has been created to make sense of Big Data, for both internal and external use, independently or through partnerships, aims to take data as an enabler to deliver better services to citizens.

Contextualizing skills: Grounded theory, abrupt change and digitalization

The research strategy in course is constructed on grounded theory from case studies, mainly due to the scarcity of research around this specific subject and context for which novel conclusions may be of value. By principle, such research strategy is open to navigate the unknown and iterative in cycles, of literature review, data collection and hypothesis shaping.[21]

In this frame, while the literature review was at a framing level of the research, the world was hit with the pandemic by COVID-19. Change was dominantly emergent and abrupt and uncertainty was – and still is – inevitable, regardless the geography, industry and nature of the organizations. And if for brief moments the world froze, it quickly became also clear that a few trends were accelerated. From remote-work to everything-delivery, digitalization was forced and accelerated.

In the context of Organizational Change, more precisely, the PA shift from NPM to NPG, where digitalization is a key element,[22] the research team wanted to take this opportunity to understand which skills from both Design and Change Leadership where under the spotlight and their interrelation.

The research team held exploratory interviews between May and July 2020, with leaders from the five case studies of LCH. These interviews aimed at taking a picture of that moment while also represented an opportunity to exercise the bridging between Designers and Change Leaders skills (Table 3), ultimately aiming at further instructing our research approach to the subject. An approach that will require further work, including reviewing other scholars on these research fields.

EXPLORATION AND EXERCISE – INFERENCES

From these open-ended interviews general conclusions highlight a few issues while raising further questions.

The mandatory lockdown state made home-office the norm, pinpointing further needs in both internal and external processes agility. Internal consequences were more evident due to the scattering of teams, in dimensions such as in communication, collaboration, project and stakeholders' management.

Such setting of abrupt change breeds multiple questions, including skills related ones. Starting from which skills would be then – and for the foreseen future - more valued and eventually lacking?

The interviews helped to shed a light on this issue. At a first level, it seems notable to identify some traces of what Weick had described as loosely coupled sub-systems.[23] Since the LCH has a highly bureaucratic Weberian organizational heritage, adding to it is a public and politicized one, it was interesting to acknowledge that these managers had their superiors' confidence to make their own decisions and choose their path to achieving the organization's goals. A trace that doesn't come without pitfalls, as the dangers of subjective rationality.[24] Nonetheless, in the same vein of freedom and responsibility, the five interviewed managers tended to apply the same principles to their teams.

Arguably and still from a skills point of view one could then assume that they were being asked by their superiors to put to practice a set of change leaders and designers' skills. And notably, in the chain of command, these managers were partly asking their teams the same, since the forced and abrupt remote work led to breaking each department to as many offices as team members, thus leading to a scenario of speeded digitalization and of increased autonomy and self-management. A scenario where managers lost part of their ability to control and where skills related to communication, time, project and stakeholders' management, critical thinking and collaboration, became even more valued.

With reference to bridging change leaders' skills with designers' skills (Table 3) we underline that all dimensions seemed relevant in the given situation, as follows.

Empathy: "We're trying to build a culture of listening" - Firstly, internally, in being able to understand how each team member may be going through a different experience during the lockdown. Personally and professionally. Empathy was highlighted as a team promoter. Secondly, when considering citizens, partners and other stakeholders, empathy was valued to be alert to the needed change.

Creativity: In assessing the "new normal" and what could or should be done differently to achieve the organizational goals and mission. "New needs, lead us to develop new services" In one particular case, traffic reduction during the pandemic, increased the number of empty parking spaces that could potentially be converted to terraces, so that local businesses could offer a safer service to their customers.

Multi and transdisciplinary: In that specific backdrop it was highlighted that not being able to being physically together was a challenge, especially when starting new endeavors. And for some duties such as road and building constructions' supervision, it was impeditive. Nevertheless, in that given moment, overall, project managers were able to adapt and execute their duties. And beyond project management, this skill was consistently linked to communication skills in the very specific lockdown moment.

Storytelling: Communication was challenged, despite all digital tools available today. On a first remote work moment, leaders promoted constant team checkpoints, as well as individual ones to make better sense of each's status. Regardless of the uncertainty and lack of clarity in what was coming next, they all opted for candid and empathic approaches, having as clear priorities the team's wellbeing and the public mission they all shared.

Co-creation: Especially because of isolation but resorting more to digital tools, collaboration was stress tested and a crucial aspect of each member duties. From a wider perspective, one interviewee highlighted how designing the return to normality was being seen as an opportunity to further engage citizens in reshaping and rebuilding the city they actually want and need. "Asking, before doing". made clear how co-creation was seen as a growing dimension of the organization in the relation with the citizens, raising the questions around what else would be co-created in the future and how.

Iterative project management: Change and uncertainty lead to exercise flexibility from top to bottom while self-management of tasks, time and stakeholders, became a more notorious need. This skill was also linked to autonomy by most interviewees, when stating that as leaders they were being given the freedom to make decisions even if it implied transformations.

Inspiration: Although usually expected from management, along with empathy, more than a skill, it was more valued as an attitude to breed an optimistic perspective. Suddenly everyone got to see and know more about everyone else's personal lives, how each colleague and their families were coping with such an abrupt change. Leaders' empathic attitude was as important as was the supportive

attitude between peers, in inspiring everyone to continuously learn, adapt and look further with optimism.

CONCLUSION AND RESEARCH NEXT STEPS

The exercise of assessing these exploratory interviews under the bridging of change leaders and designers' skills, appear to indicate a path for further investigations on this research field, but not without raising additional questions, especially because the pandemic by Covid-19 was an extreme event, provoking change in all fronts, leaving its impact for the future in the open.

Will leaders continue shifting their mindset from the need to control to the need to breed co-creators? Or will they move back closer to a pre-pandemic leadership mindset?

In this movement, that is still to be observed, which skill set will be the most fitting?

This exploratory exercise is enlightening our research next steps which, that being already in place, include the creation of a dashboard bringing together both scientific areas - Organizational Change and Design - to assess LCH five case studies.

Its outputs will be crossed with designers' skills to unveil which skills may be of relevance (or harmful) in change efforts - planned and emergent - as well as the readiness for it.

NOTES

[1] Alessandro Deserti and Francesca Rizzo, "Design and Organizational Change in the Public Sector," *Design Management Journal* 9, no. 1 (October 2014): 85–97, https://doi.org/10.1111/dmj.12013, and Francesca Rizzo et al, "Introducing Design Thinking in Social Innovation and in the Public Sector: a Design Based Learning Framework." *European Public & Social Innovation Review* 2, no. 1 (2017). https://doi.org/10.31637/epsir.17-1.9, and Daniela Sangiorgi, "Designing for Public Sector Innovation in the UK: Design Strategies for Paradigm Shifts." *Foresight* 17, no. 4 (2015): 332–48. https://doi.org/10.1108/fs-08-20130041.

[2] Tim Brown, *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation.* (New York: Harper Collins, 2009).

[3] Peter Senge, *The Fifth Discipline: the Art and Practice of the Learning Organization.* (New York: Doubleday, 1990).

[4] Serina Al-Haddad et al., "Integrating the Organizational Change Literature: a Model for Successful Change." *Journal of Organizational Change Management* 28, no. 2 (2015): 234–62. https://doi.org/10.1108/jocm-11-2013-0215.

[5] Herbert Simon, *The Sciences of the Artificial. Cambridge* (Mass. The MIT Press, 1969).

[6] Richard Buchanan, "Introduction: Design and Organizational Change." *Design Issues 24*, no. 1 (2008): 2–9. https://doi.org/10.1162/desi.2008.24.1.2. and Sabine Junginger. "Inquiring, Inventing and Integrating: Applying Human-Centered Design to the Challenges of Future Government." *JeDEM - eJournal of eDemocracy and Open Government* 10, no. 2 (2018): 23–32. https://doi.org/10.29379/jedem.v10i2.520.

[7] Francesco Mureddu and David Osimo, "Co-creation of Public Services: Why and How." *The Lisbon Council. Interactive Policy brief, Issue* 25/2019, 1-20. (2019). https://lisboncouncil.net/publications/co-creation-of-public-services-why-and-how/

[8] Francesco Mureddu and David Osimo, "Co-creation of Public Services: Why and How." *The Lisbon Council. Interactive Policy brief, Issue* 25/2019, 1-20. (2019). https://lisboncouncil.net/publications/co-creation-of-public-services-why-and-how/ and Seungho Park-Lee, "Contexts of Briefing for Service Design Procurements in the Finnish Public Sector." *Design Studies* 69 (2020): 100945. https://doi.org/10.1016/j.destud.2020.05.002.

[9] Michael McGann et al., "Innovation Labs and Co-Production in Public Problem Solving." *Public Management Review* 23, no. 2 (2019): 297–316. https://doi.org/10.1080/14719037.2019.1699946.

[10] Daniela Sangiorgi, "Designing for Public Sector Innovation in the UK: Design Strategies for Paradigm Shifts." *Foresight 17*, no. 4 (2015): 332–48. https://doi.org/10.1108/fs-08-2013-0041.

[11] Stephen Osborne, "The New Public Governance?" *Public Management Review* 8, no. 3 (2006): 377–87. https://doi.org/10.1080/14719030600853022.

[12] Maurizio Maraglino Misciagna and Anna Rinaldi. "Co-Creation in the Public Sector: A Tool for Innovation," n.d., 8.

[13] Grazielli Faria Zimmer Santos et al., "A Contribuição Da Design Research Para a Resolução de Problemas Complexos Na Administração Pública." *Revista de Administração Pública* 52, no. 5 (October 2018): 956–70. https://doi.org/10.1590/0034-761220170014.

[14] Victor Bekkers and Lars Tummers, "Innovation in the Public Sector: Towards an Open and Collaborative Approach." *International Review of Administrative Sciences* 84, no. 2 (2018): 209–13. https://doi.org/10.1177/0020852318761797.

[15] "The more science is incorporated into the labor process, the less the worker understands of the process ", or in that context, needs to understand. This critical view over the rationalist perspective, rooted on the scientific approach to management, introduced by Taylor, which aiming to boost production in late 19th early 20th century, had its focus on predictability and control, is what Braverman called the deskilling of labor, as workers were increasingly becoming button pushers. Harry

Braverman, Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century. New York: Monthly Review Press (1975).

[16] Derek Salman Pugh and David John Hickson. *Great Writers on Organizations*, 3rd omnibus ed. (Aldershot, England ; Burlington, VT: Ashgate, 2007).

[17] Barber Griffith-Cooper and Karyl King, "The Partnership between Project Management and Organizational Change: Integrating Change Management with Change Leadership." Performance Improvement 46, no. 1 (2007): 14–20. https://doi.org/10.1002/pfi.034.

[18] Rosabeth Kanter, "Leaders with passion, conviction and confidence can use several techniques to take charge of change rather than react to it". *IVEY Business Journal* (may/June 2000)

[19] Change, in fact, has been defined by the pre-Socratic Greek Philosopher Heraclitus (535-475 BCE) as a condition of existence, regardless of the object we may be assessing. This idea of change being central to the Universe, was later appropriated and adapted to the one-liner "change is the only constant". A doctrine that no contemporary industry would ever imagine becoming so relevant and true at its core.

[20] Kamil Michlewski, *Design Attitude*. (Routledge, 2016).

[21] Kathleen Eisenhardt, "Building Theories from Case Study Research." *The Academy of Management Review* 14, no. 4 (1989): 532. https://doi.org/10.2307/258557.

[22] Patrick Dunleavy, "New Public Management Is Dead--Long Live Digital-Era Governance." *Journal of Public Administration Research and Theory* 16, no. 3 (2005): 467–94. https://doi.org/10.1093/jopart/mui057.

[23] James Douglas and Karl Edward Weick, "Loosely Coupled Systems: A Reconceptualization." *The Academy of Management Review* 15, no. 2 (1990): 203. https://doi.org/10.2307/258154.

[24] Stewart Clegg and Martin Kornberger, "Modernism, Postmodernism, Management and Organization Theory", *Post Modernism and Management*, n.d., 57–88. https://doi.org/10.1016/s0733-558x(03)21003-x.

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IMPROVING MODULAR BUILDING CONSTRUCTION TO REDUCE THE IMPACT ON ASSOCIATED INFRASTRUCTURE SYSTEMS

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INTRODUCTION

Modular buildings have a long history that can be traced to the times of antiquity.[1] The recorded examples of the early modular buildings show us how these construction systems have initiated from the needs and desires of the society to construct buildings in remote location, within a faster time periods or in mass quantities.[2]

These types of buildings are constructed on-site by assembling modules that are fabricated in an off-site facility without exposure to bad external weather condition. In this production method, various types of building such as single-detached, duplex, row homes or multi-story housing can be constructed using different combinations of factory-built modules. [3] These factory-built modules include most of the interior and exterior finishes such as the necessary insulation, air/vapour barriers, plumbing, wiring, and exterior siding. In most instances, the factory built modules are delivered to the site by flatbed trucks and placed on either a full-perimeter foundation-crawl space or a full-depth basement foundation by cranes when assembling the building. Hence, though the appearance of prefabricated buildings is most often indistinguishable from conventionally constructed buildings, their interaction with other key infrastructural systems varies greatly but very little research exists on the matter.

Thus, understanding the infrastructural dependencies of MBC is essential to identify ways to minimize negative impacts and improve positive impacts of MBC on infrastructure systems as a whole. Hence, the main objective was to identify the ways in which MBC method impact the key infrastructure systems and to identify opportunities to support a positive relationship between MBC and those key infrastructure systems, which are inherently integrated.

METHODOLOGY

To achieve this objective, a two-part document analysis method was used, which involved finding, analyzing, and synthesizing the data from selected documents.[4]

The first part of the literature review focused on the published literature on MBC, from which we were able to identify what are the different infrastructure systems impacted due to MBC compared to CBC. The second part of the document analysis focused on the existing life cycle impact assessments

(LCA) of MBC, from which we were able to estimate the overall impact of MBC on each of the key infrastructure system.

To get a comprehensive conclusion, we needed to look at the overall effect of MBC on the considered infrastructural systems. So, we needed to develop a method to quantify these impacts that happen throughout the life cycle of modular buildings. Our literature review pointed to life cycle assessment (LCA) studies of modular buildings that researchers have done to examine environmental impact of MBC.

LCA is a tool where a system can be evaluated by quantifying the materials and energy flows throughout the entire life cycle of that system (material production, off-site building component fabrication, on-site assembly, operation and demolition of the buildings).[5]

The typical procedure of LCA involves:

1. Identifying all the life cycle stages of a system.
2. Quantifying material and energy flow during those stages.
3. Calculating the environmental impacts caused due to those systems.

However, while this quantification of material and energy flow of a system allows us to extrapolation the environmental impacts of that system, it also gives us a basis to quantify the impact of those systems on the associated infrastructure systems. For example, the quantified consumed operational energy can be taken as the impact on the infrastructure related to energy. Therefore, we used two LCA studies to assess the overall effect of MBC on the infrastructure systems compared to CBC.

DOCUMENT ANALYSIS

The points of contact between different infrastructure systems and MBC compared to CBC

In the first part of the document analysis, which we did to identify what are the different infrastructure systems impacted because of MBC compared to CBC, we looked at the advantages and challenges of MBC compared to conventional building construction found in the reviewed literature. The review highlighted many connections between building construction and other infrastructural systems. The infrastructural systems that are highly connected are related to transportation, energy supply, and waste disposal. While both CBC and MBC impacts each of these infrastructural systems throughout its process, in many occasions the level of impact caused on these infrastructural systems due to CBC and MBC differs.

The overall impact on different infrastructure systems caused due to MBC compared to CBC

The second part of the literature review focused on the existing life cycle impact assessments (LCA) of MBC, which we used to estimate the overall impact of MBC on each of the key infrastructure systems.

Analysis of *Construction Matters: Comparing Environmental Impacts of Building Modular and Conventional Homes in the United States* paper

The first study we looked at was Analysis of Construction Matters: Comparing Environmental Impacts of Building Modular and Conventional Homes in the United States paper. This paper had evaluated the environmental impact of constructing a 2,000 ft2, two-story modular home and an identical conventional on-site built home, using LCA. This study had considered the material consumption, transportation, off-site and on-site energy consumption during construction, and the waste generation.[6]

Effect on infrastructure systems related to waste disposal.

This paper had only considered building materials that had different quantity requirements for MBC and CBC.[7] Therefore, in this study other building materials like siding, roofing materials, and wiring had not been taken in to account. They had found that wood wastage in marriage walls is the highest producer of waste associated with MBC. Marriage walls account for about 25% of total mass of wood in MBC, which are sort of essential in transporting the modules.[8]

However, they had also found that, if we consider the total waste generated, CBC generates a higher quantity of waste compared to MBC, because of the higher wood and drywall wastage that happens during construction. In MBC. So, from this study we could see that the impact on infrastructure related to waste is lower in MBC, compared to CBC.

Effects on infrastructure systems related transportation.

To evaluate the traffic impact occurred due to CBC and MBC, using this study we calculated the passenger car equivalent (PCE) miles, which is indicated in Table 1. For this, we used the passenger car equivalent unit values.[9] PCE is an estimation of its traffic impact compared to that of a passenger car (basic car). From this study what we found out was that in CBC there is high mileage of worker transportation to site, thus, CBC has higher PCE miles. Therefore, from this study we were able to identify that CBC's impact on transportation infrastructure related to traffic is higher than that of MBC's.

		PCEs	Passenger Car Equivalent Miles	
			CBC	MBC
Material transport	Building materials: 16 metric ton truck	1.5	165 – 2,400	165 - 720
	Building materials: 28 metric ton truck	2.5	275 - 725	75 - 725
	Modules to site: 28 metric ton truck	2.5	0	75 - 725
Worker transport	To factory: car / light duty truck	1	0	2,500–13,000
	To site: car / light duty truck	1	7,800–26,000	1,000–3,500
Total Passenger Car Equivalent Miles			8,240 – 29,125	3,815 – 18,670
Average Total Passenger Car Equivalent Miles			18,682	11,243

Table 1. The calculated PCE miles of the CBC and MBC projects

Even though PCE miles reflect the impact on traffic flow, it does not reflect the impact imposed on the pavement because of the load transported. Hence, we considered the Equivalent Standard Axle Load (ESAL) factors.[10] We calculated the ESAL miles by multiplying the ESAL factor and the affected mileage. This gave us the amount of impact imposed on the pavement over the transported distance because of the carried load. From this we were able to see that, MBC has higher ESAL miles compared to CBC, indicating that MBC has a higher impact on transportation infrastructure related to pavement lifetime.

		Axels	Equivalent Axle Load Factor	Equivalent Axle Load Miles	
				CBC	MBC
Material transport	Building materials: 16 metric ton truck	Tandem Axle	1.23	135.3 – 1,968	135.3 – 590.4
	Building materials: 28 metric ton truck	Tandem Axle	10.84	1,192.4 – 3,143.6	325.2 – 3,143.6
	Modules to site: 28 metric ton truck	Tandem Axle	10.84	0	325.2 – 3,143.6
Worker transport	To factory: car / light duty truck	Single Axle	0.002	0	5 - 26
	To site: car / light duty truck	Single Axle	0.002	15.6 - 52	2 - 7
Total Equivalent Axle Load Miles				1,343.3 – 5,163.6	792.7 – 6,910.6
Average of Total Equivalent Axle Load Miles				3,253.45	3,851.65

Table 2. The calculated ESAL miles of the CBC and MBC projects

Effect on infrastructure systems related to energy supply.

Using the average energy requirement for each activity, this study had calculated the average of the total energy requirement for both CBC and MBC. From this calculation the study had found that CBC consumes almost twice as much energy as MBC, which is mainly due to the on-site heating required in CBC.[11] Therefore, from this study we can identify that the impact on infrastructure related to energy is considerably less in MBC compared to CBC.

Analysis of *Preliminary Life Cycle Analysis of Modular and Conventional Housing in Benton Harbor* thesis

This thesis has compared the environmental impact of a single-story modular home and an identically simulated conventional on-site building using a life cycle assessment approach.[12] In this study, the total energy consumption, greenhouse gas emission, and waste generation of the two buildings had been estimated by taking into account many life cycle phases: material acquisition and transportation, prefabrication and transportation, on-site construction and transportation, and building operation. However, they had not considered some key life cycle phases like site preparation, refurbishment, or demolition.

Effect on infrastructure systems related to waste disposal.

According to the findings of this thesis, during the material acquisition and material production phases, the modular home construction generates a slightly higher amount of waste. However, during the building construction phase, the amount of waste generated in MBC is significantly lesser than in CBC because of the use of CAD/CAM.[13] Therefore, we can identify that the impact of the MBC on the infrastructure related to waste management is lower than that of an identical CBC.

Effects on infrastructure systems related transportation

To compare the environmental impact of MBC and CBC, this thesis has considered the energy requirement for transportation needs. Here the thesis has considered the requirements to transport material, employees and the prefabricated modules. When considering the energy requirement to transport both material and prefabricated modules, the modular home construction consumes 8,800 MJ less energy than the conventional home.[14] According to the thesis this reduction is mainly because of the reduced supply chain of building materials in the modular home construction.[15] Unlike in the CBC method where materials are obtained from either wholesalers or retailers, in MBC, building

materials are mostly procured from manufacturers themselves which reduces the supply chain and decreases the energy required for material transportation.

Energy consumption because of transportation doesn't directly reflect the impact on traffic flow and stress on the pavement. However, if we assume that the energy consumption is proportional to the distance travelled, we can then do a comparison between CBC and MBC. For this analysis, the ratio between the distance travelled to energy consumption was assumed to be,

$$\frac{Distance\ Travelled}{10\ MJ} = a$$

where 'a' is a constant. In the previous study, we saw that 16 metric ton trucks were primarily used for material transportation, 28 metric ton trucks were used to transport fabricated modules and light duty trucks were used for transportation of workers. Assuming that similar vehicles were used in these projects as well, we calculated the passenger car equivalent miles relative to the introduced constant, which is indicated in Table 3. Considering the total relative PCE miles in CBC and MBC we can see that MBC generated higher traffic flow compared to CBC. Therefore, in this study MBC's impact on transportation infrastructure related to traffic flow is higher compared to CBC.

	Vehicle Type	PCEs	Mileage		Relative PCE Miles	
			CBC	MBC	CBC	MBC
Transportation of material	16 MT truck	1.5	19,800a	7,000a	29,700a	10,500a
Transportation of the fabricated modules	28 MT truck	2.5	-	4,160a	-	10,400a
Transportation of workers	car / light duty truck	1	72a	11a	72a	11a
Total Relative Passenger Car Equivalent (PCE) Miles					29,772a	20,911a

Table 3. The calculated PCE miles of the CBC and MBC projects

Similar to before, to estimate the stress imposed on the pavement because of heavy loads, we looked at the axle load factors. We calculated the relative Equivalent Axle Load Miles using the equivalent axle load factors, which is highlighted in Table 4.

Transportation	Vehicle Type	Axels	Equivalent Axle Load Factor	Mileage		Relative Equivalent Axle Load Miles	
				CBC	MBC	CBC	MBC
material	16 MT truck	Tandem Axle	1.23	19,800a	7,000a	24,354	8,610
modules	28 MT truck	Tandem Axle	10.84	-	4,160a	0	45,094.4a
workers	car/light duty truck	Single Axle	0.002	72a	11a	0.144a	0.022a
Total Relative Equivalent Axle Load Miles						24,354.144a	53,704.422a

Table 4. The calculated equivalent axle load miles of the CBC and MBC projects

Compared to CBC, total relative ESAL miles were higher in MBC. Thus, we learnt that the impact imposed on the pavement is higher in MBC compared to CBC and the impact on transportation infrastructure related to damage on pavement is also higher in MBC. However, this thesis also notes that the energy consumption associated with transportation changes significantly depending on the

location of the project site, prefabrication facility and suppliers of building materials. Therefore, the actual level of impact on transportation infrastructure will differ significantly from project to project.

Effect on infrastructure systems related to energy supply

As per this thesis, the total energy consumption of the MBC was estimated to be 8821.7 GJ, which is 446.5 GJ less than the total energy consumption estimated for the CBC.[16] Furthermore, out of the total energy consumption of the considered phases of the two types of construction, the 'use phase' of the buildings consumes the highest amount of energy.[17] This thesis has found that modular home consumes 282.7 GJ less than an equivalent conventional home, which is mainly because of the air leakage difference between the two types of homes.[18]

RESULTS AND DISCUSSIONS

The document analysis conducted allowed us to get an approximate estimate of the overall effects of MBC compared to CBC on the different infrastructural systems, identify impacts on each of the infrastructure systems and the key suggestions for improving MBC, to be less impactful on its associated infrastructure systems.

Impact on the Infrastructure Related to Waste management

From the analysis conducted above, it became clear that the overall impact of MBC on infrastructure related waste management is less than that of CBC. This is mainly due to the higher efficiency of material utilization in MBC, compared to CBC. The key factors allowing for this is:

1.   The use of CAD/ CAM technologies in the construction process, which allows for the optimization of the material usage and reduction of the material wastage.

2.   The strategic material procurement and management processes, which allows for the effective reuse of useable material from one project to another and reduce the material wastage caused by a surplus of materials.

Some strategies that we suggest to can be used to further reduce the impact on infrastructure related to waste management, would be:

1.   When considering the waste generated, a significant issue that is not considered in the existing literature is the hazardous waste that get generated. Since the MBC is done in a controlled off-site construction facility, it has better potential to reduce and properly dispose any generated hazardous waste compared to the CBC process. So, to reduce the impact on the waste management system, we recommend that MBC adopts an effective pollution control mechanism that collects and treats the hazardous waste prior to being disposed.

2.   Another significant issue that has not been extensively studied is the waste generated during the building renovation and demolition stages of MBC projects. Right now, in most instances, the material waste generated during the building renovation and demolition of MB is sent to municipal landfills. But, with MBC there is the potential to overcome this situation. MBC can be designed and executed in such a way that during building renovation or demolition, recyclable building materials like wood and steel can be easily separated to be diverted to recycling facilities instead of landfills.

3.   Designing and constructing MBs that can be reconfigured is another more advanced solution to minimize the generation of material wastage and its impact on waste management infrastructure systems. This solution is built based on moving towards adaptable and flexible buildings.

4.   In the analysis we identified dependencies of waste management infrastructure on infrastructure related to transportation and energy supply. So, because of this by reducing the impact on the waste management infrastructure, we can also reduce the impact on the other infrastructure systems.

Impact on the Infrastructure Related to Transportation

One of the most significant impacts of building construction on transportation infrastructure systems is the road surface damage that happens because of the transportation requirements of building construction. Through the analysis of the LCA studies it was identified that MBC has a higher cumulative axle load than CBC, because of the heavy loads that are transported in MBC. So, to reduce this we recommend: Identifying and using vehicles with an appropriate number of axels for their corresponding

loads.

Another significant impact of building construction on infrastructure related to transportation is its contribution towards traffic congestion. Our analysis indicated that the impact on traffic congestion varies from project to project, depending on the location of the project site, and the type and number of vehicles used for transportation. Many of the current MBC companies use the following factors, which help to reduce the impact on traffic condition:

1. Implementing an organized building material procurement system in MBC facilities, so that the material requirements for several projects are identified in advance and ordered in bulk. This will reduce the potential ad hoc trips to purchase materials as they are needed, and so the increase the efficiency of how the transportation system is used.

2. Recruiting workers from the MBC facility neighborhood, which reduces the transportation requirements of the workers.

3. Using third party logistic companies to transport materials to optimize how the transportation system is used.

4. Conducting transportation studies with the aid of transportation consultants from the early stages of the construction project. This would help in identifying different factors like the best route for construction vehicles to use, most optimal type of vehicle to be used and so on.

Impact on the Infrastructure Related to Energy Supply.

From the analysis we identified that energy consumption of MBC is less than of CBC. So, the impact of MBC on infrastructure related to energy is less than of CBC. We also learnt that the building operation has a highest impact on the infrastructure related to energy supply. Some recommendations to further reduce the energy consumption in MBC are:

1. Designing MBs to reduce the different operation, which will require a high-energy consumption, to construct the building (e.g. transportation and heavy lifting).

2. Reducing the energy demand of the off-site construction facility by using alternative electricity supply sources such as solar power systems and energy banks.

3. Incorporating solar power systems to the building to reduce the building's electricity demand from the local electricity supply systems.

4. Designing and orienting the building to minimize energy consumption (e.g., orienting and designing the building to obtain the optimum level of natural light).

Impact on the entire infrastructure systems as a whole

From our analysis it can be seen that these infrastructure systems do not work in isolation, instead they are well connected and depended on another. Therefore, an impact on an individual infrastructure system can positively or negatively impact another infrastructure system, which will in turn change impact on the entire infrastructure system as a whole. Hence, we recommend to clearly identify and strategically use these synergies between the individual infrastructure systems to reduce the impact on the entire infrastructure system as a whole.

NOTES

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INTENTION, LIFE, VALUE: A MULTIDISCIPLINARY APPROACH TO UNDERSTANDING ARCHITECTURAL QUALITY IN THE CITY

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INTRODUCTION

According to the United Nations, the sustainable development of our planet calls for understanding the long-term, economic, environmental, and social consequences of products and services[1]. In its capacity as the central stage of human interaction, a stage, that intersects the environmental, social, and economic dimensions of our behavior, architecture holds potential in this matter[2]. Nevertheless, short-term considerations related primarily to construction costs often dominate the design process. These neglect the complex long-term social and socio-economic potentials of architectural design related to its surrounding urban setting. Consequently, architects often feel the need to compromise the spatial qualities of architecture in the design and construction process, thus limiting their potential contribution towards the sustainable development of the urban landscape[3].

Certification schemes (such as DGNB, BREEM, or WELL) currently in use as assessment strategies are limited to qualify the physical performance of building characteristics before the building is taken into use[4]. In this regard, they often fail to describe the holistic impact of the architectural space, as the social dimension is still underexposed and undeveloped in most of these models[5]. Concurrently, other existing assessment models for quality and value either forgo the comparison between costs and benefits (multi-criteria assessment models, such as Design Quality Index or VALiD) and thus prove to be weak at assisting resource allocation, or they only provide a number, based on measurement (economic valuation models), which limits the opportunity for establishing a dialogue in decision making[6]. Therefore, there is a need for multidisciplinary methodological frameworks, that can capture the relation between the "human factors, and buildings' physical capacity"[7] (seen here determining factor for quality) in relation to their social value measured in economic terms on a single-building level, utilizing both qualitative and quantitative approaches to qualify and justify design choices.

Figure 1. Zooming down to a single building level to acquire knowledge on the social value potential of a set of strategically chosen architectural instruments constructed as spatial gestures. Here, the provision of an urban meeting point by an exterior niche at the edge of an office building, designed by AART architects

This paper is part of an ongoing Ph.D. research project, entitled "CATALYST – Architecture as a catalyst for social and socio-economic value creation", guided by a pragmatic approach to best answer the overall research question: How, and to what extent can we describe and valuate architectural design based on its potential for value creation on the social dimension in a sustainable urban development context?

To address this research question, we propose a methodological framework built on tectonic theory. Tectonic theories of architecture have historically proposed approaches to describe the expressive qualities of architecture by analyzing the careful construction of key architectural works, supported by the phenomenological theory of place. Through methodological and theoretical explorations, the present paper discusses the potential of tectonic theory in describing the interaction between architecture and people as a spatial dialogue, in the form of 'gestures' (intended, lived, and valued), and applies this in the formulation of a methodological framework for describing the correspondence between architectural quality (what it is and how it is constructed) and value (what it does and how it is experienced), across the disciplines of architecture, anthropology, and economics. The present paper is limited to the development, description, and discussion of the potentials of a tectonic framework, where it is to be tested[8], evaluated, and improved in the future within the Ph.D. project.

METHOD FOR DEVELOPING METHODOLOGICAL FRAMEWORKS

A methodological framework can be broadly defined as a "structured guide to completing a process or procedure"[9]. In their work, McMeekin et al. identified and suggested three main phases, and eight different approaches for developing a framework, based on a scoping review[10]. The main phases comprise:

1. Identifying evidence or data to inform and shape the framework.
2. Developing the framework using the identified data.
3. Refining and validating the framework.

From these phases, the present paper focuses on the first two: informing and developing the framework, based on collected evidence or data, using a combined approach. The identification of

evidence to inform and shape the framework here was done through a review of existing methods, literature, and expertise from each of the three disciplines (architecture, anthropology, and economics). Accordingly, the development of the framework was done through extracting and synthesizing knowledge, through an iterative process, involving sharing professional experiences and knowledge across disciplines. In this form, we propose a multidisciplinary methodological framework, where interdisciplinary potentials are to be investigated in the future.

INFORMING THE FRAMEWORK

This section presents the results of the identification of relevant knowledge within each field to inform the framework. Each subsection represents a discipline and starts with a synthesis of what we know from the given discipline about the social quality and value of architecture, then a review of what is "missing", that can potentially be added by the other discipline(s) considered in this research.

Architecture and urban design: Intention

The complex relations between people and architecture, were both historically and nowadays studied by a range of disciplines, from philosophers[11,12] to art historians[13], urban designers, architects[14,15], and political scientists[16]. From the synthesis of these works, one can conclude, that there is an unspoken agreement, that architecture is more than merely a physical structure or form. Correspondingly, the task of the architect ("tekton", later "architekton") "goes beyond the mere pragmatic know-how", as it was described already in ancient Greece[17]. Based on a phenomenological understanding, architecture is a sort of "language", which "at its best, create a meaningful relationship and mediate between ourselves, the surrounding world and other people in it"[18]. This definition and the findings of the above-mentioned studies are therefore considered an important step towards describing architecture in terms of what it DOES in relation to and not exclusively about what it IS and how its constructed.

However, to best describe this essential relationship between architectural design and its impact on people's everyday life, we need to understand who the everyday users are, what are their experiences[19], and how do they inhabit and utilize the building[20]. Contemporary architectural researcher, Andrew Ballantyne argues, that in an everyday context, buildings themselves are rarely in the focus of our attention, rather they are the habituated background for our life, influencing us unconsciously. While the phenomenological understanding of architecture focuses on creating a range of sensory experiences through architectural means, this approach suggests a shift in focus from architecture as a sensory experience to architecture as a supporting or challenging environment for our practices in everyday life. Either way, to provide a vocabulary for describing the essential relationship between architecture and humans, one needs to explore this relationship from an anthropological perspective.

Anthropology: Life

In the twentieth century, a so-called spatial turn in the social sciences[21] has resulted in a range of studies on the entanglements of people, materials, and spaces, what it means to dwell or how notions of "home" and "place" are constituted and experiences in everyday life have been of interest for many anthropologists and sociologists[22,23,24]. As anthropologist Sara Pink argues, "approaching everyday life through practices offers the researcher a route through which to enter the complexity that everyday life is"[25]. Due to the complex nature of human behavior, it is also pointed out, that practices need to be explored in relation to other elements of the environment — materiality, technology, the senses — they are part of[26]. In her research, Pink discusses a theory of place, that enables the understanding of empirical realities of actually experienced environments, and the practices that form

a part of these, drawing on Creswell's definition: "Place is both the context for practice — we act according to more or less stable schemes of perception — and a product of practice — something that only makes sense as it is lived"[27].

Exploring practice in relation to "place" from an anthropological perspective requires an understanding of place as an abstract notion – a changing entity that is subjectively defined through individual experiences – rather than a physical location, that expresses certain qualities or pre-defined effects[28]. Understanding how people use and perceive a building, what constitutes their preferences, is essential to investigate the social value of architectural efforts. However, in order to inform and support design choices through economic arguments, one needs to relate this knowledge back to the physical characteristics of a place, that carries qualities defined by use and experience and therefore is of value to users. This relation between user-defined qualities and value can be potentially translated into a quantified, economic value (social value) of individual architectural instruments.

Welfare economics: Value

In today's consumer society, money is the means by which we realize futures, based on accepting and rejecting possible (built) realities[29]. Welfare economics is a branch of economics aiming to valuate society's well-being built on microeconomic principles. Within welfare economics, the value of products and actions is defined by the utility it provides for people[30]. Thus, social value is "the quantification of the relative importance that people place on the changes they experience in their lives"[31]. It focuses on the quantification of "soft" values, the less-tangible values, that are not directly monetized as they are non-marketed goods (eg. privacy, view from the window, or the possibility for recreation/socialization). Since utility is not a directly measurable unit, welfare economic measures, such as "willingness-to-pay", are used to express people's marginal utility in monetary terms, based on their preferences through their choices[32].

In modern (neoclassical) economics – especially in microeconomics – economic models are traditionally relying on describing human decision making, based on the theoretical model of the "economic man"[33], that is characterized by making completely rational decisions, consciously and consistently for their own good, based on relevant and full information[34]. This assumes, that the primary goal for consumers is to efficiently maximize utility by paying for goods and services up to the point that the amount they pay balances the satisfaction gained from an extra unit[35]. However, as it is demonstrated by behavioral- and neuroeconomists, choices made by humans are in fact not (or not always) rational but can be challenged by a range of "human factors" (eg. risk aversion[36], politics[37], societal influences[38], altruism[39]), arguing that these factors should be considered to model human behavior more accurately. The simplification applied in the traditional welfare economical valuation techniques is our argument to relate the quantified social value back to the architectural characteristics through anthropological perspectives and methods as an empirical link to contextually describe architectural quality in relation to its value.

Tectonic theory as a link?

To address the knowledge gap described in the introduction, we propose a methodological framework built on tectonic theory. In this regard we build on previous scholarly works, exploring tectonic theory's potential in "outlining the meaningful development of architecture in relation to its physical, technological and societal context, necessarily also addressing the more general – yet very delicate – question of architectural quality"[40] and its application in urban design[41] and landscape architecture[42].
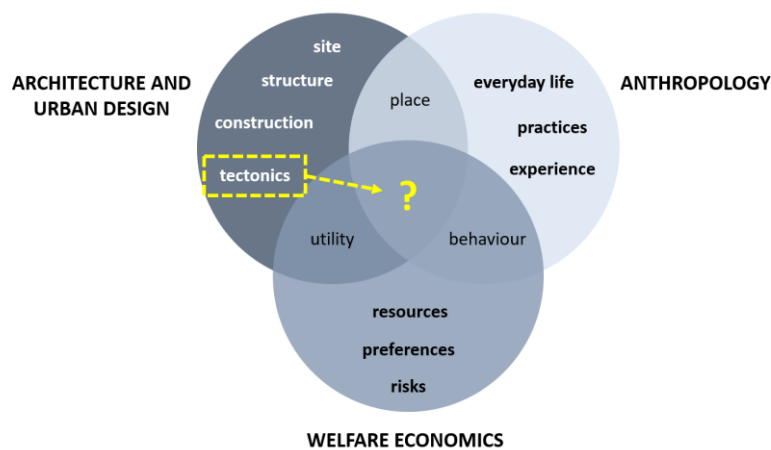
Figure 2. Synergies between some of the main concepts in the disciplines of architecture, anthropology, and economics, based on the identified knowledge from literature to inform and shape the framework

The notion of tectonics was first developed as a general architectural theory in the nineteenth century[43,44] to better understand the relationship between an architectural structure and its careful construction in ancient Greek architecture. The development of tectonic theory continued in the twentieth century with the rise of the phenomenological movement. In summary, tectonic theories of architecture have historically proposed approaches to describe not only the "technical know-how"[45], but also the expressive qualities of architecture by carefully analyzing the construction choices made in key architectural works across stylistic periods[46,47,48]. In his essay, Eduard F. Sekler differentiated the notions of structure (ordered arrangement of constituent parts), construction (specific way of realizing a structure), and tectonics, where the latter was defined as a carrier of expressive qualities, a link between the physical structure, construction, and human perception[49]. In doing so, he laid the foundation for understanding tectonics as a spatial pronunciation of specific construction choices, that carries the underlying intentions (or meaning) in the built form. The concept of tectonics thus potentially denotes an understanding of architecture as the combination of physical, cultural, ecological, and economic resources utilized in maximizing the spatial and social potential of a building[50].

DEVELOPING THE FRAMEWORK

Based on the above theoretical exploration, it is our observation that the notion of tectonics holds the potential to be developed to a framework by referring to choices in each field in correspondence with the reality of the architectural construct. Hence, we propose a methodological framework across architectural, anthropological, and economic perspectives to understand and document the relation between architectural quality (what architecture is and how it is constructed) and its value (what it does and how it is experienced). Based on the phenomenological, practice-oriented, and welfare-economical understanding, architectural quality is defined in this frame as architecture's potential to create social value for its users in a sustainable development context. This means that the value of architecture depends on the people, who consciously and unconsciously experience and interact with architecture and define its value through the choices and trade-offs they make. The project puts this relation, a cross-disciplinary link, and dependence, in the focus for setting a multidisciplinary

methodological framework for analyses from architecture to economics, through anthropology as an empirical link.

As an attempt to create a common interdisciplinary language within this framework we adopt the notion of spatial gestures. Referring to human body language, the notion has been applied within interior design studies[51,52] as a central understanding for communicating meaning through design as a nuanced spatial language. Likewise, the notion appears in Sekler's essay, describing the tectonics of architectural works as "gesturing forms"[53]. This association of the notion with tectonic theory opens a potential to investigate architectural quality – through the specific choices made on architectural instruments (such as light, disposition, material, etc.) in its construction – based on the exchange of 'gestures' (intended, lived and valued) resulting from these choices across scale.
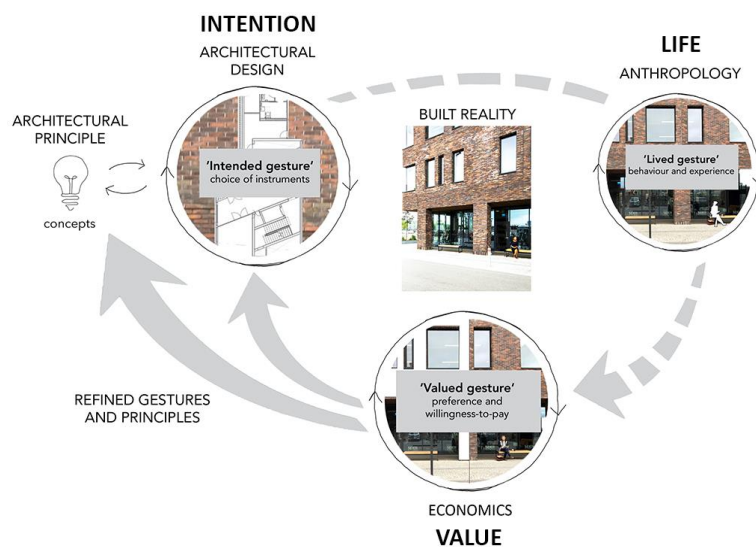
Figure 3. Intention, Life, Value. A methodological framework built on tectonic theory, using 'gesture' as a central notion across the disciplines of architecture, anthropology, and economics

From an architectural perspective, the architects' intention can be mapped in the form of "intented gestures", understood here as spatial invitations to movement, pause, socializing, etc. within, and in the connection between the building and its surrounding public space. These invitations are created in the selection, combination, and construction of a variety of architectural instruments. The resulting architectural design can be investigated further from an anthropological perspective through the narratives of "lived gestures", where it is uncovered how, and to what extent the intended gestures are perceived, experienced, and utilized by the users. Ultimately, the social value of the lived gestures can be measured from a welfare economical perspective as "valued gestures" by setting them as attributes for a choice experiment[54] that uncovers the tradeoffs, that different user groups make based on their stated preferences. These tradeoffs form the basis for translating user experience and choice into an economic value in the form of willingness-to-pay. Together, analyses from these three disciplines form a new multidisciplinary knowledge about the social value and quality of architecture in a sustainable urban development context, which can be used strategically to improve the future design (refined gestures and principles).

DISCUSSION AND CONCLUSION

Due to the complex challenge in the field of architecture, posed by the interrelated environmental, social, and economic aspects of sustainability, there is a need for multidisciplinary methodological frameworks, that allows for clarification and assessment of architecture's underexposed social quality in relation to its social value measured in economic terms on a single-building level. This dimension allows to shift the focus from the building as a whole to its key gestures/characteristics relating it simultaneously to the way they are constructed, lived, and valued. Thereby it holds the potential to support decision-making by qualifying and justifying design choices negotiated in the architectural design phase.

Methodologically, the use of frameworks, in general, has multiple benefits, as they can improve consistency, enhance the quality of the research, and help standardize approaches[55]. However, we would like to draw attention to some of the limitations and possible challenges of the proposed tectonic methodological framework. Firstly, even though the tectonic framework can potentially facilitate dialogue and thus accelerate a mutual learning process in a multidisciplinary nexus, it is, for now, uncertain how and to what degree an interdisciplinary translation will be possible between the disciplines of architecture, anthropology, and economics. Secondly, the assumed numerical and empirical causality between architectural quality and value determines how these notions are defined, explored, or assessed, and thus carries certain limitations in terms of its interpretation. Instead of the hypothesized causality, value creation in architecture can also be understood as an iterative process, a continuous "dialogue" between the building itself and its users, emphasizing the importance and the need for continuous qualitative post-occupancy evaluation strategies[56].

Nevertheless, we argue, that the proposed tectonic framework has the capacity to explore and assess design choices of key characteristics. In summary, this holds a strong potential to provide a systematic methodology for acquiring knowledge on the social quality and value of architecture. Optimally, the framework can thus be applied as a complex valuation exercise to improve the quality of the built environment, both as critical means to facilitate a cross-disciplinary dialogue and as a tool for prioritizing and allocating resources.

In this regard, it will be interesting to investigate further how the explicit formulation of gestures, focusing on both the construction and the impact of key architectural efforts can potentially improve the architects' rhetoric in a multi-stakeholder setting. Understanding tectonic spatial gestures in a multi- and possibly interdisciplinary relation can therefore be a driver for other ecological, social, and economic discussions.

This paper presented the development, description, and discussion of the potentials of a tectonic framework as part of an ongoing Ph.D. project. In the project, future steps include the testing of this framework by applying it in a case study, involving architectural, anthropological, and economic analyses of architecture's social quality and value, as well as a synthesis of these analyses and thus an evaluation and possible improvement of the framework.

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IMPROVISED ARCHITECTURAL RESPONSES TO THE CHANGING CLIMATE; MAKING, SHARING AND COMMUNICATING DESIGN PROCESSES

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INTRODUCTION

This research is undertaken through the reflection of my own architectural practices, integrated within the process of architecture through participation and co-design. The process of conducting the research took the form of community participatory activities to transfer local knowledge of
architectural interventions that adapt to the changing climate and respond to the shifting landscape of Bangladesh. This paper reviews a community focused project in the remote Rajapur village in Bangladesh, the Rajapur Women's Literacy and Community Healthcare Centre or the Rajapur Centre. Exploring the role of a UK-based architect (myself), through an environmental lens, in the context of social, cultural and economic sustainability and insights from ethnographic fieldwork.

The research is to expand, challenge and critically reflect on the narrow range of possibilities, that currently characterize the process of architecture through participation. The live practice-based research provides an opportunity to understand, explicate and share these largely unspoken, undocumented and often very local methods and networks of knowledge, that exist and are practiced by the communities living in rural Bangladesh.

This paper refers to an animation that has been produced for dissemination, to represent aspects of the research and should be read alongside it as the text and the animation complement one another. It can be seen in this link:

https://vimeo.com/326545592

Context & Background

Bangladesh is most vulnerable to the changing climate due to its shifting riparian characteristics of its landscape and its location. It is situated in the Bengal Delta which has a moving territory between land and sea on the southern areas of the country, where the sea level is rising [1]. From the northern boundaries of the country, the freshwater rivers (born out of the Himalayas) of the Ganges and Brahmaputra rivers converge with the Meghna river, are constantly depositing their silt and mix with the saline water of the Bay of Bengal [2]. The rivers are constantly eroding, depositing, sedimenting, compacting, contracting, evaporating etc., causing the shift of sand and silt, which results in both loss and gain of land[3]. Global warming, causing an increased level of ice melting in the Himalayas,

exacerbates this shifting of landscape; shift between water and land with periodic flooding. The riparian areas are most vulnerable to the shifting landscape as its inhabitants face the changing climate head on. These floodplains created by the shifting of the sediments or silt deposited by rivers are the basis for productive ecosystems and agriculture, dependent on the rich nutrients present in the silt shifted by rivers[2]. This is a very simplified explanation of a complex system of the monsoon and the landscape of Bangladesh.

In Bangladesh 10,000 hectares of land is lost every year, due to river erosion[4]. Those living on Char islands (temporary islands that appear and disappear with an estimated cycle of 5 - 10 years), are adapting by transforming the Char islands into fertile crop land, to grow food and to inhabit these islands.

The context of the research addresses issues of extreme changing climate (shifting landscape) and the community's adaptations in the Rajapur village, which is situated on the south eastern part of Bangladesh. Falling within the Deltaic floodplains that suffer from periodic floods and cyclones, shifting the landscape, that is cyclical change of the ground and water. The ground changes by relocating, repositioning, rearranging, displacing it etc..
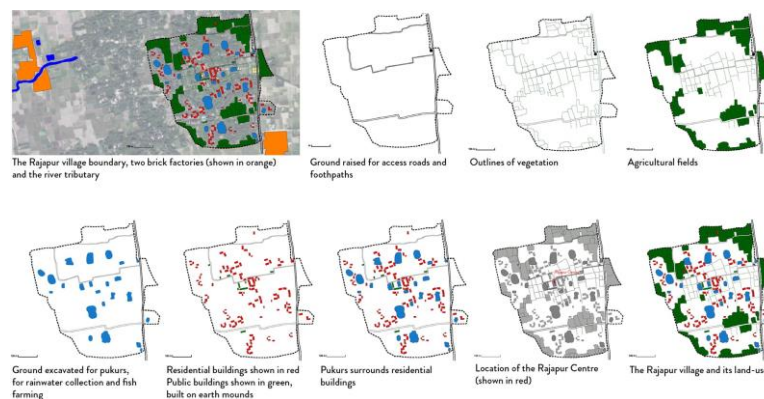

Figure 1. Mapping of ground use in the Rajapur village.

This practice-based research explores the architectural responses to the changing climate and shifting landscape. The research provides a valuable addition to the ideas (that has been explored in other disciplines but not so much in architecture) that human, non-human and the climate are entangled with each other[5].

As well as the environmental stress, the Rajapur communities face a lack of access to healthcare and education. The UK-based charity, The Manan Foundation Trust's (MFT) was co-founded to address these issues faced by the Rajapur communities. The Rajapur Women's Literacy and Community Healthcare Centre or the Rajapur Centre, was the self-generated and self-funded, participative, community-built project, led by MFT. The Rajapur Centre was generated as a family initiative by the MFT, with the main initiators as myself (architect), my sisters (doctors), my mother (retired academic) and my husband (engineer), to improve access to healthcare and education in Rajapur, where my late father was born.

The project was generated by MFT's fundraising in the UK requiring a designed building. However, on the ground, problems became immediate and the project developed as a series of inventive negotiations between the villagers and myself, attempt to draw out their knowledge of local materials, construction, and skills that are practiced by the communities who address climate calamities.

Climate and the changing climate: Representing what the changing climate means to the communities in rural Bangladesh

Climate plays a major role in the cultural practices and the lives of Bangladeshi people. The meaning and the cultural ideas of climate itself are explored in this context.

According to Mike Hulme, the idea of climate has a cultural origin and climate can be and has been changed by cultural practices. The idea of climate emerges at the "interaction between the human experience of weather and cultural practices" and climate is not weather; weather is in flux and captures the instantaneous atmospheric conditions. He argues, "making sense of climate and its changes cannot be separated from how weather enwraps itself with landscapes, memory, the body, the imagination and routine practices in particular places." [6].

People experience the changing climate by marking the change in terms of their memories of the seasons as they used to be. They also mark the changes through traces on the landscape, through their memories of space and time. Traces of the memories lie embedded within the landscape or at the water's edge [7].

Mike Hulme also argues that the idea of climate is most commonly associated with the discourse of climate change and it's scientific, political, economic, social, religious and ethical dimension [6].

In the Rajapur village, the evidence of the changing climate is present in the change of rice farming. As I walked through the village, I noticed several rice fields were barren; the villagers explained the rice farming was no longer possible due to the increased level of salination causing infertile soil.

Photo taken in 2011: Rice cultivation   Photo taken in 2015: Barren ground   Photo taken in 2019: Converted to a pukur

Figure 2. Photos taken over a period of time are of the same field and documenthuman practices that adapt to the periodic decline in rice and fish farming as theground responds to the changing climate in the Rajapur village.

The representation of the research, the changing climate and the cyclical transformation of the site discovered through several participatory activities, have been documented through the series of two-dimension drawings that are composed into a stop-motion animation. The animation film has been inspired by the artist William Kentridge. Kentridge who uses multiple drawings to denote change and movement, by erasing and altering charcoal part of the drawing, recording each change with a still camera to create stop motion animation films [8].

Figure 3. Participatory activities have been documented through the series of two-dimension drawings that are composed into a stop-motion animation.

In my animation, the transient occupations (at the site) of the non-human characters such as the water, the migrating fish and the kingfisher, narrate the story of the climatic cycle, depicted by their momentary presence and reveal a spatial-temporal relationship to the shifting landscape and the changing climate.

Local climate change adaptation strategies

Through ethnographic storytelling from the villagers, stories were heard of families leaving the village, as they lost their livelihood (fish farming) that they were dependent on. Historically, the rural communities adapted to the changing season by excavating earth to create a Pukur (a ditch typically rectangular shape used to collect monsoon rain and for fish farming). The villagers build houses on earth mounds (using the excavated earth), above the flood level. The village ecology can be read through the community's engagement with the Pukur.

The extreme climate of cyclone, flooding and storm surges caused some of the Pukurs to overflow, disrupting the fish production and the ecosystem. For the same reason during the extreme droughts, the Pukurs dried out, further harming the fish farming.

Some methods of adaptations are evident in the way the communities are farming to survive the

extreme climate. During the monsoon (which is lasting longer each year and unpredictable), much of the farm land is covered by water. Floating net cages are used to store a selection of fish, preventing the disappearance during flooding, combined with the floating garden/platform that cultivate vegetables. Constructed by gathering the seasonal water hyacinth which are compacted into rafts. At intervals of 8-10 days more layers are built, where a raft of floating water hyacinth is overlaid with bamboo poles which act as the soil bed for cultivation of food production. Coconut husk or soil is spread over the bed with a top layer of compost to grow vegetation. During the dry season when floodwater recedes, the floating platforms are broken and mixed with soil. The crop grown on the floating garden is then transferred on a plot of land for gardening.

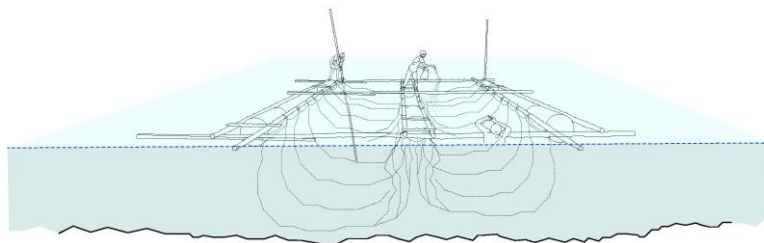*Figure 4. Examples of adaptation to extreme changing climate: Floating fish farmingprotecting fish during flooding.*
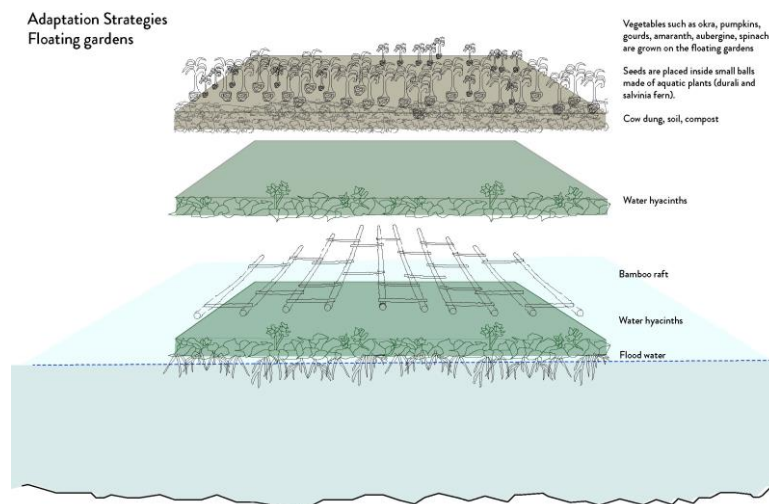

Figure 5. Examples of adaptation to extreme changing climate: Layers of floating gardenused during flooding.

Indigenous knowledge and local skills play a big part in designing, addressing and adapting to the changing climate in this way.

The Rajapur Centre - IMPROVISED METHODS TO ENGAGE WITH THE CHANGING CLIMATE AND THE COMMUNITY PARTICIPANTS

The community participation in the Rajapur Centre project, enabled us to understand the local knowledge of climate, climate change and its adaptations. The villagers' accounts of the stories of the changing climate and the village landscape were important sources of information. Some of the discussion took place at the formal community engagement meetings and other opportunities were provided as informally at the building workshops where an exchange of skills took place and the design and building of the Rajapur Centre began.

It became obvious from the beginning that the formal architectural drawings were limiting and restricting community participation, and therefore simple hand sketches and mock-up models were used for communication in the design process. We hosted several drawing workshops at the village school where the parents and their children communicated ideas for the design and the children drew their interpretation to those ideas. These workshops encouraged participation through making of physical prototypes and drawing sketches (exchanging local techniques and skills).

As the climate changed, the design stage progressed in the dry season, we (community members and I) engaged with the site, which is a ditch. The locals uncovered and read the watermarks on the ground.

When we stood at the bottom of the ditch, we could read a three-dimensional mapping of the rainwater levels. The water seeped into the land, recording and leaving traces of changing water levels within the landscape.

It is possible that without the community's engagement with the ground and their local knowledge shared at this stage of the project, I would not have been able to read the mapping of the rainwater levels nor would I have been able to understand the site the same way.
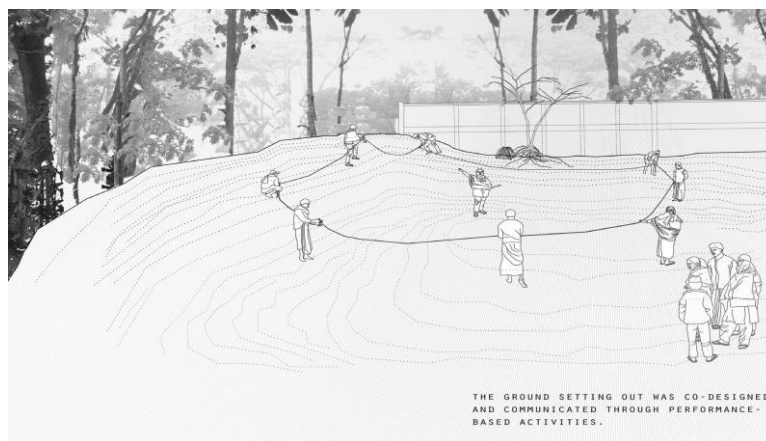
Figure 6. Improvising performance-based participatory activities to communicatedesign on site and to engage with the monsoonal grounds.

The community members and I moved around the site and acted out a number of options for how the spaces in the building could be laid out. We performed architectural relationships with the site, the context, the changing climate, the monsoonal ground etc. Once a layout was agreed, we demarcated the spatial arrangement by drawing in space with ropes and tied them on bamboo poles. The ground setting out was co-designed and communicated through on-site performance-based activities to understand the orientation of the sun, wind, and the community's social etiquette of using public buildings.

Critical reflection of architecture through participation and its findings:

As I critically reflect on the process of architecture through participation for the Rajapur Centre project, it can be summarised as an appropriate process to deliver the Rajapur Centre project. However, it is important to remember that one cannot take the participation for granted and assume that everyone participating would provide a relevant contribution. Although it was a collaborative approach and participants' views were taken into consideration, some views were not considered because they did not represent the voice of the majority therefore was not applicable to the process.

One of the main advantages associated with this process is, that it helped identify and analyse some unexpected issues.

Early community engagement meetings provided opportunities for the community to discuss the proposal of using these local materials to build the Rajapur Centre. Although we have learnt that the majority of villagers with modest income have expertise and build with mud and bamboo, at a community engagement meeting the village elders did not initially approve of the use of these materials for the Rajapur Centre.

Mud and bamboo have a stigma, are often seen as "low materials" and the environmental benefits of these materials are not always appreciated by some members of the community members who are well off and can afford to build a "Packa Ghar" (a Bengali term for a house built with concrete and bricks). Improvised methods were used to shift expectations by highlighting the merits of indigenous building types and knowledge.

In Rajapur, there is a vast number of bamboo gardens and all the bamboo used for the Rajapur Centre were sourced from a bamboo garden situated within 20 meters from the site. The transportation of the bamboo was easy but convincing the elders the environmental benefits of building with bamboo, was a difficult task. At our building workshops, some praised bamboo for its structural qualities; it's high compressive strength and low weight but expressed their concerns about its short life due to poor resistance to fungi, bacteria and it is sensitive to insect's attack.

At the next building workshop, we exchanged local knowledge of treating bamboo. A large number of villagers participated and were eager to learn how to ensure the longevity of bamboo. The structural engineer who volunteered for our project found that designing with bamboo can be challenging; as there is a lack of design guidance, the structural calculations are difficult to obtain. However, the desktop research we found that there has been an extensive research conducted on bamboo, with empirical data and case studies made available.

Figure 7. Photo of a bamboo treatment and building workshop withthe Rajapur community.

The architectural response help to overcome the extreme climate by utilising evaporative cooling through its special perforated bamboo and earth walls as it hovers over the pukur, cooling the internal spaces. Local materials utilised are intended to be resilient to the area's challenging climate; the high thermal mass of the rammed earth walls help combat extreme temperatures that can reach 45 degrees or above.
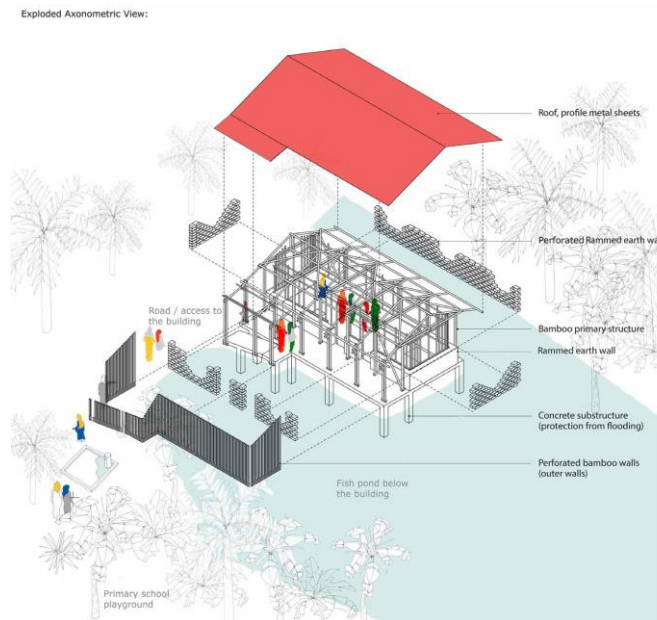
Figure 8. Post-completion exploded axonometric drawing: Rajapur Centre built above a pukur.

My role as a mediator was to prioritise what is most beneficial to the majority of the users of the building and not just a few. It was my role (as an architect) to facilitate this by giving the "voice" to those who did not have a "voice" due to the hierarchy and the social structure of the Rajapur village.
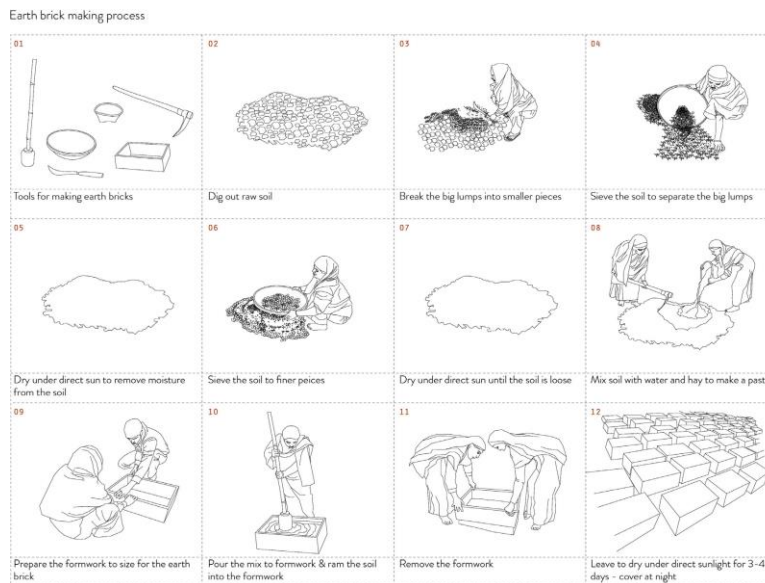
Figure 9. Diagrams of earth block making process, led by the village women who have the expertiseto build with earth.

At an early stage of the project, we discovered at the participatory workshops that the women in the village had the expertise to build with mud, therefore they were invited to make the rammed earth blocks for the Rajapur Centre. However, due to cultural barriers to women working with men in public, on site, the women's involvement at the construction stage was initially refused. To overcome the cultural barriers, we negotiated to set up a system where the women made the earth blocks at home and the men working on site installed them. It was very important that the end-users (men and women in the community), participated both in the design and construction stage. Through the participation in the construction and the involvement in the design of the Rajapur Centre, the women and the community as a whole were empowered, and community-ownership was achieved.

Figure 10. The Rajapur Women's Literacy and Community Healthcare Centre: The Rajapur Centre completed and being used by the community. Utilising evaporative cooling through its special perforated bamboo and earth walls as it hovers over the pukur, cooling the internal spaces.

CONCLUSION

Through a range of sources in literature, lectures and my own experience in working with the community of the Rajapur village, various architectural responses to adapt to the changing climate in the shifting landscape of Bangladesh, has been identified.

The research also reflects on my position as an architect in the participatory process of designing and building of the Rajapur Centre project; my role as an architect, fundraiser, a collaborator for the community in the Rajapur village. The research explores how architecture can be researched through co-design and research conducted by means of architecture itself.

The research proposes to develop experimental methods of architectural practices which identifies new strategies, networks and new forms of knowledge sharing within what is currently a field characterised by unspoken and unwritten and often local methods and network of knowledge. The reflection of my own direct experience of practicing architecture through end-user participation and the co-design of the Rajapur Women's Literacy and Community Healthcare Centre, is represented through drawings, photographs, animations and writing. All of which highlight the experimental practices that enables the participants to initiate an improvised methodology of local, specific, tactic immediately disappearing knowledge.

The collection of information took the process of community engagements, interviews, meetings which led to drawing, making and building with the community of the Rajapur village.

One of the most significant consequences of this method of practicing architecture is that this enabled me to identify and communicate the kinds of existing methods of adaptation and architectural practices that address the issues of responding to the rapid changing climate of the riparian characteristics of Bangladesh.

The animation has been developed to research new techniques for representation of the reflective process, and narrates architectural space, themes and concepts.

The animation documents and communicates what I saw, experienced, photographed, drew, and my ethnographic understanding [9]; the community participatory activities that facilitated alternative and experimental forms of architectural practices [10]. The research will provide a valuable addition to the ideas that human, non-human and the climate are entangled with each other [5]. The power of collective consciousness and local understanding of the context, leading to co-designing architectural responses to the changing climate. This practice-based research contributes and expands the narrow range of approaches to research of the processes of architecture through participation.

This research aims to explore, to test, to disseminate and share some of the rich and varied forms of tacit knowledge which provide a valuable contribution to the knowledge for international professional designers who interact with local communities on the ground, in the unique situations which form part of the global picture of the changing climates.

NOTES

[1] Cornwall, Warren. *As sea levels rise, Bangladeshi islanders must decide between keeping the water out or letting it in.* 2018. *Science*. Accessed 1 May 2020. https://doi.org/10.1126/science.aat4495

[2] Sultana, Parvin. Thompson, Paul. *Livelihoods in Bangladesh Floodplains. Oxford Research Encyclopedias of Natural Hazard Science.* 2017. Accessed 1 May 2020. https://doi.org/10.1093/acrefore/9780199389407.013.258

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[7] A Amrith, Sunil. *Unruly waters : how rains, rivers, coasts and seas have shaped Asia's history* (First edit). 2018.

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A USER-CENTERED MODEL FOR SMART-METERS' ACCEPTABILITY

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INTRODUCTION

Since the 1990s, the construction industry has made extensive use of life cycle assessment to determine its environmental impact, showing amongst the most polluting industries. Be it during the production of the necessary materials, the construction, the operation or the demolition phases, studies estimate that the world's building stock is responsible for 30 to 40% of our total energy consumption and 40 to 50% of greenhouse gas emissions[1].

To reduce energy consumption, solutions such as smart grids and smart meters are under study. "Smart meters" here are understood as devices for monitoring energy consumption in real time, adding to the traditional electricity meter's functions the possibility of constant communication with the users, the energy suppliers and the network managers. Such a device seeks to integrate an interface adapted to the users' expectations; to provide regular feedback on their consumption, advices on how to regulate it, comparisons with other households...

Initially, the socio-economic aspects of smart meters and smart grids devices have remained rather understudied in favor of technological ones. About 50% of the articles published on the subject remain predominantly technical, the rest being divided between economic and social issues[2]. Among the authors considering social issues, even fewer do question consumers' perception, and particularly the impact acceptability might have on the implementation of such devices[3].

Yet, to reveal their full potential, smart meters require active engagement of their users, and thus a high acceptability level. According to Darby[4], smart meters could contribute to a reduction in energy consumption, but only if there is strategic intention at both the urban policy and social, end-users' levels.

Consequently, this paper addresses the following research question: What are the determining factors in terms of acceptability of smart meters at the residential level? Our analysis of such acceptability factors is structured in two steps. First, a model of smart meter acceptability will be established based on the literature. Second, this initial model will be nuanced with empirical results collected from users. In other words, the influence that different factors might have on the acceptability will be qualified according to the users' perspective.

ACCEPTABILITY MODELS

We study the challenge of implementing smart meters at a household level, through the prism of users' perception. We thus investigate the acceptability of the devices and their related behaviors, believed to decrease the households' energy consumption. We start with studying two well-known theoretical acceptability models: the "TAM" and the "TPB".

Technology Acceptance Model - TAM

One of the most common models used to frame the acceptability of a technological system is Davis' Technology Acceptance Model (TAM)[5]. Following Davis, the attitude towards a behavior (i.e., using a technology) depends on two main factors:

- <u>Ease of use</u>, or the investment required to master the tool. In the case of a smart meter, it is about accessibility of the language used[6], ergonomics and adaptability of the device and its interfaces[7].

- <u>Perceived usefulness</u>, or the belief that using the tool will improve the users' daily performance[8]. In the case of smart meters, their massive residential implementation is expected to lead to reduction in the environmental impact of households[9] and tangible decrease in their energy bills[10]. Those financial benefits are seen as one of the key motivations for users to install a smart meter[11].

This attitude towards a behavior then translates into an intention to implement the behavior, which in turn translates into the technololgy actual use. The TAM is thus a techno-centric approach to the acceptability of a technological system: smart meters being highly technical devices, its use is therefore considered relevant.

Theory of Planned Behavior - TPB

Compared to the TAM, Ajzen's theory of planned behavior (TPB) postulates that the intention to implement a behavior in fact depends on three main interconnected social factors[12]:

- <u>Attitude towards the behavior</u>, or the extent to which an individual evaluates the behavior favorably or unfavorably. This attitude is derived from the perceived consequences of this behavior (behavioral beliefs).

- <u>Perceived subjective norm</u>, or the social pressure perceived by an individual with respect to the behavior under consideration. This perception is derived from the societal norms (cultural, familial...). In our context, we consider two subfactors: the energy comparisons with peers, and the nature and impact of the source from whom an individual receives advice to carry out the behavior. Indeed, research has shown that the question of "who" formulates an incentive for behavioral change profoundly influences the acceptability level. Primary sources (closer to the user) seem more influential than secondary sources[13].

- <u>Perceived behavioral control</u>, or the individual's confidence in his/her ability to carry out a given behavior[14]. This perception is derived from actual control over the behavior, and from control beliefs, which are themselves derived from past experiences, fear to see habits disrupted and anticipated problems. Some people see smart meters as an opportunity for empowerment, while other people only see them as an indicator of the magnitude of the task at hand. They then feel guilty, anxious, fatalistic, or disarmed[15]. In this context, smart meters might produce the opposite effect to what was intended, i.e. locking individuals into an extremely low level of perceived control and hindering the behavioral changes that should have emerged.

We consider that a mix between Davis' TAM and Ajzen's TPB constitutes an interesting starting point. This initial "mixed" model will be nuanced with empirical data collected from users.

METHODOLOGY

To question our mixed model, we implement research into two complementary fields (Figure 1). The first one consists in two participatory workshops, allowing us to analyze opinions from naive (N=8) and smart meters-aware (N=8) participants. This qualitative phase allows us to identify the most important acceptability factors, assumed to have a huge impact on the implementation of smart meters. The second field is a quantitative online survey distributed amongst a population of "early-adopters". Through this survey, we test the relative importance of the factors and build our custom acceptability model.

In our context, it is decisive to capture feelings associated with practical experiences, and not derived from a purely rational thought pattern. According to previous research, the context associated with a behavior, as well as its concrete aspects, indeed play an important role in decision making[16]. To accurately predict the behavioral responses of participants when confronted to smart meters, we thus contextualize the questions addressed by anchoring them in their daily lives.

To this end, the workshops participants are placed in a context close to their daily lives, thanks to personas and scenarios. Likewise, our questionnaire first targets socio-demographic data (age, genre, education, rural/urban habitat, household size,…) but then quickly includes concrete situations calling for projected behaviors associated with smart meters. In a first situation, the smart meter requires additional data related to the household (e.g day schedule); this situation allows to analyze perceived intrusiveness. In a second situation, the smart meter offers comparison with the neighbors; here, the influence of social pressure, norms or guilt is assessed. In a third situation, the smart meter offers advice that may benefit the household but that will also disrupt the day-to-day routine. In that case, perceived control, perceived usefulness or influence of a primary vs. secondary source are questioned.
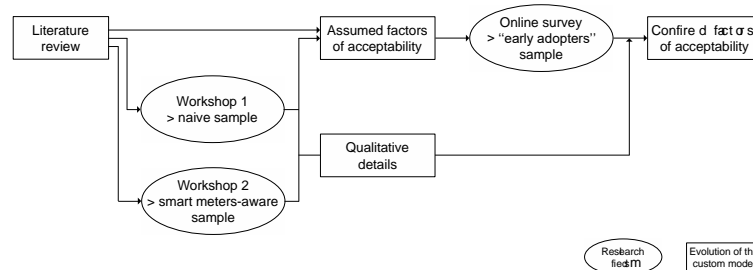
Figure 1. Methodology.

RESULTS

We will first shortly summarize the workshops' key insights that contribute to nurture our "mixed model" with additional factors assumed to impact smart meters' acceptability. Some selected results of the online survey will then contribute to confirm/infirm the perceived importance of those factors.

Workshops' key insights

We have to underline that the participants of the two workshops, although different on several levels (average age, income level, education, prior knowledge of smart meters,…), did share similarities. As volunteer participants, they naturally showed similar interest into energy consumption and were already considering or even implementing behavioral changes to reduce their domestic consumptions (the smart-meter aware sample being yet more likely to implement such changes and adopt a smart

meter, than the naive sample). Smart meters, however, were not considered as a sufficiently relevant measure in that regard: implementing them was none of both groups' priorities.

The discussions pointed out three main factors influencing the acceptability of smart meters and associated behaviors. First, we find the level of information and the source of this information, identified as key factors to convince the participants to implement a smart meter at home. Second, we find the ease of use for all users; this requires a great adaptability of the device and its interfaces. Third, we find the perceived usefulness: while the participants all admitted being sensitive to the financial benefits of using a smart meter and implementing eco-responsible behaviors, they considered themselves equally sensitive to the overall environmental issue.

The possession of a smart meter was moreover discussed as impacting the perceived control over one's environment; while it was seen as a mean of empowerment, participants argued that it might also have the opposite effect if becoming too intrusive or guilt-inducing.

Thus, the issue of intrusiveness was on each participant's mind. The introduction of a smart meter into their homes was seen as a possible violation of their privacy, especially if related to some lack of knowledge of the legal frameworks controlling data; lack of trust in the actors accessing the data and lack of visibility regarding the destination of their data. They were particularly cautious in regard of the type of data provided (not too sensitive, too personal) and the unknown purposes that data could be used for. One participant commented: "*when we go on Google to look for something, afterwards we know very well that we will receive advertisements for it...* […] *we are a little afraid to find ourselves in the same kind of scheme*".

Custom model

The literature associated with acceptability is not unanimous about existing theoretical models, and amendments are regularly made to them. The custom model we develop, like the one from Kranz & Picot[17], gets nurtured with four factors directly resulting from our workshops, and supported by the literature:

1.   The Perceived privacy: the notion of intrusiveness and risks for their privacy was heavily discussed by the workshop's participants. In the Netherlands, the legal vacuum surrounding the standardization of smart meters was indeed identified as the main cause for the failure of residential smart meter implementation[18].

2.   The Level of information of the population regarding smart meters and the associated eco-responsible actions was also underlined as crucial. According to Ajzen, a high level of information will bridge the gap between perceived and actual control over behavior[19].

3.   The Compartmentalization of practices, or the gap between the theoretical desirability of environmentally responsible behavior and its actual implementation, was also discussed by the participants, particularly in regard of Belgian households' relative indifference in regard of energy-related issues. Indeed, particularly in Belgium, eco-responsible intentions often contradict the logic of the consumer society[20], thus leading to behavioral ambiguities that are resolved by the absence of behavioral change.

4.   The Heterogeneity of the population, or the variation of the relative importance of the main factors and subfactors according to each individual, was also underlined by our participants, and by our analysis of both workshop's outcomes.

Those four additional factors, added to a mix of the TAM and TPB models, build the custom model below (Figure 2).
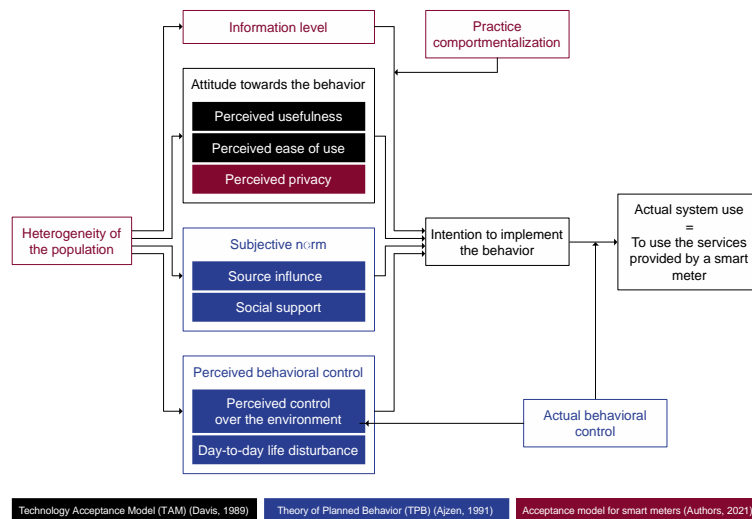
Figure 2. Custom model, based on TAM and TPB and adapted to smart meters (Authors, 2021).

Quantitative questionnaire

In addition to our workshops, the online questionnaire generated 166 responses, 121 of which were usable after eliminating fragmentary responses (min. 70% of the questionnaire had to be filled) and insufficient response times (3 minutes were the minimum acceptable threshold).

We have to underline that the majority of the respondents were between 20 and 50 years old, with 55% of them between 20 and 29, with an overrepresentation of women in our population (61%) and that 62% were university graduates. Thus, our sample is not representative in regard of the Walloon population (considered here the source population), in particular because of the survey dissemination methods used. Our participants are characterized by their youth, high level of education and a high proportion who consider themselves to be rural. The relevance of our study therefore stems rather from the similarities of our sample with a population of "early adopters", likely to easily adopt new technologies[21].

Looking through some results, the trends revealed that the residential implementation of smart meters is today perceived in a rather positive way, while our population remains little informed about these devices (Figure 3). Respondents admitted little (37%) to no (38%) knowledge of smart meters, this perception being probably already underestimated because of social desirability bias. Slightly less than 30% of the population is opposed to the installation of a smart meter at home, while 45% are in favor of it.
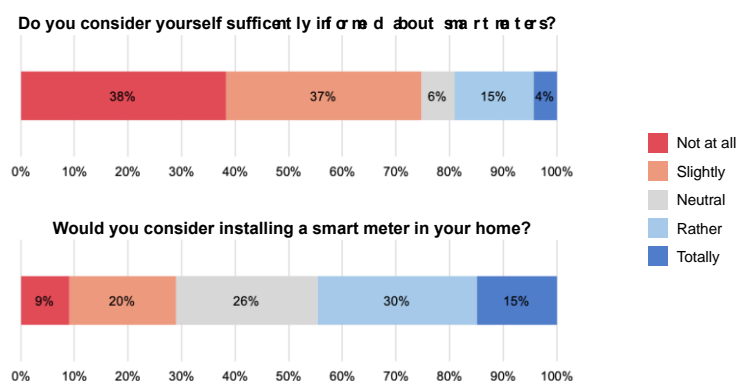

Figure 3. Perception of smart meters, N=121.

In the context of behavioral change, we studied the factors likely to prompt the respondents to follow some smart-meter generated advices (Figure 4). We find that the advices provided by smart meters could be effective if households find, in decreasing order of impact, a usefulness (financial and environmental); a feeling of empowerment linked to perceived control; a playful dimension and effect of social validation, particularly from their relatives and/or an authority recognized as an "expert". Even though bias of social desirability also has to be considered here, having a second source of information that supports the smart meter's advice seems to have a large effect on the behavior acceptability. Guilt mechanisms, on the other hand, seem less impactful, while the answers to another question underlined how stimuli related to social desirability and pride in "setting an example" could have a significant effect, at least for our sample.

Eventually, looking at the data provided by another question, choosing to implement the behavior by themselves also seems very important for the respondents; keeping a perceived control over the behavior holds a high influence over choice for 48%, and even a crucial influence for 22% of them.
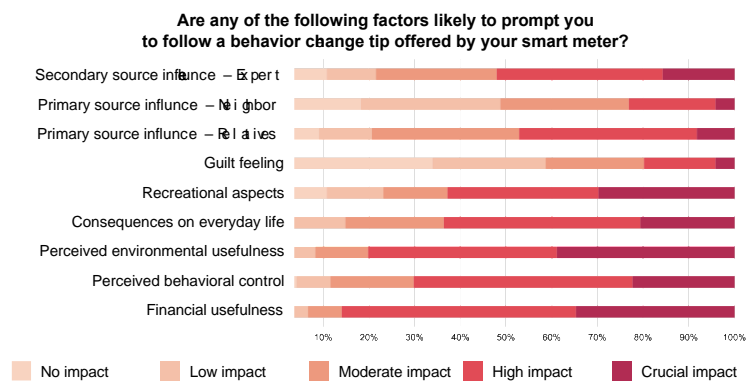

Figure 4. Relative influence of different factors on behavior change

DISCUSSION

Our results are probably positively biased (recruitment methods; early adopters; social desirability); our data would therefore deserve to be compared with practical observations, household follow-up, additional workshops, surveys and so on. They do, however, demonstrate a general state of mind that is fairly favorable to smart meter's implementation, at least for our sample.

According to the literature, a higher awareness of eco-responsible devices and practices is yet not enough to encourage households to implement them daily[22]. For Bartiaux[23], information provided to users on a theoretical level rarely (in 11% of cases) have an impact on practical behavior. Our qualitative findings confirm this compartmentalization mechanism. One way to overcome this is to concretize the consequences of using a smart meter. Anchoring these consequences in the daily life of households seems to avoid compartmentalization[24], by bringing theoretical, global, abstract measures and consequences closer to their daily life.

Keeping that in mind, we suggest below (Figure 5) an additional layer to our custom model that offers field-nurtured insights about the key factors that seem to weight more when it comes to smart meters' acceptability. Even though all factors do play a role in such acceptability, perceived usefulness (at both financial and environmental levels) clearly stands out for a large part of our sample. Our quantitative population of early adopters is sensitive to perceived environmental benefits, with 80% of them giving it a high to crucial importance. According to the workshop participants, perceived financial benefits is the bottleneck by which they assess the usefulness: the higher the perceived

financial utility, the more likely they are to accept the disadvantages linked to these devices, particularly in terms of intrusiveness.

Perceived control over one's environment is another major factor of acceptability identified by our results: 70% of our quantitative sample give it a high or crucial importance. Workshop participants see smart meters as an opportunity to reassure them, to give them a sense of power over their environment. According to them, this empowerment is gradual: once the device is installed, learning how to use it first, then following its advice later, would make households aware, at their own pace, of what level of power they hold over reducing their energy consumption. As Kranz & Picot suggest[25], the acceptability mechanism of such technologies is not entirely rational and involves emotions, as it touches on privacy and sharing of sensitive data. The issues related to intrusiveness, and therefore to the attitude towards smart meters, are therefore largely associated with the sensation of control.
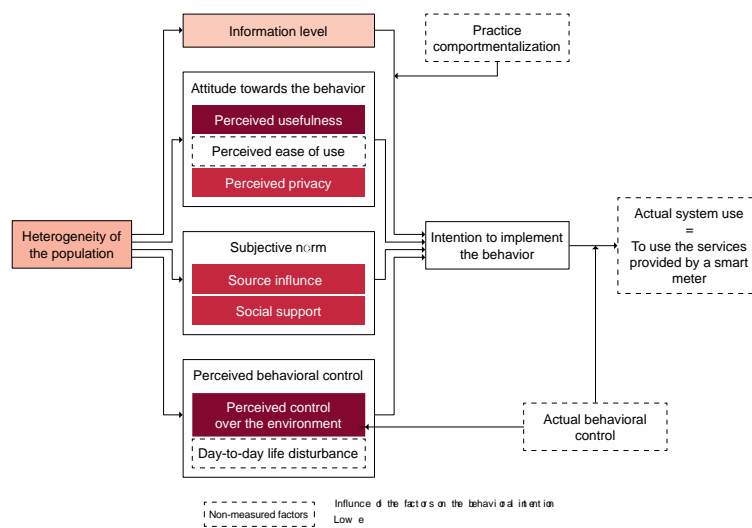

Figure 5. Influence of key factors to be considered for assessing acceptability (Authors, 2021).

CONCLUSION

The participants that took part to our research fields take a favorable stance towards the adoption of smart meters but demonstrates low level of instruction about the smart meter-related issues. The main factors fostering smart meters' acceptability (and related energy-sparing behaviors) seem to be perceived usefulness (both on environmental and economical levels) and perceived control over the behavior, with (to a lesser extent) perceived privacy and subjective norms.

While the intrusiveness of the smart meters can have a negative influence on the attitude towards them, a guaranteed legal protection of personal data should have a positive influence, notably by improving trust towards the actors involved[26].

From our workshops, it can also be hypothesized that smart meters are not considered as key energy measures. Public policies should therefore position the smart meter as an auxiliary that favors behavioral changes, rather than as a magical device for reducing consumption: it can become a source of empowerment and behavioral change, if it is accepted and supported by other sources of converging information. A high level of information in the population, which is achieved through convergent social support for the behavior in question, is therefore a prerequisite to avoid compartmentalization and to aim for concrete practice changes.

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ADAPTATION OF THE WALKABILITY INDEX AS A FIRST STEP TO STUDY ITS CORRELATION WITH THE NUMBER OF FATAL PEDESTRIAN ACCIDENTS ON URBAN ROADS. CASE STUDY: AVENUE HÉLIO PRATES, CEILÂNDIA, BRASÍLIA, BRAZIL

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INTRODUCTION

In recent decades, several cities around the world have expanded in a fast, sprawling and disorderly way. According to Medeiros[1], there is an intimate relationship between the urban form and the transformations that happen in the urban environment. These transformations, in many cases, have a direct impact on urban mobility and affect the quality and safety of pedestrian paths.

The urban form is, in short, the geometric composition of the elements that make up the urban settlements (buildings, facades, streets, sidewalks, urban furniture, etc.), taking into account their dimensions and proportions. It can also be linked to the transport infrastructure and influence pedestrian mobility and road safety.

Some of the results of this growth in modern cities are the strong morphological segregation and the high prioritization of the use of individual cars. When analyzing studies on modes of transport in Brazil, such as the one carried out in May 2018 by the National Association of Public Transport[2] – ANTP, it is observed that 41% of journeys are made on foot, 25% by cars, 28% by public transport, 2% by bicycles and 4% by motorcycles. Considering that after or before using the public transport one would need to walk to complete a given route, it can be considered that 69% of the Brazilian population uses the walking mode daily. However, despite the high number of pedestrians who move around the cities, caring and paying attention to the spaces used by these users still does not seem to be a priority in public policies in Brazilian cities. That same study indicated that regarding the time spent in each mode of transportation, people spend 45 % of their traveling time in public transportation vehicles, 28% walking, 23% inside private cars, 2% using motorcycles and 2% using bikes. This also highlights how walking is not only the most used mode, but also one of the most time-consuming ones.

According to the report of the Pan American Health Organization (PAHO), called "State of road safety in the Region of the Americas"[3], from June 2019, Brazil still ranks 9th among the countries

with the highest number of road traffic deaths in the Americas. This study highlights that the most vulnerable subjects are motorcyclists (23%), pedestrians (22%) and cyclists (3%).

In the Federal District (state in which the capital of Brazil is located), the number of fatal traffic accidents on urban roads from January 2010 to May 2020 totals 1,237 occurrences, of which 542 are caused by pedestrians being run over[4]. Among the Administrative Regions - RAs - of the DF (political territorial division), from January 2010 to May 2020, the city of Ceilândia ranked first in relation to the total number of fatal traffic accidents, totalling 226 cases, followed by the Plano Piloto of Brasília, with 214, and Taguatinga, with 159.

Researches reveal that traffic accidents occur as a result of at least one of the following factors: human, vehicular and road-environmental[5]. Considering the road-environmental aspect and focusing on pedestrians, it is possible to use the concept of walkability, which is associated with metrics to assess the quality of the built environment for pedestrians, to carry out studies on urban form and road safety of pedestrians. These metrics can be combined and mathematically evaluated through methodologies that calculate a walkability index for a given region[6].

Methods that focus on calculating a walkability index are routinely being used to assess spaces as they contribute to the recognition of walking as a means of transportation. Thus, it seems important to study the if the urban form variables that impact the walkability indices are correlated to the places where fatal road accidents involving pedestrians occur.

Since correlation studies come precisely from the comparison between large datasets, it is necessary to carry out analyzes in various urban streets, locations and contexts. Therefore, in the present investigation, we seek to propose an adapted method to optimize the process of calculating, representing and correlating the values of the indices with the characteristics of the urban form of the sites where fatal road accidents involving pedestrians took place. A study case of the Hélio Prates Avenue, in Ceilândia (Federal District, Brazil), will be carried out to illustrate the method proposed.

In short, geoprocessing tools (Google[7], GeoPortal/GDF[8] and ArcGIS[9] platforms) are adopted for the description and evaluation of the methodology.

METHODOLOGY

The methodology was divided into five steps:

1.   Literature review of: a) walkability databases, b) calculation methods for walkability indices, c) numbers of fatal traffic accidents involving pedestrians and d) georeferencing tools (GIS).

2.   Selection of variables related to the walkability index which can be remotely assessed.

3.   Characterization of the case study and application of the method.

4.   Use of GIS software (ArcGIS) for representation and analysis of the data collected.

THE IMPORTANCE OF EVALUATING WALKABILITY

Walkability is a sustainable urban mobility strategy and can be used to build healthier, more democratic and less excluding cities. Walkable cities can also promote new experiences, better connections between people, stimulate creativity, have more attractive spaces, have a high diversity of uses, among others.

It is possible to measure how walkable a region is through methodologies that calculate indices based on metrics that reflect the characteristics of the urban form and the conditions of the spaces, such as: the fluidity of the walk; the quality of sidewalks and crossings; thermal comfort; the size of the blocks; public and road safety etc.

Calculating such indices involve methods that include auditing tools, surveys, questionnaires, GIS tools and the creation of mathematical models, for example. Assessments can be carried out from

different scales, be they an intersection, street, neighborhood or even a city. Although each method is applied in a different way, they all have a common goal: to obtain a single value to classify the environment in terms of walkability[10].

According to Knapskog et al.[11], when the scale of the walkability study increases, it is necessary to automate the data collection and focus on using available quantitative data. In these cases, the use of GIS software is particularly useful for assembling and structuring larger datasets. Those authors also indicate that the adoption of GISs can allow other types of data analysis, such as the application of overlay methods to identify correlations between datasets. They also indicate that on-site analysis may be valuable to provide a complete assessment of walkability and cannot be totally ruled out.

Despite this, due to the current context of social distancing imposed by the COVID-19 pandemic, the collection of information and the corresponding discussion of this article is exclusively based on remote strategies, based on using tools from Google, GeoPortal/GDF and the ArcGIS software.

iCam Methodology – ITDP Brazil

The calculation methodology developed by the Institute of Transport and Development Policies-ITDP Brazil was chosen as the basis for the application and adaptation proposed in this article because it is based on several international and national studies including Bradshaw[12], ITDP[13,14] and Walkscore[15].

In its first version, published in 2016, the method had 21 metrics grouped into 6 categories. However, in January 2018, the tool was updated and gave rise to Version 2.0, which reduced the metrics to 15, but kept the 6 categories, namely: Sidewalks, Mobility, Attraction, Road Safety, Public security and Environment.

The basic unit of data collection and evaluation of metrics is a sidewalk segment. Each metric and category are scored from 0 (zero) to 3 (three), simulating a qualitative assessment of the pedestrian experience in insufficient (0), sufficient (1), good (2), or excellent (3).

After scoring each metric, the score of the entire segment is calculated, that is, the final iCam, by the simple arithmetic mean of the values of the 6 categories of each segment. On the ITDP Brazil website, it is possible to find the manual of method as well as a spreadsheet, in Excel format, which can be filled out by the user to automate the calculation process.

According to the ITDP-Brazil[16] method, some data must be collected through in loco site surveys, however, the methodology also anticipates that some data can be obtained through aerial photographs, satellite images, georeferenced data, pre-existing documents and public administration documents. Thus, to achieve the objective of this article, the studies were carried out only remotely.

Selection of metrics and adaptation of the iCam 2.0 method

The criterion for selecting ITDP-Brazil iCam metrics to undergo the necessary adaptations was to consider, mainly, which metrics could be analyzed remotely without the immediate need for an on-site inspection. The adaptation was based on the use of Google Earth, Google Street View and GeoPortal tools.

The first adaptation included the exclusion of day and night pedestrian flow metrics, noise pollution, garbage collection and cleaning, as they would need to be collected in loco. Furthermore, considering the impact of the pandemic on pedestrian flows, analyzing the day and night flow would not accurately represent the long-term reality of the location (characteristic flow).

A second adaptation comprised the basic unit of data collection. ITDP Brazil considers the sidewalk segment for the evaluation, which refers to the stretch of street located between adjacent intersections of the pedestrian network, whether motorized or not, considering only one side of the sidewalk. However, for a case where the road has several segmented sidewalks with the same characteristics

and similar dimensions, considering them one by one would add unnecessary repetitiveness in the analysis and calculation. Therefore, the grouping of sidewalks according to the length of an entire block was considered as the base segment of the analysis.

Finally, the last necessary adaptation was the inclusion of the running over metric, which was included in the first versions of the ITDP tool but discarded in version 2.0. The addition was necessary highlight the importance of pedestrian safety.

CASE STUDY
iCam Methodology – ITDP-Brazil

The Administrative Region of Ceilândia, which can be understood as a neighborhood in the urban system of Brasília, is located 26 km from the center of the capital of Brazil and was founded on March-27, 1971. The urban project was conceived by architect Ney Gabriel de Souza, which divided the urban core into two parts by means of a transverse axis. The Hélio Prates Av. is a primary arterial road (60km/h) and is part of the main longitudinal axis of the city, concentrating most of the local commercial sector[17].

Regarding its road geometry, the avenue is composed of a central median approximately 14 meters wide and two three-lane road axes, approximately 10 meters wide. Pedestrian sidewalks have different sizes, most of them less than 2 meters wide, and are parallel to commercial establishments. The parking lots are, on average, 10 meters wide and urban furniture, such as poles and bus stops, are located in the middle of this space or in the narrow strip of sidewalk parallel to the road (Figure 1).
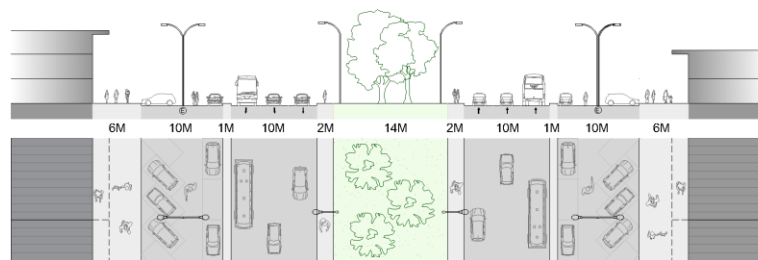

Figure 1. Road geometry of Hélio Prates Avenue.

By using the Google Street View tool, it was possible to obtain general images of the avenue, referring to the year 2019, and perform the main walkability analysis according to the iCam-adapted method. In Figure 2, we can see that cars are prioritized over pedestrians. There is no adequate vertical and horizontal signaling for pedestrians and the vegetation and store marquees do not provide adequate environmental comfort. Parking lot are much larger than sidewalk spaces. These, in turn, are narrow and are commonly obstructed, degraded, uneven and inaccessible in some points. Thus, some pedestrians prefer to walk through parking lots and cross the avenue in unsafe places. Also, although there are lighting points, they are not pedestrian oriented, as they are installed in the parking area and are placed towards the cars. Therefore, walking at night can become dangerous in terms of road accidents, falls and public security.

Figure 3 indicates that the bus stop is located without much structure and inside the car parking area, which leaves pedestrians in a vulnerable situation. Figure 4 shows the discontinuity and lack of maintenance of the sidewalks and the car lane. At the same time, a couple of pedestrians is crossing the street at an intersection with a high risk of being run over.

Figure 2. Section 7, View A, Hélio Prates Av.

Figure 3. Section 7, View B, Hélio Prates Av.

Figure 4. Section 5, Hélio Prates Av.

RESULTS AND DISCUSSIONS

To calculate the iCam-adapted, the sidewalk segments were divided considering the blocks on the avenue as the basic collection unit. Thus, a total of 16 segments of varying sizes were obtained (Figure 5) and scored according to the method's evaluation criteria (Figure 6).
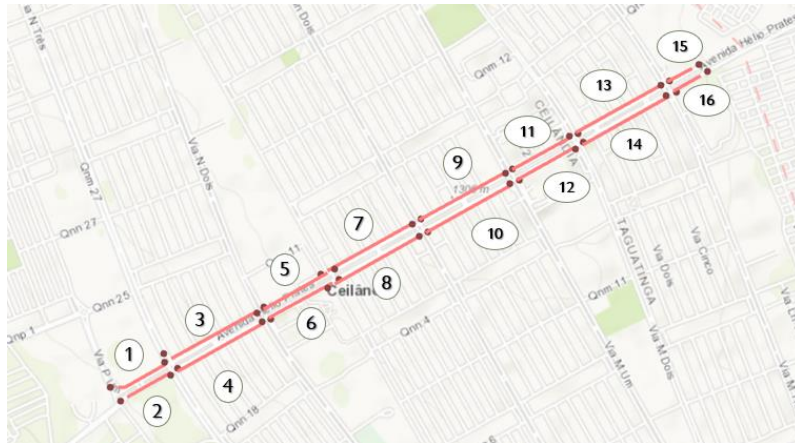
Figure 5. The 16 segments of analysis.

CATEGORIES	METRICS	EXCELLENT = 3	2 ≤ GOOD < 3	1 ≤ SUFFICIENT < 2	INSUFFICIENT < 1
Sidewalks	Pavement	Paved, no holes	Paved	Paved	Without Paving in any stretch or
		unevenness	≤ 5 holes or unevenness every 100 m	≤ 10 holes or unevenness every 100 m	> 10 holes or unevenness every 100 m
	Width	≥ 2m and supports the flow	≥ 1.5m and holds the flow	≥ 1.5m and don't holds the flow	< 1,5m
Mobility	Block Size	≤ 110m	≤ 150m	≤ 190m	> 190 m
	Walking distance to transport	≤ 200m from embarkation / disembarkation on corridors and bus lanes with road priority ≤ 200m	≤ 200m from a conventional bus line embarkation / disembarkation point	≤ 300m from an embarkation / disembarkation point of conventional bus lines	> 300 m from an embarkation / disembarkation point of conventional bus lines
Attraction	Physically permeable facades	≥ 5 entrances to establishments	≥ 3 entrances of establishments	≥ 1 entrances of establishments	< 1entrances of establishments
	Visually active facades	≥ 60% active	≥ 40% active	≥ 20% active	< 20% active
	Day and night public use	≥ 3 establishments every 100m	≥ 2 establishments every 100m	≥ 1establishments every 100m	< 1 establishments every 100m
	Mixed Uses	≤ 50% of total floors	≤ 70% of total floors	≤ 85% of total floors	> 80% of total floors
Road Safety	Typology of streets	Pedestrian only	≤ 30km/h for roads with segregated sidewalks and traffic circulation	≤ 50 km/h for roads with segregated sidewalks and traffic circulation	> 50 km/h for roads with segregated sidewalks and traffic circulation
	Crossings	100% of crossings meet quality requirements	≥ 75% of crossings meet quality requirements	≥ 50% of crossings meet quality requirements	< 50 % of crossings meet quality requirements
	Running over	No accidents with fatalities	x	x	With fatal accidents
Public security	Street lighting	≥ 20 lux or 100 points	≥ 15 lux or 90 points	≥ 10 lux or 60 points	< 10 lux or < 60 points
	**Day and night pedestrian flow	≥ 10 pedestrians/minute ≤ 30 pedestrians/minute	≥ 5 pedestrians	≥ 2 pedestrians	< 2 pedestrians/minute > 30 pedestrians/minute
Environment	Shadow and shelter	≥ 75%	≥ 50%	≥ 25%	< 25%
	** Noise pollution	≤ 55 dB	≤ 70 dB	≤ 80 dB	>80 dB
	** Garbage collection and cleaning	1	0,9	0,8	< 80%

Figure 6. The analysis criteria adopted, from the iCam-adapted method.

Figure 7 expresses the results of the iCam-adapted method for the 16 segments. The analysis was performed 100% remotely, only using Google Maps, Street View, Google Earth, GeoPortal and data available on the official website of the Regional Administration of Ceilândia[18].

The iCam-adapted of the entire stretch resulted in a score of 1.25 (sufficient), on a scale of 0 to 3. Figure 7 indicates each metric presented variations in the good, sufficient and insufficient scales, which indicates that the avenue has some potential as well as many problems.

Metrics and categories	Final score (0-3)	Evaluation and scoring criteria (Insufficient - Sufficient - Good - Excellent)
Paving	0,73	insufficient
Width	2,02	good
Sidewalk	**1,38**	**sufficient**
Block size	1,25	sufficient
Walking distance to transport	2,24	good
Mobility	**1,74**	**sufficient**
Physically permeable facades	1,5	sufficient
Visually permeable facades	1,5	sufficient
Day and night public use	0,89	insufficient
Mixed Uses	0	insufficient
Attraction	**0,98**	**insufficient**
Typology of the street	2,02	good
Crossings	0	insufficient
Running over	0,42	insufficient
Road safety	**0,81**	**insufficient**
Street Lighting	1,72	good
Public security	**1,72**	**sufficient**
Shadow and Shelter	0,88	insufficient
Environment	**0,88**	**insufficient**
iCam	1,25	sufficient

Figure 7. Average iCam 2.0 result (adapted).

Using Google and ArcGIS tools

ArcGIS Pro version 2.6.2 was used to represent and combine data, enabling a better visual reading of the values of each metric of the iCam-adapted. In addition, it was possible to overlay data on each segment of sidewalks, allowing to assess a possible correlation between walkability, urban form and the locations of fatal pedestrian accidents.

Since the urban form of Hélio Prates AV. Did not change much over the years, the locations of fatal pedestrian accidents considered to be georeferenced in ArcGIS were collected in 2015, as they are the most recent ones presented by the Department of Transportation of the Federal District (DETRAN-DF).

A color scale was used according to the scores stipulated by the method as well as according to the type of interventions needed to improve the performance of the road segments (Table 1).

This visual representation of the iCam-adapted values served to individually observe each metric and which locations received the worst and best scores. By analyzing where accidents occurred, it is possible to discuss how the urban form contributed or not to the occurrence of accidents.

Score	Assessment	Prioritization of interventions
3	Excellent	Maintenance and improvement
2 ≤ 2,9	Good	Desirable intervention, medium term action
1 ≤ 1,9	Sufficient	Priority intervention, short term action
0 ≤ 0,9	Insufficient	Priority intervention, immediate action

Table 1. Scoring and color scale for viewing segments in ArcGIS.

Figure 8 indicates that the accident points are both in places where the final iCam of each segment has a score of 0 and a score of 1.
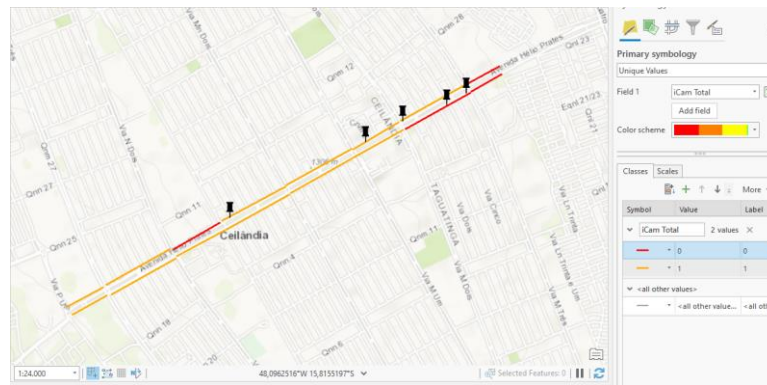
Figure 8. ArcGIS representation of the final iCam of all calculated segments.

It was possible to obtain several maps that superimpose the values of the metrics for each segment to the approximate points of occurrence of fatal pedestrian accidents. By using the GIS, it was possible to select the desired metric for analysis and visualization of the results according to each segment, which allowed the generation of a set of evaluations (Figure 9).

The results in Figure 9 are just an illustration of the methodology. More data should be considered to actually present robust correlations between the variables involved.

CONCLUSION

Through this work, we sought to discuss the use of specific tools to assist in future debates regarding the correlation between aspects of urban form and the level of road safety for pedestrian spaces that are bordered by the road axis. This correlation was assessed by comparing the calculation of walkability indices to the locations and numbers of fatal pedestrian accidents in a study case.

The adaptation of the methodology for calculating the walkability index originally proposed by ITDP Brazil made it possible to analyze the case study remotely, quickly and with a broader perspective.

After calculating the walkability index, it was observed that the avenue studied is not fully pedestrian-oriented, having received a score of 1.25 (sufficient). The main unsatisfactory metrics of each category of the walkability index were highlighted, providing a better view of the problems and helping on planning contingency actions.

CATEGORIES AND METRIC	ASSESSMENTS
Sidewalks - Width	Regarding width, it is possible to notice that there does not seem to be such a pronounced relationship between accidents and this metric. It was observed that even in places with excellent width (green), accidents were observed.
Mobility – Walking distance to transport	Hélio Prates Av., being one of the main roads in Ceilândia, offers excellent availability and ease of public transport. In relation to accidents, there seems to be a correlation, even if a little weak, between their occurrences and to the places and distances of public transport.
Attraction – Physically Permeable Facades and Mixed Uses	Due to the large number of commercial stores along the route, the score in relation to the facades was sufficient. And despite being a commercial center, the region has little diversity of use and most stores are only open until 7 pm. However, it was not possible to directly correlate this metric with the number of accidents, as these occurred in segments with the most diverse indices. More data and segments are needed for a better understanding.
Road Safety – Crossings Public Security – Street Lighting	In the case of the accident metric, all sections were indicated as insufficient. It is noteworthy that, for the public lighting metric, most accidents were close to places with bad levels (orange and red). This suggests that there is a correlation between the occurrence of accidents and lighting.
Environment – Shadown & Shelter	Along the avenue, it was observed that the service lane sections near the road do not have adequate shading, as well as some sidewalks near commercial buildings. There seems to be a correlation between this metric and the number of accidents, as most of those occurred close to places with bad levels (orange and red)

Figure 9. Summary of some considerations of the evaluations arising from the method.

During the remote application of the method, it was possible to identify some advantages and disadvantages of this method of evaluation. The main advantages were: fast data collection, overview of the main problems on the avenue, ease in measuring areas, safety and comfort etc. Some of the disadvantages included: outdated data at the time when the analysis is being carried out, it is not possible to see details of unevenness, holes, garbage collection, as well as it is not possible to assess the flow of people and the levels of noise pollution. Thus, for a more complete analysis of these data, a field visit would be necessary to obtain information and verify compatibility.

The GIS, in turn, proved to be useful in the analysis, as it helped to visualize the superposition of the values of the metrics that make up the iCam to the locations of fatal pedestrian accidents. It is understood that the GIS assists in the combination of data, identifying the most sensitive walkability metrics that may or may not be related to the locations of fatal pedestrian accidents. Thus, this article reached the main objectives proposed at the beginning of the research and can serve as a basis for future studies on the subject.

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CONNECTING EXPERIENCES OF BALCONIES FOR MORE RESILIENT CITIES

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INTRODUCTION

In urban housing, architects and urban planners have developed, through several experiences, *loggia* spaces, such as covered balconies, identifiable in the historical evolution of cities.

Citizens in their homes often have obsolete balconies, too narrow, noisy, windy, or unsafe. However, carefully designed *loggia* spaces have the environmental potential to contribute to climate moderation, reducing energy consumption related to cooling and heating of indoor spaces.

Furthermore, in epidemic emergencies, requiring preventive isolation, the *loggia* may provide an outdoor alternative to public space, contributing to people's health and well-being. The housing experience of confinement during the Covid-19 pandemic revealed the spatial injustice that many citizens were subjected to, due to the absence of private outdoor spaces in their homes. In this circumstance, to promote social justice and spatial resilience to future pandemics, the United Nations states the incorporation of outdoor spaces in housing design as a priority. [1]

Spatial justice is an integration of social justice and space. A *loggia,* in an apartment building*,* is often a space in-between private and public environments. For Philippopoulos-Mihalopoulos spatial justice is an interstice by excellence, establishing a link between law and the city. [2]

Aiming to improve spatial justice, urban resilience to situations of climate change and epidemic emergencies, we focused our study on a preliminary definition of the spatial qualities of a private *loggia* in urban housing that is applicable to new and existing buildings.

Specifically, we approach two *loggia* types, namely, the open *loggia* (Figure 1) and the glazed *loggia* (Figure 2).

Figures 1 and 2. Open loggia (on the left) and glazed loggia (on the right)

CONTEXT

Human activity is not always connected with the destruction of microclimates, it may establish new ones. [3]

Loggia's microclimate is a transitional space. *Loggias* were widely built in urban buildings in the twentieth century. Several studies analyzed the thermal performance of this space and its potential to reduce energy consumption in the connected indoor environments. Harlé pointed out that emotions and experiences in the use of transitional spaces are important to take into consideration for the characterization and quality of this environment. However, studies approaching the experiences surrounding the use of *loggia* spaces are less present in literature. [4]

We highlight the research of Sinou and Steemers (2004) who studied thermal performance of the urban spaces of the open *loggia* in northern and southern Europe, finding that cooler conditions during summer and warmer conditions during winter can be experienced by users in both of these contrasting climate regions. [5]

Regarding the glazed *loggia*, Cadima studied the bioclimatic performance of these spaces in Lisbon and stated its potential for sustainable architecture. [6] Moreover Lejeune presented the sustainable advantages of the glazed *loggia* by studying the urban context of Paris. [7]

Much less studied, by contrast, is their social performance, integrating changing demands that are inherent to the current lifestyles of the diversity of users.

In this context we highlight two exploratory studies on qualitative research approaching the *loggia* space.

Otrishchenko (2019) analyses the materiality and social functioning of balconies and open *loggia* spaces integrated in the Juliusz Słowacki housing estate in Poland, and finds methods and techniques complementary to the interview process. [8] Moreover, this study revealed the potential of the open *loggia*, as a space of social interaction with the neighborhood. Fernandes (2016) studied the post-occupancy phenomena of converting open *loggias* into glazed ones, conducting interviews in the Lisbon neighborhood of *Campo de Ourique* in Portugal and concluding that the lack of indoor space is what motivated inhabitants to implement this change. [9] Furthermore, this study revealed the potential of the glazed *loggia* as a protective threshold to unpleasant outdoor environments.

METHODOLOGY

Qualitative research methods like photo ethnography, participant observation and interviews, have been used in an exploratory approach.

The socially constructed nature of reality is explored by qualitative researchers in an intimate relationship with what is studied, seeking answers to questions about the creation and meaning of the social experience. [10]

Bridging the gap between scientific fields, we interviewed experts in anthropology (Maria de Fátima Amante, ISCSP-UL), bioclimatic architecture (Manuel Correia Guedes, CiTUA, IST-UL), ecological economics (Cristina Marta-Pedroso, MARETEC, IST-UL), environmental psychology (Fátima Bernardo, CiTUA, IST-UL), human kinetics (Rita Cordovil de Matos, FMH-UL), inclusive design (Marta Bordas-Eddy, UPC; TUT), landscape architecture (Isabel Loupa Ramos, CiTUA, IST-UL), public health (Helena Cardoso de Menezes, H.Menezes Risk Vision) and urban planning (Joana de Castro e Almeida, CiTUA, IST-UL).

To increase information diversity, pertinent to approaching the complexity of the phenomena under study, we interviewed 12 citizens of different ages and abilities (with and without physical or sensory impairments).

Due to the pandemic situation all the interviews were carried out remotely, using phone or video conference depending on the interviewees' preference.

We used a semi-structured interview format to enable the opportunity for further questioning and clarifying the interviewees' answers.

We guarantee the anonymity of the latter interviewees in order to promote the sharing of experiences about their own residential *loggia* spaces.

The interviews with users under the age of 18 were carried out with the assistance of their school staff, with empathic relationship with the interviewee. The staff didn't question the interviewees however, their presence was essential to give confidence and facilitate their participation.

The interviews with deaf people were carried out with the assistance of a sign language interpreter.

Regarding the expert interviewees, we sent previously the questionnaire by e-mail, in order to maximize their thinking about *loggia* spaces. The remote conversation using phone or video conference was more feasible than an e-mail interview due to time rationalization. None of the experts asked for anonymity.

Coding is a methodological strategy used to reduce the complexity and amount of data in analysis, that consists in the use of a label that allows the grouping of several elements as statements or observation in a single concept. [11] Therefore, we used coding to identify similarities and differences between the interviewees' perception, aiming to achieve a generalized statement about residential *loggia* spaces.

RESULTS

Interviews

Amante states the importance of rethinking the size of *loggia* spaces, to allow for uses related to social, family and work activities.

An 80-year-old woman uses both her *loggia* spaces, open and glazed, for gardening. Moreover, a glazed one, was used by her husband for oil painting, and another glazed one is used as a laundry space.

Ramos stated that "(…) an investment that we should make in the context of increasing resilience (...) or being more prepared for what climate change may be is to invest in trees in the urban space."

Regarding design requirements for a *loggia* space, she pointed out the importance of the possibility to

have views to the outside, careful sun orientation and spaciousness to allow gardening and social activity, mentioning "It is not just looking at nature that is outside the balcony, but it is bringing nature into the balcony."

To use public outdoor space during pandemic time, mainly in spaces that require the use of a mask, is very difficult for a 36-year-old quadriplegic woman due to her respiratory problems. Therefore, her open *loggia*, on the ground floor, connected with a backyard, is the area of her apartment that she enjoyed the most during the pandemic situation. She uses this space for meals and mentioned "I have the flowers there and I can hear the sound of nature. (…) as the buildings are not very noisy (…) we can hear the birds."

Regarding pandemic occurrences, Menezes pointed out the importance of a *loggia* during periods of confinement, mentioning that an outdoor space with seating and with a view of the surrounding area, may reduce the risks relating to mental health problems. Regarding the spaciousness of a *loggia*, she pointed out its importance of allowing some physical exercise. However, she also alerted that some exercise equipment may offer a chance for children to reach the fencing's top, increasing the risk of fall.

Matos pointed out "(…) that children are free to explore the space and can test their motor skills as they develop (...)". She states the importance that architecture needs to consider the risk regarding children behaviour. Furthermore, she mentions, that even in well-designed balcony fencing, the surrounding furniture may allow access to the top edge.

Guedes pointed out the importance of understanding the local climate to reduce energy consumption and allow less greenhouse gas emissions. He mentions that a *loggia* space needs to be designed to allow a passive performance of indoor spaces. For him an excellent solution is to have blinds to give shade and allow views to the outside for the users inside the *loggia*.

A 50-year-old woman with dwarfism only uses her glazed *loggia* as a storage area. She mentions "I don't reach the windows. I have to put myself on top of (…) a bench (…) to reach (…) the window handle."

Regarding usability of shading devices such as blinds to regulate the comfort in the *loggia* space, Bordas-Eddy stated the potential of domotics so that "(…) you can push a button and you can close the shade or open the shade (…)" mentioning that this solution may mitigate difficulties in the use "(…) sometimes the most difficult part is to move these shading devices, because they are so heavy or because they are in a place in such a way that they are hard to reach (…)".

A 53-year-old deaf man mentioned that what he likes the most in his open *loggia* is "Watching the people (…) Greeting people. (…) I also like the plants (…) The worst thing is the smoke from cars."

Regarding visibility Bernardo mentioned "From a social point of view, (...) I think that sometimes balconies are positioned in places and in ways that make them very exposed (…)". She pointed out the potential of private outdoor spaces for social interaction. She mentioned that during the pandemic confinement she observed a friendship growing between neighbors that were talking to each other from their own outdoor private space.

A 9-year-old child with severe visual impairment, mentioned that she uses her open *loggia* during confinement for music classes, stating "I play the clarinet and (…) I like to play outside (…) because I am feeling a little breeze." However, for her this space is not completely comfortable, mentioning "(…) sometimes I don't like it because I'm afraid my laptop will be stolen."

Almeida stated that in main avenues, due to privacy reasons, residential *loggia* spaces may not be used for meals, not only because they are unpleasant, as a result of the traffic noises, but also that they may be visually exposed to the neighborhood. Furthermore, she mentioned that town planning,

specifically through local regulation, may consider this requirement of privacy to improve urban resilience.

Marta-Pedroso states the importance of avoiding the non-functional, excessive space in a *loggia*, mentioning that we need to consider "(…) a disproportional allocation of natural resources".

Participant observation

We share the pandemic experience of the first author, a blind person that used his glazed *loggia* in order to maintain his health and well-being during the pandemic.

He lives in an apartment in a busy street of Lisbon, with narrow sidewalks and faced the impossibility of using the public space autonomously because his visual absence meant he could not guarantee social distancing.

Due to his specific condition of blindness without light perception, the *loggia* allowed him to perceive the daily rhythms through his tactile experience of sunlight.

Therefore, he used this small space daily, during two work breaks, in the morning and the afternoon, for more than one year.

This *loggia* space is located in a corner of his apartment, facing southeast and southwest solar exposure. It is closed with fixed glass panels, sliding windows and outdoor blinds.

He only used this narrow space to read audiobooks, listen to music or talk on the phone.

According to his experience, if the *loggia* is not glazed it will only be used during summer, because it is very windy.

During summer time, the glazed areas are open and outdoor blinds are shading the *loggia* space. In the winter the outdoor blinds are used less and the windows are only open for ventilation.

Regarding thermal comfort, the indoor areas of his apartment connected to the *loggia*, are the warmest in winter and the coolest in summer.

Moreover, its location in the backyard is an important quality regarding hearing experience, because it is quiet and there are sounds of birds coming from a few existing trees.

Photo-ethnography

The online picture collection revealed different uses of the residential open *loggia* during the Covid-19 pandemic.

We found pictures of people using their *loggia* for physical activity. In a picture by Remo Casilli, taken in Rome, a gym class is performed within two buildings that are opposite to each other. In the first one the trainer is in a *loggia* and in the second building several trainees are situated in their own *loggias* space, allowing for social distancing and group interaction (Figure 3).

Figure 3. Physical activity involving loggia spaces and neighborhood, tactile drawing representing picture by Remo Casilli [12]

We also found pictures of social interaction between *loggia* spaces. In a picture by Emillio Morenatti, taken in Barcelona, two neighbors are talking, each one is located in its own *loggia*, allowing the safety of social distancing (Figure 4).
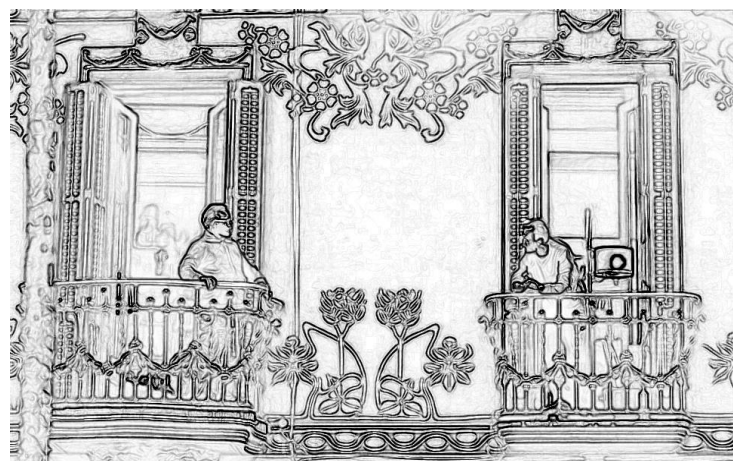

Figure 4. Social Interaction between loggia spaces, tactile drawing representing picture by Emilio Morenatti [13]

Furthermore, we found pictures of meals in *loggia* spaces. Being represented in a picture by Kathy Willens, taken in a residential *loggia* in New York, where is possible to see two persons eating together seating around the table, with their upper body shaded by the *loggia* space (Figure 5).
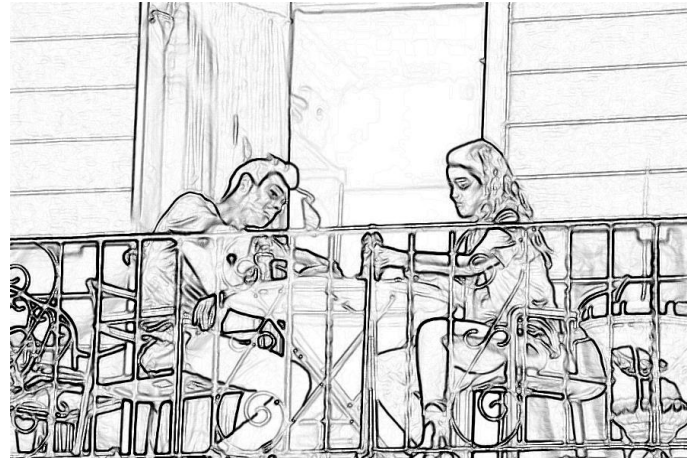
Figure 5. Meal in a loggia, tactile drawing representing picture by Kathy Willens [14]

Moreover, we found pictures of people using their own *loggia* for musical performances. In a picture by Paweł Kopczyński, taken in Berlin, a violin is played in a *loggia* to raise the public morale in the first confinement of the Covid-19 pandemic (Figure 6).
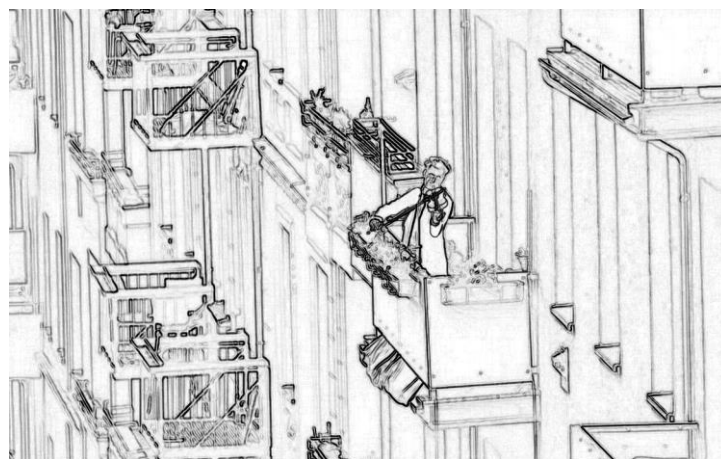

Figure 6. Musical performance in a loggia, tactile drawing representing picture by Paweł Kopczyński [15]

We also found pictures of people using their own *loggia* as a space of worship. A family is praying in a religious action (Figure 7).
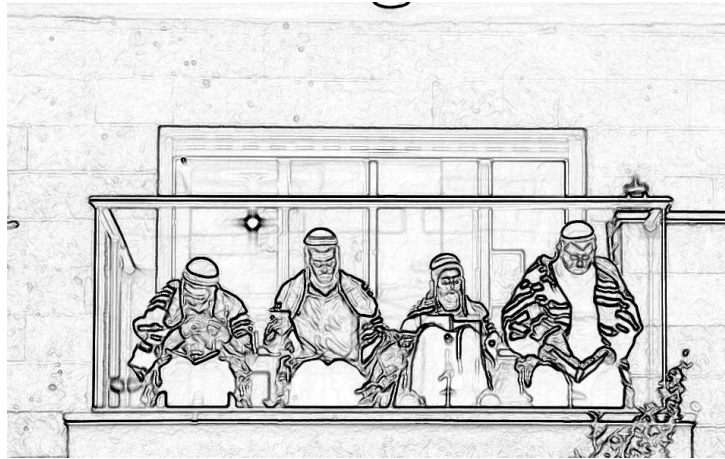
Figure 7. Family praying in a loggia, tactile drawing representing picture by Tsafrir Abayov [16]

DISCUSSION

Our analysis suggests that the *loggia* is an important spatial component in housing, promoting, both in the open and glazed types, a stronger relationship with the outdoor environment. These findings are in line with the approach to the glazed *loggia* of Fernandes (2016). They are also in line with Otrishchenko (2019) regarding balconies and the open *loggia*. However, there were differences in qualitative research methods used in the aforementioned studies.

Instead of interviewing people of a selected neighborhood, we started by selecting a sample of people to interview.

Connecting the experiences of users and experts from different fields, it was possible to understand that safety and sensory comfort are key qualities to approach in this problematic.

Beyond the potential of the *loggia* in preventive health during pandemic confinement, there is the risk of fall for children due to the temporary presence of spatial components that compromise the performance of well-designed balcony fencing. Therefore, an inclusive solution of fixed furniture and equipment, taking into account spaciousness and children's behaviour, may contribute to the safety of the *loggia*, e.g. a wall mounted folding seat accommodates children's safety and a friendly spatial conversion for wheelchair users.

Regarding sensory comfort, a combination of the open and glazed types in a convertible *loggia* may allow a regulation of tactile comfort of the protection to the wind or sun exposure. Moreover, a convertible *loggia* type, may contribute to the regulation of visibility and privacy.

Furthermore, the urban planning of *loggia* spaces in quiet backyards with trees, instead of open *loggia* spaces in busy streets may promote its use.

CONCLUSION

The focus of this study is a preliminary definition of the spatial qualities of the residential *loggia*. The interviews with users and experts from different fields revealed that safety and sensory comfort are key qualities of *loggia* spaces. Furthermore, the findings from the participant observation and photo-ethnography suggests that the *loggia* is an important spatial component during a pandemic, promoting a stronger relationship with the outdoor environment. Moreover, the insights gained revealed the need for *loggia* spaces to be designed considering local climate, rationally dimensioned, spacious enough to guarantee inclusive use, and with privacy regulation for physical exercise and social interaction with the neighbourhood.

A premise of our research was spatial justice. Therefore, we tried to ensure our interviewee sample included a wide range of human diversity. Unfortunately, the pandemic situation increased the difficulty of interviewing people with behaviour differences and cognitive impairments. We plan to include this group of users in future research.

FUNDING

ACKNOWLEDGMENTS

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REFUGEES IN A CHANGING CITY. QUESTIONS OF SPACE, HOUSING AND CITIZENSHIP IN THE LISBON METROPOLITAN AREA

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INTRODUCTION

Following the theme of the conference, Cities in a Changing World: Questions of Culture, Climate and Design*, the article crosses critical thinking in Architecture and Urbanism with Migration Studies while focusing on the recent transformations of the Lisbon Metropolitan Area (LMA), as it shelters an increasing number of immigrants, including refugees that, in their turn, contribute for its socio-spatial transformation. The work will draw on my experience as researcher[1], activist and collaborator of the Refugee Forum Portugal[2], an informal platform for the dialogue between different stakeholders, namely refugees, academics, civil society in general, State, various institutions and non-governmental organisations/associations working individually and as a network for the integration of refugees in Portugal[3]. In this context, this paper underlines the role of (ex-)refugees and scholars as important players in the process of socio-spatial transformation. This dialogue takes place in a strong neoliberal context in permanent reconfiguration.

The article aims to identify how refugees are being received in the LMA, bearing in mind structural paradigms and current problems introduced or highlighted by the COVID-19 pandemic; the process of changing the capital city, for and by, these vulnerable migrants; and the key-stakeholders and forces in charge involved and their pre and post COVID-19 routines and practices. It also debates the building of an intercultural and inclusive society and space in a changing city, all the while launching research clues for reaching new horizons aligned with the radical idea of the right to the city[4.] For that, the article is structured according to the following socio-spatial experiences and dimensions: living conditions, inclusion, access to adequate and affordable housing, and building citizenship. It concludes with a critical review on tendencies in Lisbon, a metropolitan city in a changing world.

A METROPOLITAN CITY IN A CHANGING WORLD

Portugal has 10,298.252 residents[5] distributed in a total area of 92,212 sq-km[6.] The LMA, in its large area, hosts 2,821.876 inhabitants[7] spread over 3,015 sq-km[8], with a density of 950,6 hab./sq-km[9]. It includes 17 cities, 18 municipalities and 118 parishes. The Human Development Index (HDI) of this metropolitan area is very high (0,901)[10] as its GDP *per capita* sums €31,000[11]. Regarding foreign citizens, in 2019, the LMA counted 312,486 residents[12] out of 590,348 living in Portugal, matching 53 *per cent* of the total number of immigrants residing in the country[13]. The annual growth of this

indicator in this most wanted Portuguese region[14] is of *circa* 25,8 *per cent*[15], a figure slightly above the average (22,9 *per cent*)[16].

Portugal experienced a fast-growing number of applications, summing 7,236 requests between 2015 and 2019[17]. Most spontaneous asylum seekers were sheltered by the Portuguese Refugee Council (CPR) in its reception centre (CAR I) in Bobadela, in Loures, peripheral LMA, but also in guest houses located in the axis of the Martim Moniz, in the centre of Lisbon. Furthermore, the country took part of the European Union Relocation and Resettlement Programmes and Agreements[18] with 2,149 refugees received[19]. Regarding this, until 2018, the *Municipal Programme* for the *Reception* of *Refugees* in the C*ity of Lisbon* welcomed *circa* 250 vulnerable migrants in their facilities[20]. Nonetheless, most refugees, individuals and families received under these programmes/agreements were sent randomly and disconnectedly to small and medium-sized cities and rural areas, being dispersed. 56 p*er cent* left the country mostly for secondary movements[21].

The National Survey of the Need for Rehousing[22] recognised 14,030 cases[23] in the LMA, representing 54,46 *per cent* of the Portuguese problem. Nonetheless, *as recently mentioned by REDE H*[24] *– in the comments on Housing for the Recovery and Resilience Plan of Portugal (RRP)*[25] *for the public consultation (15 March/1 April 2021); –,* these numbers were highly underestimated by public services. They only refer to the poor housing conditions while not considering cases of (1) overcrowding, with two or more households *per* house, (2) those unable to pay rents or losing their former contracts, (3) high effort rates, impossible to maintain, among other common difficulties[26.]

Furthermore, COVID-19 amplified both structural and everyday life problems and brought wider knowledge on challenges regarding the right to the city[27]. This includes the right to the product and work, namely the right to an adequate housing, urban benefits, appropriation of space and power (including struggles), and participation in the active life for building citizenship. In this context, for welcoming a growing number of migrants aiming for "their right to the city", all the while building different forms of socio-spatial interculturality, the LMA also struggles with the access to different rights in the city.

A CHANGING METROPOLITAN CITY FOR REFUGEES AND ASYLUM SEEKERS: STRUCTURAL PARADIGMS AND EVERYDAY LIFE PROBLEMS.

Paradigmatic socio-transformations of the LMA occur in a rapidly changing world, *i.e.,* one that simultaneously reflects and feeds a powerful neoliberal context in a systematic reproduction of capital. These are linked to (1) urban renovation, (2) upgrading of the city centre(s), (3) gentrification processes, (4) touristification, and (5) attracting foreign capital[28], all paradigms motivating strong real estate dynamics, an increase in the value of rents and sales and, consequently, the exclusion of a myriad of tenants and buyers unable to keep up with the housing market inflation. As such, the so-called middle class is being pushed away to the distant peripheries or other centres neighbouring the capital city. Thereat, the most impoverished groups are also being pushed further away into more accessible housing spaces.

Living conditions

Refugees also must cope with these broad changes of Lisbon, a metropolitan city facing great and rapid transformation. Searching for survival or better living condition, they tend to face poor standards of living whilst struggling with a myriad of difficulties. These problems concern learning Portuguese, lack of skills recognitions, accessing employment, education, health care, and gender issues, religious misinterpretations and racism or xenophobia[29]. At the same time, official narratives of inclusion are optimistic suggesting no intention of the government to take stock of everyday life

realities and consequences of host policies, as reported by many stakeholders in the Assembly of the Refugee Forum Portugal (2019). In this context, despite being evoked to aspire belonging to the urban society and a middle class, refugees end up living "under the radar", widening the impoverished socio-spatial margins.

Inclusion

Having to deal with these poor conditions, refugees often seek to learn new skills, to be independent and later autonomous, being able to make decisions for themselves taking control of their lives. Still, they must face and attempt to overcome LMA's perverse neoliberal urban paradigms and transformations, and their implications. Therefore, they are vulnerable targets of an exclusionary system, as they tend to (1) face exclusionary situations, sometimes even under the protection of European Programmes, (2) do not develop enough skills to achieve independence after the initial support, (3) are restricted by current neoliberal tendencies such as, again, processes of renovation, gentrification, touristification, etc. In this context, both structural and daily conditions largely clash with the needs, desires and expectations of refugees to integrate an idealised intercultural "middle class".

Adequate housing

As mentioned, accessing adequate housing in the LMA is difficult, particularly for those in need. Refugees face similar difficulties as the rest of the society, but they reflect the gap between the official messages regarding their socio-spatial inclusion and the public recognition of housing problems for a large majority, as noted by the New Generation of Housing Policies, from 2018[30]. Their major troubles relate to: (1) signing rental contracts, due to bureaucracy, insufficient documentation and/or poor earnings, this last question being related to unemployment or job instability, (2) great difficulty finding guarantor(s), due to the lack of familiar and social ties amongst the more affluent and/or institutional support on this matter, (3) very high value of the deposit[31], corresponding to the anticipation of several months of rent, and (4) lack of affordable sustainable housing programmes for refugees. In this context, buying a house is almost impossible. Thence, refugees often live traumatic situations, such as: (1) forced evictions with police apparatus and without alternatives, (2) cuts in domestic infrastructure supply (water, electricity, gas or internet); (3) sharing of rooms and houses with strangers, by individuals/families.

Building citizenship

Difficulties of the LMA's impoverished urban society on building a complete form of citizenship is, hence, related to the previous dimensions: living conditions, inclusion and adequate housing. Refugees are no different. Having little knowledge on other social groups' historical and present housing struggles, they have almost no voice when it comes to contesting public policies and practices, as they tend to focus on everyday life strategies for survival. Even if the voices of resistance, demanding for the right to the place and housing in the LMA, amongst other rights in the city, are loud enough to be heard by policymakers[32], all the while influencing new strategies and/or programmes. These new instruments are directed for the poor[33] but, mostly, to the middle class. Furthermore, associations for and by refugees in the LMA, specifically those led by former and current refugees[34], follow a similar approach, one consisting of helping vulnerable immigrants to overcome everyday-life problems. Some also invest on advocacy, particularly the UREP[35], establishing a close dialogue with the Refugee Forum Portugal. Their work looks up for a political

and institutional reform aiming socio-spatial and housing inclusion, replacing current excluding practices.

CHANGING THE METROPOLITAN CITY BY AND FOR REFUGEES AND ASYLUM SEEKERS: NEW HORIZONS FOR THE RIGHT TO THE CITY.

Pioneering new paths while looking ahead at ground-breaking horizons is in line with a growing attempt of part of the LMA's urban society to resist or reform structural paradigms sustaining and feeding on everyday problems. Innovative paths tend to be built on top of the struggles for the various rights in the city – *e.g.,* fights for survival and for reaching better living conditions –, namely the access to an adequate housing and the right to the place – in its multiple dimensions and scales (country, city, neighbourhood, street, etc.) –, and, ultimately, the right to the city, following Lefebvre's provocative thoughts[36]. This last concept is intimately related to independence and autonomy, for together – capacitated and empowered – individuals/groups can transform urban space and society. It also relates to changes introduced by/for the inclusion of refugees.

Key-players/forces in charge

In a strong neoliberal context, different social groups play different roles in the urban and housing reforms and struggles, depending on their backgrounds and ideologies, but also personal and collective needs, desires and challenges. The work developed by the Refugee Forum Portugal – a melting pot of different people and thoughts – is collective, often seeking to produce new approaches and practical answers. This collectivity, however, involves tensions between its key-players, especially when it comes to opting for reformist actions, in line with the system, or of resistance, following a revolutionary claim. On the one hand, a progressive vision on the inclusion of refugees from existing structures seems a logical approach to improve their living conditions. On the other hand, it generally reproduces and reinforces systematic patterns of dependency. In its turn, a more radical approach towards the building of an egalitarian world is seen, by some, as being conflicting with the institutions and practical works in course, compromising assistance to those who need immediate answers and cannot wait for a structural revolution. As such, small immediate responses, with low and short-lived consequences tend to be chosen over transformative background movements, eventually with better and more lasting results.

Pre/post COVID-19 practices

COVID-19 introduced an amplifying lens stressing structural and everyday problems regarding living conditions, in general, and, in particularly, in the LMA. In the pandemic, in 2020/2021, the Refugee Forum Portugal introduced and intensified a series of activities responding to some of these challenges. For advocacy, following the 1st Assembly on Building Citizenship[37], occurring in 2019, the Empowerment Initiative for Refugee Women of the Refugee Forum, organised, in late 2020, the open session Women in the COVID-19 Pandemic: Forces in Vulnerable Situations[38]. Here, refugee women had the opportunity to share their vulnerabilities with other migrants/nationals seeking to overcome common domestic challenges in times of social distance. In December, the Refugee Forum organised the 2nd Assembly on the Future of Host in Portugal[39]. Representatives of the Refugee Forum also participated in a myriad of other initiatives, both national and international, for questioning public policies and practices in times of emergency, but also to construct collective alternatives[40]. Regarding actions, the Refugee Forum Portugal[41] produced the COVID-19 Emergency Context Support Plan, financed by ACM and Gulbenkian Foundation, providing masks, hand sanitizers, hygiene and cleaning products, food, medicine and cultural mediation to asylum seekers and refugees

in need. This plan is in line with the service provided by the Refugee Forum Portugal at the Co-work Space, through in person and online meetings, to help solving problems, and the local support continuously provided to the refugee community in the LMA[42].

Intercultural/inclusive city?

Despite the numerous socio-spatial and housing problems of the LMA, attraction of urbanisation is strong as numbers confirm. Counter-acting the current decentralisation strategy for relocated and resettled refugees in Portugal, as COVID-19 triggered and/or reinforced social isolation measures, some refugees searched for better housing and living conditions and job opportunities in the capital city. In this cases, COVID-19 enhanced existent feelings of loneliness and alienation of those residing in small/middle sized urban areas, stressing problems of unbalanced territorial models forgotten by host strategies. Nevertheless, living in the LMA, refugees face other forms of segregation, as its urban society presents different levels of closeness/openness to foreign cultures, religions and phenotypes according to, once again, individual and collective former experiences and post-colonial positioning. As a matter of fact, nationalist political orientations recently emerged in Portugal and are consolidating in the LMA[43], influencing and supporting hate speech and the building of right-wing political narratives against refugees and other minority social groups.

Reaching for new horizons

Simultaneously, being cosmopolitan, support networks are more expressive and of wider range in the LMA, because they come hand in hand with a permanent demand for problem solving for those in need. Regarding poor housing conditions, for example, a recent initiative of the Refugee Forum Portugal for collecting winter clothes in articulation with Cáritas Portugal, is a fine example of combined effort. In this case, many blankets were gathered for families of refugees, including small children, experiencing extreme cold. The initiative was later expanded to the project Donate Heat, Donate Love, in articulation with the project Refugee Residences[44]. As for functional projects for inclusion of refugees in Portugal, the UREP, the Refugee Forum Portugal and the Union of Parishes of S. Iria da Azoia, S. João da Talha and Bobadela presented an application to the national Programme Healthy Neighbourhoods called Refugee Neighbourhood: Empowerment of Refugees and Third Country Nationals. It was not funded because it lacked "originality" and the number of applications largely exceeded the government's expectations. Regarding family initiatives, project Tayybeh is a singular and paradigmatic example of strength, determination, capacity and empowerment[45], as Ramia and her husband Alla built, without any external support, both the Syrian restaurant in Moscavide (in the LMA), employing other Syrian refugees, on behalf of the Association Family of Refugees, and the eco-farm Quinta do Damasco (outside the LMA, in Alcobaça), providing vegetables and other goods for the restaurant.

LISBON, A CRITICAL (RE)VIEW

The LMA shelters approximately a quarter of the residents of Portugal. More than a half of the foreigners living in the country are in the LMA, corresponding to 11% of its inhabitants, and rising. Regarding asylum seekers and refugees, even if tendentiously fast-growing, numbers are insignificant to the LMA regional scale – matching 0,3 *per cent* of its residents in four years[46] –, even more compared to national values. Moreover, the LMA presents more than half of the national problems and challenges regarding access to adequate housing in Portugal. Even if official figures are much above reality, official figures reflect a matter of scale between the capital city and the rest of the country.

Refugees aspire to belong to a so-called middle class in Portugal. However, due to an identified number of factors, such as neoliberal structural paradigms and everyday problems, their small amount, false official narratives of inclusion, etc., many refugees are forced to live in poverty. Furthermore, they have little voice compared to other social groups in need, hence tend to live unnoticed. However, their hopes, dreams and aspirations remain as they struggle for better living conditions, matching those endorsed by dominant public messages of integration, all the while bridging, as far as possible, the gaps resulting from poor public policies and practices and lack of support and funding.

Stakeholders giving voice and/or representing different matter for the inclusion of refugees have influenced and, ultimately, conditioned lines of force reacting and responding to the excluding neoliberal paradigms, thus co-transforming the LMA's urban society. What is more, they entail different views on its socio-spatial consequences. Mobilisations crossing various segments of the society also present conflicting interests. As such, refugees tend to live adaptively according to the forces in charge. Their opportunities for a radical transformation for socio-spatial inclusion depend on the struggles of other social groups in need reaching for the right to the city for all, thus unbalancing the system. In the meantime, political strategies and policies tend to target and benefit the middle class, neglecting a vast majority of population living under the radar, including refugees and other migrants in need.

NOTES

[1] For the individual post-doctoral project INSEhRE 21, funded by the Portuguese Foundation for Science and Technology **(**SFRH/BPD/118022/2016 – FSE/POCH).

[2] The Refugee Forum Portugal was created in 2018 and included five associations of/for refugees. Four were promoted by (ex-)refugees residing in Portugal, namely *União de Refugiados em Portugal* (Refugee Union In Portugal – UREP), *Associação de Refugiados em Portugal* (Refugee Association in Portugal – ARP), *Associação de Apoio a Migrantes e Refugiados em Portugal* (Support Association for Immigrants and Refugees in Portugal – APIRP) and the Family of Refugees. Currently, the Refugee Forum Portugal works almost exclusively with UREP. The association Home Without Borders is inoperative since 2019.

[3] I would like to thank Alexander Kpatue Kweh, coordinator of the Refugee Forum Portugal and Enas Fathallah coordinator of the Empowerment Initiative for Refugee Women, of the Refugee Forum, for sharing their insightful knowledge, all the while welcoming me to co-construct lines of thought and action for the inclusion of refugees in Portugal.

[4] Henri Lefebvre, *Le droit à la ville* (Paris: Anthropos, 2009 [1968]).

[5] "Estimativas da População Residente em Portugal 2020", INE, accessed July 8, 2021. https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=47307978 5&DESTAQUESmodo=2

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[7] "Área Metropolitana de Lisboa", LMA, accessed July 14, 2021. https://www.aml.pt/index.php

[8] "European Metropolitan Transports Authorities", EMTA, accessed July 14, 2021.

[9] "Densidade Populacional", PORDATA, accessed July 14, 2021. https://www.pordata.pt/Municipios/Densidade+populacional-452

[10] HDI refers to life expectancy, education and per capita income; "Internal Market, Industry, Entrepreneurship and SMEs. Portugal, Lisbon Metropolitan Area", GLOBAL DATA LAB, accessed July 8, 2021.

[11] "European Metropolitan Transports Authorities", EMTA.

[12] *260,503 in Lisbon and 51.983 in Setúbal.*

[13] "Immigration, Borders and Asylum Report 2019, SEF, accessed July 8, 2021.

[14] *Particularly Lisbon, with 44* per cent *of foreigners.*

[15] *Resulting from Lisbon (+22,3* per cent*) and Setúbal (+29,3* per cent*).*

[16] *SEF, 16.*

[17] *SEF, 52; data includes all relocations including of those from humanitarian boats.*

[18] These European programmes and agreements are intended to cover the initial 18 months with the allocation of an amount of € 6,000 per adult and € 4,000 per minor, part of this being provided in the form of pocket money, with relatively small amounts remaining for providing in-kind lodging and food expenses; Miguel Graça. "Respostas locais em tempos de crises globais: o Programa Municipal de Acolhimento de Refugiados na cidade de Lisboa (PMAR Lx)", Revista Migrações: Mediação Intercultural 15 (2018): 40-59, accessed April 23, 2021. https://www.om.acm.gov.pt/documents/58428/183863/PAGINACAO_06_REV15_online.pdf/57c28a51 -a2ee-4e1f-9d09-780bd00d826c

[19] ACM, "Resettlement Programme: Global Statistical Information" (paper presented at the meeting with the Refugee Forum Portugal, Lisbon, October 2–3, 2019).

[20] Interview by the author to technician (April 9, 2019).

[21] ACM, "Resettlement Programme: Global Statistical Information".

[22] "Levantamento Nacional das Necessidades de Realojamento Habitacional", IHRU, accessed March 24, 2020.

[23] *9.869 in Lisbon (38,31 per cent) and 4.161 in Setúbal (16,15 per cent).*

[24] Ana Estevens, Fátima Matos, Filipa Serpa, Gonçalo Antunes, Joana Lages, João Leitão, Katielle Silve, Luis Mendes, Nuno Patrício, Rita Silva, Sara Lopes, Sara Brysch, Sílvia Jorge, Sílvia Viegas and Simone Tulumello. "Investimento, vulnerabilidades habitacionais e problemas transversais no PRR", Le Monde Diplomatic, June, 2021, accessed July 8, 2021, https://pt.mondediplo.com/spip.php?article1418

[25] *RRP is part of the Portugal 2030 Strategy, framed within the European Union's Recovery and Resilience Facility (RRF). The Portuguese RRP was the first plan officially submitted to the European Commission, in 2021.*

[26] Ana Estevens *et al.*, 6-7.

[27] Henri Lefebvre, *Le droit à la ville.*

[28] Sílvia Viegas, "Access to housing by all and for all? Today's paradigms and paradoxes in Portugal", Fórum Sociológico 35 (2019): 71-80. Accessed May 8, 2021. http://dx.doi.org/10.4000/sociologico.4864

[29] "Refugee Plan Report in the Emergency Context of COVID-19", Refugee Forum Portugal and UREP (unpublished, 2021).

[30] "Towards a New Generation of Housing Policies: Strategic meaning, objectives and instruments of action", SSH, accessed March 17, 2019. https://www.portaldahabitacao.pt/nova-geracao-de-politicas-de-habitacao

[31] *In 2019, during the 1st Assembly of the Refugee Forum Portugal, the Association Crescer reported abusive situations regarding this matter,* e.g., *when a landlord asked a refugee to pay for seven rents in advance.*

[32] *The association* Habita *and the platform* Stop Despejos *(Stop Evictions) are fundamental in this case. Also, the mobilisation* Caravana pelo Direito à Habitação *(Caravan for the Right to Housing), launched in 2017, caught the attention of the public opinion and of the centre/left-wing coalition co-governing the country since 2016.*

[33] *Particularly the programmes* Primeiro Direito *(First Right) and* Porta de Entrada *(Front Door) developed within the scope of the New Generation of Housing Policies.*

[34] *These are* the UREP, ARP, APIRP and Family of Refugees.

[35] More information available at: https://urep.pt/author/webadmin-urep/ (accessed December 9, 2020).

[36] Henri Lefebvre, *Le droit à la ville.*

[37] *This Assembly* celebrated the first year of activity of the Refugee Forum Portugal, focusing on issues as the right for asylum, empowerment and training of refugee women, access to higher education, access to health, right to the city and housing, good practices, internal and external mobilities and entrepreneurship projects and actions.

[38] "Debate Session: Women in the COVID-19 pandemic: forces in vulnerable situations", ERW, accessed June 2, 2021, https://drive.google.com/file/d/118aLXrzCaAyQ4Rp13gpUTedrFVzRdhg7/view

[39] *The second assembly of the Refugee Forum Portugal occurred in late 2020, was online, and focused (1) on the challenges faced by the refugee reception system over the years, (2) the future of the national programmes, and (3) the co-construction of a new action plan with the various actors working with the asylum system in Portugal, in a pandemic context, also considering the growth of hate speech in Portugal and Europe.*

[40] E.g., *International Rescue Committee – IRC Webinar on Early Integration (online, February 25, 2021); BeVisible Refugee School (Berlin/online, 25 March 2021); Meeting on gender violence of UNHCR Portugal (15 April 2021); IV Open Forum for celebration of the World Refugee Day (17/18/20 June 2021).*

[41] "Refugee Plan Report in the Emergency Context of COVID-19".

[42] *Specially in (and from) the peripheral area of the Union of Parishes of Santa Iria de Azoia, São João da Talha and Bobadela).*

[43] André Ventura, president of the extreme right nationalist and xenophobic party CHEGA, reached the third place in the presidential elections of early 2021, having 11.90 *per cent* (496,773 votes). In the LMA the percentage of votes was of 12,85 *per cent*.

[44] *A pilot project to support the integration of refugees and asylum seekers through mediation and cultural practices of social inclusion, with the support of the municipal programme BipZip. More information available at: http://www.largoresidencias.com/projectos/residencias-refugio* (accessed July 8, 2020).

[45] Sílvia Viegas, "Tayybeh. A blessing for the World Refugee Day", Alice News, June 20, 2019, accessed July 8, 2021. https://alicenews.ces.uc.pt/index.php?lang=1&id=25698

[46] *Corresponding to all refugees and asylum seekers entering the country in 2015-2019.*

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ARTISTIC, CULTURAL, AND POLITICAL INTERDEPENDENCE: CITIES IN MOTION FACING THE CHALLENGES OF TECHNOLOGICAL ADVANCES

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INTRODUCTION

This article presents the global context in its potential for innovation and social transformation through artistic, cultural, and political interdependence, employing an aesthetics analysis and critical theory. First, imagination and creative practice are observed to consider sociocultural resources and stimuli related to urban space through the arts. Then, these practices are related to the main challenges of social inclusion, targeting the values of a democratic society. Architecture, visual arts, and design are, in its conception, the technique in its creative processes, presenting its configuration goals related to society's material aspects—that is, the economic, scientific, and technological development in the international market concentrated in the urban environment. Beyond the medium's importance, the form, and the content in which these arts configure their characteristics, this article considers the importance of the sociocultural and political influence in the current context. Thus, different forms of visual expression and perception in large cities meet an aesthetic of everyday life or urban configuration. Images are related to cultural changes and their meaning in architectural space-time. Therefore, this study is about the image, its description, and its effects on culture, in which reciprocity is involved. For example, various narratives are discussed in their visual significance and relationship with movement and synchronization with sounds in everyday interactions (Schmidt 2011). In these terms of approaching digital technologies, the moving image production, visual and sound dissemination, and social impact, this study focuses on the numerous meanings of art, creating an awareness of its effects on culture. Further, its artistic dynamics in architectural and urban spaces target the cosmopolitan ideals of social inclusion, sustainable development, and democracy.

On the one hand, artistic achievements are part of the cultural development that occurs within territorial limits. On the other hand, concerning deterritorialization, these achievements are related to space-time, images moving in the face of the perception-image (Deleuze 1983–1985). Therefore, it is not trivial to distinguish the political and economic aspects of a social fact from its immediate need to find solutions for the urban environment. To this end, this article discusses the historical achievements of practical and aesthetic developments through artistic actions, design, and architecture, while taking into account the public space—physical or digital—through the images, sounds, and integrated planning that represent local and global challenges to a sustainable environment. Hence, it considers artists, composers, designers, and architects who have consolidated their achievements through

interactions with technicians, politicians, scientists, and technologies. Accordingly, this paper addresses the formulation of a better understanding of the complexity of cohabitation—that is, urban lives.

ARTISTIC ACHIEVEMENTS IN ARCHITECTURAL AND URBAN SPACES

Analysis of the visual arts is based on approaching the rhythm of urban society concerning the aesthetic, social, and environmental aspects that converge to a common purpose by questioning, raising awareness, and, mainly, seeking solutions to many social problems. In this sense, these artistic achievements can be exemplified by Robert Rauschenberg's (1925-2008) images with the techniques and means predominant in the cultural-historical context regarding the Hegelian sense of visual arts in interdependence with culture and politics. Among the principal works are some of the 22 collages that make up the album *Tribute 21*.

From this repertoire, the foundations of Rauschenberg's multimedia art—whether through the influence of abstract expressionism, assemblage, pop art, or ready-made—present social aspects, the everyday life of society. His works established the artist's ongoing dialogue with various techniques and arts, including printmaking, painting, photography, drawing (conventional and experimental techniques), and sculpture. Between the handmade and the ready-made, between gestural painting and the reproduced image, Rauschenberg produced his art in constant collaboration with printmakers, engineers, writers, artists, and artisans from across the world, manifesting an art connected to cultural diversity.

A collaboration with the composer John Cage and choreographer Merce Cunningham inspired him to engage in conceptual modes and performances. In this sense of the relationship of images with sound and rhythm, his works acquired aesthetic importance for the city's visual dynamics. Rauschenberg's prints are relevant for their aesthetic and cultural value related to the current context's main humanitarian themes, which represent an aesthetic of everyday life, integrating image, sound, and rhythm to urban aspects and social facts. Moreover, this multimedia artist's role in the configuration of these images through digital technology and assemblages of the media world in its socio-political sense of cultural diversity is relevant in contemporary art. The images resulting from this experiment between art and technology allow the analysis of everyday aesthetics compared to the production process when art's criterion of authenticity transforms creative production into an art object. Among these prints are *Music–John Cage* and *Environment–Al Gore*. The first is a celebration of the composer's influence in the artistic and social context. The second print regards the environment and the need to focus on militancy in defence of sustainable development (Figs. 1–2). Some examples of cities' images in motion are seen in how the entire image composition guides the visual narrative.
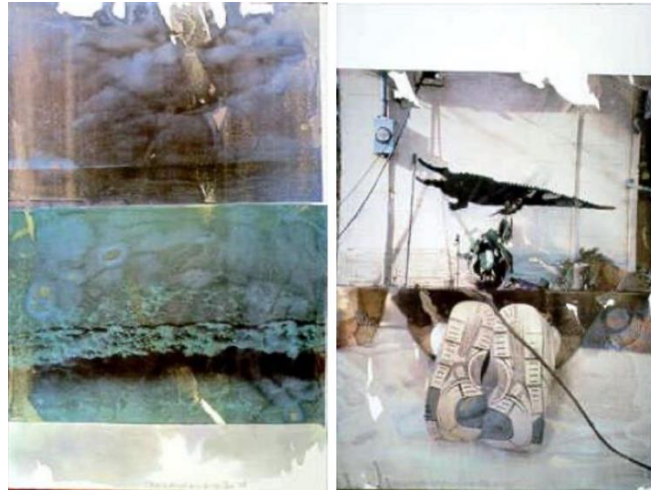
Figures 1–2. Robert Rauschenberg,
Music – John Cage, 1994. Environment – Al Gore,
Series Tribute 21, 1994. © MAC USP Artistic Collection

Although the word "image" is commonly used, it is extraordinarily complex in its meaning. We shall refer to the definition of "imagination" to understand this multifaceted signifier better. As per this definition, imagination is the faculty or action of forming new ideas, images, or concepts of external objects not present to the senses. Therefore, imagination is considered an idea that cannot be characterized as knowledge. It is equally important to pay attention to the simulacra through which imagination reaches "reality." In the case of stimulating creative artistic visual projects and architectural projects drawn from the field cinema and vice versa. For example, it is perhaps the advent and usage of new technologies that enable such simulation of knowledge. In the visual arts, it is further exemplified by the visual reproduction of this relationship in the artworks of Robert Rauschenberg, *Cinema – Steven Spielberg* or *Architecture – R. Buckminster Fuller* (Figs. 3–4).

Figures 3-4. Robert Rauschenberg,
Cinema – Steven Spielberg and Architecture – R. Buckminster Fuller,
Series Tribute 21, 1994. © MAC USP Artistic Collection

This correspondence between architecture and cinema is a good reason to think about the innovation involved in configuring images; it is also an excellent reason to reflect on technoculture, assuming

that the joining of contemporary aesthetics and total art will facilitate technological convergence. Meaning would not be created in the moment of execution but in the visual narratives' formal result concerning our consciousness in time and space as reality. Additionally, the meaning would be determined as a reciprocation of the perceptive relations between creative individuals, artists, architects, designers, and filmmakers. For example, Jean Nouvel (2004) has asserted that his architecture was significantly influenced by film, particularly by filmmaker Wim Wenders' work. For Nouvel, architecture is, above all, the production of images and awareness through sight, and an architect is an image manipulator. Cinematographic culture teaches us to see these images concerning time. Life relates to time, whether in displacement or concerning buildings that, according to some rites, survive the test of time. The feature of the image sequence is as essential to modern architecture as it is to the cinema. Based on his own experience as an architect, Jean Nouvel suggests that notions such as displacement, speed, and memory are cognitive domains. Furthermore, these concepts are compelling aspects of filmmaking. In architecture, these ideas are related to movement—how one moves in an environment or an architectural space. The creation of visual narratives involves memory as much as it does the act of seeing. It is a process wherein visual sequences are perceived and coordinated in the imagination. Hence, these perceptions are shaped by the interplay between the present and the time of creating the visual narratives. The insights are also shaped by how the architect's, artist's or the filmmaker's creations influence this interplay. In this regard, conceptually, the notion of dematerialization in urban space is like Deleuze's philosophy (1983, 1985). Such images are related to the contemporary impact of the image associated with sound and rhythm, concerning the cultural value as socio-political progress, seeking the improvement of democratization, and overcoming differences in human rights maintenance, as highlighted in Rauschenberg's homage to Nelson Mandela (Fig. 5).

Figure 5. Robert Rauschenberg, Human Rights – Nelson Mandela,
Series Tribute 21, 1994. © MAC USP Artistic Collection

Thus, based on Morton Shoolman's work (2020) on an aesthetic education through the moving image, it brings us closer to democratic enlightenment through visual culture, everyday images, and film reproduction. The entire sense of cultural reality in its appearances is registered in its political presence. The imitative image and contemporary context of the cosmopolitan rhythm prevail, seeking to overcome the differences of identities in society's daily experience. Schoolman reconstructs the

genealogical history of what he calls the reconciliation image—a visual model of a democratic ideal of reconciliation that he theorizes based on Adorno's aesthetic theory, through encounters with moving and cinematic images, *The Reconciliation Image in Film.* Moreover, sound (soundtrack) in *Philosophy of Modern Music (Adorno 1973)* explores other political-cultural spaces. For Schoolman, with an aesthetic education, the private sphere becomes an aesthetic domain of ideas, senses, perceptions, and orientations capable of transforming the relationship between identity and difference. The analysis of Schoolman's work enables an update related to political-cultural aspects that, by critical and aesthetic theory, the perception of cities in motion, sounds, images, and space concerning cosmopolitan ideals in artistic, cultural, and political interdependence are perceived and understood in their representativeness as a form of reconciliation. However, these visual reference bases—in the technical aspects of this interdependence's practice—target social inclusion and democratization.

SOCIAL INCLUSION AND DEMOCRATIZATION: ARTISTIC, CULTURAL AND POLITICAL CHALLENGES

In principle, all artistic expectations to meet the global needs of social inclusion, democratization, and sustainable and green economies depend not only on their projects but mostly on political will and new cultural and consumption habits. Moreover, the arts achievement also expects solutions with social projects concerning cultural differences, education, and the fight against poverty and hunger as the fundamental basis for broad and dynamic innovation in the current system of the "culture of waste" characteristic of our consumer society.

One of the most significant works critical to our society is precisely titled *Society of Consumption* by Jean Baudrillard (1970). This work, initially published in Paris, presented in its latest edition (1997) a cover of Daniel Spoerri's artwork, an assemblage intitled *Phallen, Fallen-Bild* (1989) depicting the end of a large meal with debris scattered on the plate and over the table. From this image, even before the introductory text and in-depth reading, we can deduce the main problem of this consumerist system and those living in abundance—waste.

However, considering theory and practice, the goal is to understand the interdependence between architecture, art, and design in its technical essence. In this sense, it is a process wherein it is possible to understand the influence of artistic creations on commercial products. Of course, the most considerable significance is the direction that designs have taken concerning the post-World-War demands of globalization and the Fordist economy model's relationship with the current condition. It is worth considering the post-war Fordist world economy versus the coincidence with the beginning of a long process leading to the end of the Fordist system itself and its replacement by an economic regime that David Harvey calls "flexible accumulation," which we know as late capitalism. In his work, *The Condition of Postmodernity, An Enquiry into Origins of Cultural Change* (1990), our present system differs from the Fordist system by decentralizing capital. In the Fordist order, power and wealth were measured by the country's productive capacity, company, or individual. In this flexible system, the consumer's power of consumption is gauged.

Therefore, formal innovations no longer follow function in their unique and determining purpose but are still associated with consumer identity values, meeting their needs and lifestyle, within criteria aimed at the sustainable development of diversified and fragmented production. There is no longer a Fordist sense of the mass output without concern for society's cultural and specific differences. Cultural stratification and consumption, respectively, on a global dimension, as the classification between developed, developing or underdeveloped countries, is no longer the usual social, political, or economic perspective. Not even the denomination of "first," "second," and "third world" has made

more sense in thirty years, since 1989 and the end of the USSR and the communist system, understood as "the second world," while the so-called "first world" were the countries in NATO, belonging to the Warsaw Pact. The other countries were the third world. Today, economists and sociologists orient their analyses based on the centre and periphery relations, enabling a comparative dynamic where their parts interact, diversify, and restructure fragmented and distinct values to maintain the global economy in its inherent differences and similarities in every culture.

However, we already know that since the 1970s, the oil crisis and environmental issues about the scarcity of natural resources are the main problems. Furthermore, some sociologists hold—to some extent, within the consumer societies, even though its different social classes and economic inequality—that the scope of a genuinely democratic consumption does not seem to be possible. Therefore, some design and society experts understand that social inclusion is favoured within this market logic. Nigel Whiteley (1993) analysed the effects that abundance and marketing have on the design and the movement of green consumption. In his studies, without contradicting the design style, he highlights design as solutions considering the "social utility" and environmental effects of a product. He understands that consumer-oriented design, stimulating consumer society, offers democratization of private property and luxury compared to scarcity and subsistence-based nations. According to Whiteley, if discarded still in good conditions, the new or used product can still be consumed as "second-hand." In this sense, for Nigel Whiteley, it is given the importance of ownership, regardless of the current or outdated product state, and he believes that there is social inclusion.

It should be noted that this consumption does not coincide between the bourgeoisie and the economically subaltern classes. Despite the technological speed at which products become outdated, the subaltern classes almost always have the alternative of consuming "the trash of luxury"—that is, things that the bourgeoisie no longer wants and even discards due to their technological obsolescence, physical form and functionality.

However, creating a more inclusive society concerning the green economy and social and environmental sustainability in emerging economies is still an enormous challenge. Outdated and environmentally harmful technologies are still the primary means of production that provide economic stability and employment in growing economies. The main factor in the evolution of science and technology is industrial modernization and design, which provide innovative solutions. However, it should be noted that designers are not the inventors of these technologies; they design creatively through them. Designers are the interpreters of new technologies, and they realize social values (Bürdek 2015).

In general, architecture—design with its inherent relationship with art, technology, society–should be attuned to society's needs. Therefore, sustainable development is the kind of development capable of meeting the needs of the current generation without compromising the ability of future generations to meet their own needs. The green economy proposes that, in addition to productive and social technologies, other means should be created through which essential factors linked to socio-environmental sustainability, still ignored in economic decisions, can be addressed. For example, the "inclusive green economy" includes programs that promote environmental preservation or recovery, supporting segments of the population to earn an income from recycling solid waste. In this sense, the goal is to consume less and more consciously with initiatives aimed at rationalizing and optimizing products for low energy costs or renewable energy and the use of renewable and environmentally friendly materials.[1] Thus, technological and scientific development in partnership with industry has intensified research into alternative energy solutions.[2] Independence from non-renewable energy sources is the new economic direction of many countries. However, some countries still resist this

demand based on political and economic interests. The United Nations strongly supports the most important treaties that condition decision-makers to follow sustainable development and a green economy. Since the Stockholm Conference in 1972, the United Nations has sought to raise society's awareness of the relationship between humans and nature. Many solutions for the use of renewable energy and the reduction of greenhouse gas emissions have been presented in the form of targets that have been set in a series of agreements—the current one being the 2015 Paris Agreement[3] at the COP21 in Paris—that aim at sustainable development.[4]

CONCLUSION

Artistic, cultural, and political interdependence must be understood globally as a significant process for contemporary urban life, especially in the articulations of democratic ideals. To this end, social responsibility is one of the primary characteristics of this interdependence in its functional, rational, and objective aspects, not to the detriment of individual sensitive values, their desires and particularities sublimated in consumption, but in the synthesis of the relationship between reason and sensitivity to meet, in all its aspects, the aspirations idealized by society. It is precisely in this interdependence that one finds the potential of the architect, artist, and designer, creating and recreating new habits and functions based on research and transdisciplinary associations to reach the best solutions for social inclusion. Creation's activities, by its objective intention and determination, differentiate themselves from the artist in their subjective creations—not that art in its subjective realization is not concerned with important issues of our social reality, but simply because of the difference in the creative process. While architecture and design target projects focused on problem-solving, art questions it, and the environment enables every moment of social history through lived experiences, considering ideas, understandings, thoughts, wills, purposes, cultural, ethical, and aesthetic values, the achievements in their formal and universal diversities that represent the spirit of the time – *Zeitgeist*.

NOTES

[1] "Cities around the world are accelerating uptake of renewable energy, adopting targets and policies to spur local consumption and generation. This makes a critical contribution to climate action, since cities shelter more than half the global population and use three-quarters of global final energy consumption. REN21's Renewables in Cities Global Status Report surveys the status and prospects of renewable energy in cities, detailing policies, markets, investments and citizen actions. It puts particular focus on renewables in public, residential and commercial buildings as well as public and private transport. Covering urban areas from towns to mega-cities, the report builds on more than 330 data contributors, and is endorsed by major renewable energy players and city networks," United Nations Climate Change, *Renewables in Cities 2021 Global Status Report*, accessed April 22, 2021, https://www.un.org/en/climatechange/reports

[2] "The need for control to maintain the objective and achieve the goals established by environmental agreements has come to be under the supervision of international institutions. Therefore, industrial companies that produce in compliance with environmental laws started to be certified by the International Standards Organization" (ISO 14001:2015), International Organization for Standardization, accessed April 22, 2021, https://www.iso.org/standard/60857.html

[3] **"**To tackle climate change and its negative impacts, 197 countries adopted the Paris Agreement at the COP21 in Paris on 12 December 2015. Entered into force less than a year later, the deal aims to substantially reduce global greenhouse gas emissions and to limit the global temperature increase in this century to 2 degrees Celsius while pursuing means to limit the increase even further to 1.5 degrees. Today, 189 countries have joined the Paris Agreement," United Nations Climate Change, *The Paris Agreement***,** accessed April 22, 2021, https://www.un.org/en/climatechange/paris-agreement

[4] "The COP26 UN climate change conference set to take place in Glasgow in November 2020 has been postponed due to COVID-19. This decision has been taken by the COP Bureau of the UNFCCC (United Nations Framework Convention on Climate Change), with the UK and its Italian partners," United Nations Climate Change, *Glasgow Climate Change Conference*, accessed April 22, 2021, https://unfccc.int/process-and-meetings/conferences/glasgow-climate-change-conference

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TOWARDS A HELIOCENTRIC URBANISM? RECONSIDERING SUNLIGHT THROUGH THE PRISM OF LOS ANGELES OLYMPICS 2028

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INTRODUCTION

The sun has been central to human culture for millennia, whether expressed in solar rituals or stories of settlement success. Sunlight naming narratives vary, such as in the case of once thriving Tongva village of Kuruvungna, meaning "a place where we are in the sun", or the acclaimed Golden Coast. From Machu Picchu, to residences erected according to fengshui principles, to old brick houses remaining in Lower Silesia countryside or Le Corbusier's investigations into sun-responsive and heliotherapeutic architecture, sacred and vernacular architecture across the world have been commonly located and oriented in close – even if diverse – connection with the sun. And nevertheless, technological revolutions, which facilitated separation of the life rhythms of nature and increasingly asynchronous rhythms of urban living, resulted in increasing disconnection from the sun – even if architects or city planners still take sunlight seriously. Indeed, the majority of urban dwellers take sunlight access for granted, routine and devoid of significance.

Our paper examines the prospects of city and lighting through the lens of Los Angeles Olympics 2028 (LA28) and its theme "Follow the Sun". We intend to inquire how light can be used, shaped and perceived in the inclusive and responsible festivals of the future, and trace the implications of redefining the significance of light within a given urban space, both as symbolic and material culture. We are particularly interested in how LA, whose light and cityscapes are well known, seeks a balance between displaying its rich heritage of manmade lighting, but at the same time advocates for active engagement with daylight. The "Follow the Sun" campaign of the 2028 Olympic Games "uses the sun as a symbol of its vision, which shines on the athletes of LA and serves as an ally in the search for a more sustainable Games."[1] This explicit connection between sustainability and sunlight can be analyzed as a broader attempt to remind us that the lightscapes designed and assembled by humans, and often celebrated to a great extent in city branding, are late and minor additions, if not harmful distortions. The essay is written in the spirit of the United Nations' project *Light: Beyond the Bulb*, an open-source international exhibition program, which brought illumination to mind for the International Year of Light.[2] This showcase displayed the incredible variety of light-based science. The UN reminded us that among many light phenomena and technologies, which the human eye can or cannot see, and all of which contribute to the urban lightscapes; yet sunlight remains central to

city's existence, even if little noticed. Through our research we encourage reflection on "heliocentric urbanism", embracing both urban design and urban presence/awareness consciously revolving around the sun, and actively exploring opportunities emerging from approaching sunlight as a creative energy, while acting decisively against the climate change.

FOLLOW THE SUN

Los Angeles is known for its California sunshine and golden beaches. "Follow the Sun" is expressed by an official statement by Los Angeles Olympic and Paralympic Committee: "LA 2028 is about what's possible when you follow the sun."[3] A shareable short Committee VIMEO announcing and promoting LA 2028 invites analysis. In a brief few minutes, night gives way to sun rise and a day time swoops by. The droned camera moves and reveals the flickering city lights then the rhythms of the sky and the sea, the sun and the valleys. First, night lights emanate from and become reflected among skyscrapers and along the streets. Highlighted sceneries are accompanied by music, which stimulates the imagination. Clipped night scenes unroll of the whole city viewed from Beverly Hills, dim lights on the shores, twinkling outlines of the skyscrapers, illuminated signs of the US Bank and City National Bank's, lit up Pacific Wheel glowing against the night sky over Santa Monica beach. City lights re-certify LA as a major hosting city. But it's the focus on the sun's journey that is most thrilling, ground-breaking and thought-provoking. When the sun rises, it illuminates a wave-riding standing surfer, and then, the Hollywood sign. Next, the city emerges in full daylight, augmented through reflections in the fountain in the Grand Park and bright glass windows of the skyscrapers. Finally, the sunset spreads gleams across magnificent natural sceneries (mountains, waterfalls, palms) and the sun is submerged back in the ocean, in an eternal cycle of birth, development and rest. The lights of East LA and South Central seem absent.

The sunlight is coupled with using sumptuous existing facilities and a smart-city renewal effort. "LA's Bureau of Street Lighting is turning 220,000 street lights into 'smart poles' with sensors, solar panels, cameras, and communication monitoring nodes."[4] Bundled, multi-use, data-resourcing street lighting poles materialize LA's bid for a sustainable Olympics. Thus, LA's rich urban history and artificial light heritage explodes to the show. Even though not unlike many other cities with Art Deco heritage in architecture, Los Angeles has also several splendid sun patterns incorporated into its builtscape, the city has an established reputation as "an incandescent city", "a blaze of glory", and "a miracle of the night", shining on the edge of the West Coast.[5] Since the late 19th century it has competed with Chicago and New York, and electric light has been strongly associated with civility, progress, commercial competition and immense transformative and imaginative power.[6] Hollywood contributed with its lights, containing magnificent urban lightscapes projected in the movies, as well as lavishly illuminated film theatres and dazzling light shows accompanying premieres.[7] In the early twentieth century, as a setting for filming outdoors, Los Angeles provided more desirable light and less uncertainty in the streets than Philadelphia and New York. The Hollywood Sign erected in 1923 was set with "lights ablaze" as 4,000 20 watt bulbs, spaced 8 inches apart, burst the LA scene upon the world. A 35 foot in diameter lighted white dot punctuated attention to "the place where magic is possible, where dreams come true."[8] From the 1940s forward, lights were not present, save for the New Year's millennium. At night, the iconic white letters mused in reflection of city lights, to be mistaken as lighting.[9] Los Angeles' functional, stylish street lights was encouraged by electricity from the Hoover Dam and came into its own the 1950s, illuminating traffic and meeting requirements for freeways.[10] Numerous urban rhetoricians and cultural anthropologists similarly identified Los Angeles with small, yet pioneering experiments in electric lighting since the 1980. Glow of cars and city's highways has been long recognized as a distinct and significant lightscape component of its own as

well. Neon lighting added yet another significant layer, and is now celebrated in Glendale in the Museum of Neon Art, dedicated to preservation, collection and interpretation of neon, electric and kinetic art.[11]

Indeed, Los Angeles seems to be very thoughtful about putting its light related heritage on display. In addition to MONA it has also a Streetlight Museum, where various fixtures that have lit Los Angeles throughout history are put on display to pay tribute to the City of Los Angeles' "over 200,000 streetlights with over 400 different styles", which throughout the decades have defined various communities within the City as well as retained the historic fabric of the City.[12] In 2008 Chris Burden created acclaimed outdoor sculpture *Urban Light*, by now one of Los Angeles' great landmarks, consisting of 202 cast iron lamps, which once lit the streets of the city and used to be symbols of "a civilized and sophisticated city—safe after dark and beautiful to behold."[13] Los Angeles' inquiry into qualities, meaning and heritage of light has been visible over the recent years in such endeavors as Huntintron Library exhibition *Beautiful Science: Light*, including a significant collection of historic light bulbs[14] or exhibition *A Survey in Light* by Mary Corse,[15] or *Lightscapes: Re-envisioning the Shanshuihua*, presenting immersive light- based installations by Nick Dong and Wu Chi-Tsung.[16] The transformative potential of the city's lighting has for a long time aligned with its evolution – from the edge of the desert into a metropolis, and from dark spaces towards safe, livable and efficient lighting and communication system for dwellers.[17] For a long time Los Angeles indulged in its disrupted natural nightscape, suppressed by spectacular commercial lighting, mutually enhancing the cinematic imagery and proudly manufacturing a dreamlike realm. In this context, "Follow the Sun" seems to be a promise, or at least a possibility of a radical turn, transforming the city from a site of "golden pink off the bay through the smog and onto the palm fronds", as *The New Yorker* called it back in 1998, to a city boldlyengaging with sustainability and increasingly committing to urban dwellers' wellbeing.[18]

CARING ABOUT THE SUN AS CARE FOR OURSELVES

Both the city and the Olympic Games turn out to be too costly, too spectacular, and too wasteful.[19] As a result they are facing major challenges concerning ability to meet requirements for sustainability and prove essential value for the urban dwellers, beyond the global competition and clever marketing for visitors. The IOC and UN concur on sustainability as a goal.[20] This requires radical new approaches to innovation and heritage. Discourse about the future surrounding LA 2028 is about reimagining and reinventing, rather than building and installing costly new things. It's moving from simplistic linear timelines towards more complex relations between the city's past and future. Los Angeles suggests engineering the future in such a way that a reshaped perception of the past, conducted in the present, will open space for welcoming the future, which by the time it arrives should be perceived as most desirable and advanced, even if at first sight not much different from what the city was ten years ago. Light has a crucial role to play as rhetorical re-invention, and therefore it needs to be rediscovered as well.

LA strives to put on display its status as a world metropolis, and yet it does not aspire to be brash or wasteful. It insists on use of the existing infrastructure and prioritizing changes which could in a long term benefit city dwellers, not only foreign guests. This is of course a broader trend, noticeable also in Paris which committed to staging climate-positive Olympic and Paralympic games.[21] The Winter Olympics in Milano and Cortina promise such goals as well.[22] A new model of glorious, responsible and sustainable Olympics, which does not need to fear transparency and sunlight--as an alternative to multiple authoritarian spectacles the world has witnessed--, turns also into a promise of a new city, which does not need to endlessly add stimuli in order to project and pursue its modernity. This idea seems to correspond to new approaches developed in tourist advertising and storytelling developed for

cities or even entire regions as well, as can be seen for instance in case of Portugal inviting visitors to "Visit our sea, our sun, our heritage and our culture"[23] or Expedia embarking on "a mission to mission to find the most beautiful sunsets in America" and encouraging people to "chase the sun around the nation."[24] The city needs to be re-presented, and re-seen in a new light, to move beyond the theme of commercial lighting and seductive nightscape.

We interpret the helio-imperative "Follow the sun" as a broader call for diverse identities, and potential important aspiration for every modern city, punctuating the lavish expenditures of neo-liberal global urban games.[25] Reconnecting city, sun, health, sport and possibility can be seen not only as an inclusive and powerful narrative for a major cosmopolitan sport event, but also a direction to pursue actively in macro- and microscale urban (re)development and daily urban practice. If cities are supposed to face ecological reconstruction urgency, and take on healthy and clean city agendas, rapidly reducing energy consumption, then reimagining relationship with sunlight and carbon-neutral attractions is imperative. Illuminated nocturnal skylines – on which Los Angeles hasn't given up entirely yet – tend to impose an illusion that we control nature and head for a beautiful and safe future; but, the truth is very different. Changing climate conditions affect natural lighting of the cities and their seasonal appearance. Appreciation of locality of light and weather, together with awareness how air pollution interferes with natural light shows in the city, could hopefully add momentum to large scale commitment to sustainability. We advocate the nurture of "photosensitivity", a kind of "natural photopositivity" at scale—allowing us not only to notice how Californian palm trees echo in their slender elegance tall street lamps, but also the sunlight shimmering on the edge of their palm leaves, or how they cast playful reflections in countless swimming pools of Los Angeles. Who at the advent of the night choses to focus on Los Angeles' evening scents and dusk glows, rather than any artificial illuminated spectacle accompanying them? We aim to remind ourselves that local natural light is heritage of the place we inherited from ancestors and share with other species. The hope here is then to work towards such a narrative of appreciation of the given loci of light and seasonal beauties of sunlight, which could facilitate reimagining of urban lighting policies and creative strategies, complying to multispecies justice, and most selfishly our own health improvement.[26]

GENIUS LOCI

Cities develop different lighting practices depending on length of daylight, density of light, warmth, latitude, climate conditions (such as humidity of air), and particular features of builtscape ambience (such as different textures or height, blocking access to sunlight). Ambience of light in LA is closely related to the particular topography, as a city built on a coastal plain nestled between two mountain ranges and a hilly peninsula with a mild Mediterranean climate. It all anchors its people in this place, which can imply emotional bonds, memories, artistic expressions and personal relation, or can as well go unnoticed. Re-imagine the genius loci, not only as a spirited animation of place but also as entanglements of sensed environments activating diverse identities and inclusive movements. The body of associations connect and inspire cultural waves that rise and fall with distinctive resonances of fortune and reckonings, light and shadows, among the wandering and dwelling of hosts and guests, indigenous and strangers across the city and its biome.

If we push the inspiration put forward by LA28, we can perceive this Olympics theme as a broader promise of the city, where people can obtain that presence which implies belonging as an organic part of the cityscape and broader landscape. Los Angeles now works for more than to reveal again in its once youthful Hollywood Dreams; rather, its planning engages the wealth mixed contributions of color and light across its diverse spaces. Light is a plenitude for this city, a way to energize the narratives of

cultural recoveries of fair play in aspiring openly toward the health and well-being of all residents and visitors alike.

The Olympic torch stands for strength and endurance in effort to enlighten and brighten up the world. It is closely associated also with integrity, liberty, hope and justice. Like other forms of ritual light, Olympic Flame enables connections across space, and between past and future. One can't really think about the theme "Follow the sun", LA28 and its genius loci, without recalling the ritual of lightening of the Olympic torch in Olympia, using the parabolic mirror with a curved shape, which allows focusing the sunrays to a single point. It's that focused single point on earth which we all need to reclaim for ourselves, as no matter how global or nomadic we are in our lives, we really can always be only at a single spot at a time, and as a matter of fact, there is much beauty and joy to be retrieved about it.

NOTES

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[7] Isenstadt, Petty, Neuman.

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DEVELOPING A WORKFORCE OF APARTMENT INDUSTRY AMBASSADORS

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INTRODUCTION

Owning a house is a long-held cultural norm in the United States…the so-called "American Dream."[1] However, renting an apartment also has advantages, but often carries a social stigma. This rental apartment stigma hinders additional development, and simply adds to consumers' housing costs as a result of the imbalance between supply and demand. The rental apartment stigma may also result in negative perceptions of rental apartment residents and even cause fewer individuals to consider multifamily rental housing as a career choice.

Multifamily housing organizations try to raise awareness of the value of apartments and renting in an effort to generate more apartment development. They also use their advocacy platform to train apartment industry leaders to work with elected officials on public policy issues that impact the apartment industry. However, what is needed in the apartment industry's advocacy campaign is education for apartment industry staff to have a better understanding of the debate regarding renting an apartment vs. ownership of a traditional house, and how to modify apartment industry practices that may have unintentionally contributed to the stigma.

The focus of this paper is to:

- Provide an overview of the debate between ownership of a traditional house and renting an apartment
- Describe how the preference for ownership of a single-family detached house has been created and reinforced in American society
- Identify why apartment industry ambassadors are needed
- Share an educational program designed to create more apartment industry ambassadors

THE GREAT HOUSING DEBATE – BUYING A HOUSE VS. RENTING AN APARTMENT

In 1856, American author Walt Whitman wrote "…a man is not a whole and complete man unless he *owns* a house and the ground it stands on."[2] Homeownership is believed by many to represent financial security, status, social class, stability, commitment, and good citizenship.[3] In its 2021 first quarter report, the US Census Bureau indicated 65.6% of Americans are homeowners.[4]

However, there are also many advantages to renting an apartment.[5] For example, renters need less money upfront and can move more easily than someone tied down by a mortgage. Property management staff maintain the equipment and grounds, so renters save time, money, and frustration if

they are not equipped to maintain the facilities themselves. Access to amenities (swimming pool, fitness room, business center, dog park, and more) increases the benefits of apartment living, as does the sense of community created by resident activities.

There are now more renters in the United States than at any time in the past 50 years, representing a variety of ages, incomes, and social classes.[6] However, such statistics should not be interpreted to suggest a shift away from the American Dream of homeownership toward a preference for rental apartments. While fewer Millennials are homeowners as compared to Gen-Xers and Baby Boomers when these generational groups were the same age as today's Millennials, Millennials still want to become homeowners.[7] This rite of passage has simply been delayed by education, student loans, credit card debt, marrying later, and having children later.

Even with the ongoing increase in apartment demand, there is still a stigma attached to this housing option. Perceptions of renters shared by respondents in a study by Apartment List further support the rental apartment stigma, as respondents used these phrases to describe renters:[8]

second-class citizen - transient - less successful - cannot afford a house - waste money when they should build equity - not invested in their location - lack commitment and responsibility

Consequences of Rental Apartment Stigma

The stigma against renters and multifamily housing has erupted into contentious debates at city planning meetings nationwide, as developers try to provide more affordable housing in areas where there is a housing shortage. Through NIMBYism (Not-In-My-Back-Yard) and exclusionary zoning, homeowners and city leaders may attempt to block apartment development in favor of traditional neighborhoods of owner-occupied houses. A search using Google News and the search terms "apartments" and "opposition" will provide readers with a large number of examples. However, as documented by Jacobus in his article "Why We Must Build", blocking apartment development in areas where rents already consume more than 30% of household income (and more than 50% in some locations), simply drives rental prices even higher due to an imbalance of housing supply and demand.[9] It has been estimated that over 4 million more apartments are needed in the United States by 2030 to keep up with demand and to keep overall housing prices at a more reasonable level.[10]

Not only is there a shortage of apartment homes, the apartment industry is also experiencing a shortage of staff.[11] And this staff shortage will only become more problematic if more rental apartments are built, as even more employees will be needed. Even though the apartment industry provides a more generous compensation package, the property management industry competes with the more traditional (and apparently more attractive) housing career of real estate sales. Nevertheless, property management positions typically include a vast array of employee benefits and may even include a reduction in rent,[12] whereas 2018 data from the National Association of Realtors indicates that real estate agents are typically self-employed and therefore do not receive employee benefits.[13] This supports the contention that the rental apartment stigma not only impacts housing consumers negatively, but also has negative consequences for recruitment of housing professionals toward careers in multifamily rental housing.

Creation and Reinforcement of the American Dream of Homeownership

Americans are not born with a preference for houses over apartments, nor a preference for owning over renting. In fact, renting is more common and more acceptable in several other countries.[14] Switzerland and Hong Kong both have more renters than homeowners. And these additional countries are identified as having a higher percentage of renters than the United States (in order from lowest to

highest homeownership rate): Germany, Austria, South Korea, Turkey, New Caledonia, Denmark, Japan, France, Sweden, New Zealand, Australia, and the United Kingdom.

Housing preferences are created and reinforced in a number of ways in the United States. Examples include the Mortgage Interest Deduction, which promotes homeownership and costs the US in lost revenue more than what it provides in low-income housing subsidies.[15] Other ways the American Dream is reinforced is through the news media, movies, TV shows, literature, art, and song lyrics, where apartments, renters, and property management staff may be portrayed less favorably, if they are represented at all.

Anecdotal Evidence of Unintended Reinforcement of the American Dream

While speaking with an apartment industry leader at a social gathering, we discussed apartment demand/supply/pricing issues, and how the media portrays the apartment industry as the villain. She made the comment: "They blame us. They make it sound like it's our fault that rent prices are so high." I knew what she meant, and I agreed…the high cost of rent isn't the result of price-gouging by property owners/managers; if apartment developers could overcome local opposition, more apartments could be built, supply could meet demand, and monthly rental rates would drop.

Later, reflecting on her comments and some of my additional observations and further interactions with members of the apartment industry, I began to think that perhaps some of the responsibility DOES rest with the apartment industry, but not in the way the media portrays. My anecdotal evidence suggests that members of the apartment industry may be unintentionally perpetuating the rental apartment stigma.

• There is an entire genre of memes focusing on rental apartments and the property management industry, most with a negative message. And apartment industry employees are seen sharing these negative messages on their social media sites. The short-term impact may be humorous when shared internally with other apartment industry associates, but there are potential long-term consequences in sharing these memes with a broader audience that may cast a negative light on an industry already in need of repairing its reputation.

• A popular Corporate Social Responsibility (CSR) activity among apartment industry associates is to provide volunteer labor for Habitat for Humanity, assisting low-income families with building a house. Nothing against this organization, but it seems counterproductive for those employed by the rental apartment industry to support homeownership in their corporate volunteer work; it seems to reinforce that buying a house is superior to renting an apartment.

• There are also property management companies that provide financial literacy classes for their residents, helping residents to budget their money to buy a house. Perhaps these companies do not understand how their well-intended actions are being perceived as counterintuitive to elevating the reputation of the rental apartment industry.

• Another observed activity involved a combination happy hour and painting class arranged by property management staff for a group of apartment residents. Surprisingly, the piece of artwork that each of these residents was asked to reproduce was an image of a house. Again, such activities only reinforce that houses are held in higher esteem than apartments.

• Property management employees are typically offered a discount on rent when they live an apartment community managed by the property management company that employs them, and some staff (such as community managers and/or maintenance) may even be offered a free apartment as an employee benefit. However, it seems that apartment industry employees may take advantage of this benefit only until they accumulate enough money for a down payment to buy a house.

• When a member of the apartment industry spoke to my class during a field trip, she stunned these college students (some of whom planned to pursue a career in the apartment industry) with comments implying that apartment living is a temporary housing solution until one gets married, has children, and then buys a house. We all expected someone in her position to be a more fervent ambassador of long-term renters and the apartment industry.

Apartment Advocacy Activities of Professional Organizations

The National Apartment Association, together with the National Multifamily Housing Council, are trying to raise public awareness of the value of apartments and renting through their apartment advocacy campaign. They also use their advocacy platform to train apartment industry leaders to work with elected officials on public policy issues that impact the $3.4 trillion apartment industry.[16]

However, what is missing in the apartment industry's advocacy campaign is education for apartment staff to have a better understanding of the "rent vs. buy" debate, and how to overcome the rental apartment stigma through apartment design, amenities, marketing techniques, leasing strategies, customer service, resident retention practices, staff behavior, and volunteer activities that may unknowingly contribute to the stigma. What is needed are apartment industry ambassadors…influencers or change agents who can make a positive impact on the rental apartment industry. A working definition of an apartment industry ambassador includes:

Someone who believes in the value of multifamily rental housing for individuals, families, and communities, and will represent the industry in a positive way…leading to an enhanced perception of this housing option, increases in multifamily housing development, and elevated perceptions of both residents and staff.

DEVELOPMENT AND PILOT-TESTING OF EDUCATIONAL MATERIALS

In January 2021, funding was received from Ball State University (Muncie, Indiana, USA) and Indiana Humanities (with support from the National Endowment for the Humanities) to educate apartment industry professionals in an effort to help overcome the rental apartment stigma. A series of six monthly educational sessions was developed for pilot-testing, and attracted eleven participants representing five different states, six different property management companies, and a variety of positions, from a leasing consultant at an apartment community to the executive vice-president of a property management company, and a variety of other positions at all levels in between. These monthly sessions were offered free of charge during the pilot-testing phase, with the potential to include the educational sessions for a fee as part of the university's Executive Education offerings in the future. "AT HOME in the Apartment Industry" was the title of the seminar series, and the sessions were conducted virtually via Zoom.

Session One

As participants gathered online for Session 1 they were asked to draw what "home" means to them, to photograph it, and then send the photo to the instructor by text or email. When all members had joined the group, they were invited to introduce themselves and to then participate in a variety of quizzes and polls to assess their knowledge and attitudes regarding various housing issues. The remainder of Session 1 provided an overview of the concern regarding rental apartment stigma.

In evaluating Session 1, participants remarked that they enjoyed learning apartment industry statistics, especially the need for many more apartments to be built. Some commented that the information gave them new ideas for how to improve the marketing of the apartment homes in their companies' portfolio. One of the greatest takeaways reported by participants was the need to update the

terminology used in the rental apartment industry, particularly that "home" can be a rental apartment, an owner-occupied house, or any other type of housing option.

Session Two

Session 2 began with a recap of the previous session, with participants reporting how they had used the information learned in Session 1. All reported increased awareness of the terminology used in the rental apartment industry, and many reported changes in the words they use as a result of Session 1 (resident instead of tenant, apartment home instead of unit, community manager instead of property manager, etc.). The remainder of Session 2 focused on the American Dream of an owner-occupied house and the many ways it is reinforced in our society, through public policy, news media, social media, movies, TV shows, music, literature, and art. When their drawings of "home" from Session 1 were shared with the group, they were surprised to learn that even apartment industry professionals may be guilty of reinforcing the American Dream, as the overwhelming majority of participants had drawn a house as their symbol of "home."

Session Three

As shared with the group, today's children are our future housing consumers, future community leaders, future housing professionals, and future elected officials. While Session 2 had focused on negative influences on rental apartment attitudes, Session 3 provided an opportunity to reflect on children's books that have a positive story and positive images regarding apartments, apartment residents, and apartment staff. Each participant was provided one of these books to read in advance and then reported to the group in Session 3:

- Blackout (2011) by John Rocco
- Going Up (2020) by Sheryl J. Lee
- Lily's New Home (2016) by Paula Yoo
- My Building (1998) by Robin Isabel Ahrens
- My Family Four Floors Up (2018) by Caroline Stutson
- The Imaginary Garden (2020) by Andrew Larsen

In evaluating Session 3, respondents reported that they enjoyed learning about all of the children's books that portray rental apartment buildings, residents, and staff in a positive way. They only wished we had had even more time to discuss them during our time together.

Session Four

Continuing with the focus on children's books that have a positive story and images about apartments, author Johanna Hurwitz joined the group in Session 4 to talk about The Riverside Series, a collection of fourteen books she has written that follow young children through their early years of living in an apartment building. Although the stories are fictitious, her own experiences living in New York City provided inspiration for the stories she wrote. Members of the group had read these books from The Riverside Series in advance of Session 4, and enjoyed hearing the author talk about them:

- Busybody Nora (1976)
- Nora and Mrs.-Mind-Your-Own-Business (1977)
- New Neighbors for Nora (1979)
- Superduper Teddy (1980)
- Russell Sprouts (1987)
- Elisa in the Middle (1995)

Sessions Five and Six

Session 5 of the AT HOME seminar series includes the many situations in which apartment industry professionals can influence the way apartments, residents, and staff are perceived. This includes not only doing away with the negative apartment industry practices described earlier in this paper, but additional strategies including changes to apartment building interior and exterior design, marketing approaches, resident policies, resident activities, volunteer activities, and additional professional development opportunities for staff. Session 6 provides an opportunity for participants to share what they have learned and how they will incorporate these strategies to overcome rental apartment stigma. Summarized results from seminar participants have been grouped into three categories (immediate impact, future plans, and recommendations for the apartment industry) and are described here.

Immediate Impact of Seminar Series

Immediately following the seminar series, participants reported greater awareness of the issues surrounding the topic of rental apartment stigma; greater appreciation of renting as a housing option, even long term; and greater appreciation of and commitment toward the apartment industry as a career. Behavior changes included increased attention to residents' wants and needs in a home, and a greater focus on resident events and building a sense of community among the residents.

Future Plans of Seminar Participants

Individual participants shared many plans for using the information obtained through the seminar series. Examples include:

- Have leasing consultants educate residents on ways to personalize their apartment so it feels like "home"

- Update apartment marketing materials to be more reflective of the positive aspects of renting

- Celebrate those renting an apartment like we celebrate those buying a house

- Encourage more positive apartment/renting-related social media posts among the staff

- Work with the news media to create positive stories about multifamily rental housing, especially before new apartment development is proposed, to get ahead of any potential opposition from the city or from neighborhood groups

- Plan and participate in volunteer activities that bring positive awareness of apartments/renting

- Create a library at the apartment community of children's books with a positive focus on apartments, and also donate copies of these books to area libraries

Participants' Recommendations for the Apartment Industry

In addition to their own plans for using the information gained in the seminar series, participants also shared recommendations for potential actions to be taken by the apartment industry as a whole:

- Showcase apartment living as a mainstream, long-term housing option, with a greater focus on an apartment as "home"

- Consider longer lease terms, and offer more resident renewal incentives

- Update terminology industry-wide to be more reflective of the positive aspects of multifamily rental housing ("resident" instead of "tenant," "community" instead of "complex," "community manager" instead of "property manager," etc.)

- Consider children's perceptions in everything we do, as they are the future…future residents, future housing professionals, future community leaders, and future elected officials

- Enroll in more courses like this one, so that more apartment industry professionals can learn what this group as learned about rental apartment stigma and how to overcome it

CONCLUSION

There is a long-held preference in the United States for owning a house. Negative perceptions toward rental apartments stall housing development in communities where it is sorely needed, elevate the price paid by housing consumers, reduce rental apartment residents to second class citizens, and make it difficult to recruit individuals to work in the apartment industry.

These negative perceptions have been created and reinforced in a variety of ways throughout American society. Professional organizations have attempted to address the issues that confront the apartment industry, but may not realize that members of the industry themselves are unknowingly contributing to the stigma.

With funding from Ball State University and Indiana Humanities, a series of seminars was developed and pilot-tested to educate industry associates on the many ways they can have a positive impact on rental apartment stigma. These educational activities have the potential to change the perception of rental apartments, restore dignity to apartment residents, and pave the way for additional development, as well as growth and respect for associates of the rental apartment industry.

ACKNOWLEDGEMENT

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THE CITY AS A PACKAGING FOR SOCIAL COMMUNICATION

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INTRODUCTION

In the coming years, in the social, demographic and communication context, as well as in urban planning, the city will become the main arena of changes[1]. Thus, it becomes important to study city-forming processes and the possibilities of managing change not only in the urban and architectural dimension, but above all in the social and communication one, taking into account the entire repertoire of methods and tools in the area of research and design of social communication This article presents the results of research on the perception of the city by its inhabitants in order to be able to learn the broadest possible linguistic representations of this concept - it is interesting above all what people say and how they speak about the city. The reliability of the study may be seen in the dynamics of the emergence of ever new models describing the main directions of changes in planning and designing cities - a large part of achievements in this area focuses on the so-called smart city, which directly translates into computational value. It is technology that becomes the main driving force behind changes, whose beneficiary is the often unaware end-user in any role - of a resident, tourist, or investor. Another - broader - way of describing the upcoming changes is related to the concept of creative cities[2]. However, this method quickly became the subject of criticism, as it indirectly leads to the phenomenon of gentrification and social stratification in terms of access to resources (economic, technological, etc.). The main threats resulting from the de-socialization of the city at the level of planning and designing new models in which optimization is the overriding value may also be seen - the city becomes an arena of technological and economic services, instead of being an optimal social organism. Although defining new roles and functions of the city seems quite difficult and comprehensive, positioning the city in a broader perspective, as long as it does not provide solutions, allows to build interesting models, the implications of which are important for many disciplines (e.g. for ethnography, cultural studies, architecture or urban planning). The role of the city seems to be critical in the process of human development, e.g. from the perspective of archeology, it is assumed that the city is a key indicator of the formation of human civilizations. Civilization can be understood not only as a certain stage in the development of the human species that meets the contractual criteria, but also as a result / effect of economic processes[3]. Studies on culture and theories related to it more and more often refer to the issues of communication[4] It is difficult to overestimate the culture-forming role of communication, especially since communication seems to be a necessary condition for the formation of a society. Although there is no single definition

of communication[5], in recent decades the research on communication and the accompanying system approaches have provided a fundamental contribution to the development of humanities and social sciences. It seems that communication understood as a specific social game in the form of *negotiating meanings* may constitute an adequate supplement to the current considerations on the city - on the one hand, in order to be able to create models using the available and future computing resources, and on the other hand, relating to the main postulate of designing communication: organising and stabilising the society by ensuring differentiation, the culture of participation and the capacity for diversity.

From the design point of view, the basic range of packaging functions focuses on securing the product, its trouble-free transport, storage, use and distinguishing it from the competition in a purchasing situation - isn't it the same for the city that is supposed to protect, enable movement or stay, using its functions and finally integrate, thus ensuring the distinctive character of the city.

Material and Methods

The starting point for deliberations on the ways of social and communication functioning of the city, and in view of modelling such solutions in the future should be getting to know the perceptions of various social groups on the semantics of the construct of a city. The point of departure in studying the city from the perspective of communication was studying the functioning of the very concept of a "city" in its linguistic representations obtained in the mode of linguistic empiricism. The aim of the research project is the semantic verification of the concept of a city on a (possibly) representative research sample. To achieve the above goal, a questionnaire with a standardized list of open questions was prepared and supplemented with basic demographic information. The form of a questionnaire will help in pursuing detailed research goals in the area of communication research: associations, functions, differential and vision. Such a structure of research issues made it possible to prepare a list of questions that will comprehensively cover the possible communication strategies and their linguistic representations about what a city is and could be for its inhabitants.

Since the city is the main arena of civilizational changes, it is important to get to know the ideas concerning it and its semantic representations in order to be able to adequately respond to dynamic social, technological and cultural changes in the future. Currently, little is known about the communicative and linguistic functioning of the concept of the *city*. This deficit could be remedied with the help of, among others, this study. The scope of collected data is presented in Table 1. The survey was conducted on a sample of 524 respondents in the form of CAWI (Computer-Assisted Web Interview). Such a research tool allowed collecting a large number of simple answers during the lockdown period resulting from the COVID-19 pandemic - the study was conducted in January-February 2021. The collected data was used for the qualitative analysis of frequencies, taking into account the following steps: data lemmatization, categorization and calculation of the frequency of categories, and indication of significant statistical relationships using Chi-square statistical tests (verification of the independence of variables), Phi and V-Cramer (analysis of the strength and direction of the relationship between variables). In this article, due to the volume of basic frequencies, statistical tests have not been indicated - their conclusions are presented in the discussion.

The proposed study does not explicitly include the initial hypothesis, although it is widely used in the area of sociological or psychological research. Communication research[6] is not about verifying hypotheses, but about verifying research problems and questions. The most important thing in the study was the reconstruction of communication about a *city* in natural language. In such a case, it is not possible to speak of hypotheses about natural language, which should be understood as a system of signs. Thus, it was decided to comprehensively verify the communication structure, taking into account its various dimensions. "Providing an answer to the thus specified research problem will

allow, if the answer is affirmative, to confirm the applicability of the theoretical assumptions"[7]. The aim of this study is not to confirm or only verify the hypotheses, but to verify communication on the proposed subject - to check how the concept of a city in Poland is connoted and what communication structures are used to operationalize it. With regard to the adopted assumptions and research issues, a questionnaire was prepared with the following list of research questions: 1) A city is… (fill the gap); 2) What do you associate a city with? Please give a few short descriptive phrases; 3) What do you think is a typical city? Please give a few short descriptive phrases; 4) What, in your opinion, is an unusual city? Please give a few short descriptive phrases; 5) What do you think the city is for? Please give a few short descriptive phrases; 6) What, in your opinion, is the difference between a city and a village? Please give a few short descriptive phrases; 7) What is the city where you live like? Please give a few short descriptive phrases; 8) What is the difference between the city you live in and other cities? Please give a few short descriptive phrases; 9) The city used to be… (fill the gap); 10) The city today is… (fill the gap); 11) The city of the future is… (fill the gap).

Sex		Education			Age					Place where you live			
F.	M.	B.	S.	H.	15-24	25-34	35-44	45-54	< 54	village	>50 thousand	50-200 thousand	< 200 thousand
51,5 %	48,5 %	5,0 %	58,2 %	36,8 %	18,3 %	21,4 %	22,7 %	21 %	16,6 %	25,2 %	22,9 %	24,8 %	27,1%

Table 1. data structure, own study

THE RESULTS

As a result of the research, 8801 individual responses from the respondents were obtained, which translates into an average of 800 responses to one question. The following part of the article presents a summary of the frequency of responses in the form of a table and their discussion, distinguishing the categories of research issues in the following order: associations, functions, differential, and vision.

Associations

The empirical results show that the respondents associate the city with a cluster of people (23.5%), which is reflected in the results presented in Table 2, where such an association is declared by almost 16% of the respondents. The social character of the city is also reflected in the list of responses in Table 3, where a typical city is "full of people" (13.1%), and respondents describe an unusual city as "empty, depopulated" (10.6%), or "quiet, not crowded" (16 , 3%). The second distinctive group of categories that the respondents associate the city with are "developed" (14.5%), have "buildings" (11.3%) - in terms of the character of a typical city, the issue of buildings is the most frequently represented category: "developed" (18, 3%), although this category does not appear in the question about an *unusual city.* What is interesting from the perspective of a researcher and depressing from the perspective of an inhabitant is the image of an atypical city, described by respondents as "green,

ecological" (11.1%), and "clean, tidy" (5.7%). In opposition to *an unusual city,* a typical city is described, inter alia, as *"congested, crowded" (11.4%), "loud, noisy" (9.5%) or "dirty and polluted" (5.2%)* - which may be related to current communications related to climate protection and sustainable development.

The city is ...	N	Per cent
Many people	210	23,5%
Many buildings	130	14,5%
Territory, area	100	11,2%
A specific town	75	8,4%
Traffic, hurry	21	2,3%
Dirt, pollution	13	1,5%
Bustle, noise	27	3,0%
Road infrastructure and transport	61	6,8%
Entertainment	25	2,8%
Service and commercial activities	46	5,1%
Cultural heritage	25	2,8%
Public institutions	16	1,8%
Work	28	3,1%
My place to live	45	5,0%
Opportunities, development	25	2,8%
Other	47	5,3%
Total	**894**	**100,0%**

Table 2. research results, own study

What do you associate the city with?	N	Per cent
People	168	15,9%
Buildings	119	11,3%
Development, Science	16	1,5%
Traffic, hurry	67	6,3%
Dirt, pollution	40	3,8%
Bustle, noise	85	8,0%
Road infrastructure and transport	112	10,6%
Entertainment, events	41	3,9%
Shops, Shopping centres	79	7,5%
Cultural heritage	68	6,4%
Public institutions	33	3,1%
Work	46	4,4%
Place where you live	25	2,4%
Other	158	14,9%
Total	**1057**	**100,0%**

Table 3. research results, own study

What do you think a typical city is like?	N	Per cent	What do you think an unusual city is like?	N	Per cent
Big, small (size)	74	8,3%	Empty, depopulated	80	10,6%
Full of people	116	13,1%	Like a village, stretched out, with no centre	44	5,8%
Jammed, crowded	101	11,4%	Peaceful, not crowded	123	16,3%
Comfortable, giving possibilities	50	5,6%	Green, ecological	84	11,1%
Providing entertainment	22	2,5%	A specific city	38	5,0%
Lively	35	3,9%	Low rise, spaced buildings	44	5,8%
Well connected	39	4,4%	Small	59	7,8%
Fast, chaotic	54	6,1%	Friendly, has a community	22	2,9%
Dirty, polluted	46	5,2%	Clean, tidy	43	5,7%
Loud, noisy	84	9,5%	Boring, no events / entertainment / leisure activities	26	3,4%
Densely built	162	18,3%	Neglected, gloomy	31	4,1%
Other	104	11,7%	Devoid of industry and services	26	3,4%
Total	**887**	**100,0%**	Devoid of infrastructure, communication and transport	20	2,7%
			Modern or historical	27	3,6%
			Other	87	11,5%
			Total	**754**	**100,0%**

Table 4. research results, own study

City functions

Defining the city as a social packaging essentially boils down to defining its function - product packaging protects the product, secures it during transport, and allows for its trouble-free use. Does the city fulfil similar functions as the packaging of an ordinary product? According to the respondents, the city is mainly used for "work and earning money" (20.4%), "housing" (17.2%) and "living" (10.6%). Respondents also indicate such functions as entertainment (8%) or fulfilling needs (8.1%). In this approach, the city meets the basic needs of every inhabitant - it allows them to make a living in certain conditions (city conditions in this case); performs a protective function for the resident according to the same principles as the packaging of any product. An attempt to explore this issue in the form of a question about the possibility of using what the city has to offer reveals its two basic functions: "work" (18.4%) and entertainment in the form of the category "have fun, enjoy and be entertained" (14.2%), "Attend cultural centres" (13.6%). It would be too much to say that these are the dominant functions of the city, but the data presented below allow us to highlight a certain

dichotomy of functions; on the one hand, there are **protective** functions (work, security, transport), and on the other hand, **social** ones (entertainment, culture, comfort, convenience, development), which is related to the dichotomy of packaging functions (see Wszołek 2019).

What do you think the city is for?	N	Per cent
Inhabiting	152	17,2%
Work, earning money	181	20,4%
Living your life	94	10,6%
Sightseeing, culture	18	2,0%
Developing trade and industry (economy)	14	1,6%
Comfort, convenience	49	5,5%
For entertainment, taking rest	71	8,0%
For self-development, gives opportunities, personal fulfilment	65	7,3%
Satisfying needs through services and goods	72	8,1%
Education	34	3,8%
For official and public matters	26	2,9%
For bringing people together in a given area	30	3,4%
For taking care of everyday matters	14	1,6%
For interpersonal interactions	33	3,7%
Other	33	3,7%
Total	**886**	**100,0%**

Table 5. research results, own study

What do you think one can do in the city?	N	Per cent
Inhabit	107	8,4%
Live, everything	100	7,9%
Work	234	18,4%
Learn	73	5,7%
Take advantage of opportunities, develop yourself	48	3,8%
Have fun, enjoy and be entertained	180	14,2%
Attend cultural centres	173	13,6%
Relax	99	7,8%
Meet people	49	3,9%
Get things done	22	1,7%
Shop	106	8,3%
Go to restaurants, cafes	47	3,7%
Other	34	2,7%
Total	**1272**	**100,0%**

Table 6. research results, own study

Differential

The term differential does not refer to the competitiveness of constructs, but to their coexistence, taking into account the variety of functions - in other words, compiling the difference does not consist in looking for differences on the vertical axis of the relation (better — worse), but on the horizontal axis of the relation (different, different). In this context, the respondents were asked to indicate the distinctive features of the city compared to the countryside - the most numerous categories were "lifestyle and noise" (15.5%) and "population density" (15.8%). The issue of scale in the sense of "size" was represented by 7.7% of all responses. According to respondents, a characteristic feature that distinguishes the city from the countryside is also the "types and number of buildings" (9.9%) and "access to services and trade" (8.6%), which in fact coincides with the functions of the city. Moreover, the respondents were asked about the city they live in and what makes this city different from other cities. In the first question, the respondents mainly referred to the scale of the city, describing it as "big / small" (26%); The respondents often described their city as "well-kept / friendly" (11.9%) and "developed, attractive" (8.1%). In the case of features differentiating the city of residence from other cities, the issues of "landscape, location" (12.3%) and "size" (12.1%) appeared in the first place, which is a reference to the previous question (Table 6). An interesting category of responses are those concerning private feelings and specific atmosphere, which appeared in 10% of the responses, and "heritage, history" (10.7%). In conclusion, it should be noted that the main differential regarding a city is its size, population, lifestyle and the related atmosphere. The issue of specific buildings and architecture is equally important, but gives way to issues related to scale, development and sociality.

What do you think is the difference between a city and a village?	N	Per cent
Size	78	7,7%
Type and number of buildings	100	9,9%
Population density	159	15,8%
Lifestyle and noise	156	15,5%
Pollution	54	5,4%
Infrastructure and transport	47	4,7%
Type and availability of work, salaries	34	3,4%
Possibilities, quality of life	45	4,5%
Access to services and trade	87	8,6%
Entertainment and culture	60	6,0%
Relations and privacy	28	2,8%
Agriculture	33	3,3%
Nature, plants	33	3,3%
Traffic and the number of vehicles	26	2,6%
Other	68	6,7%
Total	**1008**	**100,0%**

Table 6. research results, own study

What is the city where you live like?	N	Per cent	What is the difference between the city you live in and other cities?	N	Per cent
Big / small	170	26,0%	Size	63	12,1%
Nice	27	4,1%	Number of inhabitants	22	4,2%
Well-kept, friendly	78	11,9%	Heritage, history	56	10,7%
Dynamic, developing	20	3,1%	Peace and quiet	30	5,8%
Developed, attractive	53	8,1%	Views, location	64	12,3%
Green	32	4,9%	Developed	23	4,4%
Historic, touristic	37	5,6%	State of communication and infrastructure	25	4,8%
Calm	38	5,8%	Available entertainment, amenities	18	3,5%
Dirty, polluted	26	4,0%	Attractive for tourists, popularity	28	5,4%
Unpleasant, neglected	41	6,3%	It is unattractive, neglected	31	6,0%
Boring, uninteresting	19	2,9%	It is clean and tidy	21	4,0%
Jammed, crowded	19	2,9%	Atmosphere, private feelings	52	10,0%
Densely developed, little greenery	9	1,4%	Opportunities for development, study and work	21	4,0%
A specific city	55	8,4%	City development,	8	1,5%
Other	31	4,7%	Other	59	11,3%
Total	**655**	**100,0%**	**Total**	**521**	**100,0%**

Table 7. research results, own study

Vision

The last research issue presented in this article is the vision of the city in relation to history and the present. For the respondents, the city used to be primarily a "settlement, town" (12.9%), which may indicate that the city is perceived as a process of its development in the context of scale (size) - such inference seems to be legitimate due to the image of the city in terms of scale (see results above). The city also used to have "different buildings and architecture" (11.9%) and was "the centre and seat of the authorities" (11.3%), which would indicate the distinctive character of the city as a privileged space for living and exercising power. Today, the city is perceived primarily from the perspective of the consequences of scale: "urban sprawl, metropolis" (10.1%), "cluster of people, community" (8.1%) or "development" (8.0%). The category of scale is followed by two directions of its definition: "modernity and development" (9.7%) and "traffic, congestion, noise, hustle and bustle" ($\sum = 14.2\%$). An interesting question in this context is the question about a vision of the city - the question about the city of the future is in fact a question about the deficits of the present. In this context, the respondents have indicated primarily "new technologies", which constitute an interesting reference to

the concept of *smart city.* The city of the future, discussed in terms of the deficits of the present, is also described by the respondents as "comfortable, neat, ecological, a development centre" ($\sum$ = 18.7%). On the other hand, the respondents point to the deepening city-forming process, indicating that the city of the future should be perceived in terms of an "economic centre" (8.4%), "dense development, less greenery" (8.1%) or the problem of "overpopulation" (6.4%). The emerging triptych "once-now-in the future" is a picture of the city's development mainly in terms of its scale and technology. Interestingly, the same functions of the city (though to a different degree) are represented in each question regardless of the time (past — present — future): work, commerce, entertainment.

The city used to be ...	N	%	The city today is ...	N	%	The city of the future is ...	N	%
Gloomy place, poverty	22	3,3%	Traffic, crowds	74	9,7%	Comfortable, well-kept place	48	6,8%
Undeveloped, no buildings	10	1,5%	Hustle and bustle	34	4,5%	Opportunities to work, learn, develop	38	5,4%
Other transport solutions, infrastructure	18	2,7%	A place to live, inhabit	23	3,0%	Economic centre, centre of development	59	8,4%
People, community	36	5,4%	Pollution	35	4,6%	Greenery, ecology	46	6,5%
Settlement, town	87	12,9%	Trade and service space	50	6,5%	Entertainment, full of life	20	2,8%
Convenience, prestige	45	6,7%	Modernity, development	74	9,7%	Pleasant, peaceful	23	3,3%
Opportunities for development, work	33	4,9%	Development	61	8,0%	New technologies, cutting-edge solutions	127	18,1%
Centre of trade and industry	56	8,3%	Infrastructure and vehicles	24	3,1%	Dense development, less greenery	57	8,1%
Different architecture, buildings	80	11,9%	Entertainment and culture	39	5,1%	Metropolis, urban sprawl	53	7,5%
Public services	12	1,8%	Availability, possibilities	31	4,1%	Overcrowded, overpopulated	45	6,4%
Pollution, noise	22	3,3%	Cluster of people, a community	62	8,1%	Pollution, chaos	28	4,0%
Calm, less traffic	23	3,4%	Work, study	48	6,3%	Loneliness, unhappiness	14	2,0%
Entertainment, culture	15	2,2%	Urban sprawl, metropolis	77	10,1%	Disaster, prison	31	4,4%
Centre, seat of authorities	76	11,3%	Prestige, comfort	16	2,1%	Same as today	14	2,0%
Other	137	20,4%	Other	116	15,2%	Other	100	14,2%
Total	**672**	**100,0%**	**Total**	**764**	**100,0%**	**Total**	**703**	**100,0%**

Table 8. research results, own study

DISCUSSION

The obtained research results provide a cognitive image of the city in the shape of its linguistic representations. It seems that the presented research provides an interesting foundation and more detail on the issues related to the functions of the city and its image in the eyes of residents, which, as a result, may constitute an interesting apparatus for exploring solutions in the field of architecture or urban planning - after all, these two areas of design are, in principle, oriented towards the final user. The obtained data show that the city is primarily perceived from the perspective of possible socialities - social relations; in this area, the respondents see the characteristics of the city, which also translates into the dichotomy of its functions, which can be defined precisely by the category of social functions (social relations, entertainment, culture) and protective functions (shelter, house, flat, work). Although this is probably not a discovery for architects and town planners, the answers emerging from the presented results force us to reflect on the current design applied in the city and for its residents - the semantics of the city as such is ambiguous, and certainly not fully positive. Respondents point to problems that architects and city planners are also familiar with: overcrowding, congestion, pollution, noise.

The long-term goal of the research project that defines the city in terms of the packaging of the social system is to seek and model specific solutions in the area of *a socially sensitive city*[8]. The aim is to build a model that will not only focus on providing technological solutions (smart city) or offering the city to selected and privileged social groups (creative class), but will take into account the city from the perspective of sustainable development and broadly understood accessibility[9][10]. The search for these solutions should begin with the communication image of the city, because communication is responsible for the creation and maintenance of society[11], and the society needs an environment adequate to their life and survival.

NOTES

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ARCHITECTURE, CULTURE AND AGRICULTURE IN THE WENRUITANG VALLEY, SOUTH CHINA

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INTRODUCTION

The notion of landscape is neither a natural nor an obvious material fact. French geographer and environmental philosopher Augustin Berque describes landscape in his work as a mediation between an environment on the one hand, and a particular culture on the other hand, through its perception, representation, and transformation[1]. He defines a landscape civilization based on six conditions: using one or several words to say "landscape," including in its toponymy, literature describing landscape as a poetic and aesthetic object, visual representation of landscapes or landscape painting, ornamental gardens, and an explicit reflection on landscape. According to these criteria, the first culture that became a landscape civilization was China around the six dynasties in Southern China, between the 4th and the 6th Century CE. As Berque explains: "During that time the Jin dynasty took refuge south of Yangzi, in the Zhejiang and Fujian area and will discover a more "picturesque" landscape very different from the large plains of northern China. This is also the time when political instability makes the mandarin career risky, and intellectuals are fleeing the capital city and Confucianism that is focusing on the social order to the countryside and turn themselves toward Taoism that focuses on the relationship to nature." [2] Landscape is, therefore, a localized notion that blends cultural and environmental problematics.

Through this perspective, roughly summarized, we are looking at landscape preservation issues in the south of Zhejiang, in the valley of the Wenruitang. Our study aims to characterize the Wenruitang landscape first by analyzing its settlement pattern and its evolution through time to identify the threats and opportunities that could drive potential preservation projects.

LANDSCAPE HISTORY

Historically, Wenzhou was an agricultural region with integrated development of agriculture, fishing, and forestry, with seventy percent of hills, twenty percent of waters, and ten percent field. The Ou River and Feiyun River estuary plains were the main directions of agricultural development. The evolution of Wenzhou's geographical object bred the settlement and culture of the Wenruitang River as Michael Wang Stated in his artwork, Terroir, "A pied-à-Terre, a plot of ground, a handful of dirt. The geological foundations of a city are its necessary other. A natural history gives rise to civilization. No stone. No city."[3]

From primitive farming and natural farming period （221 B.C.- 220 A.D.）to the period of farming and food production in the Plain of the Water Network（317 A.D. - 589 A.D.）, the soil properties were improved after practicing coastal reclamation, the Wenrui wetlands became plains where cash crops could be grown. The population moved in-fill and settled on the agricultural habitat. Regular markets have appeared in the cities and villages of Wenzhou, listing commodities such as grain brocade and other household items. From a period of similar food production and specialty development（618 A.D. - 1279 A.D.）to the period of intensive farming instead of extensive farming and the simultaneous development of agriculture and industry（1368 A.D. - 1911 A.D.）Wenruitang specialties are well distributed according to a water source, soil quality, climate, and distribution. Markets emerge in towns and villages, and Wenzhou becomes a distribution center for goods from southern Zhejiang, with night markets appearing in commercially concentrated locations. The commercial content around the riverbanks is all for agriculture, selling local crops that are highly seasonal.[4] Again, on account of kinship and religious institutions, natural villages were formed in a star network. The villages are connected mainly by a network of water rather than by roads. The settlement culture of the Wenruitang River is characterized by an agricultural ring featuring one street and one canal, with a village layout pattern of front fields and backwater. Both the production transition and cultural aspects of agriculture are related to the environmental evolution –as illustrated in Figure 1.

Figure 1. The evolution of Wenzhou geographical conditions.

Landscape, as in landscape paintings and poems, is a type of cultural creation that expresses human perception, subjective experience, or biological function.[5] The ecology of Wenzhou's landscape is permeated with the cultural characteristics of Wenzhou. The contemporary Chinese poet Xia Chengtao (1900-1986) had a pure affection for the waters of Wenzhou's Wenruitang River and wrote about the scenery of the river from different perspectives: The leaves are fragrant in the north and south of the bridge, and the gulls and herons are dreaming of coolness. The flowers have not yet fallen like the autumn soldiers; a single barge meets in the water town. The oars and the staffs of the river crossing and the mountains.[6] The poet perceived the landscape that the Wenruitang river system as a public space engages directly with the production and maintenance of the city. Outside the city, there is Huichang Lake and the Ou River moat. Inside the city, there are residences, squares, canals, and bridges interlocking waterways. The water network activated by these negotiators between how people live, arrive, and work inside the city as the characteristics of a water township. In addition, the aesthetics of the Wenruitang River landscape can be understood by looking at Lin Xi Yue's landscape paintings which are regarded as the symbol of the Wenruitang River. His ink and wash painting method comes from his unique experience and love of the landscape of Jiangnan, especially after the

rain. Therefore most of his landscape paintings depict scenes in the rainy season or afterward, using thick ink with water penetration, hydration, and seepage controlled by the movement, speed, and change of the ink and water produced by the brush.7 In this regard, the ideology of Wenruitang River as landscape urbanism embodies a cohesion of architecture culture and environmental performance in the context of a geographical transition history.

LANDSCAPE ARCHEOLOGY

When looking at the current condition (Figure 2) of the Wenruitang Valley, we face what John Brinckerhoff Jackson would call a vernacular landscape driven by mobility and change[8]. It is a suburban landscape in the meaning that Landscape Artist Robert Smithson gives to the term: a zone that encompasses the large cities and dislocates the "country." Suburbia means "city bellow"; it is a circular gulf between city and country, a place where buildings seem to sink away from one's vision." As Jackson reminds us, 'in order to comprehend this landscape we have to understand the organization of space (…) how they were created and how they changed"[9]

Figure 2. Picture of the Wenruitang landscape (2020)

Figure 3. Diagram of Wenzhou current conditions (2020)

At a territorial scale, we understand the territorial logic of urbanization, constraint between the two main massifs: Daluo Mountain on the west and Jiyun Mountain on the east. If we zoom on the section of the river located between the city of Wenzhou on the north and the city of Rui'An on the south, we can see the Wenruitang gridiron stretching on the whole flat surface of the valley bottom.

We isolated a sample of five kilometers by three kilometers across the valley to look in detail at the relationship between the infrastructures and the settlements system: we have a system of built figures made of settlements and infrastructures on a background made of agriculture and leftover spaces (Figure 4). The built figures count for about half of the area, which makes a particularly loose urban structure. We then isolated the historical infrastructure (i.e., the Wenruitang water network) and the new infrastructure built after 1990 on the one hand, and the historic settlements and the newly built urban islands on the other hand.

Figure 4. Sample of the Wenruitang Valley.

We then correlated historical settlements and infrastructure and the post-ninety nineties urban developments and infrastructures to reveal two consistent spatial systems: a premodern one, with a high built density and a large footprint, built tightly along the Wenruitang (Figure 5). Most of its architecture is oriented toward the water, which becomes the settlements' main public space, as we also have observed from our field study. Buildings are two to three floors. The water edge is hard, usually built in stone with many water access, either for boat access or for other domestic usages of the water stream such as clothes or dishes cleaning.
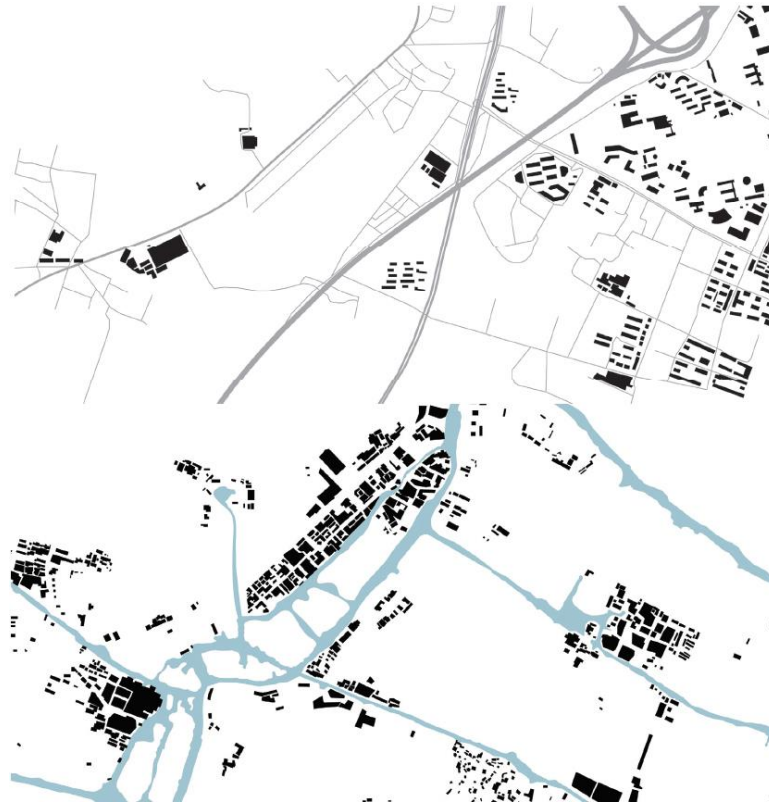
Figure 5. Correlation between new infrastructures and urbanization (top) and old infrastructures and settlements (bottom)

When looking at a large-scale sample of settlements along the Wenruitang, we can see the same spatial disposition and relationship to the water.

The modern spatial system has a low built density and a low footprint. The buildings have a loose relationship with the newly built infrastructures and are turning their back to the Wenruitang, where the bank is usually a park with no access to the river.

We have then done a series of sampling along the river, where new transportation infrastructures cross the old one, with sites of eight hundred by eight hundred meters. We observed similar phenomena: historical settlements related to the Wenruitang, new urban development following newly built infrastructures.

What we can observe is that the current landscape condition is not unplanned but it the sheer overlapping of two planned territorial systems: a premodern, structured around the Wenruitang as primary transportation and settlements matrix, and a modern one structured around the newly built road system using the river as a picturesque background.

Beyond its spontaneous aspect, the Wenruitang landscape is not a vernacular landscape, as defined by Jackson, but the overlapping of two political landscapes (or landscape two as he also calls it)[10].

Let's look at the pre-ninety-nineties conditions of Wenzhou. We can observe the premodern conditions of the Wenruitang landscape: a grid water network that connects a network of agricultural settlements to the Wenzhou core (in the north), and according to historical maps of Wenzhou, was continuing within the city fabric to become the city gridiron, a planned city where the water system replaces the usual street system.
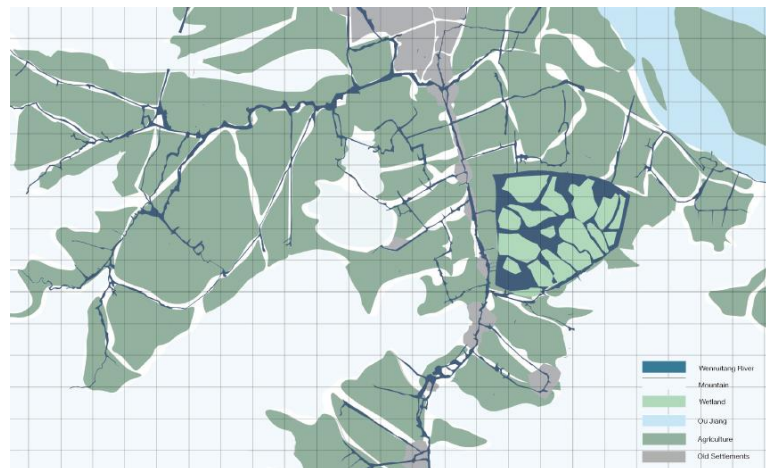
Figure 6. Diagram of Wenzhou premodern conditions (1984)

 To summarize our analysis of the Wenruitang valley, we could say that It is a not-yet planned landscape where the large infrastructures of the urbanization process (Highways, roads, train lines) overlap with the territorial structure of the countryside (farmlands, irrigation, and drainage water system, pathways).

LANDSCAPE PRESERVATION

As we have seen previously, the current condition of the Wenruitang landscape is not static but dynamic and mutating. The archeological analysis shows the overlapping of two territorial logics, but this is a temporary and unstable condition toward the total replacement of the premodern system by the new urbanization model.

But to paraphrase the political scientist James C. Scott in his work on state craftsmanship, behind the discourse of development and progress of urbanization lies a synoptic project of legibility and concentration. [11] The ecological and cultural variety and richness of the premodern Wenruitang landscape are being replaced by urban monoculture (to use the terms of James C. Scott[12] and Richard Sennett[13]) suitably modified for the context of the market economy. In addition to the political project, we are facing a loss in agriculture, particularly the smallholder production that made the traditional productive landscape[14] of Wenruitang sustainable. The agricultural landscape destruction is to put in relation with the large-scale industrial plantation in northern China described, for example, by Stephan Petermann in his essay "Village with Chinese Characteristics."[15]

What is at stake here is the disappearance of the cultural and productive landscape, with its logic that combines architecture and settlements, agriculture, and the water network. The current preservation projects regarding the Wenruitang primarily focus on the water quality, putting aside the settlements and the agriculture.

The urbanization of the Wenruitang bypasses the geographical conditions and jeopardizes the ecological and cultural heritage. And the waterfront landscape design projects currently in design are threatening the existing landscape by what landscape theorist Alain Roger called "An artialisation in-situ" that "consists in materially modifying the existing condition, to give it a beautiful, picturesque, charming form, in short, a form capable of being qualified by one or the other of the recognized positive aesthetic predicates."[16]

During the Tang dynasty, Chinese poet Li Shangyin invented the idiom 殺風景 (Sha Fenjing) that means literally killing the landscape. Even if it has lost its literal meaning, it could be a word to

describe the current phenomenon: the destruction not only of arable lands but of the very relationship that a particular culture had with its milieu[17].

The Wenruitang preservation should be understood at the scale of the landscape. To follow the suggestion by French Landscape architect Michel Corajoud, we should consider the landscape itself as a monument, as an object of preservation[18].

POINTS OF DEPARTURE

Suburban villages are former rural settlements organized by the Wenruitang water network and are now on the edge of the urbanization front[19]. Our project focuses on Wangzhai village as a transformation case study, which will be part of a production chain along the river system. These villages play an active role in agricultural production (Figure 7). Meanwhile, the production chain activates the consumption, distribution, and exchange along the river system, which triggers the global exchange in terms of economy, culture, history, etc. In this way, preservation is not a proposal imposed by designers but a spontaneous development that's driven inherently.
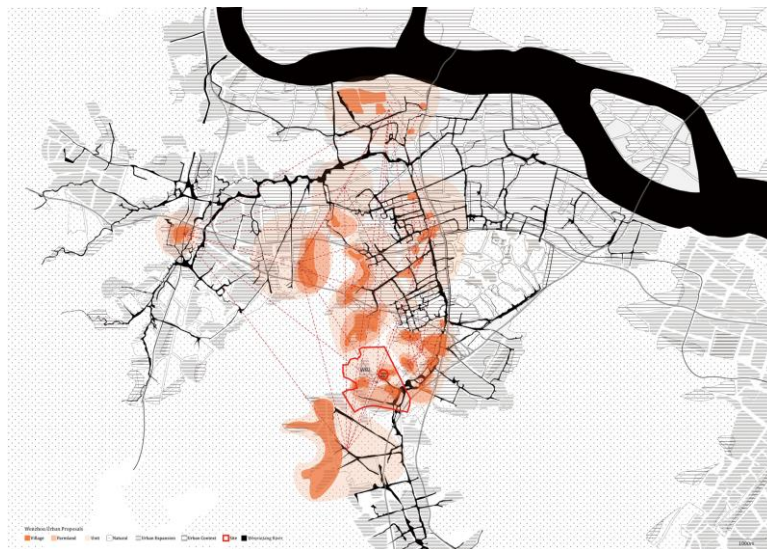
Figure 7. Diagram of the production network, based on the historical settlements network.

As the agricultural tradition gets outmoded, the loss of the rural population is inevitable. At the same time, the preservation of a place could only be achieved when people maintain the place's vitality. Also, it cannot be achieved by strategies of a single dimension but has to be considered in a nexus of relationships. Therefore, in coordination with an in-depth research-based architectural preservation proposal, this project tentatively structured a possible way of production and exchange in the economy, biology, architecture, and planning. During the process, the issues that urbanization brought: the disappearance of the cultural and productive landscape, can be considered as the development of necessary conditions that nurture the redevelopment of the villages along the river.

As the Wenzhou Official data indicates, about 70% of the rural working population (2 million people) is concentrated in the cities (2020)[20]. The loss of the rural population can be preserved by generating more income for villagers, providing social welfare, etc. As land productivity already reaches its maximum due to the agricultural involution, we built a financial model that could generate nearly 700% more income from the limited production. First, high value-added agriculture provides a high premium. Secondly, with the construction of the distribution center, we can save significant channel

costs of agricultural products trade. Third, biotechnology to increase production and keep sustainability.

For the farmland to sustain the local economy, the specific yield needs to be increased. This proposal introduced a concept of pixel farming, which a farming systems ecology group originally named at Wageningen University[21]. This farming methodology allows diverse communities of plants to be packed next to each other in a limited area, the neighboring plants could assimilate nutrition from each other, insect visitors could navigate foliated avenues, and colonies of uninvited but tolerated flora could occupy the awkward spaces in between, all these conditions are coexisting. In addition, the farmland's layout strategy could also impact the growth condition of the crops and further impact the specific yield. For instance, by crop rotation and interbreed, the interplay of the diverse layout could support species growth. Also, methods such as rainwater harvesting and wastewater filtration and reuse are recommended.

In terms of architecture and planning, we proposed three stages of development. In the first stage, new farming methodologies are introduced to increase the agriculture production value. The housings which are close to the field are transformed to hold farming facilities. In the second stage, according to the architectural condition in the village, we inserted a sorting and distribution program and a distribution center to centralize the value for later distribution all along the river system. In the third stage, following the existing housing typology, it's possible to consider the basic needs of new villagers to generate new programs.

Figure 8. Model of the reuse of Wangzhai village.

While the strategies mentioned above are not a solution to the comprehensive issue, several departure points respond to the rethinking of the future of the Wenruitang river system, which needs to be considered in a broader and deeper context.

CONCLUSION

The Wenruitang is considered in local culture as the mother river (母亲河), which accurately describes the importance of this water network in Wenzhou history and territorial organization. Generations have shaped this hybrid system of rivers and canals, and it organized the settlement patterns of its valley. Therefore considering the Wenruitang as an independent object, a water

infrastructure by itself is jeopardizing the Wenruitang as a cultural landscape and a man-made ecosystem. Preservation shouldn't focus on objects themselves but on how objects perform within a given environment. On the one hand, the split between cultural folklore as intangible heritage and the fetishization of tangible heritage objects hides the profound cultural loss of what historian Pierre Nora calls "Milieux de Memoire" (Environment of Memory)[22]. But behind the cultural loss, it's also an ecological and agricultural loss that needs a holistic approach to be addressed. That's where the notion of landscape preservation, as it bridges cultures and environment, and embodies culture as the index of environmental transformation by a given society, becomes operative.

NOTES

[1] Augustin Berque , *Thinking Through Landscape* (London: Routledge, 2014), 47.

[2] Augustin Berque, "Et la Chine inventa le paysage… ", Libération, October 13, 2013, https://www.liberation.fr/planete/2013/10/03/et-la-chine-inventa-le-paysage_936783/

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[9] Jackson, 150.

[10] Jackson, 151

[11] James C. Scott, *Seeing Like a State* (New Haven: Yale University Press, 1998), 189.

[12] Scott, 138.

[13] Richard Sennett, *Building and Dwelling: Ethics for the City* (London: Penguin Books, 2019), 42.

[14] Sébastien Marot, Taking the Country's Side Agriculture and Architecture (Lisboa: Polygrafa, 2019), 167.

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[18] Michel Courajoud, "La Ville Diffuse dans les Traces du Tissus Rural", Urbanisme 338 (September - October 2004) 48-50.

[19] Vincent Peu Duvallon, "Suburban Villages: Conceptualizing Urban Fringes in a Global Context. The Case of Wangzhai" 2019 XJTLU International Conference: Architecture across Boundaries, KnE Social Sciences (2019) 182–194. doi : 10.18502/kss.v3i27.5526

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[21] Lenora Ditzler, "Pixel Farming", in eds. AMO, Rem Koolhaas, Countryside, A Report (Köln : Taschen, 2020), 300-321

[22] Pierre Nora, "Between Memory and History: Les Lieux de Mémoire", Representations 26, Special Issue: Memory and Counter- Memory (1989) 7-24.

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FROM GARDEN HOUSES TO A GARDEN CITY, THUA THIEN HUE (VIETNAM)

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INTRODUCTION

In the face of climate change, the Southeast Asia has experienced the increasing and more intensive extreme events including drought, floods, heatwaves, and cyclones in both urban and rural areas. Further with the fast-paced development and social crisis, people started to rethink the relation between buildings and landscape in order to reduce the impacts of built environment.[1] The concept to harmonize buildings with landscapes – embedded in the global prevenance of building garden city - is indeed not new: based on local socio-ecological knowledge, vernacular architecture has been trying to adapt to its surroundings, being climatically and geographically compatible. The vernacular architecture represents the unconscious "realization" and "embodiment" of the culture of the society for the needs of its population.[2] Hence, revisiting traditional settlements can draw crucial lessons to envision new (urban) settlement structures that relate to landscapes and adapt to the consequences of climate change.

In Vietnam and Asia's tropics characterized with hot and humid weather, living with gardens is an old tradition. Gardens have been viewed in Asian culture as forms of 'nature'[3] composed of ponds, trees, and agriculture fields, where settlement structures developed within.[4,5] Gardens have set frames for anchoring several traditional typologies ranging from private housing to public cultural constructions. In such way, a microclimate is created – an area that is a bit cooler than the ambient ground temperature outside, and a domain of social interactions was generated to engage for dwellers engaged in exploring, cultivating, worshipping, and entertaining. Across Vietnam, 54 ethnic groups have their terms referred to gardens, including *vuon, miet, haree*…. which differ depending on geography and cultures.

This paper investigates the traditional garden typologies in relation to climate and diverse landscapes in Thua Thien Hue (TTH) Province, Vietnam, in order to imply the "garden city". The main typologies include the Cham and Mon-Khmer stilt house, and the Viet variations of garden house. Through looking at the traditional gardens and their transformation, the paper drew wisdom that could be applied today, including 'adapting to the environment' and 'manipulating the landscape'. The paper argues that remobilizing and rearticulating the garden as a central organizing concept in settlement planning is worthwhile to test.

METHODOLOGY

The study is based on the intensive on-site fieldwork conducted in TTH Province, supplemented by archival research in Vietnam and online sources in France. Archival images help to illustrate values of traditional typologies in terms of composition, structure, and local materials. The study employed interpretive mapping as developed by James Corner (1999), combining deep sections to analyze the interaction between settlement patterns and topography across TTH's territory. Through interpretive mapping, diverse garden typologies in A Luoi Valley (mountainous area), foothills, the plain and lagoon are revealed. Additionally, contemporary challenges posed by urbanization and climate change were mapped to emphasize the need to shift radically from the current modern development types.

TROPICAL CLIMATE AND DIVERSE NATURAL LANDSCAPES

Before the deep analysis of typologies, it is worth going through the local geographical conditions and climate, which are key factors that shape the settlement patterns and characteristics.[6,7] TTH Province is located in Central Vietnam and a pars pro toto. It is the land of plurality for its diverse landscapes and blending influences of northern and southern cultures.[8] The flow of water reveals a host of differences in the terrain: it begins at steep forested mountains (with altitude ranging from 600 to 1600 meters above sea level), forms valleys in a plateau, meanders through the midlands, an alluvial plain and empties into Tam Giang - Cau Hai (TG-CH) lagoon, the largest lagoon system of 22,000 hectares in Southeast Asia (Figure 1).[9] The territory belongs to the tropical monsoon climate region and has two distinct seasons: the dry season from May to September influenced by the southwest monsoon with average temperature of 27 °C-29 °C; and the rainy season from September to February with an average rainfall of 2500 millimeters. In particular, the high mountains (Phong Nha - Ke Bang and Bach Ma) blocks the northeast monsoon, causing heavy rain in the mountainous region. The A Luoi and Nam Dong mountainous districts has an average rainfall of 3180 millimeters.[10]
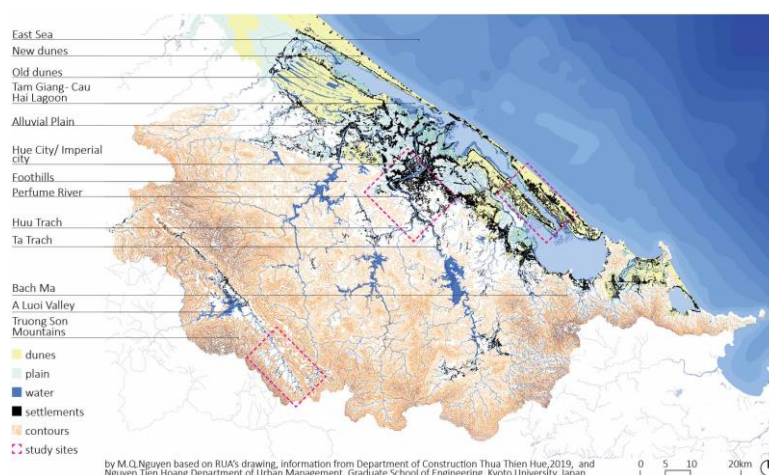
Figure 1. Thua Thien Hue Province and its ecological regions.

The heavy rain provides water for rivers and flourishes flora and fauna of TTH from forested mountains to the lagoon complex at the coast, but it also brings threats to the territory. Flash floods and landslides are evident in mountain areas, while severe floods and storms are experienced at narrow alluvial plan and coastal dunes during the rainy season. The magnificent landscape and dynamic hydro system set a greatly framework that accommodates different settlement structures by several groups, including Mon-Khmer, Cham and Viet (Figure 2). They learned to adapt to or

manipulate their surroundings in various terrains to meet their lifestyles and cultures while protecting them from natural hazards.
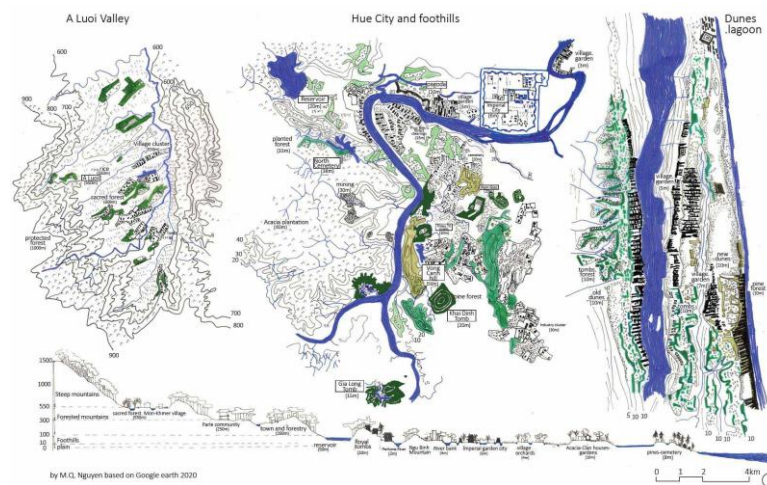

Figure 2. Diverse gardens and typologies in relation to landscapes.

ADAPTING TO THE SURROUNDINGS: STILT HOUSES

The stilt house - a traditional house typology for Mon-Khmer and Cham - was built and designed for tropical landscapes in the context of shifting cultural modes where people move, negotiate and trade for natural resources and defense. During the process of moving and adapting to different terrains, people absorbed and accumulated local knowledge about landscapes and developed stilt house as a result of an enduring relationship with climate, soil, water, mountains, and forests.

The Mon-Khmer people initially occupied the lowland and coastal area, but they were gradually pushed into the forested foothills and midrange mountains as Cham settlements grew. Historical records show a dynamic cultural and material exchange between Mon-Khmer and Cham groups in mountains, foothills, the plain and coast through water network of rivers and streams.[11] The mountain dwellers needed essential goods including salt, metal tools, and rice from the plain; while their wood, medical plants and forest products were essential to the daily life of the lowland people.[12] This exchange made the two groups share similarities in their cultures but also keep the respective characteristics.

Villages of both ethnic groups were associated with the shifting cultural modes and cultivation dominant with productive landscapes. Mon-Khmer inhabitants grew rice on foothills with the slash-n-burn method in forest clearings, taking rainwater and using slope for irrigation. The swidden rice field, called *haree*, is connected with villages through the forest paths. Cham dwellers grew rice in the lowland (close to villages), relying seasonal floods and using channels to drainage and irrigate. When the villages and cultivated lands are attacked by other groups or the signs of the exhausting environment emerge, people relocate elsewhere. Until the abandoned lands regain their fertility, they move back. In that sense, Mon-Khmer and Cham people developed settlements in balance with landscapes that simultaneously used natural resources and protected them.

Mon-Khmer and Cham lived in stilt dwellings and constructed villages based on the logic of local assets (resources, accessibility).[13] A Mon-Khmer village encompassing a dozen stilt houses surrounding a communal yard with a communal house erected in a forest clearing on a plateau with access to rivers and springs. All the houses were situated close to one another (surrounded by a

bamboo fence) and created a dense composition to maximize their defense capacity. Moreover, at the edge of the village, inner the fence, a layer of gardens (with medical plants, orchards, vegetables, and other food crops) played a mediating role between the forest and village. As such, the fence and gardens act as double layers of defense to protect the village from wild animals and intruders. In the alluvial plain, on the narrow strips of high land along rivers, Cham developed linear villages of low-stilt houses alternating with orchards perpendicular to streams. The orchards protected the houses from strong winds come from the East Sea. A few Cham groups occupied the dunes took advantages of abundant aquatic resources from the lagoon (Figure 3).
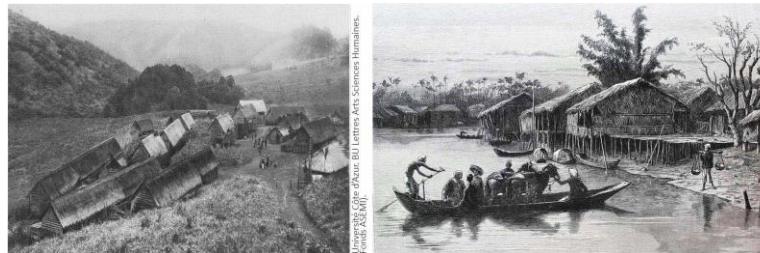
Figure 3. The composition of stilt houses and gardens in dry and wet conditions.

The *pilotis* of the stilt house mirrored the trees in nature, with varying height based on the terrain and functions: in the highlands, *pilotis* has an average height of 1 to 1.5 meters, leaving more open ground space to avoid flash floods and landslides while used for storage or raising poultry and cattle; in the plains and dunes, the height is much lower of 0.5 meters to protect the house from floods and flowing sand. Clearly, the open ground floor created by the *pilotis* is a mediating space between living space and nature and between dry and wet, humans and animals. This space also allows, therefore, sustaining environmental flows in different ecological regions. To survive from frequent wars and natural disasters, the stilt house was built easy to assemble, dissemble, and mobile with local light materials (wood, bamboo, etc.) and a flexible structure: dowels and ties hold together the framework without using metal parts. This structure is also applied for large buildings like a communal house that may be 100 meters long (Figure 4).[14]
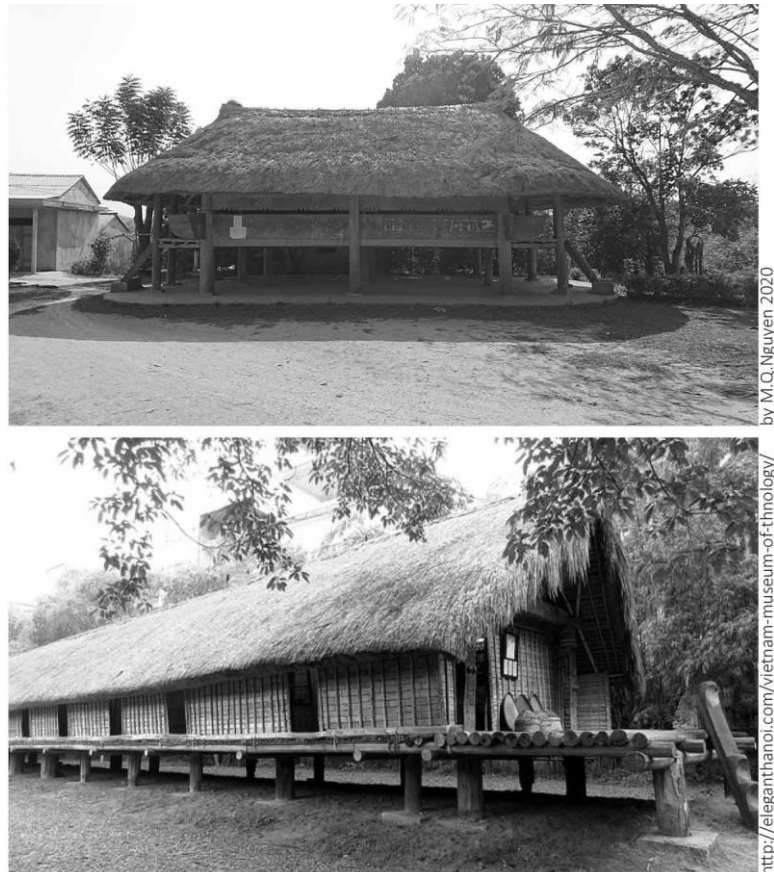
Figure 4. The flexible framework of large stilt houses and local materials.

Although stilt houses are no longer widely used today (mainly due to lifestyle changes) apart from a handful of communal houses preserved in A Luoi District, the notion of adapting to the surroundings of Mon-Khmer and Cham traditional typologies holds invaluable lessons and inspiration for the contemporary world. The lesson about evaluating local assets to choose where the built and non-built environment should be placed to minimize impacts to the environment and vice versa is essential nowadays. Therefore, the relationship between stilt houses, topography and gardens needs to be redesigned. Moreover, the cyclic manner of shifting cultural modes has to be uplift as a design concept of housing typologies using renewable resources and energy.

MANIPULATING THE LANDSCAPE: GARDEN HOUSES

If the Mon-Khmer and Cham people adapted their settlement to surroundings, the Viet people exemplified how to manipulate the landscape to settle in the alluvial plain. Their traditional settlement typology - garden house – is a system of buildings embedded in an artificial nature (garden) that works as an autonomous microclimate regulating system. The typology is an adapted model of garden practice deeply influenced by Confucianism and Feng Shui of Chinese culture during the Ming and Qing dynasties[15], was initially designed for Mandarins (servants to the royal state, the Nguyen Dynasty) to display their social status in TTH. Feng Shui (*Phong Thuy* in Vietnam) are geomantic principles that refer to understanding natural elements (wind, water, and topography) and work with them to create a cosmological world that brings fortune and security for dwellers to build up their regimes.[16] Following these principles, the garden house is structured symmetrically. Along a divine axis sit the south-faced main house, *Binh Phong* (a screen), and a pond with *Penjing* (rock). The latter

two are set in the south to protect the main house from bad spirits. All houses including the main and side houses sit on a base of 0.5 meters high to avoid floods and insects in the plain,[17] and are structured by grid wooden beams and columns based on small spans (3x3 meters).[18] The space between columns is called *gian* and the number of *gian* represents for the class of the owner. Two symbolic plants at the front gate represent for White Tiger/ Blue Dragon as guardians for the house. Surrounding the houses, a garden is divided into pieces for different uses: vegetables garden, orchards, yard, etc. Also, a cozy microclimate is created: trees with thin foliage like palm are planted in the front (south) to welcome the cool southeast wind circulating to the main house; fruit trees such as bananas are planted in the back (south) to form a barrier against the freezing northeast wind. A large tree in yard also provides shade for outdoor activities (Figure 5).
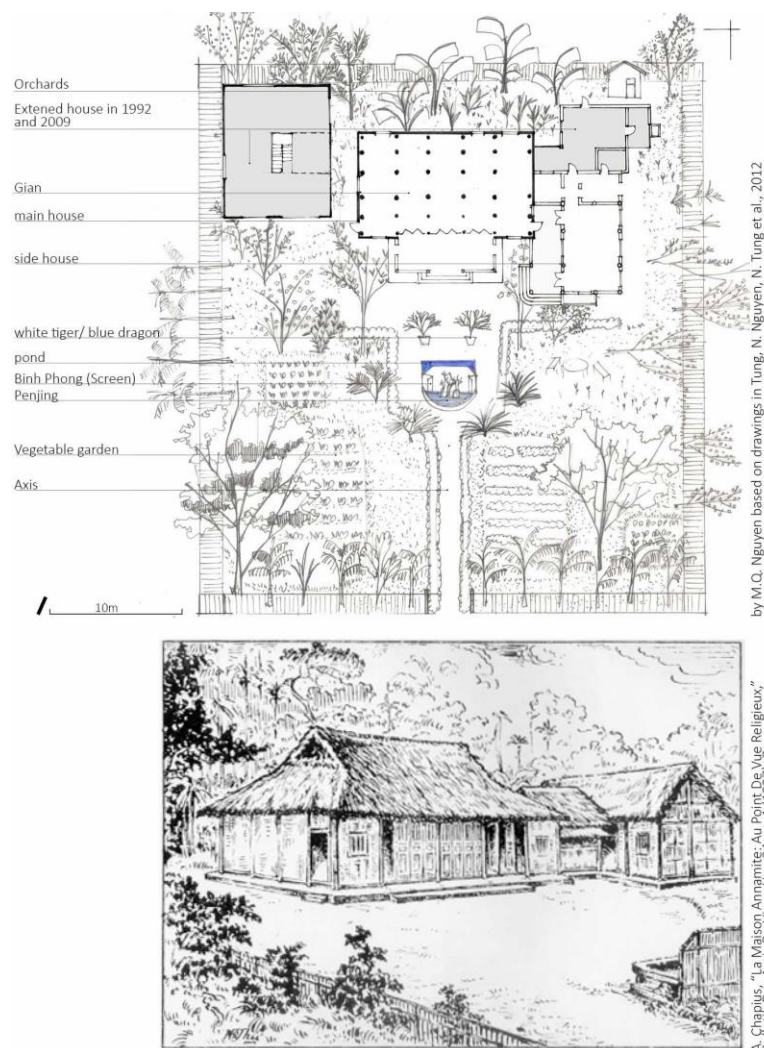
Figure 5. The garden house and its cosmological frame.

As Nguyen Lord (with mandarins, literary, and artisans) came to TTH endeavored to promote economic, political, and social development in the south during the Trinh-Nguyen Civil War (16th-18th Century),[19] the building and possession of gardens were expanded dramatically in TTH Province. The garden house was upscaled; various gardens and buildings associated with topography anchor the Perfume River.

The Hue Citadel (Imperial City) in the plain, established by Gia Long King in 1805, is one type of upscaled and multiplied garden house for recreation and production. The Imperial City lies on the northern bank of Perfume River, sandwiched by Truong Son Mountains and TG-CH Lagoon. The Ngu Binh Mountain with 103 meters height in its south serves as the Royal Screen protection, and two islets Hen (eastern) and Da Vien (western) serve as guardians. The location gives the perfect access to the sea and mountains for ruling the territory. Such landscape framework contains auspicious geographical features to protect and flourish the citadel following *Phong Thuy* principles. As the area was frequently experienced by heavy rain and navy attacks, the imperial city plays important role in dealing with floods and protecting citizens. There is a dual defense system created by the cut-and-fill method, consisting of moats, the central Ngu Ha (Imperial) Canal and a 6m high wall.[20] The moats are responsible for transporting water from the Perfume River to surround the city, and the Imperial canal collects and drains water out of the city.[21] The moats and the canals also circulated water for royal rice fields in the northern part of the citadel to secure food particular during wars. Additionally, a system of forty-one ponds and lakes were with an arrangement of trees, plants, and pavilions in order to form several (pleasure) gardens for royal members and mandarins. Palaces, office buildings and the residences of mandarins in the Imperial City are extended version of the main and side houses of the traditional garden house. Their sizes depend on social status.

After the feudal time (1945), garden houses became popular in society, not only for the aristocracy. Therefore, there was the multiplication of garden houses inside and outside the Imperial City.[22] As such, the Hue Citadel is actually a garden city carrying both ecological and socio-cultural values (Figure 6).
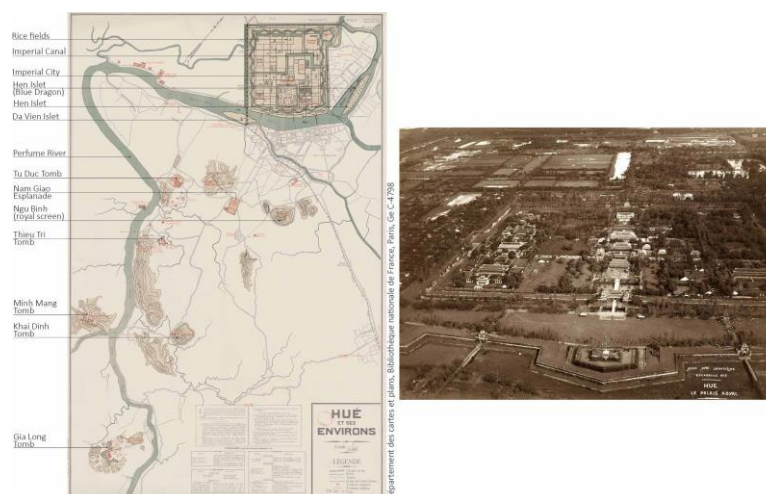
Figure 6. Hue City embedded in the choreographed garden complex on top of the landscape.

The upper part of the Perfume River situated another variation of garden house – sacred gardens. A constellation of eight sacred royal tombs makes up pleasure gardens. They take advantage and manipulate topography and tributaries to make terraces and ponds combining with buildings, pavilions, trees, and rocks. These sacred gardens, as part of the Perfume River's cultural landscape, function as retreat places and extend the mark of royal families along the main river of the territory (Figure 7).
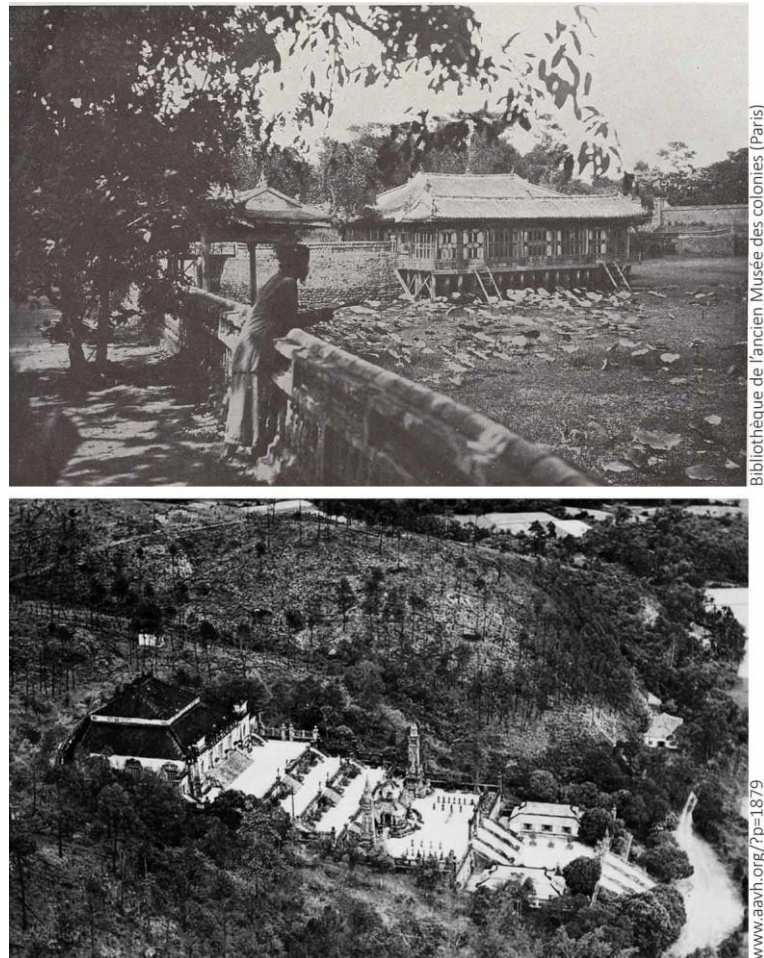
Figure 7. Terraces, pleasure gardens and royal tombs explicitly in the foothills.

The Hue City today has expanded on two sides of the river with a population of 354 124.[23] Although narrowed by urbanization, the varied gardens combine with water structures from the feudal time are still evident (Figure 8). Looking at the whole territory as a cohesive image, the city sets against a backdrop of stunning landscape (with Bach Ma National Park, Sao La and Phong Dien Nature Reserves, and the lagoon) and patchworks of gardens that implicit or explicit link with the Perfume River and its tributaries, that is, a starting point for (re)design the city in the relationship of the complex gardens and parks. Furthermore, the lesson on manipulating the landscape is based on understanding the terrain's pros and cons, which can inspire new occupations that always accompany with the changing landscapes.
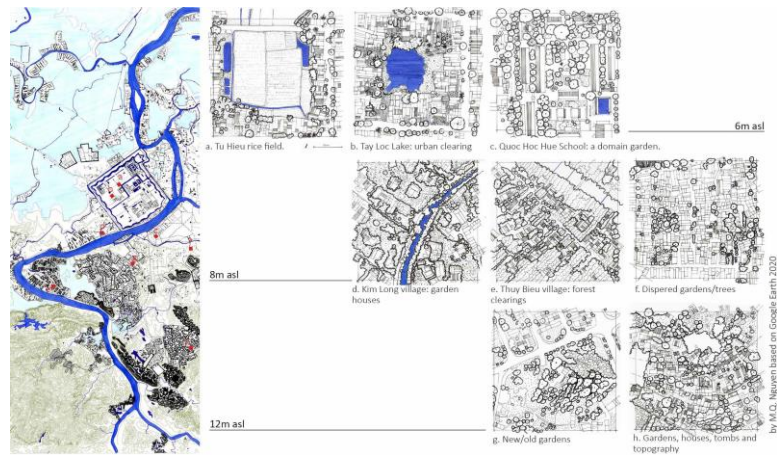
Figure 8. The transformation of the old garden complex.

CONCLUSION

In the contemporary world, people keep changing and occupying new lands for production and development. In TTH, urbanization has been taking place strongly in vulnerable ecological regions, including the valley, plain and the lagoon. The Hue City has projected built areas with industrial zones, commercial, service zones and infrastructures to accommodate 40 000 people in the valley and 650 000 people in the plain.[24] The development plan will take over most of the area of wet-rice fields that are flat and accessible and vulnerable to floods (Figure 9). Besides, the urban housing models in the plain are replicated in mountainous and coastal areas regardless of varying cultural and geographical characteristics. Changes in lifestyle and household structure also present challenges. Household sizes tend to shrink, as evidenced by over 60% of one-person and nuclear families still increasing.[25] In addition, young people prefer dynamic, highly interactive, and economical living spaces that leads to co-living buildings.[26] Furthermore, the increasing environmental problems in cities such as air pollution, rising temperatures, storms and floods require more typologies integrated with green spaces, water and energy-saving system and local materials. Challenges posed by urbanization and socio-natural crisis requires a transformation in the current development model and strategy.
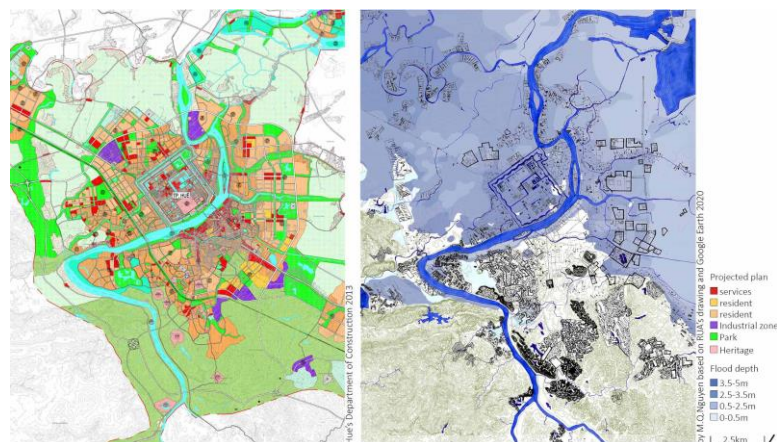
Figure 9. The contemporary challenges related to climate change and urbanization.

By revisiting the traditional typologies of ancient Mon-Khmer, Cham and Viet people linked with gardens the paper drew lessons of manipulating and adapting to the landscape which contribution to envisioning a new settlement organized by gardens. First, the ancient Mon-Khmer, Cham and Viet used landscapes to guide their settlement structure. Second, flexible settlement structures are resilient to social-natural crises. Third, the wisdom of manipulating the landscape is to create gardens as mediating spaces to regulate microclimate and overcome the disadvantages of the terrain. These lessons give a hint to (re)design the notion of living with gardens. Based on landscapes and climate, developing settlements with dry and wet, recreational, and productive gardens in the foothills and plain is possible. In the foothills, following the topography, it can draw up a system of terrace gardens in which apartment blocks (with a view toward the sea) and infrastructure are integrated. As a model of living with urban forests, patchworks of clearings are extended to host mix-used towers. The notion of living with wet gardens occurs in the plain where dynamic hydro systems, floating gardens and water infrastructure give a frame for settlements. As such, the city is organized in a network of different gardens.

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[13] Dang, 42.

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WELCOME TO PROGRESS CITY: LESSONS IN STORY-DRIVEN DESIGN FROM WALT DISNEY'S EPCOT

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INTRODUCTION

In 1966, Walt Disney fired imaginations when he unveiled his plans to build an Experimental Prototype Community of Tomorrow in Central Florida. Imbued with midcentury futurism, EPCOT was Disney's hypothesis to resolve the rampant urban blight of the 1960s.[1] Almost a decade after the project's unveiling, Walt Disney Productions pivoted plans for a prototype city to the well-known theme park that stands today at Walt Disney World in Orlando, FL.[2]

Schematic plans for EPCOT remain the only evidence of what might have been had Walt Disney's last dream been realized. While dramatic renderings of a radial industrial park, enclosed urban core, multi-tiered transit system, and sprawling suburbia offer clues into what the city might have looked like, they fail to explicate exactly *how* residents would have lived there.

As a student of Ball State's Honor College I commenced a project under advisor Carla Earhart, PhD. to examine how Disney's original design stands up in today's logistical, cultural, and technological milieu. Using new research and story-driven design, I inferred answers to the many questions about life in EPCOT to develop a "resident experience plan" for a contemporary reimagining of the experimental city.

A DREAM DEFERRED

Despite his association with fairytale castles and talking mice, Walt Disney was a juggernaut of the Atomic Age. No challenge interested him more than curing the ills of yesterday with innovation and new technology. In 1964, his company started purchasing major tracts in Central Florida near Orlando for a new enterprise.[3] This "Florida Project" would be a "living blueprint" of a better city, dedicated to reinventing the American seat of poverty, pollution, and prejudice as an Experimental Prototype Community of Tomorrow or EPCOT (depicted in Figure 1).[4]

Figure 1. Concept Rendering by Herb Ryman[5]

Walt's EPCOT looked nothing like the theme park it inspired. It would have been situated on 1,100 acres on a north central parcel southeast of what is today the Magic Kingdom park.[6] A new Industrial Park would have hosted the Research & Development facilities for innovative corporate partners. An entrance complex would have welcomed visitors arriving from the Disney World Jetport or by car. A monorail system would have run the length of the property. [7]

EPCOT's 50-acre Center City (depicted in Figure 2) would have been enclosed under a climate-controlled glass structure and offered a diverse array of shopping, dining, and entertainment sheltered from the Florida heat.[8] Some residents would have lived in apartment buildings around the perimeter. Outside the Center City, a greenbelt would have been home to parks, places of worship, and schools.[9]

Toward EPCOT's perimeter would be a ring of low-density cul-de-sac neighborhoods. Houses would have been furnished with experimental in-home technologies.[10] Neighborhood nodes would be connected to the Center City via the WEDway, a continuously moving, zero-emissions conveyance that converged on a subterranean transportation lobby. Beneath this concourse would have been roadways for motorists and service vehicles.[11]
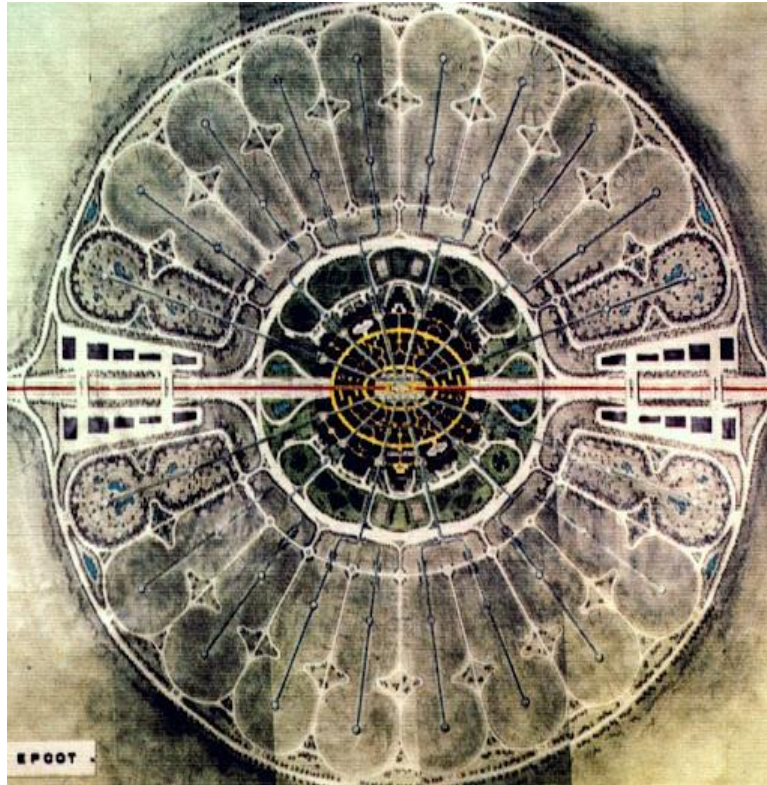
Figure 2. EPCOT site plan from Walt Disney Imagineering[12]

To govern EPCOT's logistical idiosyncrasies, Walt Disney Productions chartered the Reedy Creek Improvement district in 1967. Today, the RCID oversees such services as fire protection, water management, and pest control for the Walt Disney World Resort; but its powers also include condemnation of private property, enforcement of eminent domain, and operation of public transit.[13] EPCOT was riddled with puzzling challenges left at the time of Walt Disney's unforeseen death in 1966, which ultimately precipitated the project's demise. Many of these lacunae pertain to the day-to-day resident experience.

RESEARCH & METHODOLOGY

The most pressing question in my research was: how would modern audiences respond to the concept of EPCOT? I used both a survey and follow-up interviews to ascertain interest and obtain enough psychographic information to construct targeted resident experience design stories.[14]

Survey

The majority of data was obtained from a 33-question Qualtrics survey disseminated via social media. In total, 524 nationwide individuals participated over approximately two months.

Participants were between the ages of 18 and 65+. Approximately 43 percent of the participants were male, 56 percent were female, while the remaining one percent preferred not to answer. Over 50 percent identified as suburban homeowners. Around 30 percent identified as unmarried singles, 28 percent were married, and 27 percent were married with dependents.

"Safety/ Crime Rate" was the most important dimension of community living across almost all demographic breakdowns. Thirty-seven percent of participants identified "suburban" as the ideal living space. Major issues participants took with cities were that they were "dirty," "crowded," and

"not family friendly." Sixty-three percent of participants said they were "extremely likely" or "moderately likely" to relocate to a city if the problems they identified were resolved.

Eighty-nine percent of survey participants preferred living in houses over other types of dwellings. Survey participants ages 21-24 had the highest percentage of participants who preferred apartment living compared to other age groups (25 percent). Similarly, 26 percent of unmarried singles elected apartment as their preferred residence.

Behavioral information about participants' transportation habits also provided important guidance. Ninety-four percent of participants identified "car" as their primary mode of transportation. While 88 percent "never" use public transportation, around 68 percent stated that if they had access to reliable, eco-friendly public transportation, they would consider using personal transportation less frequently.

The survey showed that the Disney brand is an asset. Ninety-two percent of participants have a positive perception of the Walt Disney Company. Eighty-four percent said they would consider living in a Disney-built community. Those who would not consider living in a Disney-built community commonly stated expense and the Central Florida climate as their reasons.

Interviews

Eleven survey participants volunteered to participate in a 15-30-minute follow-up phone interviews. Ages ranged between 25 and 58. Interview participants were introduced to and probed on their thoughts about EPCOT's most defining features. All were at least somewhat familiar with the company's endeavors in real estate development.

EPCOT's Center City enclosure was met with some skepticism. Four participants enjoyed the notion of a climate-controlled environment. The others consistently expressed that they were "not sure" about the idea. Overall the "dome" seemed too restrictive and artificial. Most preferred the option of living in one of the city's neighborhoods outside of Center City.

Interviewees overwhelmingly favored EPCOT's transportation model. Despite the fact that almost all participants relied on cars for daily transportation, they embraced the city's walkability. Many expressed not having to experience traffic was ideal. All interviewees felt EPCOT's public transit system would make life more convenient and enjoyable.

Opinions about EPCOT's 9 month - 1-year cycle were mixed. Five of the participants expressed no issue with this model, one individual citing this as the only minor downside.

DESIGNING TO A STORY

Ultimately, my research revealed that Walt Disney's concept of EPCOT still had high appeal across multiple audiences. Next, it was time to reference my own data against known elements of the original residency experience to properly segment specific target audiences.

In its initial phase, EPCOT would have supported about 20,000 residents living both in the Center City apartments and outlying neighborhoods.[15] Every adult who lived there would have to be employed on site.[16] Children would have likely been required to attend EPCOT's schools. For EPCOT to remain truly experimental would require Disney and RCID to maintain authority over every aspect of the city. As a result, EPCOT could not have property owners. Residents would have rented homes for stints of 9 to 12 months.[17]

Using both these parameters and my own research, I identified three distinct target audiences for EPCOT: families, young professionals, and existing Disney employees. Despite their overlap, these categories provided clear direction for contemplating the distinct elements that high-quality resident experiences might include.

Resident Experience Pathways

After identifying the three target audiences, I charted each of their individual residence experiences. Where I found gaps in the original plan, I designed solutions based on psychographic information obtained in my own research. The end result was three distinct resident "tracks."

The Family Track

This option was designed for married couples, cohabiting partners, and adults with children. Families who apply would enter into a lottery to live in EPCOT's single-family homes or family-sized apartments. Exceptionally qualified families (e.g. with members who have well-matched employment qualifications) could bypass the lottery. Housing would ultimately be assigned based on current income, household size, and the age of claimed dependents.

Families with school-age children would have to live in EPCOT for the duration of one complete school year. Children would be able to enter whatever grade they would have at their home school. The application would require a copy of every school-age child's academic and immunization records. Any family member over the age of 18 would have to be employed with EPCOT, Walt Disney World, RCID, or a Corporate Partner, unless still enrolled in school or claiming valid medical exemption. The residency application process would allow applicants to view and apply for open positions. In order to be considered, applicants would have to provide proof of work authorization in the United States. Applicants who would remain on a non-EPCOT employer's payroll during their stint would have to provide proof of employer's consent to be considered.

The Gap Track

This resident experience was designed for single persons without children interested in living a full year at EPCOT. It is targeted primarily toward college students, recent graduates, and unmarried professionals. Gap Track applicants would enter into a lottery to live in EPCOT's high-density apartment communities. Employment qualifications would be considered in selection for the housing lottery.

In addition to standard employment opportunities, those accepted into the Gap Track would have the opportunity to participate in the Progress City Apprenticeship Program. Every four months, Progress City Apprentices would get the chance to move to a different role within Disney World's four different work areas: Disney World Jetport, the Industrial Park, RCID/EPCOT City Center, and Resort Area. Roles would be assigned based on a candidate's educational background and career interests. In order to be considered, applicants would have to provide proof of work authorization in the U.S. and not require visa sponsorship during their employment.

The EPCOT Sabbatical Track (EST)

This residency option would be exclusively for individuals or families in which at least one adult is already employed with the Walt Disney Company, its subsidiaries, or EPCOT's Corporate Partners. Housing would be assigned based on a resident's current income and household size. In order to qualify, applicants would have to be in good standing with their respective employers.

Applicants could only transfer into commensurate positions with their respective employer; but could seek lateral or vertical opportunities once accepted. Any family member over the age of 18 not already employed with EPCOT, Walt Disney World, RCID or a Corporate Partner would have to apply for a job, unless they are still enrolled in school or claim valid medical exemption. College students and recent graduates who meet the EPCOT Sabbatical Track's employment prerequisites

would be able to participate in the Progress City Apprenticeship Program once accepted.

Ethics & Safety

Since EPCOT residents would essentially live as test subjects, they would require more structures of trust than just civil statutes. So, I assessed the most salient audience concerns expressed in my survey and interviews to develop a Code of Ethics that secures resident rights. This code addressed what I identified as the core pillars of EPCOT's experience: community, technology, mobility, and industry.

Community

EPCOT's mission hinges on the successful creation of community. Residents would have to do more than coexist but contemplate the city's structures and systems tested there together. I developed community ethical provisos to hold EPCOT to its fundamental telos and protect against imposition on resident's personal wills. The core tenets included:

1.   The quality of individual lives and the interactions among peoples will always be the top consideration of EPCOT's leadership.

2.   EPCOT will exercise equal and unbiased practices in the recruitment of citizens without regard for race, marital status, socioeconomic status, religion, mental or physical disability, gender identity, education, national origin, familial status, sexual orientation, or other myopic dimension of classification.

3.   EPCOT will foster community through the creation and maintenance of public commons. The city will constantly monitor their safety, never allowing them to fall into disrepair.

4.   EPCOT will ensure the diversity of the community and prevent the accrual of disproportionate influence in any one area by assigning housing based only on income qualifications and space-related needs of applicants.

5.   Each of EPCOT's neighborhoods/apartment communities will be permitted to form committees that represent important resident issues to the Reedy Creek Improvement District's Board of Supervisors. In order to be recognized, community boards must be comprised of a representative number of residents based on the population density of their sector of origin.

Technology

New and evolving technology would be a dominant element of EPCOT life. Since safety was the top concern of all survey participants, EPCOT's technology provisos would respect resident's valid personal exemptions from product trial. The following items are meant to ensure the balance of these responsibilities:

1.   EPCOT and its Corporate Partners will not allow the market testing of any in-home technology that has not been certified as safe for consumers. Prior to implementation, all technologies must receive approval from the United States Consumer Products Safety Commission. Participants may demand the removal of the technology prior to the completion of market testing.

2.   EPCOT and its Corporate Partners will confirm the safety of any technology intended for public areas before implementation. If a legitimate safety concern is raised, the city will cease use of the technology and seek out its repair or removal. EPCOT will be held financially liable for injury resulting from product failure.

3.   EPCOT and its Corporate Partners will not permit the implementation of technologies that violate citizens' right to privacy or their personal property. Market testing participants will be notified if a technology has video and audio recorders or other behavioral monitoring capabilities that can be accessed remotely by a third-party. Participants may demand the immediate removal of the

technology at any time.

4.　　EPCOT will inform citizens of the installation of technologies with public surveillance capabilities and provide legal guarantees for their ethical usage. Members of the public who feel these technologies have violated their privacy or caused damages must provide evidence of such to the appropriate city department. If reasonable proof is shown, the city will immediately alter or remove the technology accordingly.

5.　　EPCOT and its Corporate Partners will not penalize citizens or employees for the failure of a technology. Involved parties may not be terminated from their place of work or reprimanded in any manner if they followed the applicable procedures.

Mobility

Most EPCOT residents would be beholden to experimental public transit for their daily transportation.[18]

In addition to obvious safety implications, a resident's work, school, and social commitments would rely heavily on the functionality of these systems. The following mobility ethics provisos are meant to eliminate negative consequences in case of system failure:

1.　　EPCOT will protect the priority of pedestrian safety and convenience. The city will maintain a walkable environment through regular inspection of walkways.

2.　　EPCOT assumes full responsibility for the safety of its mass transit systems. RCID acknowledges their responsibility to maintain the safety and functionality of its transportation by running regular, thorough diagnostics and service checks. The city will also maintain secure safety barriers and visible signage at transportation lobbies.

3.　　EPCOT will not penalize its citizens and employees for the failure of its mass transit systems. Should any such failure cause an individual to arrive late to work or school, they may not receive reprimand. Businesses and schools may confirm an individual's alibi by calling the Department of Transportation, which maintains up-to-the-minute records of the failures of its mass transit systems.

4.　　EPCOT will provide quick service turnaround for failures of its mass transit systems. RCID is responsible for the dispatch of emergency vehicles to any point along a given route with the capability to safely evacuate passengers within ten minutes of the incident.

Industry

Since all residents of EPCOT would be required to work for the Disney company, its subsidiaries, or one of the Corporate Partners based in the Industrial Park, it was also important to establish the power dynamic that all companies ultimately serve residents. The following industry ethics provisos were meant to assert this relationship:

1.　　EPCOT will not permit its Corporate Partners to impinge on citizens' expectations for safety and privacy through the introduction of a product/service. Corporate Partners are required to gain approval from EPCOT's leadership to legitimately market test any of the technologies they develop for homes or public areas.

2.　　EPCOT assures its citizens of their right to decline participation in market testing of products/services without fear of negative repercussions from the city's Corporate Partners. Households selected to test a technology that makes any of its members feel unsafe or uncomfortable may respectfully opt out without penalty from the city or the originator.

3.　　EPCOT prohibits Corporate Partners from offering monetary incentives or gifts to residents for their participation in market testing, focus groups or other feedback channels. Additionally,

EPCOT residents may not incentivize Corporate Partners to select them for participation in business-to-consumer opportunities. Corporate Partners may not volunteer prospective candidates, nor may individuals volunteer for special consideration.

CONCLUSION

My reexamination of Walt Disney's EPCOT thoroughly explores how today's society would morph the original concept, but also testifies to its timelessness. Its relevance is resultant of EPCOT's foundation in story, not as an abstract concept, but a practical way of problem-solving. During this exercise I used story to reconcile data into an actionable resident experience plan that fulfills the desires and addresses the concerns of real of people. In doing so, I optimized the fifty-year-old city for a modern audience.

Walt Disney's great experiment and its story-driven design are not only relevant, they are imperative in a world embroiled in upheaval commensurate to the era of their conception. They offer a way forward to a world infected with the fallacy that humans are defined only by their differences. By giving all of its residents an active role in the betterment of urban life, EPCOT creates an intersection of human story arcs at the climax of imagination and possibility. In this sense, most of all, it still represents the prototype of what modern cities should strive to achieve.

NOTES

[1] Don Hahn, *Yesterday's Tomorrow: Disney's Magical Mid-Century* (Los Angeles: Disney Editions, 2017), 160.

[2] Christian Moran, *Great Big Beautiful Tomorrow: Walt Disney and Technology* (Orlando: Theme Park Press, 2015), 133-134.

[3] Neal Gabler, *Walt Disney: The Triumph of the American Imagination* (New York: Random House, Inc., 2006), 605-607.

[4] Steven Mannheim, *Walt Disney and the Quest for Community* (Burlington: Ashgate Publishing Company, 2002), xiv.

[5] Herb Ryman, 1966, Painting, Walt Disney Imagineering, http://www.omniluxe.net/wyw/epcot.htm, figure 1.

[6] Sam Gennawey, *Walt Disney and the Promise of Progress City* (United States: Theme Park Press, 2014), 178.

[7] *Florida Film*, directed by Hamilton Luske (1966; Burbank, CA: Buena Vista Home Entertainment, 2004), DVD.

[8] "Transcript," The Original E.P.C.O.T, Accessed June 16, 2021, https://sites.google.com/site/theoriginalepcot/the-epcot-film-video/transcript?authuser=0

[9] Sam Gennawey, *Walt Disney and the Promise of Progress City* (United States: Theme Park Press, 2014), 190.

[10] "Transcript," The Original E.P.C.O.T, Accessed June 16, 2021, https://sites.google.com/site/theoriginalepcot/the-epcot-film-video/transcript?authuser=0

[11] *Florida Film*, directed by Hamilton Luske (1966; Burbank, CA: Buena Vista Home Entertainment, 2004), DVD.

[12] Marvin Davis, 1966, Print, Walt Disney Imagineering, http://www.omniluxe.net/wyw/epcot.htm, figure 2.

[13] Steven Mannheim, *Walt Disney and the Quest for Community* (Burlington: Ashgate Publishing Company, 2002), 105-107.

[14] Jared Wells, *Exhuming EPCOT: Marketing the Future that Never Was*, 2018. Distributed by Ball State University. Qualtrics Survey, 2018.

[15] Neal Gabler, *Walt Disney: The Triumph of the American Imagination* (New York: Random House, Inc., 2006), 609.

[16] "Transcript," The Original E.P.C.O.T, Accessed June 16, 2021, https://sites.google.com/site/theoriginalepcot/the-epcot-film-video/transcript?authuser=0

[17] Christian Moran, *Great Big Beautiful Tomorrow: Walt Disney and Technology* (Orlando: Theme Park Press, 2015), 112.

[18] *Florida Film*, directed by Hamilton Luske (1966; Burbank, CA: Buena Vista Home Entertainment, 2004), DVD.

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MANUAL FOR THE FUTURE CITY AND TIME MACHINES

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INTRODUCTION

Wallbridge & Crowson run a master's in architecture design studio which explores the making and materiality of spatial practice, named *Future Architectures & Time Machines*. This paper shares and reflects on studio practice and the framing used via narrative and mapping over the academic year 2020-21. It does not attempt to explore pedagogical or theoretical contexts in depth. The studio comprises Master of Architecture Students working towards design thesis.

The studio works through action: writing, drawing, debating, experimenting, and making. The narrative frame allows students to explore ideas relating to both themselves and place without the constrictions of time, because narrative can be read both sequentially, out of time sequence and in depth, as strata[1]. Narrative is utilised in letters, debate and manual. It considers the role of the architect as a physical novelist[2] who weaves together past, present and future. Students were challenged to consider architecture as a time machine.

Starting with a question: What is your commitment to the future?. Through a collection of letters, the studio considers that architecture has agency to fulfil these promises made by soon-to-be architects. Gosport, UK, and its constellation of forts are considered as a laboratory for testing ideas. The city is loaded with extraordinary opportunities to be overlaid, traced and explored. Reflecting on the words from the philosopher Friedrich Nietzsche "Out of chaos comes a dancing star"[3], the context of an extraordinary confluence of extinction rebellion[4], Greta Thurnberg[5] and the constraints imposed globally in an attempt to combat a global pandemic[6] were seen as an unprecedented catalysts for change, adaptation and exaptation.

This paper aims to share the studio theme, research, program and selected projects and its overarching architectural aims:

1.   Debate global issues and local heroes to reveal tangible and intangible aspects of place, support value formation and inform tactical future architectures.

2.   Explore how utopian and dystopian narratives in film, architecture, literature, and history can be both context and catalyst for future architectures.

3.   Enact spatial practices and material explorations through making and employing mapping, modelling, and drawing to reveal spatial attributes and layers of meaning.

4.   Create a Manual for the Future City to act as agent to enact promises to the future.

Finally, the paper reflects on the studio year and through three projects shows how the key themes have born innovative programs of work. It also Reflects on the design studio methods used within

future architectures enabling co making/ co production/ collaboration to take place - even during the constrictions of COVID-19.

METHOD

The overarching design methodology is research through action, collecting and using critical reflection. This method supported value formation and informed tactical future architectures. Weekly debates explored global issues and researched local heroes to reveal tangible and intangible aspects of place. Bringing together the views from students and broadcasts made by the BBC[7] during the pandemic relating to climate change and the possible causes of the pandemic (such as loss of ecology). Using local heroes relating to global issues was a frame generated to enable students to identify more directly with the issue through a scale shift, in many ways also relating to narrative in terms of character and plot see figure 1. below that tabulates Scene (global issue) to character (local hero) and plot (Quote). A structure that is also utilised in the example projects selected.

Global Issue (Scene):	Local Hero (character):	Plot (story):
Ecology + COVID 19	Gilbert White (1720 – 1793) from Selborne, Hampshire, UK.	Ecology: its creation, growth and destruction.
The future	H.G Wells (1866 – 1945), known as father of science fiction, worked in Portsmouth from 1881 to 1883 and Uppark, Hampshire.	Science fiction: Wells wrote a number of utopian works including *War of the Worlds* and *the Time Machine*[8] and foresaw the advent of aircraft, tanks, space travel, nuclear weapons, satellite television and something resembling the World Wide Web[9].
Climate crisis	Professor Alessandro Melis[10] 2020 PSA	Creative thinking as a response to climate crisis "stone fortresses do not protect us from greenhouse gases"[11]

Figure 1. Topics of debate - Global/ Local Hero

This paper will reveal how the studio enacted spatial practices[12] and explorations carried out employing writing, mapping, modelling, and drawing to reveal spatial attributes and layers of meaning in place. Mapping different layers of history of the forts, mapping stories, present, past and future, and their interrelationships requires architects to broaden their understanding of context and catalysts for change through the consideration of tangible and intangible characteristics to place-make. Informed by film, architecture, literature, and history, as both context and catalyst for future architectures and as ways to frame potential futures through science fiction, dystopia and utopia.

The students set their narrative direction through the writing of a letter that exposed values and ideals in relation to the future. Explorations are framed via debates on matters of concern which are seen as catalysts to inform architectural action and program. The letters collectively give a spirit to the group but individually give each project authenticity and resonance. The Manual for the Future City acts as

agent to enact these promises to the future, it provides a strategic framework to generate the projects grown from it to become the synthesis of theory, practice, identity and resolution. The studio research maps the developing story of the project of student, research and proposal within and beyond the manual.

Letters and Forts

The lost art of letter writing was re-established through looking to Reverent Gilbert White, whose letter writing comprised *The Natural History and Antiquities of Selborne*. White corresponded with Charles Darwin and is considered the first ecologist and part of the "first age of enlightenment"[13]. The studio debated the links between the pandemic and human overlapping and destruction of non-human ecologies[14]. The students were invited to write a promise to the future in the form of a visual letter. The act of writing such a promise was personal and identified individual values.

Just as Gilbert White, from his own garden, observed in depth and minute detail the interconnections of flora, fauna and time in his diary, sharing his observations with fellow early scientists; So, the letters were used as a framing of individual values and architectural commitment, a correspondence of ideas and reflection, of thoughts and deeds. Lauren Honey considered the Architectural student as pilgrim, "[you] are on your own journey, don't squander yourself on comparisons and labels, open yourself up to new experiences and lose yourself in your passion".[15]

Architectural propositions were thus nurtured based on values and authenticity and how these can impact and inform a changing world. The global pandemic as experience linked ecology and climate change and concerns about the 'new normal', from isolation to a new age of enlightenment. The collection of visual letters identify a range of concerns, dreams and promises at an extra-ordinary, unprecedented time. The Global Pandemic has meant that this cohort has experienced a world that is online and offline, isolating, frightening, and challenging.

Considering our field of study as a series of scales from global to island city to Gods Harbour to ideal city (philosophy), using narrative and mapping as spatial and time frames, the studio researched local heroes and debated utopia and dystopia, comparing Portsmouth heroes (utopia) to Gosport (dystopia). The Palmerston Forts (1860–1870) form a constellation of defences around the island city encircling the Harbour. These defensive star forts past, present and future can themselves be viewed as time machines refer to fig 2.

Figure 2. Studio Co- drawing and making:
Fort as time machine (authors: N. Crowson & T. Wallbridge)

The parallel between the strong plan motif of the fortification and the ideal city plans was explored. Dr Milena Metalkova-Markova in her open letter stated that;

"[The] Architectural identity of Portsmouth is closely intertwined with a large network of defence forts on land and water reflecting its history as a naval port and the continuous need for a building strategy against enemy attacks. This network of defence architecture comprises a necklace of self-contained architecture micro-worlds, precisely planned at strategic locations within Solent water, on coastal shores of Portsmouth Island and its surrounding territories of Gosport and the neighbouring islands of Hayling and Wight[...]Fort micro-worlds (similar to Ledoux, Salterre, ideal city), an arena to dream, envision and plan compact self-sustainable urban forms with mixed functions, a form of global architectural pattern".[16]

Dystopia and utopian frames were used to view the future, in film, literature and art see figure 3. The local Hero used was Grayson Perry, Alumni of University of Portsmouth, Royal academician, broadcaster and artist. Perry's "map of days"[17] established links between culture, identity and mapping that propose a freedom to explore and research both self and transformational concepts in place. Considering what made an ideal city, whether it was wholly new or overwritten, what political and social drivers[18] inform utopian visions in the past and for the future. In Lewis Mumford's book *The Story Of Utopias* he makes reference to a quote by Anatole France "Without the Utopians of other times, men would still live in caves, miserable and naked. It was Utopians who traced the lines of the first city [.....] out of generous dreams come beneficial realities. Utopia is the principle of all progress, and the essay into a better future."[19]

*Figure 3. Collage Dystopia and Utopia from the
Manual for the Future (author: B. Smith)*
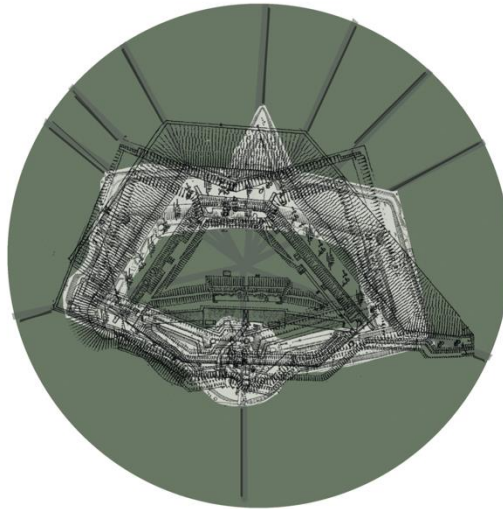
*Figure 4. Collage of overlaid forts from the
Manual for the Future (author: M. Wynne).*

In studio, we cultivated (from Colere 'to till') the Fort as a shell or armature in which to grow ideas from the letter much as a pearl is induced to grow in the shell of an oyster or clam, by the insertion of a small object around which small layers of nacre are deposited see Figure 4.

THE MANUAL FOR THE FUTURE

Historically, Architecture has been instrumental in embodying shared ideals and values, enhancing the public realm and strengthening social fabric. These alternative and visionary scenarios may be unrealistic, or even provocative, but due to this, allow people to see their city in new and unexpected ways. With architecture established as an agent for change, the creation of the manual considers the temporal axis as part of its construct to address possible futures in order to construct a dynamic response, in addition to the architecture as time machine. The time frames and scales considered ranged through astrological, cosmological, geological, architectural, ecological, natural, seasonal and daily resulting in a range of students' responses for the future (2100) See figure 5.
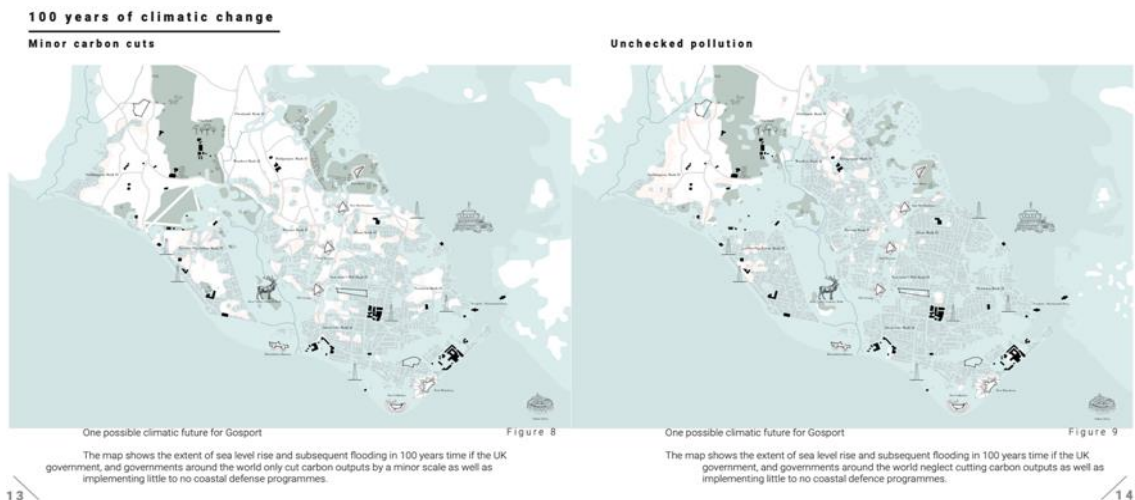
Figure 5. 100 years of Climatic Change predicted on Gods Harbour, UK. (Humby, M)

The manual took Gosport & Portsmouth as a test bed to situate the developing proposals made within each volume, entitled 'The Book of Panacea[20]: A Manual for the future'. These respond to the letters and make a new group promise that pulls together the themes that emerged from the preparatory work and a web of entangled issues. Following the research into the area's dystopian and utopian past and how these were born of societal and economic crises[21], the manual now emerged as a tool to be used by national and local governments in a bid to build toward a utopian society following the catalytic dystopian year of 2021. The manual could be applied to different contexts to enable a mainly utopic vision that responded to the matters of concern. Considering a new utopia the introductory volume identifies key societal issues – economic, cultural, political, social, spiritual, health, educational to introduce the wider concept of curing all and the *panacea effect*. A web of issues is considered through an *issue identifier* used to identify the 'volume' most relevant to a particular context. By identifying a hierarchy of values and relating the volumes to the problem and solution via architectural action. Refer to Figure 6.

The 9 volumes within the manual are each authored by individuals on a theme relating to their developing architectural design project, figure 6 below shows the key descriptors and issue identifier from the manual.

Figure 6. The Manual for the Future.
Themes and Issue Identifier (author: PSA Studio Students).

RESOLUTION

Reflections on the spatial practice of a 'Manual for a Future City & time machines' resulted in varied strategic and proposed design outcomes. In this paper three projects are considered through the narrative frames of plot, character and scene all of which focus on different societal catalysts.

Project 1- A Healing Station for a new listening society by R. Butt

Scene: In her promise to the future Rachel Butt suggests "You're the beginning, the middle and the end. Draw and Write. You'll be overwhelmed but enlarged. Make architecture rare. Make it breath-taking. Make it art."[22]This programme and volume imagines that society is broken post a significant event and re-imagines a society that listens as illustrated in figure 7. It concerns building a stronger, resilient society that has broken from a collapsed civilization, forming new island communities in order to preserve humanity. It explores how to ensure connection in a physically divided environment, where society itself is broken and occupying a series of Archipelagos left by rising sea levels.

Character: It envisions a new layered community & future, a utopian society which listens and in which its' individual citizens are heard. An imaginary future society (2100) a society that listens and in which its citizens are heard, an auditory utopia. The design for a 'Healing station' led to a project of joy and a desire for a brighter future.

Plot: It aims to preserve and improve social qualities following catastrophic climate change and flooding. The community is on an island, it has a city metaphorical core. It considers moving from dystopia (catastrophe and societal sickness) to utopia (a new listening society) and imagines a web of connections both physical and metaphorical with other small island communities. A Metabolist approach to design within the Island fort of Brockhurst and Rowner.

Figure 7. Manual for the future: Volume 1:
The Healing Station (author and images: R. Butt)

Project 2- Manifestation of water by J. Clark

Scene: In his promise, the author says "I hope that there comes a positive future out of the situation that we face in our lives today, positivity that you contribute to. You may not have endless riches or your name on the tallest skyscraper but benefit society and you will gain recognition"[23]. This is a response to rising sea levels, resulting loss of nature and ecology and the manifestation of water. It explores methods to deal (positively) with the incoming threat of water and rising sea levels. As illustrated in figure 8.

Character: An imaginary future society (2100) living with, in and above the water explores an architecture that has room for both community and nature. The project's aim is to design an urban infrastructure and district able to adapt to the ongoing threat of flooding, brought about by global crisis and climate change, protecting new infrastructures, society and the natural environment.

Plot/ story: A Metabolist grid generated from the natural response to flooding within God's Harbour enables adaptability, developing a grid structure encapsulating objects, community, events and nature; The project develops evolving edges and maps them - soft and hard, receptive and protective. It considers water adaptation in terms of protection, control and preservation. The project develops ideas of reclaiming land lost to water and evolving edges that allow new ecologies of living to grow and explores how the proposed structures change over time and in use (part new/ part ruin).

Figure 8. Manual for the future: Volume 3:
Manifestation of Water (author and images: J. Clark)

Project 3- Beyond the Manual: The Cosmic Wanderer/ an arc for humanity by J.Ali

Scene: Jeremy shares his belief in the ethical and moral responsibility of future Architects as " [..] architects are left with a clear conscientious path to deliver a future that avoids the worst and nurtures the best, ensuring to embed virtue into the presence of their creation if they hope for it to endure beyond the scope of imagining."[24]. His promise explored a utopian proposition of time travel and a new age of space travel and was inspired by ecology, science fiction, response to climate crisis and development of architectural agency. As illustrated in figure 9.

Character: Conceptually driven by an exploration of defensive forts as miniature ideal cities and research through multiverse and string theory. The proposal shifts scale from the Ark of humanity showcasing the best of humanity, the Cosmic Wanderer, as a conceptual object (time machine) to a proposal for a Cosmic Exploration Port.

Story: The port and launch pad sit within the curtilage of a pair of defensive batteries and the historic home of the Black Arrow testing site on the Isle of Wight, the needles old and new batteries[25], Isle of White, existing fort and Black Arrow Rocket Launch site[26]. The centre provides research facilities for space exploration and debating technological advances. The scheme proposes a structure independent of both cliff and fort and printed chalk technologies.

Figure 9. The Cosmic Wanderer
(author and images: J. Ali)

CONCLUSION
Drawing it together
Our aim to create a Manual for The Future City with set aims, to act as an agent to enact promises to the future, led to outcomes broader than initially expected. Just as the fort patterns are global, the manual unexpectedly became a pattern book, a panacea, for global usage and extended issues beyond the studio's local laboratory site of Gosport and Portsmouth.

Starting with a promise and a letter, the scale of observation (Gilbert White) encouraged personal value formation and relatable structures within which to debate and analyse far larger issues. This scale of inquiry from local hero to global issues continued through the debate and narrative formats, encouraging further transformation of ideas and scale of response. The debates expanded beyond architecture to encompass societal, political and philosophical positioning. The use of the 'time machine' and debate on science fiction as prophetic wisdom and the very helpful debates and reading on utopias encouraged the theoretical research and deepening to underpin developing design and conceptual thinking.

The constellation of forts - local and global, and the act of mapping, allowed future predictions relating to climate change to be predicated graphically. Relating individual narratives to place mappings and shared studio mapping exercises encouraged individual action and freedom. Covid lockdowns limited the physical studio making hoped for, but required us to work better in the digital realm. Mapping ideas proved to be a strong spatial catalyst for the projects. Working through a series of scales from global to local, supported students, through the use of narrative, to develop their individual design identities, making it personal, relatable and enabling the learning to be specific to place and individual, through place making and narrative.

The power of the letter, time machine, scale and time shift has allowed a structure through which to develop authentic voices that have driven the studio in its commitment to the future.

NOTES

[1] The concepts of strata and its relationship to structure of narrative is discussed by Barthes in a number of papers including. Barthes, Roland, *Introduction to the Structural Analysis of Narratives*: New Literary History. Vol. 6. 1966. Published By: The Johns Hopkins University Press: 237-272.

[2] Hill, Jonathan, *The Architecture of Ruins: Designs on the Past, Present and Future.* New York: Routledge. 2019.

[3] "The Perspectives of Nietzsche", *Towards the Ubermensch.* Accessed May 22nd 2021. https://www.theperspectivesofnietzsche.com/nietzsche/nuber.html

[4] *"Extinction Rebellion"*, accessed July 30th 2021. https://extinctionrebellion.uk

[5] TIME Magazine. *"Person of the Year 2019",* Greta Thumburg. Accessed May 22nd 2021. https://time.com/person-of-the-year-2019-greta-thunberg/

[6]"British Broadcasting Corporation." *Britain goes coal free as renewables edge out fossil fuels.* BBC News. Accessed June 10, 2020.. https://www.bbc.co.uk/news/science-environment-52973089

[7] "British Broadcasting Corporation." *Coronavirus: This is not the last pandemic.* BBC News. Accessed June 6, 2020. https://www.bbc.co.uk/news/science-environment-52775386.

[8] HG Wells, " The War of the Worlds," in *The War of the Worlds* (London: Ray Society, 1993).

[9] James John. *"H. G. Wells A Visionary who should be remembered for his social predictions, not just his scientific ones"*. Independent Newspaper. Accessed September 22, 2016. https://www.independent.co.uk/arts-entertainment/hg-wells-a-visionary-who-should-be-remembered-for-his-social-predictions-not-just-his-scientific-ones-a7320486.html

[10] Alessandro Mellis, Curator of Italian pavilion at the Venice Biennale 2021, critical friend of the studio and former professor at PSA

[11] Virginia Cucchi, *"A future on Resilence"* Design & Trends. Floornature.com. (blog) Accessed July 18th 2020. https://www.floornature.com/design-trends/strongonstage-interview-alessandro-melis-strong-15428/

[12] Spatial practices are considered as research, drawing, making and designing architecture and place making. An assemblage of mapped stories and exploration in different media, depths, and materials and when used as a research tool can make social and spatial practices and the interactions in space visual and tangible.

[13] Gilbert White. The Natural History and Antiquities of Selborne. London: Ray Society, 1993.

[14] Non-human ecologies as defined by "British Broadcasting Corporation." *Coronavirus: This is not the last pandemic.* BBC News. Accessed June 6, 2020. https://www.bbc.co.uk/news/science-environment-52775386.

[15] Lauren Honey. "*Letter to the future. Studio: Future Architectures."* Portsmouth School of Architecture, University of Portsmouth. 2021.

[16] Metalkova-Markova, Milena. "*Open Letter: In Praise of Fort."* Portsmouth School of Architecture, University of Portsmouth. 2020.

[17] Grayson, Perry. *The Map of Days*, 2013. Etching. 1090 mm x 1515 mm, Royal Academy of Arts. https://www.royalacademy.org.uk/art-artists/work-of-art/a-map-of-days

[18] Ebenezer Howard. 1902. *Garden cities of tomorrow*. London: Swan Sonnenschein.

[19] Lewis Mumford. *The story of Utopias*. New York: Viking Press. 1962: 15

[20] Panacea - Meaning the Greek goddess of curing ills, panacea, holds the ideology behind the collection of manuals together as one force

[21] Helen Rosenau, 1974. *The ideal city in its architectural evolution*. 1st [London]: Studio Vista.

[22]Rachel Butt. "*Letter to the future. Studio: Future Architectures."* Portsmouth School of Architecture, University of Portsmouth. 2021.

[23]Jack Clark. "*Letter to the future. Studio: Future Architectures."* Portsmouth School of Architecture, University of Portsmouth. 2021.

[24]Jeremy Ali "*Letter to the future. Studio: Future Architectures.*" Portsmouth School of Architecture, University of Portsmouth. 2021.

[25] National Trust . The Needles Old Battery New battery. https://www.nationaltrust.org.uk/the-needles-old-battery-and-new-battery. Accessed 12 Jan 2020.

[26] National Trust. Black Arrow Program. The Space Age at the Needles New Battery. https://www.nationaltrust.org.uk/the-needles-old-battery-and-new-battery/features/into-the-space-age-at-the-needles-new-battery. Accessed 12 Jan 2020.

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National Trust *'Black Arrow Program. The* Space Age at the Needles New Battery.' National Trust Accessed 12 Jan 2020. https://www.nationaltrust.org.uk/the-needles-old-battery-and-new-battery/features/into-the-space-age-at-the-needles-new-battery.

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HAUNTED ARCHITECTURE AND SHIFTING PERCEPTIONS: The NOTION OF HOME IN POST-CONFLICT SYRIAN CITIES: ALEPPO, IDLIB AND RAQQA

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INTRODUCTION

Over 65 million people are forcibly displaced due to armed conflicts. [1] Studies demonstrate approximately 70% of war-displaced populations never return following conflict resolution.[2] When discussing the possibility of return, the tendency is to outline and report logistical obstacles[3][4][5] while dismissing the psychological impacts of war which can cause Post-Traumatic Stress Disorder (PTSD), escalating into aggressiveness, addiction, and suicide.[6] Forced displacement is traumatic and can result in feelings of uprootedness,[7] anxiety,[8] emotional suppression,[9] and adjustment disorders[10] associated with alienation and self-isolation.[11] The literature on return rarely touches on the loss of attachment and belonging as a by-product of displacement, and the resulting rejection of one's own former 'Home Sweet Home',[12] and how this collectively impacts the dynamics of cities and the housing sector.

The Syrian War (2011 - present) has resulted in the destruction of over 3 million residences,[13] and left 13 million people displaced.[14] This displacement is associated with traumatic events: the deaths of family members, lack of safety, fear of prosecution, and the destruction or confiscation of properties, alongside job loss, disruption of education. [15][16] Based on previous war-induced displacements, 3-4 million people are expected to return to Syria once the conflict ends.[17] By 2020, the Russian Centre for Reconciliation in Syria documented the return of over 800 thousand externally displaced Syrians and over 1.3 million internally displaced. It also reported the desire of around 1.3 million to return to Syria.[18]

The possibility of return is challenging, especially for those externally displaced who may fear prosecution or be concerned about the lack of security and services, the inefficiency of legislative frameworks of restoration and development, or the lack of proof of ownership.[19] However, the scope of this study is the psychological factors that might impede the decision and/or desire to return. From the micro to the macro, it investigates and attempts to measure the change in personal perceptions and levels of attachment to the 'original house', as well as understand the circumstances that are implied by the change in relationship. Broadly, this would help to measure the demographic, social, morphological impacts on cities and predict the ways in which their urban dynamics could be altered.

The notion of 'home' in the Syrian context has a rich meaning that exceeds physical dwelling which can be changed over time and throughout life - to also relates to the family, its history and socio-economic status, its traditional practices, and rituals. While the material aspect can be a cultural product related to local identity, especially in the case of historic city centers, this is also passed through generations.[20] It is preserved and valued as a family heirloom. Syrian traditional houses can accommodate three to four generations simultaneously.[21] The house is perceived as a container of social dynamics and cultural practices, where religious rituals, social events, and celebrations take place.[22] Thus, Syrians tend to spend most of their time at home; the notion of home is related to both history and memory.

Modernity implied new housing typologies. While houses became smaller and accommodated less people, most practices continued to be held at home. Despite not necessarily being an heirloom, the relationship with the house remained strong as most houses in Syria are owned by their residents.[23] This strong and direct financial relationship is an important aspect when the property, or access to it, is lost. Collectively, the mentioned aspects result in a high sense of attachment: loss can be an excruciatingly painful experience.

This study is focused on Aleppo, Idlib, and Raqqa. These cities registered the highest rates of destruction and displacement since the beginning of the Syrian War (2011) (Table 1). While all are major cities in Northern Syria, their communities' ideologies and political views differ and have witnessed diverse scenarios of conflict and displacement. Therefore, combining these cases allows the assessment of the notion of home detached from political polarization.

City	Aleppo	Idlib	Raqqa
Years of Armed Conflict	2012 - 2018[24]	2012- Present[25]	2013 – 2017[26]
Current Control	Syrian Government[27]	Syrian Salvation Government[28]	Syrian Democratic Forces[29]
Pre-war Population (2010)	3,000,000[30]	112,780[31]	262,116[32]
Population (2021)[33]	1,602,264 (-46.59%)	128,840 (+14.24%)	177,636 (-32.23%)
Total Long-term Displacements per Governorate (2019)[34]	0.99 million	1.125 million	0.147 million
Damaged/Destroyed Housing Units (2017)[35]	23.3%/7.5%	25.3%/6.3%	12.9%/4.3%

Table 1. Data on the Syrian cities of Aleppo, Idlib and Raqqa

METHODOLOGY

To understand the shift in perceptions regarding one's attachment to their home in the aftermath of forced displacement, an online survey was conducted and circulated on social media platforms (7th of April -20th May 2021) – 162 responses. This method was selected to collect a diverse and random sample, open to all ages, genders, social and cultural backgrounds, and including people currently in Syria and in the diaspora. However, it was exclusive to those who left their house during the Syrian War, between 2011 and 2021, whose original houses were in one of the three cities. This method

allowed anonymity, given the sensitive political situation in Syria and potential fear of identity exposure, and helped avoid technical problems associated with the limited availability of electricity and internet access.

The 10-minute survey included an introduction on who is conducting this research, Rethink Housing Studio – Syria,[36] followed by information sheet on the research objectives and the purpose of data collection, the connotation of the term 'home' (translated to 'original house' in Arabic), consent section, and finally the 28 survey questions. The close-ended questions aimed to capture the following:

1. Typology Parameters (TPs): age, gender, number of family members, housing typology, and location.
2. Level of Attachment (LoA), to the original houses before and after displacement and the current sense of belonging to the neighborhood. LoA was captured both numerically, on a scale from 1 to 10, and through indirect questions to detect changes and possible influencing factors.
3. Time (T), to record the period spent at the original house, and away from it, the frequency of checking on the house.
4. Use and Status (U&S), are related to the war; they refer to the use of the house since the displacement and the physical conditions of the building.
5. Perceptions (Ps), to measure the change in perceptions towards the house following displacement.
6. Return (R), to capture feelings, intentions, ideas regarding the possibility of return.

RESULTS

Typology Parameters (TPs)

From the 147 qualified respondents,[37] 39.9% reported their original house to be in Aleppo, Idlib (38.6%), and Raqqa (17.6%). 64.6% of respondents were 20-29. 71.4% are currently inside Syria. 57.2% had 5-7 family members at the original house mostly reported to be at city centers (50.3%): in detached residential blocks (48.3%), low-income/social housing (22.4%), T3 (14.3%), T4 (11.6%), or T5 (3.4%). [38]

Level of Attachment (LoA)

Before displacement, 89.8% of the responses are between 7 and 10, with 59.2% a high extreme. Dropping after displacement to 70% between 7 and 10. The current sense of belonging to the neighborhood scored 33.3% on the high extreme (Figure 1).
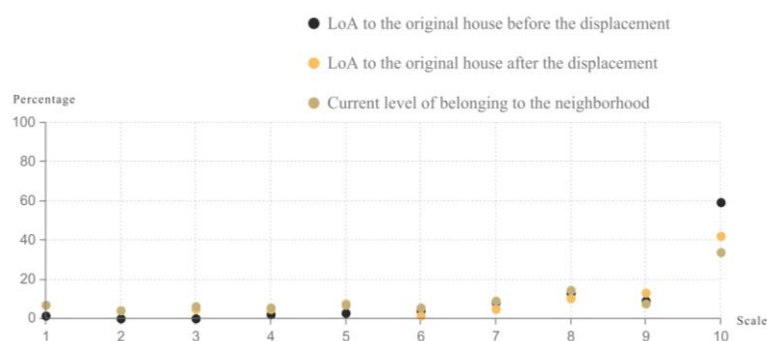
Figure 1. Levels of Attachment

Time (T)

51.7% spent more than 15 years in their original houses before displacement. 62.6% have been away for 6 to 10 years. 46.3% constantly check on the status of their house, 42.8% have been moderately checking, 4.8% have never checked (Figure 2).
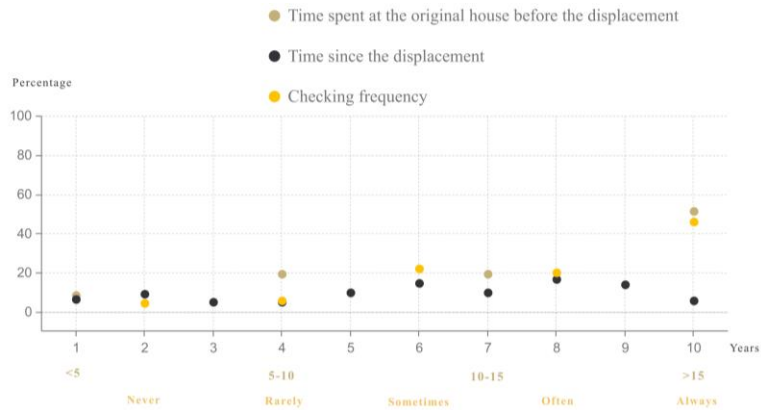
Figure 2. Time

Use and Status (U&S)

42.2% reported that the original house was, or is, used by others, of them 18.4% forcibly occupied. 29.9% of houses are now vacant. 65.3% have suffered physical damage, 12.9% were destroyed. 11.6% reported that their displacement was due to damage (Figure 3).
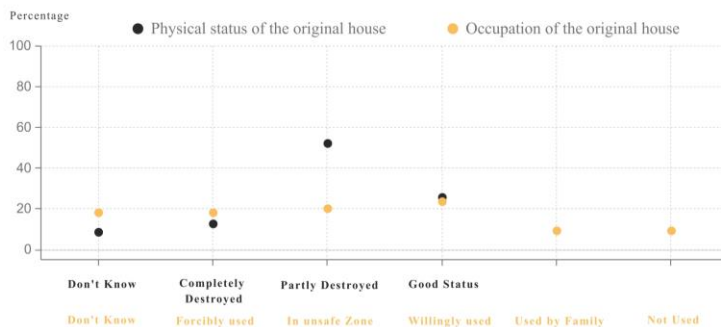
Figure 3. Use and Status

Perceptions (Ps)

39.5% described their original home as full of pleasant memories, 29.3 % as the only place they consider their 'home', and 7.5% as a place that makes them feel safe, 11.6% perceived it as no more suitable for living, and 6.8% as a place of painful memories. Some respondents reported missing/losing everything (41.5%/31.3%). Some responses specifically reported missing/losing family members (17%/17%), daily life details (13.6%/12.2%), and the sense of safety (9.5%/13.6%) (Figure 4).

Figure 4. Perceptions

Return (R)

14.3% reported returning to their original home. 31.3% expressed their wish to return. However, 16.3% believed it impossible and 6.8% totally rejected the idea. 14.9% do not have future plans for the house, do not want to think about it, or are uncertain, and 13.6 % consider sale or rental. 58.5% of the respondents are considering a new beginning at a new house, 27.9% plan to emigrate, 13.6% want to resettle elsewhere in Syria, and only 18.4% wish to return to the original house (Figure 5).
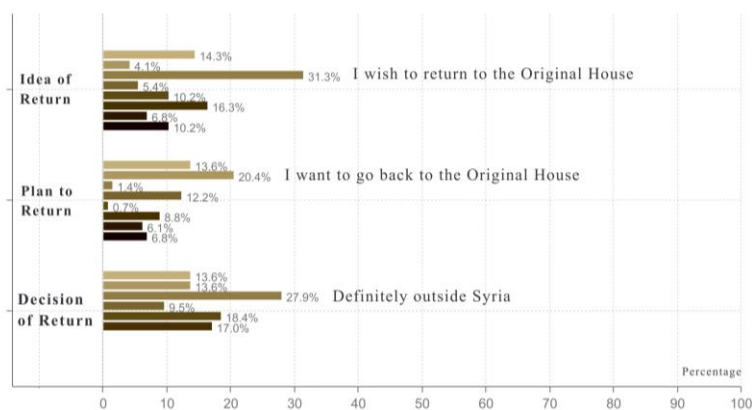
Figure 5. Return

DISCUSSION

Reviewing and assessing the collected data, some correlations appear between three main themes: 'attachment', 'memory', and the 'decision of return'.

The captured levels of attachments before and after displacement illustrated emotional and temporal changes. The collected data that tackled memory showed two types of connections related to the original house, a strong pre-war memory, and a traumatized post-war memory. Finally, data regarding the decision to return demonstrated feelings of uncertainty and contradictory intentions.

Disconnection: Denying the Incident

The data shows that, regardless of reason, the incident of displacement is ignored and blurred. Denying the incident is seen to be linked with two aspects: the notion of home for Syrians and memory suppression.

The traumatic events of danger, being forced out by others, and physical destruction, scored 51.7%, 17.7% and 11.6% respectively, are normalized and put aside when reflecting on the house before the displacement. The responses showed a sound reflection on the image of 'home' before the displacement. The high level of 'attachment' to the house of origin is demonstrated by most of the respondents' agreement with the importance of home in Syrian culture as an incubator for daily practices, family and social relationships.[39] Thus, forced displacement is a cruel disruption of continuity. It also suggests implied irreversible damage in the relationship with the original house after the displacement.

Further, after years of displacement, the original house was still described by more than two thirds of the respondents as a safe place (7.5%), a pleasant place (39.5%) or the only place considered home (29.3%). Despite this painful disconnection, confirmed by all respondents, the original house is still preserved as a beautiful memory and a source of safety in a way that dismisses the effect of war. This reading also renders the effects of war as invisible. This empowering of the pre-war image to the level of ignoring the war incidents, in addition to the normalization of traumatic events, can be seen as traumatic responses - i.e., suppressing and denying the traumatic memories as Chung et al (2018) argue.
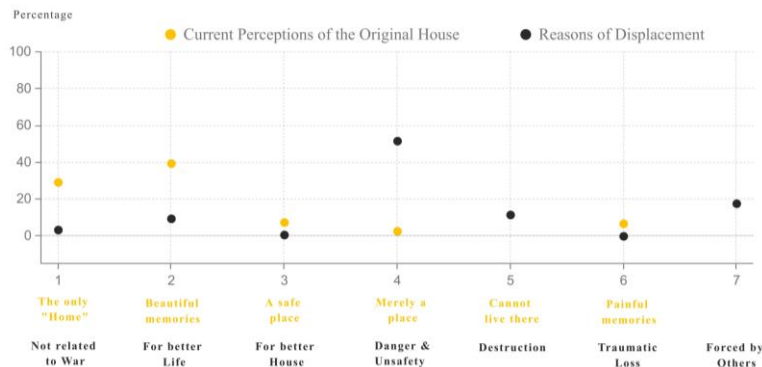
Figure 6. Disconnection: Denying the Incident

Home as a (Non)Architectural Space

The importance of the architectural aspect of home varied among the respondents; several components determined it.

Before displacement, the level of attachment to the original house was strong, with approximately 59.2 % scoring it a maximum 10. This strong relation is assigned by 41.5% of the responses to 'all' components of the house including the built environment. This raises questions of the importance of the built environment as a tangible perceived frame to 'all' the components that define 'home'. This agrees with the loss of the built environment, through the high rate of destruction 65.3%, to affect the notion of loss of home.

However, when conceptualizing the level of attachment in the context of partial and complete destruction (65.3%), the level of attachment drops after the departure, from 59.2 % to 41.5%, can be understood in the means of what was lost or changed in the event of destruction. Data before/after displacement confirmed that family relations (17%/17%), and their shared practices (13.6%/12.2%), are the main missed/lost aspects after displacement. This means that if all the family members were able to establish the lost rituals again somewhere else, then the architectural environment loses value. This can propose the home as a concept regardless of geography and location and weaken the possibility of returning to the original house considering the possibility to re-establish it again.
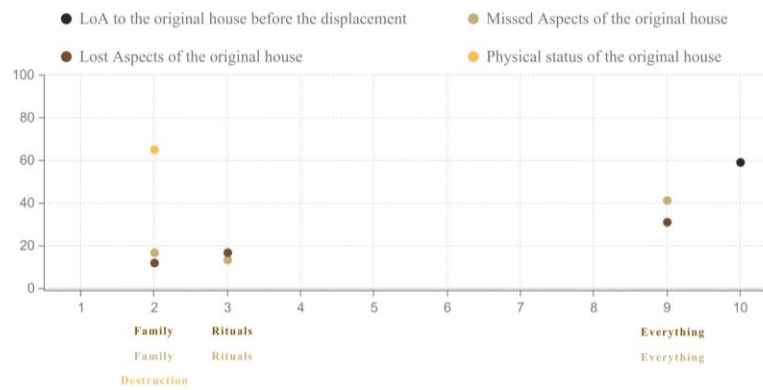
Figure 7. Attachment as an Architectural Element

Time and Ties: Pain, Release and 'Letting Go'

Time is a factor that reinforces the relationship with the original house and makes it less changeable. However, although the interpreted data shows strong ties with the original house, these ties are seen as a two-sided time-based tool in evaluating the relationship with the original house – a triggering tool vs. healing tool.

51.7% of respondents had lived at their original home for 15 years or more. Such a long period may suggest a definite return. Yet, this potential linkage is seen as a source of painful feelings. This can be read through the data of the 'missed' and 'lost' components of the home following displacement. When most of the inhabitants express missing/losing 'everything' after leaving their home (41.5%/31.3%), home then has become an emotional burden bringing continuous disturbing feelings when recalling it.

Conversely, time is found to be a healing factor when related to the period spent away from home, after displacement. The data shows that the longer the respondents were away from their home, the more their memory of it fades. Time is seen here to be a recovery aspect when it is sufficient to accommodate the loss realization and processing. However, interrogating this once again periodically, we notice that the level of attachment does not necessarily always drop as during the first five years of displacement, the attachment is amplified; 42 out of 54 (77.7%) maintained a strong or an increased attachment with their original house. After the first five years, the ties started more clearly weakening as a way of release.

Even if the relationship fluctuates up and down, if the disconnection is lasting, it weakens eventually. What can confirm this more, the majority (17 out of 20) of those who deemed their homes to become meaningless (85%), have been away from it between 5 to 10 years. Also, the dramatic drop in the relationship with the original house happens in the period of 5 to 10 years away. This fluctuation towards less attachment with the original house can contradict with the notion to return.
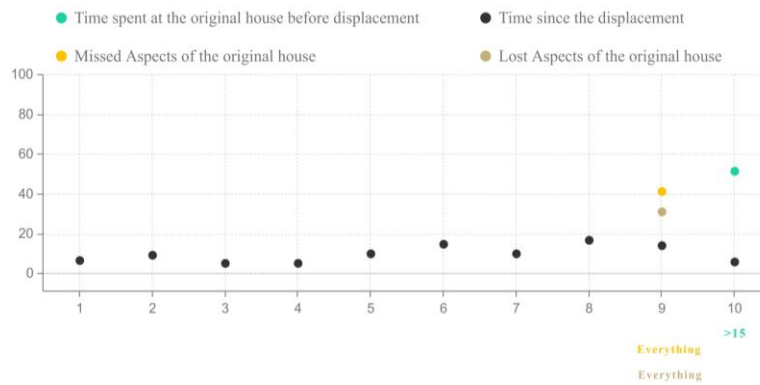
Figure 8. Time and Ties

A Virtual Intention to Return: Return is a Lie

Return as a concept is analyzed on a broad range of the questions asked. Emotion-based questions were used as an introduction. The respondents were asked decision-making questions as a check on their emotional disclosure. On this account, the intention to return is evaluated as a narrative of the overall previous interpretations.

Regarding attachment, of the 147 respondents, 41.5 % are still strongly attached to their home (10 out of 10 on the scale of attachment), while regarding memories, 76.3 % still visualize their home as full of beautiful memories. To understand any correlation between desire and action, these percentages are projected on the possibility to return. 14.3% of the respondents confirmed that they already returned to their original homes, and only 13.6% considered this as a satisfying ending. On the other hand, although 31.3% of the respondents 'wish' to return to the original home and 89.1% kept checking on their houses regularly, shockingly, (58.5 %) expressed their desire for a new beginning and a new home, (27.9%) want this new beginning to be outside Syria, and 12.2 % wished to sell their homes.

Therefore, the original house is still valuable to most of the respondents and many wish to return, their plans for new starts contradicts their intentions. This discrepancy between feelings, intentions, and actions comes from multiple reasons, e.g. trauma. An indicator of this is excessive checking on the state of the house, reported by 46.3%, also related to anxiety. Yet, it does not correlate with any desire to return. This led to the conclusion that return is in fact a false intention.
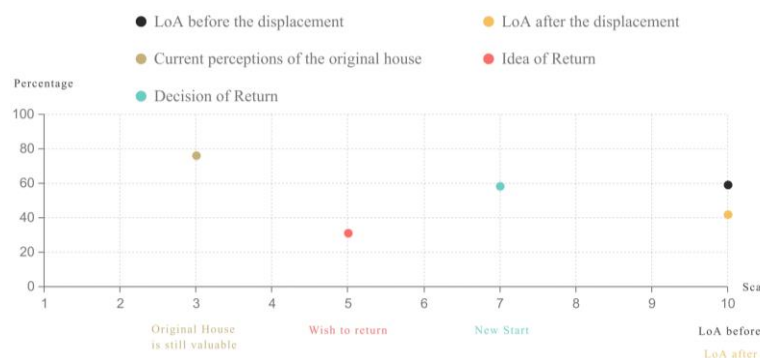
Figure 9. Return

Changing Cities

Drawing on the psychological implications of displacement, the voids left by the individuals collectively create a change on the city level due to the massive number of individual cases. Occupying the left-behind houses by others of the same city or adjacent city, or keeping them abandoned, is ultimately bringing a considerable change to the syntax of the three cities.

Although the phenomenon of change is usually complex, this discussion will only assess the possibilities of change in a linear route from the demographic, to the social, and then to the urban structure levels.

Based on demographic changes, the city might still be represented and function through its residents who relocated to other houses and whose houses are used by others. However, as the conflict is happening in a wider context, this suggests that each city should accommodate displaced people from adjacent cities: adding new demographic components. As a result, the social relationships within neighborhoods are subsequently influenced by new use of the urban spaces, and because of the new social behaviors, customs, and social needs. Social needs will push towards adapting or refusing the new contexts to create more open, closed, or mixed communities where social diversity may occur or restrict. The inclusion of new lifestyles would also (de)activate certain parts or services of the city due to the relocation. Consequently, on the urban structure level, the use and reuse of the built environment and public spaces would lead the city to function with different mechanisms. The high rate of displacement and destruction is an opportunity for potential redevelopment of an emergency or investment nature. This glimpses a possible change in the city with various scenarios that include dramatic mutations in the social and urban structure.

CONCLUSION

On the scale of original house, the overlapping of the faded attachment, traumatic memories, haunted homes by what is missed and lost, the use of the original house by others, all lead to major shifts in perceptions towards it. Consequently, this suggests a high possibility of an irreclaimable relationship between what was considered to be a 'home' and its owner. Hence, leaving the original house behind, nominates it, even if destroyed, to be the starting point of a wider change on the city scale demographically and socially.

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URBAN DESIGN AND PLANNING IN GLOBALIZED CITIES: THE BERLIN EXAMPLE

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INTRODUCTION

In this article, the similarities between the planning for American downtown areas and the city center of Berlin after the fall of the wall are examined as a means to reveal this new German downtown is based on a North American model despite its promotion as a European city.

After the fall of the wall in 1989, the revitalization of the city center of Berlin, that is located in the former eastern part of the city, became one of the most important directions of the urban planning in Berlin. The leading model of the new planning was called "Critical Reconstruction" of the "European City." That meant reconstruction and maintenance of the street pattern of the 19th century, of the block structure, of the height of the buildings, of stone facades, and of the open spaces. This should also enhance the street life on the public spaces.

The building type that was introduced to fill and to revitalize the city center, however, was called "mixed-use commercial building." These autonomous compounds are directed towards their interior rather than towards the street. Private indoor plazas want to substitute for outdoor public streets and spaces. Through the monostructure of functions the center is becoming a central business district. Therefore this new downtown does not represent a European city, rather it has many components of American central business districts.

REVITALIZATION IN AMERICAN CITY CENTERS

The historic American city center is based on a street concept. The buildings were oriented towards the main street, leading to multi-use neighbourhoods.

Modern city planning replaced these networks of multi-use neighbourhoods with a model that separated living, working, production, and leisure within the city. The city was fragmented through this reduction of specialized areas to technical functions. This development started between the world wars. After the second world war there was an even bigger flight from downtown with large numbers of apartments and single-family homes being built in the suburbs. Places of work partly persisted in the downtown areas, but offices were also built outside of downtown, following the idea of the decentralized concentration.

Shopping centers were constructed extensively in the countryside near the suburbs. They were autonomous compounds surrounded by parking lots, that had given up on the street concept. Leisure

activities were directed towards theme parks also located away from the city. These fragments were connected through highways.[1]

After this development downtown areas could only be used as tourists' attractions, if they had an attractive, historic core, which concentrated monostructurally and seasonally on visitors' activities. If they did not have an interesting heritage, they were ruined by neglect and often became ghettoized areas. This is the reason for the density of the city center to decrease while the density of the suburbs increases. In many cities in the USA, the suburbs have de-colonized the city. The suburbanites do not even come downtown to work, to go to the cinema or theatre, or to shop. They find all these amenities in their own or in a neighboring suburb. This flight from downtown has led to a deurbanization of downtown areas. Important attributes of city cores such as density, mixture of functions, and public transport were lost.[2]

Following the decline and destruction of many buildings, the downtown was no longer a place with central functions and central importance, no longer a place of identification with the city. The centers have been deurbanized, and the downtown areas themselves have become suburbs of their own suburbs.

Because of this development city officials and developers thought of two attempts of revitalization:

- Malls and mixed-use developments with own circulation systems in the sixties and seventies
- Revitalization of the historic Main Street in the eighties

Figure 1. First attempt of revitalization: example Eaton Center Toronto

In the sixties and seventies mega structures were developed to try to save the dying North American downtown areas. Mainly office towers, some shops, and few apartment buildings were built in city centers. These huge autonomous compounds also contain shops, hotels, conference rooms, and restaurants. They were frequently linked through skywalks. In cities with hot climate tunnels were constructed.

The mixture of types of buildings and of functions was given up in the center. Variety was only achieved by esthetic means through use of different materials, form or color of the buildings, rather than through different functions or variety in use.

Urban life was concentrated in certain locations, certain hours, and certain categories of 'acceptable' activities. After working hours and on weekends, the center is devitalized through the functional monostructure.

The main entrances are directly from the underground parking. Blank walls homogenize the streets. The compounds do not animate the surrounding streets and sidewalks. They are self-centered, and lack direct street relation. Their inner circulation systems inverse indoor and outdoor space. Public streets are emptied through parallel circulation systems as passages or skywalks. Moreover, streets become more and more dangerous, because they are not observed and controlled by passers-by anymore.

Originally passages were thoroughfares or short cuts between streets. However, they were developed as systems that attract their own population and divide it from the ordinary person on the street. The mixture of the urban population to be observed on public streets is hardly possible in malls and indoor plazas, and it is not wanted. The indoor worlds are realms with special regulations. Users have to be willing to follow the rules, e.g. to consume, or they are excluded. Groups of people are thereby segregated. "The public" is divided into several "publics" of populations of the same descent, education, income, and way of thinking.

Figure 2. Second attempt of revitalization: example Atlanta Underground Main Street

The indoor worlds such as shopping malls, arcades, atriums, underground cities, and skywalk systems want to substitute for the lost public space in streets or on plazas. These spaces are nearly always privately controlled, offering privatized versions of the once public street life. The potential for these

plazas to be truly public is highly dependent on the owner's attitude. Therefore, the result is privatization and control of open space and public life.

Therefore the construction of huge, autonomous mega structures did not lead to a livable city center. These compounds did not animate their surrounding open spaces. The cities' physical appearance became similar throughout the continent. The downtown areas therefore lack individual character.

In the eighties and nineties, the disadvantages of this development were taken into account by planners and politicians. They looked for a new strategy to revitalize the deserted and unsafe downtown areas, and they wanted to give their cities a new identity.

Preservation of the historical heritage of small-scale buildings directed towards the streets, emphasis on walking instead of driving, and a vital street life, became the new guidelines for the restoration and creation of the American downtown areas.[3]

Where historical complexes were already destroyed, new buildings with historical appearance was erected. Naturally grown cities were simulated.

Figure 3. "Main Street" Universal Studios Hollywood

These "historical downtowns" can be interpreted as theme parks of history. The functions in these new, pseudo-revitalized city centers and in the renovated areas were directed towards tourism and shopping, not towards living and working in an urban environment. Downtown areas were transformed into museums or into drive-in shows.[4]

The simulation of city life did not lead to a revitalization of the downtown areas based on real and diverse urban life, but it intensified the negative tendencies that were already introduced in the sixties: monostructure of functions, commercialization, segregation of the urban population, privatization and control of open space. Malls and revitalized Main Streets are similar concepts.

REVITALIZATION IN A EUROPEAN CITY CENTER: FRIEDRICHSTRASSE IN BERLIN

From an urban design point of view, the situation in the city center of Berlin after the fall of the wall in 1989 can be compared to the situation in some American city centers in the sixties. The reasons for this and the history are very different, obviously, but the situation of the central area in Berlin in the year 1989 resembled many American downtown areas. A disperse building structure with many voids was prevalent, there was no vital street life but many deserted open spaces.

After the fall of the wall, the revitalization of the city center, that is located in the former eastern part of the city, became one of the most important directions of the urban planning in Berlin, mainly for political reasons. The political situation was very different from the one in North America, evidently, but the dynamics and intentions for the revitalization were similar.

The leading model of the new planning in Berlin's center was called "Critical Reconstruction" of the "European City." That meant reconstruction and maintenance of the street pattern of the 19th century, of the block structure, of the height of the buildings, of stone facades, and of the open spaces.[5]

Besides Potsdamer Platz and Alexanderplatz the Friedrichstadt with the central Friedrichstrasse was one of the main revitalization areas.[6] It was based on a street concept. The building type that was introduced to fill the street was called "mixed-use commercial building." It consists of nine stories above ground and four below ground. The first and second floors as well as the first basement floor were filled with shops and restaurants. From the third to the seventh floor offices were planned. The eighth and the ninth story were reserved for apartments, and the remaining three underground floors contained parking.

Figure 4. Mixed-use building type Atriumhaus Friedrichstrasse

Housing had to be 20 per cent in this building type. This was achieved with small luxury apartments on top of the buildings as well as apartment hotels. In comparison to other city centers in Germany this figure is very low. Housing occupancy in the center normally is 50 to 80 per cent.

The most prestigious project in this areas is the Friedrichstadt Gallerias ("Friedrichstadt Passagen.") They form three blocks in the center of the Friedrichstrasse, near the legendary boulevard "Unter den Linden." (Block 207: architect Jean Nouvel, investor: Roland Ernst; block 206: architect Henry N. Cobb, investor: Tishman Speyer Properties; block 205: architect Oswald Mathias Ungers, investor: Arc Union/Bouyues).

1400 million DM was invested for a brut floor area of 99600 square meters, containing 35 per cent shops and restaurants, 59 per cent offices, 5 per cent apartments and 1 per cent cultural functions. The floor area ratio is 6.5. The three complexes are connected by an underground passage.

Figure 5. Model Friedrichstrasse

Comparing this German strategy of downtown revitalization with the one in North American city centers, several similarities are notable. What both have in common is the reevaluation of the city center. But this return to the center is mainly a geographical one. The structure and function of a vivid downtown, that implies mixed-use neighborhoods, was not rebuilt.[7]

Historically, the city of Berlin consisted of many similar mixed-use neighborhoods. The center is now directed towards service and business, whereas huge housing areas are built as suburbs outside of the city. Berlin is fragmented by this specialization.

The displacement of housing towards the suburbs leads to a deurbanization of the center by means of depopulation. The center is only frequented during rush hours and lunch breaks. At night and on weekends, it is becoming a deserted area. In Germany, there is a high demand for housing in the city center. Therefore this planning means mismanagement.

Figure 6. Schützenquartier Friedrichstadt

The regulation of street width (22 meters) and the height of new buildings (22 meters) was set up to create a homogeneous streetscape. However, homogeneity in a negative way results from monostructures. The new buildings in the Friedrichstrasse contain shops, banks, automobile showrooms, offices, and hotels. The center now is a central business district displaying multi-national chain stores and not an individual city center. Moreover this one-dimensional monostructure of functions can hardly adapt to changing needs of different uses.[8]

The banks and car showrooms of the Friedrichstraße do not encourage window shopping and strolling along the sidewalk. The shopping compounds and indoor galleries do not attract street life, in fact they lack a direct street relation. The autonomous complexes of the Friedrichstadt Gallerias are directed towards their interior rather than towards the street. Private indoor plazas like the "Place Voltaire" in block 206 want to substitute for outdoor public streets and plazas. These commercial buildings have direct access from the parking garage. This leads to a social devaluation of the street.

The tendency of gentrification is also obvious in the Friedrichstraße. Small shops and little trade and craft businesses, families and subcultures were expelled through demolition of old buildings or high rents. The new trade spaces and luxury apartments are directed towards high-class shops, high-profile businesses, and high-income professionals.[9]

The regulations, which have directed the design of Friedrichstraße, originate in the late 19th century city (street pattern, block structure, height of the buildings, stone facades). In some places this also led to a simulation of a naturally grown neighborhood in blocks that were divided into pieces simulating different architectural styles and ages, and to the construction of new buildings that pretend to be old.

The historical tradition of Friedrichstraße as a nightlife area, as it was in the twenties, with many bars, clubs, and theaters is an image which the new builders want to promote in their advertising, to give the street back its historical value as an address. But they did not supply the street with the functions that make a street vivid. [10]

CONCLUSION

There are many similarities between the planning for American downtown areas and Friedrichstraße in Berlin. This is remarkable, because the official direction of the German planning was a regional one: the "Critical Reconstruction" and the "European City." There were inhabitants, researchers, planners and architects who raised their voice against this development. This only had a minor effect. The public discussion and the economical promotion of Friedrichsraße were hypocritical. The new downtown does not represent a European city, rather it has many components of American central business districts and therefore is an example of globalization in architecure and urban design.

Figure 7. Similar revitalization concepts: Main Street and Friedrichstrasse

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OCCUPYING THE ASPHALT: THE REPURPOSING OF PARKING LOTS DURING THE COVID-19 PANDEMIC

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INTRODUCTION

In the spring of 2020, the COVID-19 pandemic abruptly and drastically changed many aspects of day-to-day life worldwide. As sanitizing, mask-wearing, and social distancing became critical in the midst of mandatory quarantines and closures, many establishments and organizations had to pivot to alternate methods of functioning. The necessity of open air and spacious areas in which to operate prompted business owners and community members to look to their available outdoor spaces in which they could resume typical programming in a new venue – parking lots. These car parks, often considered the scourge affiliated with suburban sprawl or an overreliance on the automobile, were given new life. Civilian-planned, ad hoc, temporary architectural projects and uses demonstrated diverse manners in which asphalt expanses could be occupied, by both people and cars, for previously unconsidered uses.

This essay will examine the repurposing of two distinctive parking lots during the COVID-19 pandemic. In the first case study, the parking lot at the Lucky Devil Lounge in Portland, Oregon was converted into a drive thru strip club, extending and reimagining the program of the permanent infrastructure. In the second example, the IKEA car park in Wetzlar, Germany was used as a worship space on Eid for Muslims in the community, which converted a private lot into an event space for a program distinct from the retailer's typical functions. These case studies demonstrate how when examined through the lenses of tactical urbanism, informal urbanism, and generous urbanism, car parks can be an untapped asset.

Parking lots are one of the most ubiquitous presences in urban, suburban, and rural landscapes. There are approximately 3.4 parking spaces for every car in the United States, meaning that at any given time less than one third of the parking in the US is occupied.[1] Even in dense, urban areas, a significant portion of land in communities is devoted to parking. In Los Angeles County, over 14% of the available land in the jurisdiction is used for parking.[2]

Given the excess of existent parking, many modern scholars are critical of the parking provided in urban areas today, citing numerous negative ramifications. These criticisms include that parking ignores cost effectiveness, adversely impacts public transit and encourages car use, reduces density of urban areas, creates challenges to affordable housing construction, indirectly harms the environment, and creates "inhospitable project design."[3,4] Parking generates physical voids that work against urbanism principles of density and walkability. And, more often than not, when the parking is not in

use, it sits vacant, devoid of activity or program. As Ronald Wilson and Donald Shoup noted in their book *Parking Reform Made Easy*, "If parking was a person we might say that s/he is very poor at multitasking." [5]

The ubiquitousness of underused parking has left a surplus of void space in all contexts. It is impractical to suggest that no additional parking lots or spaces be designed moving forward, given zoning laws and restrictions, and it is even more unlikely to suggest that some of the excess parking be promptly removed to course correct. A more attainable response might be to investigate what can be done with the parking lots that already exist, exactly as they are. Parking lots can have a greater architectural purpose, as was demonstrated by many examples of make-shift architecture and installations during the COVID-19 quarantine.

Figure 1. A dancer advertises the Food 2 Go-Go "Strip-Thru" at the entrance to the Lucky Devil Lounge. [6]

Case Study 1: Food 2 Go-Go at The Lucky Devil Lounge in Portland, Oregon

One example of a place with a transformed parking lot is the Lucky Devil Lounge in Portland, Oregon. The Lucky Devil strip club building is unimposing and small in scale. It wields an irregularly shaped plan, reminiscent of the building's time as a car service facility in the mid 20th century, now heavily adorned with promotions affiliated with the club. A large parking lot, with a footprint three or four times the size of the building, fills the site of the lounge.

The architecture that emerged in this parking lot during the spring of 2020 for the "Food 2 Go-Go" drive thru strip club used space planning that was logically derived from site constraints. The venue capitalized on its corner lot site in the programming, as its two entries were repurposed such that one entry became the beginning of the drive thru queue, and the other was designated as the exit. Customers entered the car park with their vehicles, placed food orders with an employee, and paid before winding through the queue defined by traffic cones. While the permanent building was utilized as a back of house space and kitchen, it was the most forgettable part of the experience.

Due to the nature of the queuing process, the sequence of arriving, participating in, and departing the exotic dance processional was very public. Cars wound down the block waiting to turn into the parking lot queue on busy days. Instead of letting signage alone direct people into the site, dancers waved people into the queue from the public walkways, extending a personal element of the go-go dancing experience to the street side.

Figure 2. A dancer performs inside the Food 2 Go-Go tent.[7]

Figure 3. Cars enter the tent on a central axis, bordered by dancers on platforms on either side of the vehicle queue.[8]

Approximately 20 feet wide by 60 feet long, the rental tent was made up of a simple metal frame and white canvas cover, typical of rental tents found at picnics or events. The environment created within the tent, however, was remarkably unique. Approaching on a centered axis, vehicles entered the tent to find themselves flanked by pole dancing platforms and up to 6 dancers (all wearing face masks), speakers, smoke machines, theatrical lights, and a DJ on either side of their cars. Above the line of cars, an aerialist performed from a hoop connected to a lighting rig that ran along the center spine of the tent.

The temporary architecture was occupied by three cars at any given time. Cars parked in the queue within the tent for a one- or two-song performance. Metal barriers aligned the sides of the drive thru and were equipped with tip buckets so that guests could tip dancers without encroaching on the recommended six-foot social distance. At the conclusion of the dances, patrons would receive their food at the end of the tent and proceed to exit. [9]

Figure 4. A dancer collects a tip from a patron.[10]

Tactical Urbanism and Informal Urbanism

In this case study, Food 2 Go-Go provides an example of how businesses or private landowners might utilize parking surfaces as exterior extensions or enhancements to their interior space. In the reclaiming of the residual void space that is the parking lot, the architecture extends life and program to the edges of the site rather than isolating program and surrounding it by vacancy.

In evaluating this study with regards to tactical urbanism, there exists contradiction. On the one hand, it embodied hacker-culture and used quickly planned, short-term, low-cost intervention to activate a block. In this way, it counters the typical slow, siloed conventional process of city building through its quick and flexible response. This philosophy of using lightweight, easy-to-assembly, and affordable interventions is prevalent in many case studies in Mike Lydon and Anthony Garcia's renowned examples of tactical urbanism, from placing inexpensive art installations and potted plants placed in Boston's Rose Kennedy Greenway to stationing cheap folding chairs in the closure of Times Square to automobiles.[11] However, in contrast to typical tactical urbanism projects, this pop up embraces the vehicle as a tool of convenience and personal space. While most projects related to tactical urbanism are designer-orchestrated and civilian-informed attempts to improve walkability and connectivity, this project, planned by the business owner and a local events team, transforms a void space for cars into a functional queue and responds to the conditions generated by the pandemic in a way that tactical urbanism doesn't specifically address.
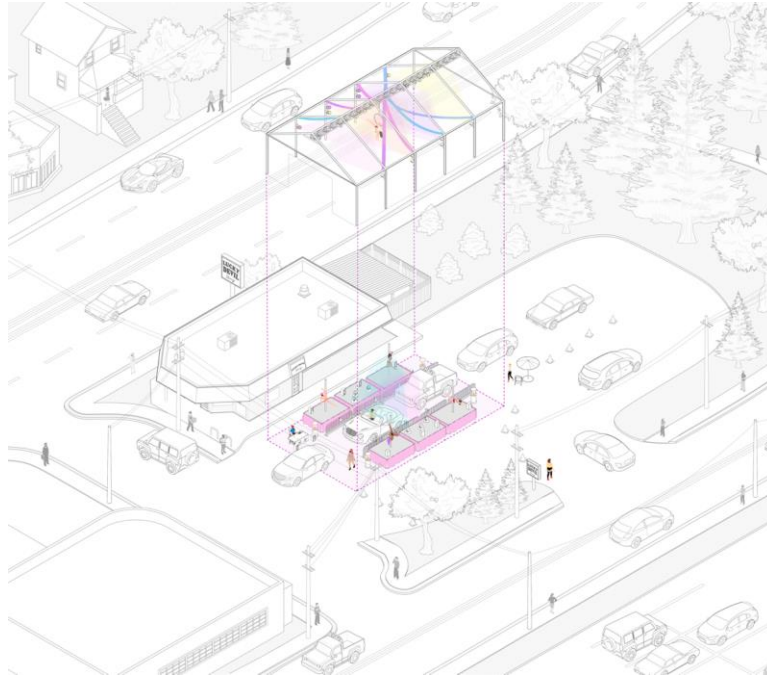
Figure 5. An exploded axonometric depicts the queuing sequence of the Food to Go-Go tent.

Another way to examine the case study at the Lucky Devil Lounge is to note its success as a work of informal urbanism. Michael Rios denotes informal urbanism as appropriation of public and private land for a range of casual activities that defy land use norms.[12] While in some instances these uses are not necessarily illegal, they often challenge conventions, and sometimes zoning requirements or laws. The Lucky Devil Lounge was able to justify its drive thru strip club by requiring the purchase of food at its elaborate tent experience. This allowed the business to cleverly circumnavigate COVID-19 restrictions and to become classified as an essential business permitted to offer take-out food services. The COVID-19 restrictions certainly were not meant to inspire an entirely new land use, but in this case, finding a legal loophole that would keep dancers employed and business running stimulated unique placemaking that integrated temporary elements.

The oddness of playing voyeur from a vehicle managed to create an occurrence unique from that of the typical operations of the Lucky Devil Lounge; it was not simply a matter of moving activities outdoors but rather the generation of an entirely new experience that made this project so successful. Perhaps the interventions it inspires are as simple as utilizing parking lots for occasional exterior extensions of interior programming, like outdoor dining or open-air merchandising. Or, conversely, maybe the car becomes a tool for defining personal, socially-distanced spaces, as is done with other pandemic-era examples such as drive thru COVID testing. Perhaps additional businesses can utilize drive up services in the manner that fast food joints or drive thru bank tellers already do.

Case Study 2: Eid Prayer Service at IKEA in Wetzlar, Germany

A different approach was taken with regards to the program and use of a big box parking lot – that of the local IKEA – in Wetzlar, Germany, during the spring of 2020. The Wetzlar IKEA site is expansive and typical of many big box retail prototypes. Large blue and yellow clad volumes make up the retail and warehouse spaces at the north end of the site. The scale of the building allows it to serve also as signage – it is readily visible from surrounding roads.

The large parking lot, organized in eight doubly-loaded rows of cars, occupies a footprint nearly as large as the warehouse and store itself. The rows run perpendicular to the store, each row with up to 80 vehicle spaces and punctuated by shopping cart returns, small shrubbery, signage, and trees organized along a uniform gridded system. The space of the lot is defined by primarily non-spatial elements, like painted parking space lines or changes in surface material.

Unlike in the previous case study, the procession sequence of vehicles is inconsequential. The parking lot is used for a program completely separate from the retail program, in a manner that caters to people rather than to vehicles. The oversized parking lot, which is designed for the scale of the car, is reclaimed for the human scale.

Figure 6. A Facebook event image from Islamische Gemeinscahft Milli Gorus explaining the COVID-19 precautions for Eid prayers at IKEA.[13]

The local mosque, Islamische Gemeinschaft Milli Gorus (Islamic Community Milli Gorus), in Wetzlar, Germany used the private parking lot for Eid al-Fitr prayers on May 24th, 2020. Due to the number of worshippers and the social distancing necessary, the scale of the parking lot felt almost appropriate; the community ultimately occupied about 40 to 50 percent of the parking lot at its peak attendance. It is estimated that over 800 members of the Islamic faith came to pray together.[14] At the head of the crowd a leader guided the group in prayer. Behind him, evenly spaced rows of worshippers organically but neatly filled four rows of the parking lot and established a new architectural grid on the site. Worshippers oriented themselves toward Mecca, which was southeast relative to the location, and superimposed a new directionality on the parking lot as they defined the space with their bodies and prayer rugs. The banal big box store lot became the background to a sacred practice. In taking over this open expanse, local Muslims also gave others a public view of private religious practices many would otherwise never witness. At the conclusion of prayers, participants collected their belongings and left the site as vast and empty as it was only hours before.

Figure 7. An aerial photograph of the Eid prayer service outside IKEA in Wetzlar.[15]

Figure 8. Worshippers socially distanced in the IKEA Wetzlar Parking Lot. [16].

Generous Urbanism

From the Eid prayers that occurred in Wetzlar in this second case study, an entirely different type of speculative programming emerges. The example was a one-time event for a specific religious holiday. However, it brings into question what might be done with big box parking lots when they are not filled to peak capacity. A typical supercenter parking lot spans 17 acres and can fit within it a dozen football fields, providing ample room for a variety of activities.[17] Since aside from select sales or during holiday times many big box parking lots are largely vacant, could there not be programming that allows various groups to take advantage of the open expanses that are underutilized? Following the logic of the case study, the use of such car parks does not need to correspond to the business that has ownership but could serve as a shared public resource that allows for gathering or occupancy on a large scale when it is difficult to do elsewhere.
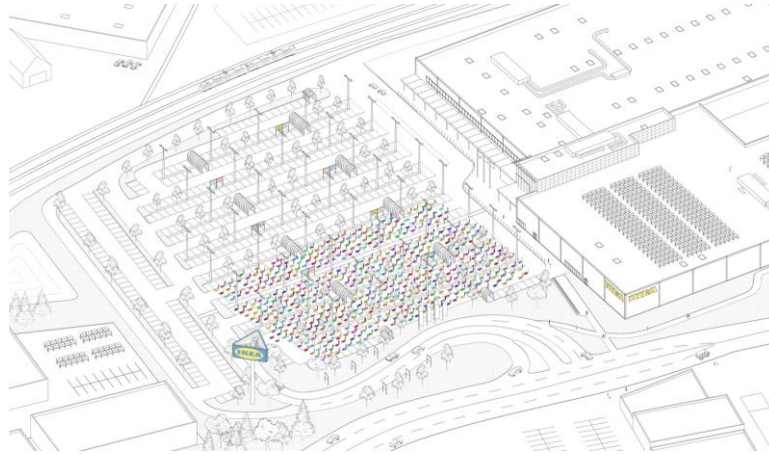
Figure 9. An axonometric drawing depicting the Eid prayer service at the Wetzlar IKEA.

The hypothetical use of these parking lots by communities at large falls under the umbrella of generous urbanism and is not without precedent. The San Francisco-based art and design collective Rebar did an urban design experiment that tested the private sector's graciousness as it pertains to what they deemed "generous urbanism" – the creation of public situations between strangers that produce new cultural value without commercial transaction. Rebar's project *Commonspace* crafted eight experimental interventions within San Francisco's privately owned public open spaces. Occupying rooftops, atriums, breezeways, and plazas, the group staged installations and events that ranged from kite flying to public workshops to activate otherwise unutilized spaces and recast them as public assets, and to provide programming that enhanced public life.[18] The firm found that framing the activities as a free "gift" to the private owners of these spaces was so unexpected that it generally overcame institutional resistance by management.

Consider how the parking lot of a local Walmart may better be utilized by the community. In the present time, many Walmart stores already allow people to sleep in personal or recreational vehicles on their grounds. This is so prevalent that there is a smartphone application, AllStays Camp & RV – Tents to RV Parks, that maps Walmart stores across the US with the intent of directing RV owners to these sites as safe long-term parking locations.[19] Additionally, an independent site online, aptly called 'Walmart Locator' (https://www.walmartlocator.com), publishes a book that lists safe-to-park Walmart locations that allow for long term RV and car parking. If people are already occupying the unused corners of these technically private lots for personal use unrelated to retail or consumerism, there is precedent for allowing the public to take some ownership of big box lots for alternate community programming.

Outdoor roller rinks, seasonal community gardens, theatre sets, voting booths, or running tracks could all be easily set up and dismantled in typically vacant areas, providing a new way for various communities of people to take back private spaces. The parking lot takes on new life as a space for pop up programs tailored to people, not vehicles, taking advantage of the large scale that normally dwarfs the individual. In this way, the parking lots that are a signature element of auto-driven, consumer culture are elevated to embody non-consumeristic ideals through varied programming unaffiliated with shopping. Perhaps this example is also a impetus for planning and zoning laws that decrease the amount of parking required on large retail sites, in favor of more public space punctuating stretches of strip malls and big boxes.

CONCLUSION

Although these case studies demonstrate vastly different programs, the strength of both of these architectural adaptations is that they utilized the aspect of the site that would be most apt to be seen as ordinary or excessive by many a trained designer. These projects do not advocate for redesigning parking lots to be more attractive or more versatile places but instead utilize them exactly as they are – flat, tarred, expansive surfaces. Both solutions take advantage of opportunities in the void space. As Eran Ben-Joseph notes in his book *Rethinking A Lot: The Design and Culture of Parking*, "Parking lots may not be thought of as public open spaces like parks and plazas, but with their ability to accommodate the public and allow for both formal and informal uses, they should be." [20]

A commonality between these studies is also the civilian-led nature of the projects. Both of these interventions were planned and executed not by trained architects or urban planners but instead were generated by community members who used what was available. Mosque leaders in Germany and a strip club owner in Oregon each saw potential and promise in a vacant paved area in their respective localities. This relates to Robert Venturi and Denise Scott Brown's criticism of modern architecture. As they stated in *Learning from Las Vegas*, "Modern architecture has been anything but permissive: Architects have preferred to change the existing environment rather than enhance what is there." [21] And what is there to be used is parking lots, and lots of them.

The COVID-19 pandemic has influenced daily life, including the way in which people occupy spaces. Parking lots have become a necessary entity, and they have been used in previously unconsidered ways. The case studies of the Lucky Devil Strip Club in Portland, Oregon, and the IKEA in Wetzlar, Germany during the pandemic restrictions demonstrate the tremendous range of occupancies that car parks can accommodate readily even when the pandemic is over. Considering tactical urbanism, informal urbanism, and generous urbanism interventions, parking lots can be a benefit spatially with programming beyond car storage. In its ubiquitousness, its emptiness, its unpretentiousness, the asphalt – with a little creativity and light equipment – has tremendous potential to become more.

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DIGITAL INNOVATIONS FOR ARCHITECTURAL TRADITIONAL HERITAGE CONSERVATION

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INTRODUCTION

Internationally, debates surrounding the value of cultural heritage in an urban context have recently intensified making urban heritage conservation a crucial area to better understand. The concept of heritage has broadened into notions of local identity, belonging, nationalism, liveability of urban areas and social cohesion.[12] The deliberate destruction of heritage has become a weapon of war, part of a broader strategy of cultural cleansing that includes murder and persecution of people in the short term, and the annihilation of identities and destruction of social fabric in the longer term. This is why the consideration of the protection of cultural heritage is far beyond a cultural issue and transformed into issues of humanity and security. A further emphasis on the broader role of cultural heritage in society is demonstrated through an explicit target for heritage, Target 11.4, in the Sustainable Development Goals which commits countries to make efforts to protect and safeguard the world's cultural and natural heritage. Beyond this explicit target, heritage is referred to throughout the SDGs[3] as well as the UN New Urban Agenda 2030 in Point 124 and 125 which emphasises the safeguarding of a diverse range of tangible and intangible cultural heritage and landscapes, protecting them from potential disruptive impacts of urban development.[4] This UN 2030 Agenda further promotes technological innovation applied to infrastructures, encouraging the field of research into the interplay of heritage conservation and digital technologies. The protection of heritage is unique in that it presupposes maintenance and conservation interventions that involves multidisciplinary teams of experts such as architects, engineers, archaeologists and others, capable of producing parallel and heterogeneous data streams that often cannot be directly integrated with each other.[5] In order to respond to the need to manage such diverse sources of information, research is moving towards the preparation of interdisciplinary databases that allow structuring the documentation generated throughout the useful life of the architectural artefact, so as to adequately prepare future interventions. Digital technologies play an increasingly pivotal role in acting as an instrument to achieve holistic documentation of heritage assets.

In recent years there has been an increasing diffusion of the Building Information Modelling (BIM) methodology, especially due to the introduction of regulations and standards that impose or at least regulate its use. There are many studies and researches on the application of BIM processes to the built environment that highlight the criticalities in combining the variability of historical architecture with the necessary discretization and standardisation that are involved in parametric processes. Also, the international scientific community has been focusing for some years on Heritage Building Information Modelling (HBIM): the application of BIM systems to historic buildings investigating and testing approaches suitable for the digitisation of the existing heritage.[6] The research and studies conducted in this field focus on reading the building, structuring the information associated with it and how to manage the information and geometric gaps in this type of architecture. The outcomes of previous research, through the study of digital methodologies, have highlighted various possible applications of the BIM process to the built environment during the historic architecture conservation project, such as: the potential of BIM for documentation,[7][8] pathology analysis, scenario simulation, digital support of conservation plans,[9] digital representation through augmented reality and virtual reality[10] and interoperability with GIS and CityGML[11][12]

This paper discusses the benefit of applying digital technologies, and in particular Heritage Building Information Modelling, in supporting heritage conservation. It explores this through the discussion of two chosen case studies: (1) Traditional Italian Villa, Villa Rufolo and (2) Traditional Jordanian architecture, Qaqeesh house. Documentation and promotion of traditional homes are conducted through developing a set of virtual models (3D models and BIM objects) suitable to support the construction sector and traditional architecture and heritage. This is achieved by: developing a new set of BIM objects related to the traditional architecture heritage, suitable to be used by engineers and architects in the development of interventions on the built environment. The results from this paper set a precedent for further documentation and heritage conservation of traditional architecture through the application of digital technologies.

THE ROLE OF DIGITAL TECHNOLOGIES IN DOCUMENTATION AND RAISING AWARENESS OF HERITAGE

Digital technologies offer a unique opportunity for uplifting the power of the rationale beyond the conventional conservation handbooks.[13] These handbooks were often prepared to support cities based on the three specific goals: (1) encourage and steer the conservation of historic urban fabric, through appreciation of the materiality of historic buildings; (2) offer technical insights to conservations and architects; (3) engage with the communities on the conservation of traditional heritage.[14] The use of digital technologies to replace this conventional method offers the possibility to integrate multiple layers of information and to link across industry, community and higher education with a flexibility and timeliness that traditional techniques such as paper-based drawings could not demonstrate.[15] In particular, HBIM offers the opportunity to link a variety of information concerning heritage assets and convey them across multi-disciplinary professionals through the form of BIM models, embedding key features of historic buildings whilst enabling designers to gather and reassemble information easily. This facilitates the conservation of historic centres, both through an enhanced body of knowledge made available to the local professionals' community, and through stakeholder and community engagement. Nowadays, digital innovations provide greater agility in the process of digitising cultural heritage and make it possible to generate 3D restitutions that are more accurate, faster, interoperable and combinable between different methods, thus generating a different level of knowledge of the heritage object.

The role of HBIM focuses on developing a methodology expressed in a model, which relates to the collection and collation of historical data to elements of a study structure categorised as heritage. While BIM aims to provide predictive models of how a building should operate, HBIM has the potential to indicate to users how a building has performed and is even more valuable when it comes to restoration projects.[16] Similarly, it allows the structured integration of geometric and non-geometric information, including tangible and intangible values, as well as external documentation into a single model, whether it is pathology detection, analysis of material deterioration or historical development of the building.[17] HBIM technology should be considered as a link between innovation and history through four key roles, the first is the documentation of all the previous and future interventions of a heritage asset, secondly, to provide an understanding of the historical evolution of construction over time, allowing the geometric reconstruction of parts that do not exist today. The third role is to carry out degradation analysis for future work and lastly, HBIM also has great potential for the promotion of cultural heritage: from the generation of virtual tours to future applications of virtual and augmented reality. However current challenges to the successful application of HBIM still exist such as data storage and data sharing abilities.[18] Further difficulties exist in the conceptualisation of heritage through digital technologies in capturing the essence of heritage.

CASE STUDY: VILLA RUFOLO, RAVELLO, ITALY

Villa Rufolo, a landmark of the Amalfi Coast, was built between the twelfth and thirteenth centuries as a family residence and a material representation of social status (Figure 1). It has almost unique architectural features, which blend Arab-Byzantine typologies and ornaments with elements of local culture. In the period of maximum splendour, it is said that the Villa had "more rooms than days of the year", although today it is possible to appreciate only some parts of the original construction, such as the Moorish cloister, the entrance tower, and the main tower whose 30 m in height represented the family's prestige. The primary purpose of the digitisation work conducted on the Villa is the definition of a protocol for the accuracy check in a BIM process, from digital survey to three-dimensional reconstruction. The result of the experimented procedure is a local parametric model that transforms the repository of all the systematized data collected for Villa Rufolo (Figure 2). This defines a BIM environment able to offer a valid support to decision-making processes for future works not only in restoration, but also in the transmission of culture to the next generations thanks to the implementation of digital tools.

Figure 1. Villa Rufolo, view of the southern gardens.

Process of HBIM Scan-to-BIM workflow

In accordance with the guidelines from the U.S. Institute of Building Documentation a four-step "Scan-to-BIM" workflow is applied: data acquisition by digital surveying techniques (SLAM and laser scanning), integration of point clouds, post-processing in the Autodesk ReCap environment and, finally, the import in Autodesk Revit. The latter is used both for geometric modelling and for the implementation of the existing information on each element, as well as the historical information of the complex. The Level of Accuracy (LOA) framework used was LOA20, with deviations in the range 15 mm - 5 cm with 95% confidence. A series of deviation tests is then performed to verify that these threshold values are actually met. Clearly, in the case of historical buildings, the control of the model's deviations from the metric base is very complex due to their intrinsic characteristics and the processes of deformation and degradation suffered. To reduce these deviations to acceptable values masses are modelled on site, trying to contain this type of modelling so as not to give up geometrical parameterization.[19]

The following classification criterion is the identification of four semantic levels: the complete building, the historical stratification, the architectural/technological elements and the architectural sub-components. Each of these semantic entities has a level of graphic and informative representation. As far as the model Level of Development is concerned a LOD F level (UNI 11337) is set. For the historical stratification, the digital reconstruction is organized in several phases, considering the transformations undergone over time, from its construction to nowadays. To organize the architectural elements and sub-elements, the method described in the UNI 10838:1999 and UNI 8290:1981 standards is used, where the building is divided into classes of technological elements (foundations, vertical structures, horizontal structures, etc.) and sub-classes (plinth, column, masonry, etc.) The great flexibility and the possibility to query a model that contains all the information available about a

particular asset are the strengths of this application, also to understand the overlapping different layers of knowledge, otherwise not capturable.
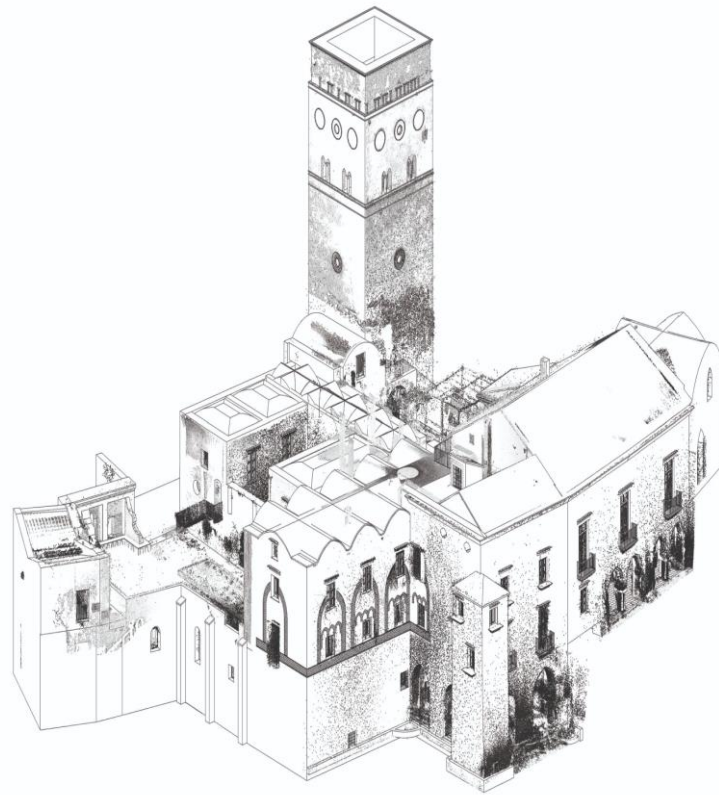
Figure 2. Overall axonometric view of the BIM model.

CASE STUDY: QAQISH HOUSE, AS-SALT, JORDAN

Historically, As-Salt was one of the only areas to maintain its city status after the Ottoman conquest in the 16th Century benefitting from its position on the Syrian pilgrimage route to Mecca and on the road leading to the cities of Palestine. As the city grew in population and diversity in the 19th Century, As-Salt's unique cultural tangible and intangible heritage began to form (Figure 3). Oral traditions, performing arts, social practices, rituals, festive events, and traditional knowledge and practices that exist today were introduced during these crucial periods. Stone masons, architects, groups of builders, stonecutters and craftsmen migrated from nearby regions to help build the city. As a result, large-scale building and the development of monumental heritage was witnessed. These buildings incorporated European references and Middle-Eastern traditions that created As-Salt's distinct historic architecture. The evolution of house development is of significant interest to understanding the heritage of As-Salt. Homes in As-Salt were initially built in complete harmony with the landscape of the city. House typologies in As-Salt were designed according to social status and wealth. The simpler layouts were referred to as the peasant's house and houses with larger rooms and finer architectural details were the houses of the rich.

Figure 3. City of As-Salt and Qaqish House

Houses were constructed in orderly ranks on the hills of the city. The building materials used in the city's historic architecture included yellow stone transported from neighbouring quarries, wood, mud mixed with straw, lime, brick and tiles. As a result of the increasing attention into building development, the trade industry also began to flourish. Likewise, customs and living traditions were formed as the community grew such as religious festivals and seasons. The layered urban fabric of the city with its history and vibrant living heritage ideally positions As-Salt for sustainable heritage preservation management. There is therefore huge potential to utilise the extensive benefits of digital technologies in supporting the effective and sustainable planning of tangible and intangible cultural heritage in Jordan. The selected traditional house for the HBIM Scan-to-BIM process is the Qaqish house (Figure 3).
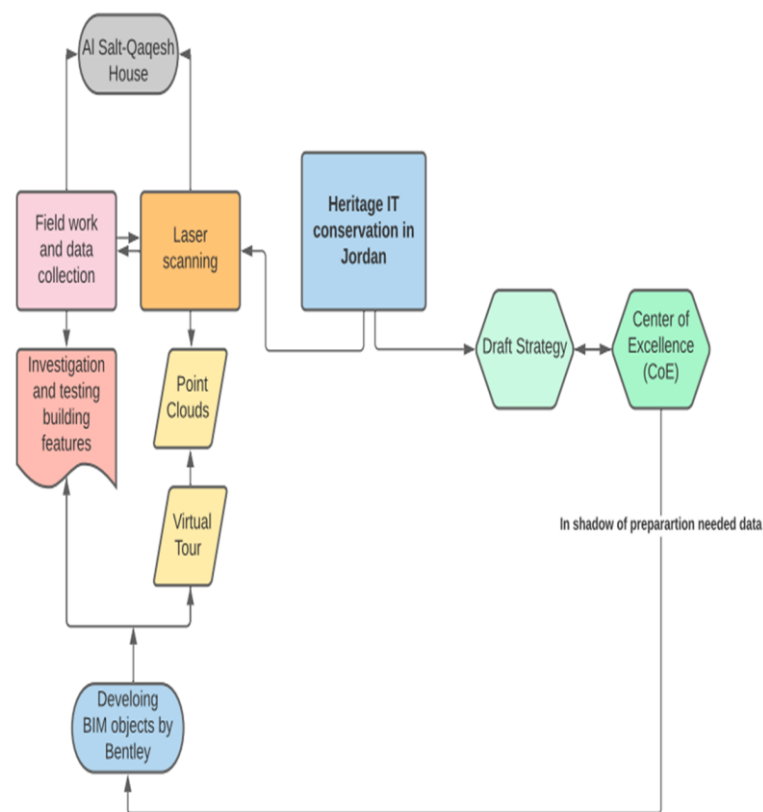
Figure 4. Integration from multiple data sources.

Process of HBIM Scan-to-BIM workflow

The methodology used an integration of data from different sources: Direct observation, fieldwork and labs, Archival data, Laser scanning (Figure 4). The main goal is to develop a new set of BIM objects related to the traditional architecture heritage in Jordan, suitable to be used by engineers and architects in the development of interventions on the built environment. Direct observation of As-Salt city was undertaken as a visual tool to support the understanding of heritage conservation and traditional architectural heritage. To enable a better understanding of the application of digital technologies, and in particular HBIM to traditional architecture in As-Salt, the project team conducted the first stages of the scan-to-BIM process on the Qaqish house used as a point of reference and illustration of the development of historic BIM objects. In the present research, starting from proposal of modelling concrete objects, the geometric configuration has been analyzed and procedures related to parametric modeling in BIM environment (Figure 5) have been experimented with the aim of outlining an iterable operational process for the construction of such geometries in CLOUD-to-HBIM pipeline.
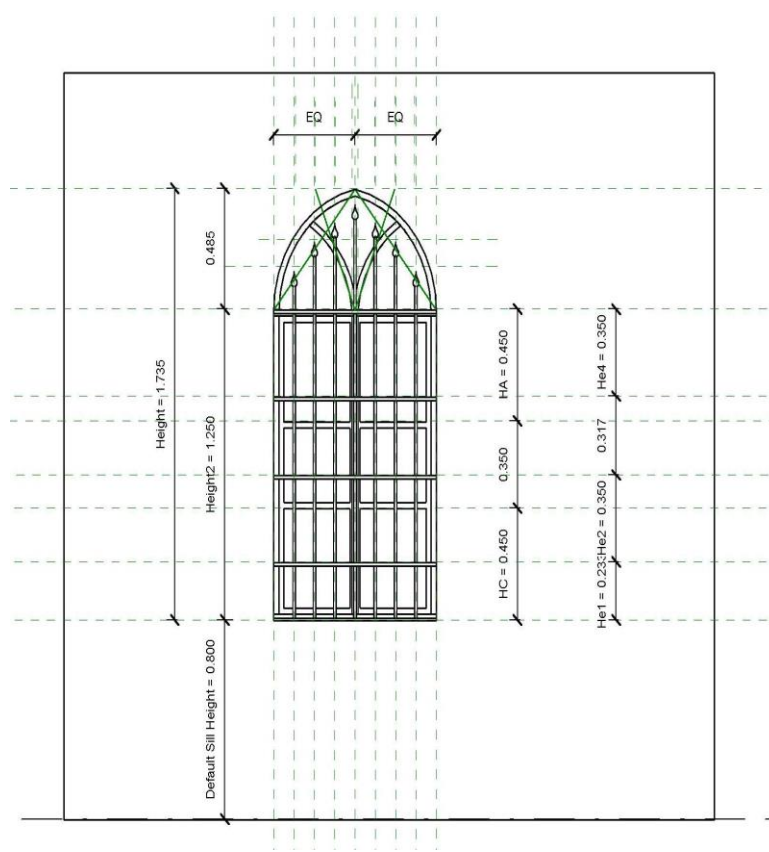
Figure 5. Front view of the BIM family with the respective parameters applied.

Digital survey and data processing

The so-called workflow starts with the digital survey. The first step is defining the positions of TLS stations, so that the whole object coverage at requested spatial resolution could be guaranteed. The instrumentation used was a laser scanner from Leica GeoSystems with a total of 47 internal and external scans. The data processing was done with Cyclon utilizing the Iterative Closest Point algorithm: given the set of scans, the ICP algorithm searches for all the possible connections between the pairs of point clouds with overlap. For each connection, a pairwise ICP is performed and the best matching point pairs between the two scans are saved. A final non-linear minimization is run only among these matching point pairs of all the connections. The global registration error of these point pairs is minimized, having as unknown variables the scan poses.[20]

Preliminary modelling factors

Subsequently, the constitutive data belonging to each object have been identified, considering the procedures that can be used for modeling and, at the same time, the tools offered by the BIM platform used for the analysis of the case study (Autodesk Revit). It has been chosen to contemplate solutions useful to reduce modeling times, avoiding, however, an excessive simplification of the forms and adhering as much as possible to the metric data. In other words, we followed a semi-automatic result, replicable and adaptable, useful to document the tangible and non-tangible information acquired, without ignoring the relative geometric and typological interpretations.

BIM objects modelling

Generally, historic buildings are dominated by complex geometries that are difficult to standardize using BIM technology. In the case of Qaqish House, the project team were confronted with an architecture that incorporates European references and Middle Eastern traditions. In order to proceed with the development of the BIM objects, it was necessary to create Revit loadable families in the family editor. The particularity of this type is the fact that the families are created in external files (.rfa) allowing them to be imported into any Revit project thanks to the addition of information parameters. In other words, these "external" families can be used both for the Qaqish-House and for any BIM model with similar morphological characteristics. The first step was to study and understand the geometry to be modelled: this was possible thanks to the point cloud (.rcp) and the virtual tour of the house generated by the Leica Trueview software. With these two tools as a basis, it was possible to take all the existing measurements and observe the geometrical details.

Subsequently, the modelling was started in the family editor of the Revit platform. In this case, the typology of an external window was identified: it was decomposed into parts (sill, frame, internal frame, arch, horizontal and vertical bars) modelling the single profiles and recomposing the whole within the corresponding family, using the constraints of the components (Figure 6). This solution proved to be particularly appropriate as, on the one hand, it made it possible to represent the individual details into which each part is articulated and, on the other, it made it possible to recompose the whole into an element with meaning in the overall syntax. Finally, the family was inserted into a BIM model simulation to make a confrontation with the point cloud: It was verified that with the measurements taken from the virtual tour, there was a maximum offset of +- 5 mm with respect to the .rcp file (Figure 6) in the case of the horizontal bars. Thanks to the previous parameterisation of the geometry, it was possible to adjust this minimum metric variable by changing only the value of the corresponding parameters.

Figure 6. Axonometric overview of the BIM object with the associated point cloud

CONCLUSION

The two case studies demonstrate a process that can be used for the documentation of traditional heritage for future generations. The BIM models that are developed through this process can be used for the management of the plans of heritage cities, enhancing tourist attractiveness of places and developing a library of HBIM objects suitable to support heritage conservation planning and restoration interventions. Equally interesting is the search for a standard in information management. The single experiences analyse specific aspects and often lack an effort of data normalization that can simplify the interchange and comparison. While this is a problem, especially for the practical application of the HBIM methodology, it also offers the opportunity to trace the guidelines of a best practice that is still missing. In fact, HBIM systems are still not very versatile in the modelling of the shape and material continuity of the complex morphology of historical architecture. In this way, there is still an open field of research, the one related to the development of methodologies to digitally reproduce these systems by modeling objects that are on the one hand generalizable by type, on the other hand adherent to the specific case of study. The case studies presented in this paper intended to answer some critical issues such as the analysis of accuracy and the cataloguing of information content.

Despite these key advantages, there remains a conceptual ambiguity of digital technologies as a vehicle for the dematerialisation of cultural heritage. In this case, dematerialisation is a delicate task

because the unique characteristic of tangible heritage is that it cannot be reproduced, once lost it is lost. This is why the survey procedures and the precision with which they are carried out are extremely important, but more important, in terms of BIM technology, is how this information is reproduced in modelling software and what information content can be added. The preservation and valorisation of cultural heritage represents a problem already present before the pandemic period and amplified during the COVID-19 pandemic crisis. As a result, the dematerialisation of architecture is the means to link society and architecture digitally. This methodology allows the fruition of the asset even at a distance with the possibility of creating virtual tours to make the spaces accessible for everyone. Philosophically, these virtual tours should never be considered as an alternative way to experience the site, but simply as promotional tools with the aim to strengthen and widen accessibility of Cultural Heritage exploring the role of digital tools during and mainly after the COVID-19 crisis finding an alternative way to enjoy it even in times of impossibility. It is absolutely crucial to highlight the importance of high-quality surveys, otherwise an incorrect "digital twin" is created, generating misinformation and uncertainty in the database created for management and dissemination of Cultural Heritage.

Based on these assumptions, it is foreseen as a future perspective that the future development of BIM objects will allow a different level of knowledge of the architectural object, overlapping different layers of knowledge that have not been perceived before. This will be possible, as mentioned above, by counting on high quality digital surveying and highly accurate BIM modelling to carry out an optimal Scan to BIM process. Furthermore, the creation of a virtual tour will break down architectural barriers (physical and not) allowing the accessibility of all users as a consequence of the dematerialisation of the heritage object, which however, will never replace the physical experience but will allow an optimal diffusion of the cultural heritage.

NOTE

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RESILIENT SPACES FOR REUSE AND RECYCLING. THE CASE OF MINALESH TERA: A THEATRE OF PRODUCTION

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INTRODUCTION

Located in Addis Ababa, Ethiopia, *Minalesh Tera* is a 5ha piece of a dense neighborhood in *Mercato*[1]. It caters to diverse trades: blacksmiths, carpenters, leatherworkers, and plastic specialists to name a few. Artisans use the arterial streets and rent out workshops to transform scrap into a usable commodity. A minute screw from automotive parts of a car is dismantled and christened to find its new purpose. Since this operation is performed within the public domain, one can witness the process of dismembering a large entity into smaller usable parts. The streets operate as vibrant spaces of production. The cycle of collecting scrap and the infrastructure of reusing/ recycling depends on collecting items, sometimes thrown as garbage or scarp, and transporting to Minalesh Tera which usually happens on foot. Items are then sorted and distributed to different sectors within Minalesh Tera for reappropriation.

Minalesh Tera is impactful both at the city and the national scale. At the city level, it promotes recycling while getting the city rid of potential 'waste'. This is beneficial in a country such as Ethiopia, with minimal or non-existent recycling industries. Nearly all recycling is labor-intensive hence contributing to job creation and the support of livelihoods. At the national level, the area serves as an urban incubator, a sphere where ex-ruralites exercise urbanity. According to statistical projections, 80% of the Ethiopian population is rural.[2] Addis Ababa is a primate city and a young labor force streams to the capital in search of jobs and better livelihoods. Marcato at large and Minalesh-Tera introduce urbanity into the hearts of the youth as probably the very first urban encounter.

UN-Habitat defines Urban Resilience as follows:

The measurable ability of any urban system, with its inhabitants, to maintain continuity through all shocks and stresses, while positively adapting and transforming toward sustainability. Resilience is a catalyst for sustainable urban development. It ensures development gains are not lost when cities face shocks and urban residents can flourish in a safe environment while addressing major challenges such as climate change and rapid urbanisation.[3]

This paper explores the spatial characteristics enabling resilience in Minalesh Tera. Using visual ethnographic methods, it attempts to relate spatial practices with the physical characteristics of space. Ultimately, the paper argues that the underlying qualities of resilience lie in the very nature of spatial

conditions. Therefore, any form of future development should consider the nuances of these conditions.

Context

Although the physical fabric of Minalesh Tera is dilapidated, the intricate relationship between the artisans, the shop owners, and the community at large harbor an urban environment that is economically inclusive in addition to cleansing the city of its waste. This unconventional waste recycling and reusing system assist the formal solid waste management that relies on landfill sites.[4] A summary of Addis Ababa and the wider area of Mercato is imperative to contextually situate the study and its relevance.

Addis Ababa

Addis Ababa, the capital city of Ethiopia, started out as a temporary military encampment in 1886. It is widely believed to be a city of approximately 5 to 6 million[5] inhabitants while official census results contradict this belief. Addis Ababa is characterized by a housing shortage, flooding, inadequacy of basic services, and urban poverty. Providing jobs to the 'young population' is also mentioned as a critical challenge the city faces.[6] According to the latest available reporting by the UN-Habitat, it has registered an annual growth rate of 3.89% in 2017.[7] Addis Ababa has a dense inner city where most of the above-mentioned challenges manifest. These old neighborhoods sometimes referred to as *sefers,* have a well-developed social fabric promoting ties and safety net networks. The government's vision to be a middle-income country by 2025 has instigated grand urban renewal and redevelopment projects. These projects, while attempting to solve issues of housing and urban services, have dislodged the livelihood of urban communities.[8] Mercato is one of these older sefers of Addis Ababa that is earmarked for redevelopment.

Mercato

Ethiopia was briefly occupied by Italy from 1935-1941. Italy had the vision of instituting Addis Ababa as the capital of its East African colonies, Eritrea, Somalia, and Ethiopia. With this backdrop, the Italian administration embarked on preparing a master plan besides implementing key architectural interventions. Ignazio Guidi & Cesare Valle produced the first blueprint of the Italian master plan in 1936. In simple terms, the master plan attempted to realize colonial visions of Italy by dividing the city into distinct parts that belonged to the local community and the Italian community. This demarcation was to be done via a green buffer zone. The original marketplace of the city, *Arada*, was annexed to the Italian part and the *mercato indigino* was introduced as the marketplace for the local community. The Italian cartesian grid was superimposed over the organic urban tissue of Addis Ababa and one can still notice this organic pattern visible within the rectangular cell of the Italian grid.
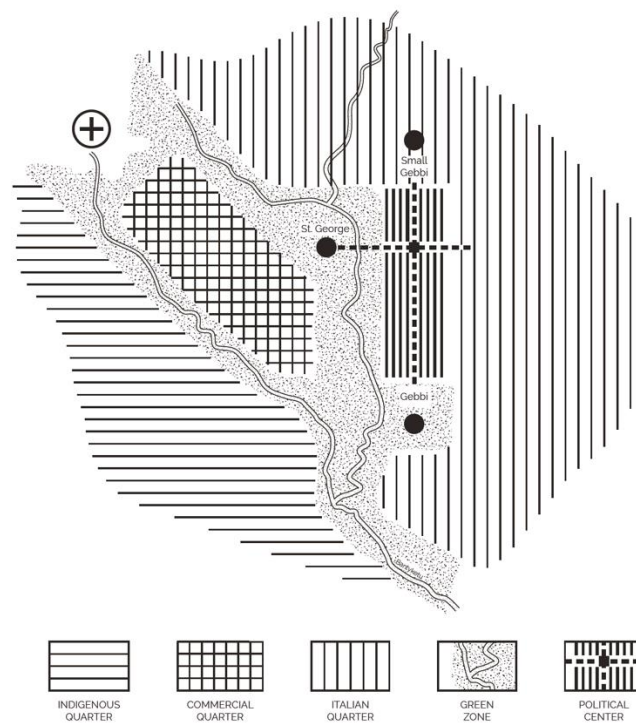
Figure 1. The Italian Masterplan of I.Guidi and C.Valle in 1936

Figure 2. 'Organic' patterns within the grid structure of mercato

DECODING MINALESH TERA

The subtle negotiation between different actors on the use of space is a key issue to be explored in this paper. How is space appropriated and negotiated? What type and level of tacit community negotiations happen? Are these processes completely informal or do they operate within the formal domain? How can a city adapt or benefit from such bottom-up and innovative structures of land use? These research questions required a method of inquiry suited to uncover the spatial realities behind the complex practices that are evident in Minalesh tera. The author had already conducted a photographic essay on Minalesh Tera in 2016. As a follow-up to this, a visit was made in January

2019 to carry out a survey. Although local authorities were approached for official census data, on ownership status, types of businesses, or other related social and physical data, it was difficult to acquire due to lack of institutional memory and incompetent bureaucracy.[9] Besides this, the urban situation on the ground being fluid and dynamic convinced the author to follow an unconventional research procedure; Visual Ethnography. An approach that relied on gathering and analyzing information through visual means. It also required the physical presence of the researcher on site in line with the methods of classical ethnographic inquiry.

Visual Ethnography

The canonical work of Henri Lefebvre staging Space as a product of social processes is a key theoretical reference for the methodological framing of this paper. Contemporary sociologists since then have argued that spatial explorations of location explicate social constructs.[10] Within this theoretical frame, this research employs photography to capture spaces and spatial practices via still images. Using the camera as a tool for anthropological research has been well explored since the 1900s'. Subjectivity that comes due to subject "selectivity" or "non selectivity" by the researcher makes the camera "operator-sensitive"[11], a nuance that needs awareness from the side of the researcher. Sarah pink further examines such nuances while discussion the methodological variants of photography in a research setting.[12] In addition to photography, visual ethnography, in this paper encompassed mapping and analysis of the still images in conjunction with semi-structured interviews.[13]

A key reference in this regard is *Suturing the City - Living Together in Congo's Urban Worlds.* Filip de Boeck, an anthropologist in collaboration with Sammy Baloji, a photographer, attempt to depict the urbanscape of Kinshasa via the medium of texts and photography. The Authors view their work as an "urban acupuncture", fusing ethnography and photography as analytic tools.[14] the goal of the book is to depict how the various places, sentiments within Kinshasa make up a "coherent totality". In the case of Minalesh Tera, a visual ethnographic study on spatial characteristics is made to reveal how informal spatial practices operate and how spatial resilience in Minalesh Tera contributes to accommodating programs such as reuse, recycling, and dwelling.

The first task during the second phase of the site visit was to recruit a key informant that is willing to partake in an interview. A person with ample knowledge of the site and its environs. After interaction with potential candidates, Mr. Abdi[15] was chosen since he fulfilled the above criteria. Abdi, aged 40, was born in Minalesh Tera and is a current dweller.

The first day was more informal. It was spent on getting acquainted with Abdi while getting him to understand and internalize the aims of the project. It also included a walk on site where Abdi gave a tour of the different sections of Minalesh Tera. A tentative walking route was decided for the upcoming days. The route was designed so that it covers a cross-section of representative programs. A similar procedure was followed during the second day. This time, walking was accompanied by voice recording Abdi, note taking, and photography. The third day was fully dedicated to photo documentation as well as taking drone images to get a bird's eye perspective on the neighborhood. The images taken were sorted and categorized based on the patterns. Some images were further mapped to filter and further understand prevalent conditions.

KEY FINDINGS

The objective of the photo documentary conducted in 2016 was to present the nature and extent of urban transformation that is happening in Addis Ababa. The area was selected for its mixed zoning, encompassing living, working, religious as well as production facilities. The key take from the

photographic essay was the extraordinary spatial organization that existed in Minalesh Tera. Building upon this, the outcomes of the interview and visual ethnography from 2019 is summarized as follows:

Waste as a source of livelihood

The predominant activity in Minalesh Tera is waste recycling. The *Qorales* are the traditional waste collectors of Addis Ababa. This is a typical situation where informal actors take over waste management systems when the city government fails to do so.[16] Scrap waste of all natures is collected from all corners of the city via the Qorale. In addition to collecting from dumpsites and municipal containers, the Qorale walks by residential neighborhoods and chants 'Qorale' signaling dwellers to come out and offer an item for sale. Residents come up with a scrap of all sorts and try to negotiate a good deal. The Qorale inspects the items and pays the agreed amount. He then takes the material to Minalesh Tera for selling. The main sorting space where this process happens was identified in Minalesh Tera. Middlemen come here to purchase scrap items from the Qorales and they distribute it to workshop owners or recycling artisans after retaining their profit margin. The Qorales are key players in the waste material exchange network with Minalesh Tera acting as an important Hub of operations. The open scrap trading space assists the Qorale and the artisan to trade waste.

Figure 3. Waste sorting and distribution area in Menalesh Tera

Spatial Zoning: The teras of mercato

The *Tera* is a local zoning mechanism in Mercato whereby spaces are designated to cater to a specific type of trade. *Goma-tera* (in Amharic) translating to *rubber-tera* for example refers to an area where rubber is recycled or sold. As Mercato operates at the horizontal layer covering a large surface area, it is extremely dense and navigating through is a complicated task. The teras ease this inconvenience as any individual interested in rubber can easily go straight to this tera to explore and compare prices between shops. Minalesh Tera is a cluster of several teras specialized in a specific production trade. Interview with the traders of Minalesh Tera suggests the teras developed through time but operate in a sphere of informality. The visual survey reveals spatial zoning due to the teras contributing to the movement of goods as well as navigation while redevelopment projects on the other hand do not acknowledge the existence of the teras.[17]

Layers of space and appropriation.

The constitution of Ethiopia gives ownership of land to the state. Land is owned by the state and administered by the government. Citizens have use rights. Private ownership essentially means owning the physical property (building and fence) over the land while the land is leased either for 30 or 90 years from the state. The state also owns properties nationalized in 1975.[18] These land and tenancy politics frame how space is used. Minalesh Tera hosts both private and government-owned properties with the majority being state-owned. Local user appropriations are tolerated.

Space in Minalesh tera is very valuable. Shaded spaces (semi-indoors) are restructured, usually re-parceled to accommodate multiple outlets or storage to maximize the use of space. On the horizontal dimension, the stalls, both for an outlet as well as production, are tailored to claim the outside space during the daytime. Dedicating a few meters of space for circulation, the shops extend the definition of space via extended plastic structures or the definition through storage items. On the vertical dimension, rooms and stalls are stacked to allow storage at lower levels and selling lofts at the upper levels. This is especially prevalent in areas dedicated to selling food items. According to the interview with Abdi and informal discussions with shop owners, spatial appropriations happening at several scales in Minalesh Tera involve tacit community negotiations and unwritten laws. The masjid overspilling onto the street on Friday *Jumu'ah* (weekly congregational prayers) is a good example to demonstrate the public consensus to use street spaces for special weekly purposes.

Figure 4. Vertical layer of spatial appropriation

Figure 5. Horizontal layer of spatial appropriation – extension of the mosque for Jumu'ah

Spaces of production

The livelihood of around 5,000 traders and recyclers relies on the production spaces of Minalesh Tera. Production in terms of both reusing materials as well as producing new ones from raw materials such as leather products occur in labor-intensive small-scale workshops. Recoverable waste from metals, plastics, old shoes, electronic materials are some of the very valuable items that go into the production spaces as raw goods acquired from the Qorales. One of the compelling aspects of these spaces is the fact that they are open to the public and sometimes operate purely in the street realm. This is significant in promoting the trade of the artisans as it is open-sourced and publicly promoted. A ruralite interested in acquiring these skills could stand in a corner and learn how it is all done. It was not possible to empirically define or explain the tolerance limit on using the streets. However, both the interview results and the images show that those who use the street spaces are aware of a certain implicit limit where they leave spaces for circulation.

Figure 6. Spaces of production – coat hanger wire straightening

Figure 7. Spaces of production – pot cleaning ladies

Spaces of dwelling

Dwelling space is an important component of Minalesh Tera. The Italian planning envisioned most of the western part of Addis Ababa to be a residential neighborhood for the indigenous population. Although most of the residential quarters are located to the west of Minalesh tera, quite a few mixed ones are encircling Minalesh Tera. One can find recent one-room dwelling units (post-nationalization) as well as older ones (pre-nationalization) that are typically compound-type. The compound type houses contain smaller units within the plot that are commonly rented out as a means of generating income.

A peculiar compound-type residential house that was surveyed has a courtyard with a groundwater well serving inhabitants 'clean' water as claimed by the residents themselves. [19] It is difficult to imagine a dwelling setup with a clean water well and a large shading tree when walking through the dense streets of Minalesh Tera. Several bars, restaurants, schools and, seven masjids are found in the precinct of Minalesh Tera to serve the communal need of residents. The dwellers find this heterogeneity of functions beneficial as it is convenient to sell homemade items within the vibrant environment.

Figure 8. Dwelling spaces; Water well in the courtyard house.

The transient vs the permanent

With regards to cross-relationship of programs and the ingenuity in the use of space, the most remarkable finding is the complementarity between the transient and permanent domains of space. This was observed by mapping a series of images from the street. The images demonstrate the relationship between permanent indoor structures (such as shops and stores) vis a vis temporary space definers such as the Isuzu Truck and makeshift tents. The street acts as a ground to mediate between the transient and the permanent. Dynamic transaction of goods from distributors to outlet stores results in some of the items being sold before physically making it to the formal shops. In some cases, the receiving shops do not even exist, and the traders are mobile. The distributors bring in the goods to Minalesh Tera via Isuzu trucks and the items are sold while already on the truck before downloading. The buyer uses manual labor to distribute the merchandise to several shops or to middlemen.

Figure 9. The transient vs the permanent

CONCLUSION

The city administration of Addis Ababa has on several occasions declared the need for transforming the image of the city to live up to the dreams of a 'modern' African metropolis. Implementing large-scale urban development projects that are essentially tabula-rasa is the method that is adopted to achieve the city's vision. The urgency to replace whatever is deemed old and dilapidated with new and chic is causing the parallel erasure of livelihoods as well as urban qualities that on the underlayer support the very functioning of the city. The newer urban tissues replace the older fabric while the non-physical social disappears without a trace. The amount of urban history the city has lost due to these projects in the past 15 years is unaccounted for. This includes intangible resilient spatial practices that were very much dependent on spatial conditions.

The fact that bottom-up spatial organizations such as the tera evolved through time outside the auspices of planning suggests that it is a result of continuous community consensus. Revisions to this system at the urban level will naturally call for community participation. This must be incorporated by the city government when drafting the development plans. As it stands now, transport and waste management are the two visible 'deficiencies' of Addis Ababa.[20] In line with this and in line with the findings, the author concludes that waste management planning can better function if it considers and

learns from the existing socially established informal waste management systems such as the Qorale (regarding systems) and the Minalesh Tera (regarding spatial conditions).

Figure 10. The newer development replacing the urban fabric in Menalesh Tera

NOTES

[1] Mercato is a large tract of market in the older neighborhoods of Addis Ababa. It is sometimes referred to as one of the largest open-air markets in Africa.

[2] Central Statistical Agency, 'Population Projections for Ethiopia. 2007-2037' (Central Statistical Agency, July 2013), https://www.statsethiopia.gov.et/wp-content/uploads/2019/05/ICPS-Population-Projection-2007-2037-produced-in-2012.pdf.

[3] 'The State of Addis Ababa 2017: The Addis Ababa We Want', accessed 17 April 2019, https://unhabitat.org/books/the-state-of-addis-ababa-2017-the-addis-ababa-we-want/.

[4] 'Minalesh Tera: How Addis Ababa's Informal Recycling and Reusing Market Supports Formal Waste Management', UNDP (blog), accessed 26 July 2021, https://www.et.undp.org/content/ethiopia/en/home/blog/2020/minalesh-tera--how-addis-ababas-informal-recycling-and-reusing-m.html.

[5] The population of Addis Ababa is debatable. The figures published by the government are not trusted by the academia. Census data from CSA is deemed unreliable by researchers' and academia due to suspicions of political manipulation.

[6] 'The State of Addis Ababa 2017'.

[7] 'The State of Addis Ababa 2017'.

[8] Gebre Yntiso, 'Urban Development and Displacement in Addis Ababa: The Impact of Resettlement Projects on Low-Income Households', *Eastern Africa Social Science Research Review* 24, no. 2 (2008): 53–77, https://doi.org/10.1353/eas.0.0001.

[9] In general, it is quite difficult to get dependable and factual urban data in Addis Ababa. Professional turnover in the sub-city offices is quite high and empirical data is seldom available.

[10] Zawadi Rucks-Ahidiana and Ariel H. Bierbaum, 'Qualitative Spaces: Integrating Spatial Analysis for a Mixed Methods Approach', *International Journal of Qualitative Methods* 14, no. 2 (2015): 92–103, https://doi.org/10.1177/160940691501400208.

[11] John Collier and Malcolm Collier, 'The Challenge of Observation and the Nature of Photography', in *Visual Anthropology: Photography as a Research Method* (Albuquerque, N.M: University of New Mexico Press, 2009), 5–15.

[12] Sarah Pink, 'Photography in Ethnographic Research', in *Doing Visual Ethnography: Images, Media and Representation in Research* (London: Sage Publications Ltd, 2001), 49–75.

[13] The full set of the still images and the mappings have not been included in the paper.

[14] Filip de Boeck and Sammy Baloji, '"Acupuncturing" the City Through Anthropology and Photography:', in *Suturing the City: Living Together in Congo's Urban Worlds* (London Autograph APB, 2016), 20–26.

[15] Name of person has been anonymized. Male gender will be used in reference to this person

[16] Kassa Teshager Alemu, 'Formal and Informal Actors in Addis Ababa's Solid Waste Management System', *IDS Bulletin* 48, no. 2 (27 March 2017), https://doi.org/10.19088/1968-2017.116.

[17] The redevelopment projects require for 4 to 6 storey building that disregards the existing spatial realities of Minalesh Tera

[18] 'Proclamation to provide for government ownership of urban lands and extra urban houses', Pub. L. No. 47/1975 (1975).

[19] The residents claim that the house was built just after 1936 when the neighbourhood was started. Although it is difficult to confirm this, the author believes the house to be of historical significance looking at the construction details. It is one of the few remaining original structures built during the Italian occupation.

[20] 'The State of Addis Ababa 2017'.

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RESPONSIVE ENVIRONMENTS: DESIGNED OBJECTS AS ENABLERS OF NEW CYCLES FOR A MORE SUSTAINABLE URBAN ENVIRONMENT

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INTRODUCTION

Recognizing the anthropocentric perspective as one of the causes of our contemporary environmental crisis[1], the approach presented in this paper roots the design process of urban spaces on the analysis of the environment giving values to the interplay between humans and nonhumans, as a move towards a more sustainable society[2]. Designers are asked to explore and re-imagine the networks within which the designed objects are used, circulate, and disposed, considering the whole system and its dynamics. The project of an "object-with-its-environment" goes beyond crafting products, designers are indeed 'engaged in the active creation and curation of complex socio-technical networks'[3]. This means that in many cases, designers must operate simultaneously at different scales, such as the urban, the architectural, the object, the body, to recreate the collaborative city[4].

Object Oriented Ontology and Actor Network Theory (ANT) are used as a base to expand the understanding of multiple agencies, dependencies, entanglements, and relations that make up our urban systems. On the one hand, object, includes non-human agents, such as climate and other biological entities, on the other hand, object, as active participant in the modeling of the dynamics of its environment. The conventional notions of "product", "audience" and "clients" are challenged and questioned.

This paper examines the application of a nonanthropocentric approach in the course "Responsive environments: Reshaping the Urban" as part of the Product Design concentration program at the Dubai Institute of Design and Innovation. The students were invited to work granting legitimacy to all the objects/actors of a studied system, with the goal 'to draw attention to the need to understand and account for the systemic effects of design across species and throughout the environment.'[5] The approach places the study of the environment as the center of the discussion and the designer as a figure that investigates on its dynamics, 'enabling designers to think and act more critically about their responsibility to design more ethical ways of living and working in cities given socio-technical complexity'[6]. Working without the boundaries of a typical corporate design brief, the urban environment is seen an opportunity to operate within different scales and modalities, from the ideation of domestic objects, building systems, urban devices, and services.

ANTHROPOCENTRIC NATURE

The widespread separation of humans from nature in Western culture has a complex story, a starting point can be traced to the rise of the Judeo-Christian values. Historian Lynn White[7] argued that these values laid the foundation of modern anthropocentrism, the system of belief that frames humans as separate from and superior to the nonhuman world[8]. Let's just mention that God as well as salvation are positioned outside of nature[9]. These positions were reinforced in the 17th century with the work of Descartes, that was fundamental in shaping the modern conception of human and animal identity[10], framing the world as essentially split between the realm of mind and that of inert matter. The emerging industrial capitalism in the eighteenth century has changed the cities into centers of pollution, poverty, and deprivation[11]. As a response against this transformation and the scientific rationalization of nature, intellectuals and artists reacted with a romantic idealization of nature. This led to an appreciation of the landscape, described in terms as the "Sublime", word previously related to religious awe or dread[12]. It is emblematic Friedrich's "Wanderer above the Sea of Fog": the man standing in contemplation in front of nature is at the same time a stranger but also a conqueror of nature: the idealization creates itself a separation, the human is not really part of it, he is an observer. The concept of Nature we have is, according to Timothy Morton[13], a concept that is used precisely and predominantly to define an old, romanticized view of our ecology. It is about the picturesque, or the idea of discovering the landscape in its "natural" state, where nature is uncontaminated.

SEARCHING FOR A POSTHUMAN NATURE

Decentering the human does not mean excluding the human factor, rather considers the human a component in a larger system of interactions among objects and things, human and nonhumans, and how the capabilities and limitations of all the factors work in concert or not in each scenario[14]. It is about a nature that is not anymore isolated, separated or contemplated, but simply part of an assemblage where the boundaries between humans and other-than-humans are blurred emphasizing their interconnectedness. Science and technology studies contributed to construct a nonanthropocentric perspective where the world is made up of hybrids and assemblages that organize together, sharing agency as understood by ANT.[15] Agency is a peculiarity of things that is shared with other theories such as neo materialism and object-oriented-ontology. [16]

At the beginning of this century, a new concept has been adopted to capture the inseparability between humans and nature: the Anthropocene is the proposed geological epoch dating from the commencement of significant human impact on the earth's geology and ecosystems. This term was popularized by atmospheric chemist Paul J Crutzen[17] to emphasize the impact of human behavior on Earth's atmosphere. The term it is now been used by scholars in different fields to define the evolution of Earth's ecology. It is still debated if we should apply it to define a new geological era, but the term could be used opportunistically, with important ramifications on how we think about environmental sustainability, precisely for the emphasis into the interrelation between human and non-human actors. It is indeed a useful intellectual tool to blur the boundaries between social and natural sciences and redefine the conversations about the Earth System as the interactions through material and energy fluxes, between the Earth's processes and spheres, including what is reprocessed by humans. Brondizio et al.[18] help us understanding that the term has recently broadened to signify 'the novelty of the time in which humans find themselves as a result of this; the novel challenges, opportunities and uncertainties that awareness of global potency brings; and the new perspectives required to deal with them.'

For an Environment-based Design

Environment refers to the factors or components constituting it. In natural sciences, we can identify abiotic and biotic factors. In the first one, we have non-living components found in an ecosystem that influence living things (or the biotic factors), such as soil, water, rocks, but also phenomena like wind, temperature, humidity, so energy flows. In the second one, we have the living organisms that shape their environment, beings that are highly dependent on each other like animals, plants, human beings, and microorganisms. With the Biotic and Abiotic components, we can include others, as the transformation actuated by the biotic factor. If we consider humans, it is, for example, the socio-technical system. And as a byproduct of the socio-technical system, we have also what we call pollution, something "external" that ruins a balance which in this view of interconnections, could instead become something else: a new raw material. As we synthesize new materials, we must face their incorporation in the system, at the end of use they are not excluded from the cycles, there is no "out of". Plastiglomerate[19] tell us again, from a material perspective, about the entanglement between the factors and their inseparability, and so the urgency to think in the same way. The term refers most specifically to an indurated, multi-composite material made hard by agglutination of rock and molten plastic. It is a clear example of this condition of interconnection and as Heater Davis[20] said, plastic is so commonly found in our ecology, that one could now call it nature. These materials are so embedded at so many levels that doesn't make any sense to consider them "others". It is a new condition; it is a new material we can find in the system. The plastic in the oceans is part of our nature now, therefore we must start seeing it as nature. This change of perspective could transform them into resources and therefore change our behavior in their regards.

The natural and the artificial have merged at every scale, and we see the consequences in the seas where carbon absorption turns oceans acidic and threatens everything that lives in them, or in the landscapes where the species that inhabit them are a mélange of those we have created, those we have cultivated and introduced, and those we let live. If Nature were a place, we could not find it.[21] Nature as that "thing" containing trees, bushes, birds, is merely an abstraction. As Morton says, there are objects and there is nothing underneath objects, and what is called Universe is a large object that contains objects, from black holes to pigeons. There is not such a thing as Environment or Nature, wherever we look for them, we find all kind of objects.[22] Object Oriented Ontology has emerged as an association of philosophical positions considering objects as entities in their own right, without requiring recourse to human intervention in use or perception. DeLanda reminds us that even inorganic matter is capable of expression, 'even humble atoms can interact with light, or other forms of electromagnetic energy, in a way that literally expresses their identity'[23].

The biological environment, the built environment, the social environment, the market environment, from separated groups that are collecting things with the same characteristics. The adoption of a flat ontological approach, all of them are on the same plane, so that we don't need any more these distinctions. In Object Oriented Ontology nothing has a special status, and everything exists equally.

Environment here is just considered as the assemblage of objects that are in a way or another influencing each other through their agency. This posthuman perspective is impacting society with political transformations, just consider the recent acts of the New Zealand government with the Animal Amendment Welfare Bill[24], where animals are now legally recognized as 'sentient' beings; or the case of the Whanganui River[25] that has now the same legal status as a human being. Something similar is happening in the technological sphere, with the case of Saudi Arabia that in 2017 granted citizenship to a humanoid robot[26]. What it could be confused by a process of anthropomorphization, is instead opening different new ways to reconsider the relationships between the parts of a system.

The environment remains the connector, the place where objects interact, and its boundary is elastic, or better, viscous, open to include new objects into the interplay.

Mapping as an Opportunity to Re-structure the System

The urban environment occurs through a vast network of relationships, complex flows of energy and matter, as well as capital and commodities, in which ethical and political consideration extends beyond the bounds of the human. A local-global 'hybrid' space that link the urban with distant sites and distant ecologies. [27] The entangled forms of more-than-human life in cities might then be seen as "collaborators" [28] in making urban ecologies and it is crucial to focus on the dynamics, the associations, and alliances between actors[29] to inform urban research and practice.

Given this theoretical structure a fundamental part of the research for a project is about the reading of the environment through the construction of maps. The students were asked to start with the definition of network based graphical maps, involving different interacting actors. The mapping process is suggested as a dynamic process that evolves into personalized ways, to better emphasize the character of the interaction that is studied. In Figure 1 the interaction between heat and other objects has been layered and then superimposed to create intra-relationships.
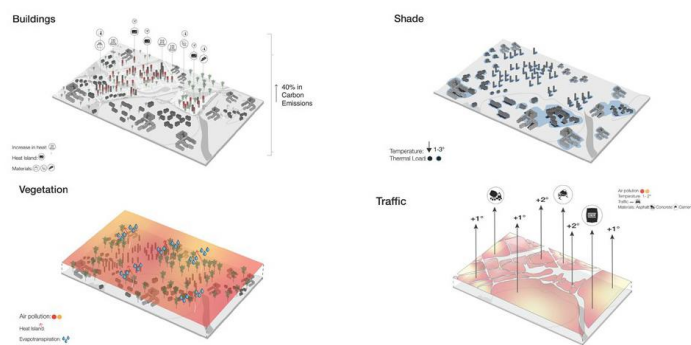
Figure 6. Analysis COLDPLAY - Abdulaziz Alzamil, Mona Itani, Pavwan Malik

Every case was encouraged to find the most clear and comprehensive way to describe the relationships, like in Figure 2, where the emphasis falls on cycles: the relationships are flows of inputs and outputs. In this case, the study focused on the cycle of desalinated water showcasing the change in terms of PH during different transformations/interactions and highlighting in the different moments what are the actors involved with the identification of the consequence of this interaction.
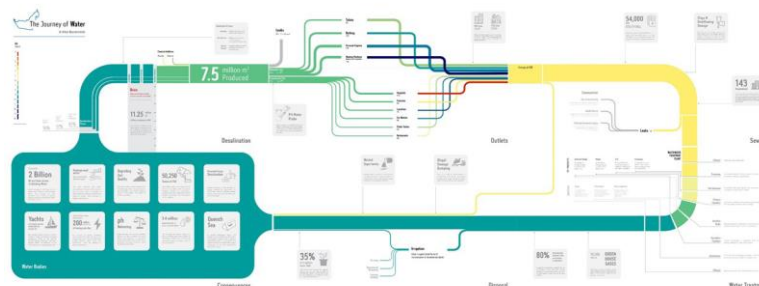
Figure 7. Water desalination Dubai HYDRIA - Alhaan Ahmed, Nikhilesh Mohan

Mapping the interacting actors makes possible the identifications of areas of re-articulation, in other words, where potentially we can intervene through a design action to re-articulate the system. The map could give us the possibility to read the big picture and the impact of small actions in the whole system. Rather than being solution-oriented problem solving, the aim of this approach is to promote Design as enabler of new cycles, of new transformations, and new behaviors: the core of the research is about the awareness about the potential of every actor in what they could enable or disable, precisely in their relationships.

The mapping process could be also expanded with autoethnographical investigations, as for example the students mapped their daily water consumption to identify where the resources could be easily re-cycled. The water journey is analyzed in the domestic environment and the project focused on the introduction of a device able to filter the grey water for buildings not equipped with grey water re-cycling systems. The device is analyzed as an enabler of different habits and a conscious consumption of the water in relation to other domestic needs/objects. The analysis of the map, suggested the expansion of the environment from a single apartment to the entire building, Figure 3, with the constitution of a network of objects: the water collected on a local level could have an impact in the system of the building for the cleaning of the floors and common areas, to use for car wash or watering common green areas. This reconfiguration can create a different dynamic in the water usage on a community level, establishing a new micro economy that has advantages for different parties, from the building management to the single family, and an impact in the whole cycle.
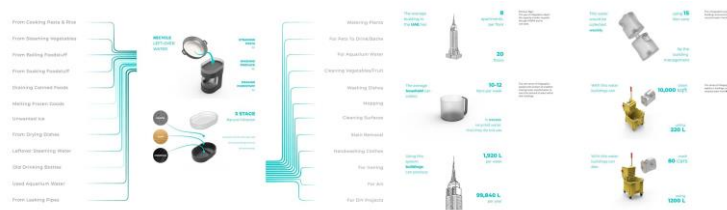
Figure 3. Domestic and community re-cycles HYDRIA - Alhaan Ahmed, Nikhilesh Mohan

Expanding the knowledge of the system via sensing devices

The low cost, and diffusion of sensing devices allow the designers to transform the actors into probes expanding the sense-abilities of the environment and to unlock behavioral information that otherwise would be difficult to track or reconstruct into patterns. In Figure 4 for example, the students hacked the sink pipeline with a PH sensor to track with more accuracy the condition of the water after use, combining the data with the survey of the daily habits, opening ways of understanding relationships among people, objects and use practices.

Figure 8. Sink hacking with a PH sensor - HYDRIA - Alhaan Ahmed, Nikhilesh Mohan

Objects equipped with sensors and software can provide access to perspective that would not be approachable from human ethnographers. The transformation to thing ethnography[30] articulates a

nonanthropocentric way of understanding design opportunities from a material objects' perspective. What more this actor can be? Tracking our habits can for sure help us in being more conscious about our actions. Beyond the simple data collection for analysis purposes, the opportunity would be to extend the capacity of an actor, incorporating the sensing device into its body. In the previous example, the device could be transformed into the sensing apparatus of the sink to set up its point of view and a morality regarding how humans are using it. Imagine the sink refusing to provide water if utilizing too aggressive detergents. Figure 5 shows other examples on a urban scale. In the first case, a series of amorphous objects capturing and visualizing through color, the micro temperature variations according to the position and influence of the surrounding objects, like cars, trees, and buildings.

Figure 9. Sensing the urban environment
COLDPLAY - Abdulaziz Alzamil, Mona Itani, Pavwan Malik
RESPIRO - Rafif Alhassen, Mohammed Abu Ebeid

The second case instead, is about a collaborative sensing, where a multitude of actors, like joggers and taxi cars contributes to a common understanding of the air quality with real time updates. What is measured is the single experience but what is processed is the collective one in a micro-level sensing of the urban space.

Besides the human and nonhuman factor, we have so to consider the important impact of the other-than-human factor coming from the technosphere and its algorithmic creatures, using Choi, Forlano and Kera definition[31]. This series of autonomous agents, from sky and terrestrial drones to AIs, are able to interact physically, and for the designers it is an opportunity to design these interactions and discover the unknown emerging patterns beyond the utilitarian reason they are designed for.

Figure 6 for example, shows a proposal for a transformable playground, able to interact with kids and weather, through sounds and its motion. The behavior of this actor is a negotiation between the climatic conditions, heat in particular, and the willingness to play of the kids, that could become insisting. This implies to design the object not only from the perspective of a user, the kid, but also from the perspective of the thing. These actors have the potential to re-wire the use of public space, and the new dynamics that the presence of these actors is engaging, also considering the potential of having them as co-ethnographers. In these scenarios of multi-species behavior interlacement, how the diffusion of sensing devices could define new proto cognitions in the urban environment?
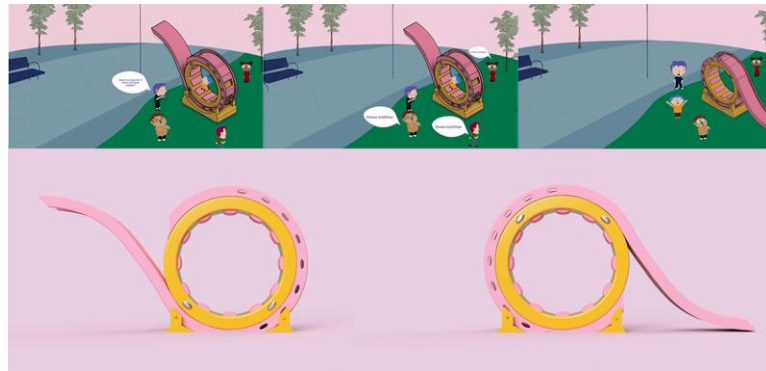
Figure 10. Analysis COLDPLAY - Abdulaziz Alzamil, Mona Itani, Pavwan Malik

CONCLUSION

Mapping is framed as a fundamental tool to understand the environment and manage the relationships between the objects forming it, and the new ones introduced with designed actions. Designed objects are so studied as enablers of new interactions between the parts of the system. They have the potential to define a multi-layered set of re-cycle projections and stimulate new behaviors within the communities, to increase its economic and environmental sustainability, as well as the quality of life, beyond a reductionist individual utilitarian design strategy. Human actions and desires are indeed present and exerted but are not taken uncritically as the focus or driving purpose.

The goal of this approach is to shift the focus from the method of how to design, to why to do design, asking a series of questions, foundation for future developments, such as how can we distribute influence across humans, machines, and biological systems? What is design for these new actors? Is it a choice, negotiation, imposition? Then, what is the economy of posthuman design? What knowledge, stakeholders and partnership are needed?

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AN EMPTY SPACE, A VIRTUAL PLACE: CULTURAL LIFE AND CREATIVE SOLUTIONS IN BESIEGED CITIES

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INTRODUCTION

The term "placemaking" has been used since the 1990s by the non-profit organization Project for Public Spaces based in New York. They define placemaking as "an overarching idea and a hands-on approach for improving a neighbourhood, city, or region, placemaking inspires people to collectively reimagine and reinvent public spaces as the heart of every community".[1] "Placemaking can be basically summarised as the art of making better places for people", although what makes a place "better", why and how to make it better, lies at the core of the matter. The purpose of placemaking is to create places that bring people together. Lepofsky and Fraser argue that "place-making is participation in both the production of meaning and in the means of production of a locale".[2]

The expression "creative placemaking" was coined by Ann Markusen & Anne Gadwa in a report written in 2010 for the National Endowment for the Arts (NEA), where a broad, descriptive and encompassing definition was provided: "[i]n creative placemaking, partners from public, private, non-profit, and community sectors strategically shape the physical and social character of a neighbourhood, town, city, or region around arts and cultural activities. Creative placemaking animates public and private spaces, rejuvenates structures and streetscapes, improves local business viability and public safety, and brings diverse people together to celebrate, inspire, and be inspired.".[3]

It is worth saying that the report was based on two decades of American placemaking activities involving artists and other related cultural workers who were engaged with local government, community members and even private entrepreneurial stakeholders in rehabilitating decaying urban neighbourhoods and other impoverished or otherwise declining spaces. Born out of a response to what has been named the Great Recession of 2008 (the subprime mortgage or the financial crisis), it has contributed to step off a creative placemaking grant program, "Our Town",[4] and inspired the promotion of similar activities even outside of the USA.[5] The economic merits of such practices, already promoted by the original report, have certainly contributed to the success of creative placemaking, particularly when paired with the rise of the global city and the creative cities paradigm where cultural industries and artistic intervention has been seen as a catalyst for business and economic growth.[6] This has often put creative placemaking under suspicion of serving a neoliberal agenda, but some have argued that creative placemaking may still lead to more just cities and

community building, through "increased participation" of residents working with artists and cultural agents, activities that allow sharing knowledge and common experiences, contributing to an enhanced sense of place and, finally, to the creation of better public spaces.[7]

The "A Place" approach to the concept of place

The notion of place supersedes knowledge boundaries: place is intrinsically linked to existence, in so far all being is "being-in-space" (the Heideggerian *Dasein*). Places not only "are", but they "happen";[8] they are more events - which happen to someone - than objective realities. Around an idea of place, people and memories, events and meanings, practices and experiences, become assembled, or gathered. As Casey, following Heidegger,[9] contended, "places gather things in their midst-where "things" connote various animate and inanimate entities". Agnew [10] structured the variety of phenomena that places bring together in three components, which altogether make a place: location (physical setting), locale (social and cultural relationships) and sense of place (the human capacity to produce meaning). For Sack,[11] a place is a texture in which three domains becomes interwoven: the empirical, the moral and the aesthetic. As Cresswell contends, "Places both gather and disperse". A place can be thought of as a fixed image we have of something - an idealized memory of the past, an archetype - or as an open process in continuous change. In this second case, the question is then "why and how particular places gather particular things at particular times?". [12]

Following these and other conceptual and practical proposals regarding the importance of places in the configuration of community, the purpose of "*A-Place: Linking places through networked artistic practices*", a project co-funded by the Creative Europe programme (2019-2023) - is to design and implement art-centred placemaking activities in six European cities: Barcelona, Bologna, Brussels, Lisbon, Ljubljana, and Nicosia, in order to connect meanings and experiences associated to places across cultural and geographic boundaries. The activities were planned to be carried out in the socio-physical territory, with activities embedded in public spaces, and with the involvement of multiple social groups. However, the outbreak of the COVID-19 at the start of the project led to reconsideration both the programme of activities, and some basic tenets on which the project was based: place, public space, community building, co-creation. In fact, the notion of public space, as circumscribed to physical space, was challenged, as public space was extended through digital media. Likewise, social contact continued through the social media, facing the impossibility to physically meet in streets and squares. In the same way, spaces for creation and exhibition became equally virtual ones, all around the world, with artists intensifying the development of their creativity using digital media and disseminating their artwork through the web.

While global lockdown destabilized economy and challenged the international leaders, at the human level the pandemic generated isolation, loneliness, and nostalgia for the public space, with a significant raise of helplessness and fear. As a reaction, many creative expressions started to redefine a sense of community across different countries and locations, strengthening solidarity and cooperation, also through social media initiatives. Human beings basically needed to feel connected with each other, even if the virus outbreaks demanded that people remained apart, looking at the outside world from behind their windows. The quarantine has raised the awareness about the essential role of urban public spaces for the functioning of cities and societies. But the question arises: Will public space be the same?

Reflecting on (pandemic) public space

At the beginning of the COVID-19 pandemic, two main ways of looking at public spaces seemed to re-emerge: the possibility of death of public space and the bio-power perspective. The first, mostly anchored in Sennet's work,[13] pointed to a present and future where our significant lives had moved to private settings and public spaces became only spaces for (rapid) mobility. The second, based on Foucault's meaningful work,[14] dealt with the dangers of allowing governments and authorities to increase the control over people's bodies and behaviours in public space, predicting that this specific solution for an emergency would prevail beyond the pandemic moment and eventually would change public life completely. In this context, we work with a definition of public space that engages Henri Lefebvre's work on the social production of space and proposes to focus on representation and meaning to imagine a future where public spaces will not be dead and/or overly controlled. Lefebvre's proposal encompasses three elements that create social space, each one being informed by and constituted through the other two: 1) the representations of space, which refers to how space is conceived in abstract by authorities, architects, etc.; 2) the perceived space, or the material form of space produced and reproduced by actual practices; and 3) the representational space, meaning the ways space is directly lived and shaped by everyday practices, memories and experiences.[15]

Don Mitchell argues that public space is a space within which political movements can stake out the territory that allows them to be seen (and heard) [...]".[16] In that sense, we can say that public space and public sphere – Habermas defined public sphere as non-necessarily physical spaces of expression of public life in democratic societies - are two separate entities, but they are not mutually exclusive and public spaces can have public sphere qualities.

Another way for us to look at public spaces is to highlight the production of shared meaning. For Rogério Leite, urban spaces only become public when invested with meaning. In other words, when actions attribute meanings of place and belonging to certain spaces, and when those spatial environments are also contemplated in the construction of meanings of the actions.[17] Hence, public spaces not only provide the tangible and physical realm for a shared sense of being with other humans,[18] they are also the places where the differences between groups and individuals can become visible and confrontational.

THE PROJECT ACTIVITIES

The project team of the School of Architecture La Salle, Barcelona, reacted to the pandemic situation by creating "A Confined Place". The proposed activities dealt with the perception and representation of places using mixed media (photography, video, graphics, and texts) that were fully developed and disseminated online. The activities included three sections:

1. Photographic representation of space in the confinement. A pedagogical programme designed and implemented by the School of Architecture La Salle (Barcelona, Spain) to perceive and communicate the experience of living in the confinement through photographic media;

2. Artistic interventions in times of lockdown with hybrid media, a call organized by Urban Gorillas (Nicosia, Cyprus) to create an online repository of experiences about the sense of place during the period of confinement.

3. Short films on the transformation of public spaces during and after lockdown. City Space Architecture (Bologna, Italy) invited filmmakers to rethink human existence and the ways people can live together in the 'new normal'.

The works produced in these three sections addressed several topics which offer interesting insights into the sense of place that emerged during the pandemic, and the impact on public space, such as the transfer of activities from public to private domains.

Artworks' digital communication

The programme of activities included three ways of participation according to the sections above: 1) a blog on the perception of domestic space in times of confinement; 2) an open call for artistic interventions in times of lockdown; and 3) a short film competition on the changes in urban life and public space after the confinement. The activities were presented and disseminated through the social networks (Facebook and Instagram).

1. Photographic representation of space in the confinement

Students from the higher education institutions participating in A-Place were invited to contribute to the Blog "A Confined Place" with photographs and texts reflecting on their experiences with places in the time of confinement (Figure 2). The blog was also opened to the participation of other educational institutions, from secondary schools to higher education.[19] A series of topics were suggested: The emptied city; spatial thresholds; the city inside home; inhabited roofs; communal spaces; and augmented spaces. The blog, with the same graphic identity of the project, promoted the dialogue between people from different geographic areas.
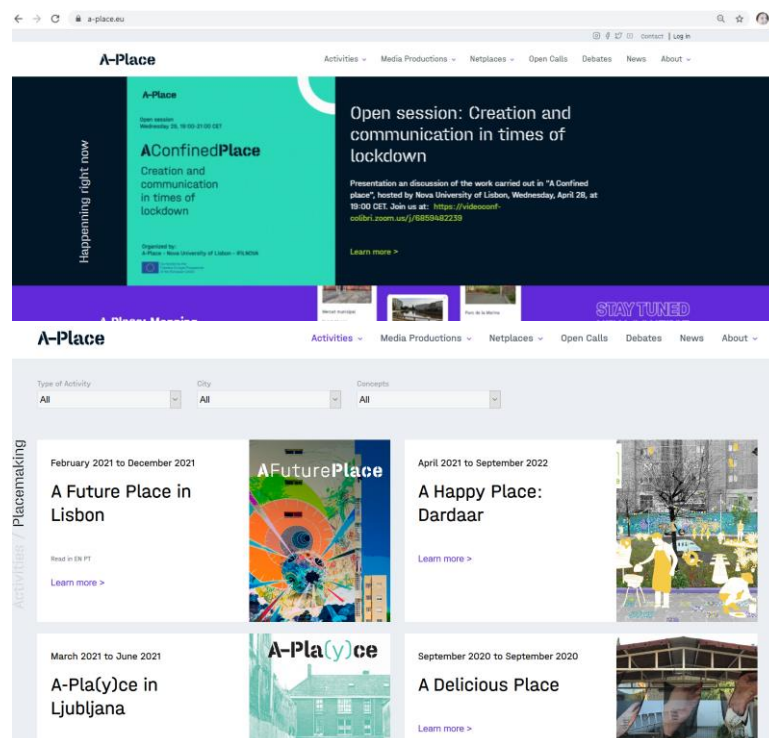
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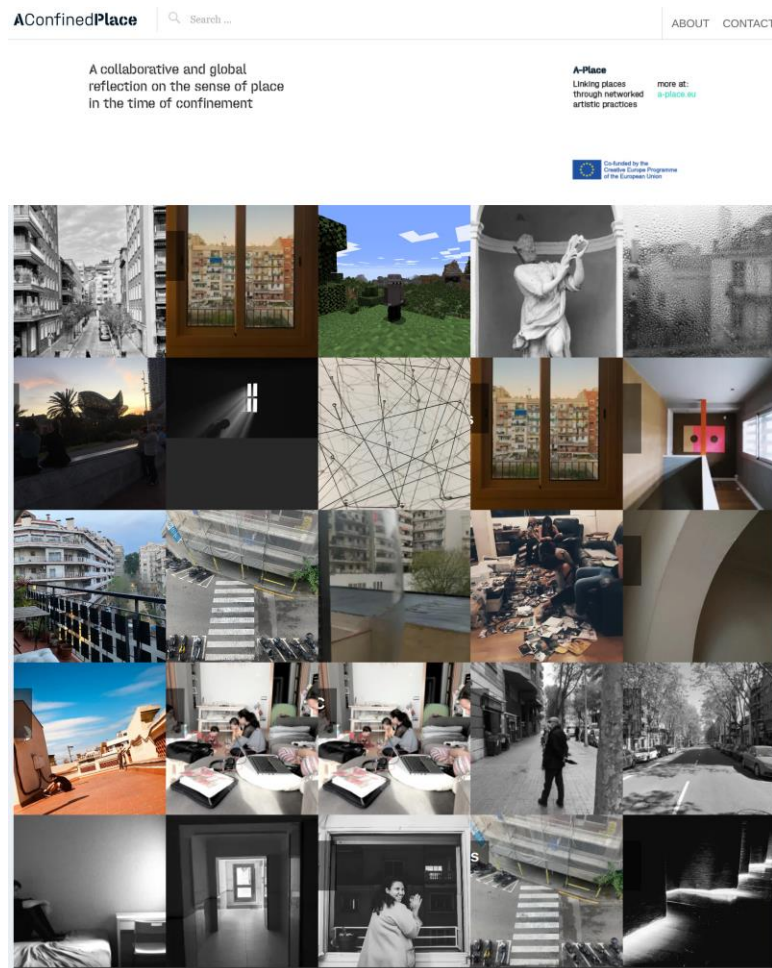
Figure 2. Blog "A Confined Place" (https://aconfinedplace.wordpress.com/)

In the blog, contents were divided in three categories: Institutions of provenance, themes referred previously or "No category". The category "Institution" received 115 entries combining photography and text. This category has the subcategories of the partners involved: La Salle School of Architecture (99); Nova University of Lisbon (3) and the University of Ljubljana (2). "Themes" received 98 posts divided in sub categories: augmented spaces (15); communal spaces (18); inhabited roofs (5); spatial thresholds (22); the city inside home (31) and the emptied city (40). "No category" received only two entries. It is interesting to notice that participants choose to identify their posts with location (the reference to the physical space) and to themes that expresses the vision of a (located) confined life.

At the School of Architecture La Salle, the work done in the blog was intertwined with a regular course dedicated to architectural space and photography. In this course, students read texts on the meaning of place and summarized them in concepts and exercised their capacities to derive meaning from photographs from other authors. With this previous conceptual framework, they took photographs of their living places during the lockdown.[20]

e of the students who contributed gave an interview one year after in Lisbon and spoke about how they felt being part of a community participating in this activity. Students' opinions about their experiences can be heard at https://www.a-place.eu/en/debates/47.

2. Artistic interventions in times of lockdown

The open call "A Confined Place"[21] was addressed to those people who wanted to share their experience about living and transforming confined places through mixed-media. The categories were chosen in order to connect this activity to the concepts that ground the project: Living in the confined place and transforming the confined places. As stated in the event Facebook page, the call was addressed to "Any citizen, professional or not, individually or as a member of a team or organization". The submission and dissemination were done on digital social networks.

3. Short films on the transformation of public spaces

The Short film competition "A Confined Urban Vision"[22] was the 3rd activity of "A Confined Place". That is, places of present and future community. The main purpose was to widen the meaning of places in the situation of the COVID-19 pandemic, and rethink human existence in the time of the pandemic by documenting ways of living together or apart in the 'new normal". Once more, all information was disseminated in digital media. A multidisciplinary jury composed of "A-Place" project partners was appointed to select the shortlisted films and the winner.

FROM EMPTY SPACES TO VIRTUAL PLACES: A SHORT CONCLUSION

"A Confined Place" was a response to the isolation of people at the beginning of 2020, and a solution to the impossibility of living and sharing experiences in physical public spaces. Seeking to take advantage of the isolation measures that have taken place across the world, the activity was designed as an interactive platform, with a direct appeal to participation, without borders, seeking to follow the main objectives of the Project: developing placemaking practices, contributing to the creation of attractive places and strengthening ties between people and communities. Although it was an arduous and sometimes difficult task to fulfill the initial objectives of the project, the redefinition of activities had positive results. From our point of view, the involvement of some students and teachers contributed to overcome the difficulties of a sudden change in pedagogical practices, which educational institutions were forced apply. And last but not least, some activities of the "A Confined Place" activity was an opportunity to explore the potential of new technologies, in inventing new modes of civic participation and artistic creation.

Teresa Hoskyns had already underlined, perhaps too severely, "the increasing importance of virtual public space"[23]. Hoskyns invoked then the comprehensive definition of public space proposed by Setha Low and Neil Smith,[24] which could also "be described through non-place-based definitions such as the media or the internet".[25] Certainly, the author reflected on citizenship and democracy in contemporary societies, and she was very critical of how any lack of open and free access to physical spaces (e.g. the library, the university, the theatre, the swimming pool, etc.) can shape identities – often turning citizens into "docile bodies", to use Foucaultian terminology –, and ultimately restrict the exercise of citizenship and democracy. However, in spite of this and other dystopian approaches, what seems important to us, that is, what we should retain and conclude from recent experiences of creation and placemaking, is the urgent need to understand the extension of the concept of public space, far beyond its physical dimension. Empty spaces can be linked to virtual spaces,and transformed through technology into bridges for "the park, the square, the street, the market, and public buildings such as the town hall, the parliament, the shopping mall and so on",[26] although we are perhaps not fully prepared for a futuristic and utopian urban portrait like the one that cinema has shown us for decades.

Glenda Caldwell and Carl Smith claimed that "The pervasive and ubiquitous nature of digital technologies have affected nearly all aspects of our daily lives, including the design and experience of

the built environment"[27]. Even though it was written a couple of years before the COVID-19 pandemic, this claim has gained immeasurable proportions with the state of besiege experienced in many cities, and even nations, in recent times. Writing about the hybrid city of the present, the authors emphasize that "The city of today is an interwoven series of physical spaces with digital layers of media and information."[28] "A Confined Place" implicitly confirms the power of that possible intertwining between physical places and virtual spaces, whether in everyday experiences in all dimensions of life or in citizenship practices, creation, community interaction, socio-cultural approximation, to name but a few.

More recently, Sarah Calderon and Erik Takeshita reflect on how moments of crisis have influenced the modes of creation throughout history. Their "*prolegómenai*" introduces a question that has become now frequent in artistic circles, too: "…crises put the stark realities of inequity into the spotlight, reinforcing the need to envision a different future and the importance of our relationships and the realities of our interconnectedness".[29] The pandemic literally suspended public and private lives. It revealed suddenly, and in the worst way, the extreme importance of places in everyday life and in the definition of our own condition of humanity.

"A Confined Place" placemaking activities, created in that context of social isolation, reacted to the closing of universities by reconnecting faculty, students, artists, and general audiences who, otherwise, could not pursue their academic, social and/or artistic activities. In a way, it emerged as a creative solution to a sudden and unexpected crisis and, at the same time, it might have created alternative spaces and places where people can share experiences, emotions, knowledge, etc. Students, teachers, artists and other citizens engaged in the challenge. Teachers launched and publicized their calls, and students and citizens participated with their artistic projects created during confinement and disseminated (and shared) through social media. Long before the pandemic, Internet had been used mostly for sharing content, but now it explores massively its capability and power as a meeting point, a space of multiple places for exchanging experiences, sharing emotions and creations. That is, places of present and future community. The hypothesis still needs to be confirmed, but the coming times will certainly reveal the huge scale of influence of this and other forms of "virtual placemaking".

NOTES

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MATERIALS THAT SEPARATE AND CONNECT: COVID-19 AND PROTECTIVE BARRIERS

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INTRODUCTION

During the COVD-19 pandemic, face coverings and partitions have enabled people to connect safely by distancing them from one another. By pulling us further apart beyond the norms and placing physical barriers between us, social distancing inhibits the senses and clouds communication. Anthropologist Edward Hall in his book *Hidden Dimensions* (1996) suggests humans communicate through multiple receptors– eyes, ears, noses, and skins– with varied distances between themselves depending on their intensions. Distances between people affect how well we can hear, see, touch, and smell each other.[1] Besides their clinical effects, choices of barrier materials have psycho-social impacts on the scales of the body, buildings, and cities. Demarcation of spaces around human bodies for health protection– including wearables, furniture, and buildings– are in the domain of architects and designers as well as medical professionals, anthropologists, and psychologists. Materials of social distancing and their impacts remain largely unconsidered and demand deeper investigation vis-à-vis the pandemic. While the paper does not attempt to cover every aspect, it will discuss a range of examples from social distancing materials in personal protective equipment (PPE), restaurants, and workplaces.

The Center for Disease Control and Prevention (CDC) defines social distancing as "keeping a safe space between yourself and other people who are not from your household".[2] While this has been the prevalent definition during the pandemic, social distancing is a term rooted in the field of sociology. In the past, it referred to the distance between social groups,[3] and more recently, it has come to signify the space between individuals. In the 1957 book *Systematic Sociology: An Introduction to the Study of Society,* German sociologist Karl Mannheim published his seminal studies in cultural dynamics surrounding social distancing. He writes, "In every kind of social contact there is implied a social distance. Distance may signify an external or spatial distance, and an internal or mental distance." He distinguishes two types of social contacts between individuals: primary, which is an intimate face-to-face interaction that engages visual and auditory senses, and secondary, which is characterized by "externality and greater distance."[4] He suggests that people who fall in the realm of primary contacts are treated with sympathy whereas there is antipathy towards those in the secondary category. This distinction, he says, is the origin of prejudice, or viewing those people as foreign, as "them" instead of "we".[5]

Spatial distance, Mannheim asserts, can also create an artificial distance without physically moving closer or farther. To explain this idea, he describes a seafarer who is approaching a port on a clear day. Suddenly, a mist appears and blurs the view, rendering the town remote; without altering the physical distance, the mist has created an illusion of remoteness. This is not unlike an acrylic partition at a cashier's counter during the pandemic, or masks that obstruct the view of the speaker's face. Without moving the positions of the individuals, protective barriers create an illusion of remoteness. Furthermore, Mannheim notes that the impulse to distance is entangled with the need to regulate and control anxiety. He associates distancing behavior with authoritarian civilization, and decreased distancing with democracy.[6] Sociologist Frank Ferudi suggests that today, the increasing need for a safe space, or a need to keep a distance from strangers, is a metaphor for what sociologist Anthony Giddens calls "ontological security – the sense of order and continuity – in the face of uncertainty."[7] Protective barriers provide safety not only from the virus but also psychological safety in uncertain times.

MASKS AND FACE SHIELDS

At the most intimate scale surrounding our bodies, face coverings demarcate a personal air space near our months and nose. Masks have been used throughout human history for a variety of purposes, and with each type, masks take on a symbolic significance and meanings. As in a building, materials and details of construction affect perception and experience of a masked person. To mask means to "to prevent something from being seen or noticed,"[8] which suggests concealment and deception. A person "hides behind a mask" when they fear exposing their true self. Masks have been worn to display and to disguise, and to protect and to punish. Partly due to these darker connotations, masks over the course of human history are fraught with contradictions and controversies.

Masks in history

Historically, masks are found in ceremonies and rituals of religious or social significance, such as funerary or fertility rites.[9] They have also been worn to portray characters in mythologies, to frighten a child who need to be disciplined, or to terrorize (such as Ku Klux Klan) without recognition. Scold's bridle dating back to the mid-1500s in Scotland was an iron muzzle that disabled a person from speaking, as a punishment and humiliation.[10] Masks often have been used to protect the wearers. Death masks were thought to safeguard the dead from evil spirits, and war masks not only physically shielded warriors but also instilled fear in the enemy. In contrast, masks are also used in festive occasions such as masquerade balls (Figure 1), where masks provide anonymity and a momentary release of inhibition. One of the most recognized Venetian carnival masks is that of the mediaeval 'Plague Doctors' with a white beak and a black hat. Based upon the Miasma Theory, an obsolete belief that diseases were caused by noxious fumes, the beak was filled with herbs to protect against the Black Plague.

Figure 1. Ill Ridotto by Pietro Longhi (1750s) depicting a scene with masked visitors at a gambling hall mask at a party in Venice.

Masks during COVID-19

For medical masks, surprisingly little has changed in technology over the past century. During the 1918 flu, cheese cloth masks were worn to block respiratory droplets. In the spring of 2020, the most effective masks such as N95 respirators were scarce and reserved only for medical workers, and the majority wore disposable surgical and home-sewn fabric masks. Medical masks have historically been made with opaque or translucent materials, mostly fabric (Figure 2); new alternative present both benefits and challenges. In 2020, clear face coverings have appeared on the market. For many, a transparent material is preferred over opaque materials that prevent reading facial expressions and body language that convey emotions. Seeing gestures and mouth movements is also more equitable for people with hearing difficulties. Teachers and caregivers for people with hearing problems or non-native English speakers who rely on lip reading, for example, wear clear face shields so that listeners can see their lips. A face shield, which is a headband with a curved, clear plastic sheet extending down from it, have been used by dentists, surgeons, and other clinicians for protection from exposure to patients' bodily fluids. However, shields are far less effective than masks in blocking respiratory aerosols as aerosols can easily escape from the gaps around the shield (only 2% of whereas an N95 mask blocks 99% and a 3-ply cotton mask 51%).[11] In fact, CDC does not recommend face shields for everyday use and instead recommends combining them with a mask underneath.[12]

Figure 2. Red Cross workers name fabric masks during the 1918 pandemic. (Photography: Photoquest.)

Masks and transparency

Entrepreneurs and designers have made transparent masks, which block droplets and aerosols better than face shields and show facial expressions and speakers' lips. Allysa Dittmar, who is deaf, encountered a frustrating experience during a surgery in which she was unable to read the lips of her masked clinicians. In response, she co-founded the company ClearMask™ (Figure 3) in 2017, which makes an FDA-approved surgical mask with a curved plastic sheet sealed against the face with foam strips along the nose, cheeks, and chin. The company has sold 12 million masks between April and November 2020.[13] During COVID-19, crafters sewed fabric masks with a rectangular plastic window in front of the mouth and sold them on online marketplaces like Etsy. Some sellers applied fog repellant to prevent the plastic from fogging. Notwithstanding the benefits of transparent face coverings, even a clear material is an obstruction; sounds are muffled, tactility is lost, and reflections on the surfaces can obstruct clear vision. Similar issues are observed with transparent barriers in offices, shops, and restaurants. Despite the designer's intent to make a material disappear, just as glass in a building makes itself present through reflections, shadows, and hardware that holds the glass to the structure, a transparent barrier or mask is present– tactilely and visually.

Figure 3. ClearMask™.
(Photography courtesy of ClearMask™.)

Glass and PlexiGlas

Although masks can be traced long back into human history, mass production of transparent materials appeared only recently in modernity. Beginning with the monopoly of glass making by the Venetians in the 11th to 16th century, glass's historical exclusivity continues to impact metaphors associated with glass today. Glass slippers, coffins, and mirrors often appear symbolically in fairy tales, which describe the collective dreams of a culture. Glass is physically heavy, but metaphysically light.[14] Its brittleness and heavy weight present challenges for wearing on bodies, or for rapid emergency installation by non-professionals. Most COVID-19 partitions have been made of PlexiGlas, a more affordable, less breakable alternative developed for automobile windshields and military equipment.[15] Plastic was originally developed to imitate expensive, rare natural materials, such as billiard balls made of ivory or amber accessories.[16] A material for imitation, security, and defense, plastic contrasts in metaphysical associations to glass despite its visual resemblance.

SOCIAL DISTANCING IN RESTAURANTS

Restaurant tables on sidewalks, often housed in igloos, yurts, and greenhouses in the winter, came to symbolize restaurant dining experience during the pandemic. The pandemic has limited places to safely gather with those outside of one's family or social pods. Humans long for in-person

connections, and the pandemic challenged designers to rethink how people could congregate while preventing infections. While places of large congregations such as theaters and religious buildings were closed until vaccination was well underway, people gathered to eat outdoors in pairs or small groups. In order to provide safe spaces for customers, the pandemic prompted restaurants to pivot to different ways of socializing.

Long-term impact of pandemics

Notwithstanding the recent easing in social distancing requirements, business owners and designers agree that some changes from the pandemic will remain as they have historically following public health crises. Prior to the 1918 Spanish flu, people drank free water using communal cups called "tin dippers" in public buildings and railway stations. These cups were banned during the pandemic and replaced with disposable "Health Kups"– which became Dixie Cups.[17] In addition, beginning in 1918, restaurants were required to wash their dining ware in scalding water and cover their food on display with a glass case. A century later, these hygienic standards have long remained the norm.[18] Sociologist Richard Sennett speculates that social distancing practices will outlast the pandemic due to a learned fear of the invisible. He bases this on examples of security measures practiced immediately after 9/11, such as ID checking and x-ray scanning at building entries or airports, that remain the norm decades after the terror attack.[19]

Figure 4. Thanksgiving dinner with acrylic partitions at Fort Huachuca, November 2020. (Photography: Tanja Linton, US Army.)

Post-pandemic dining

After COVID-19, restaurants will, speculates Lance Sauders of Stokes Architecture, allocate more space per person, as much as 30 to 40 square feet per person instead of ten; bars packed with people shoulder to shoulder may become thing of the past. Since even transparent partitions are obstructive (Figure 4), as the population became vaccinated, restaurants sought out more subtle, implicit demarcations of personal spaces for dining out. Designers have a challenge to create a sense of intimacy in a less densely populated restaurants and bars – relying more on visual connections instead of physical.[20] Less densely populated dining tables placed near fire places is one design strategy to create a sense of warmth and intimacy. Long-established interior features such as dining booths also convey closeness while providing distance between groups of diners. Restaurants have even placed mannequins in chairs and booths to give a perception of a busy dining room. At the Michelin three-star restaurant Little Washington in Virginia (Figure 4), mannequins dressed in 1940s outfits are

seated at empty tables to maintain the 50% capacity requirement.[21] Other restaurants responded with humor to a health crisis by seating stuffed animals and blow-up dolls at empty tables. In a study published in the *Journal of International Restaurant Management* in October 2020,[22] survey respondents were shown images of restaurants with partitions and mannequins and asked about their perceptions. The results showed that the respondents perceived the partitioned dining room to be more attractive, welcoming, safe, sanitary, and comfortable than those with mannequins. However, this particular study, conducted by a scholar in restaurant management, did not consider the qualitative and quantitative information that designers pour over. The responses could vary depending on the material qualities and their perceptions–whether it is diffused glass that offers privacy while transmitting light, opaque plastic that is more private, or a tufted fabric that suggests domesticity and provides acoustic insulation. Perceptions are subject to other factors such as the quality of construction, assembly details, and dimensions, including the height and the spacing between barriers.

Figure 5. Mannequins at tables at the Inn at Little Washington.
(Photography: Courtesy of The Inn at Little Washington.)

Streeteries

During the cold months of COVID-19, when indoor dining was prohibited, restaurant designers created "streeteries," or street eateries for outdoor dining (Figure 6). Initially constructed as minimal structures covered in clear plastic to provide shelter from rain and snow, as construction materials became more available, the sheds evolved to include heaters, plants, and chandelier (Figure 7). These yurts, huts, and greenhouses were intimate and playful, reminiscent of forts and treehouses of childhood. While the transformation of sidewalks and parking spaces to outdoor dining rooms delighted many, plastic dining bubbles also raised public health concerns that these may be incubators for virus transmission. While the bubbles are located outside, without sufficient ventilation, they can pose more risk than indoor seats. Dr. Linsey Marr, airborne disease transmission expert at Virginia Tech, says, "When you're in the open air the large droplets and aerosol we produce when we talk are rapidly depleted. A tent defeats the purpose and would only be a little bit better ventilation-wise than eating inside the restaurant," and suggests leaving two or more sides of the pod open to airflow, or using the bubble only with one's own social pod. [23, 24] Finally, despite the designer's intent to make a material disappear, just as glass in a building makes itself present through reflections, shadows, and hardware that holds the glass to the structure, a transparent barrier or mask is present– tactilely and visually.

Figure 6. Restaurants in West 105th Street in Manhattan place sheds and plastic bubbles for outdoor dining. (Photography: Shalom Stavksy.)

Figure 7. Greenhouses outside has come to symbolize restaurant dining during the pandemic. (Photography: Author.)

Even as social distancing restrictions are eased, sidewalks, patios, and rooftops may remain more desirable dining spaces. This shift in preference and norms suggests architects to, for example, design the perimeters of building differently now, with spaces that are protected from the elements but have natural ventilation (Figure 8). These spaces would no longer be makeshift, emergency measures, but permanent. Equally important is for people to adapt to new thermal comfort levels while dining outside. European restaurants, for example, furnish their outdoor tables with heat lamps and blankets. In Japan, the inside of houses is colder than the US in the winter, and warmer in the summer. Japan also has traditional customs of spending time outdoors in partially covered pavilions or *engawa* (veranda) that run along the perimeter of houses. These examples may serve as inspirations for reconfigured spaces for post-pandemic socializing.

Figure 8. Frédéric Druot *and Lacaton & Vassal revitalized Tour Bois-le-Prêtre (2011) in Paris, an apartment tower built in 1961, with an exterior of balconies and wintergardens along the exterior. (Photography:* Frédéric Druot.*)*

PARTITIONS IN WORKPLACES

During the early months of the pandemic, physical barriers appeared where keeping a 6-foot distance was a challenge. This included meat packing plants, Amazon fulfillment centers, bus driver's seats, and other spaces where remote working was not possible. As people returned to schools and offices in a hybrid mode, many classrooms and offices began to resemble cubicles of the late 1900s, but with make-shift acrylic panels instead of felt-covered partitions.

Historic partitions

Prior to the invention of cubicles, offices had endless rows of desks in an open floor, as portrayed in the TV show *Mad Men*, surrounded by private executive offices along the building's perimeter. Herman Miller invented the Action cubicle in 1968 based on the notion that employees need autonomy, independence, and file cabinets next to their desk. With giant mergers and mass layoffs in the 1980s and the 1990s, the cubicles began to symbolize precariousness of American workers.[25] Although the successful Action Office II was designed with hinged walls of varied lengths meeting at 120 degrees like a dynamic honeycomb, the more common derivative cubicles, as seem in films such as Office Space (1999), had three walls meeting at 90 degrees. In the past twenty years, the sea of cubicles has been replaced by open-plans, where team members with mobile devices congregate–or sit alone–in a field of tables without partitions or designated seats. The open-plan is not without drawbacks, including lack of acoustic and visual privacy, and constant distractions. Studies from the 1980s and 2018 show that open plans in fact reduce human interactions, and people are more likely to meet with each other when given enclosed works spaces.[26]

Figure 9. Plexiglass in riot shields.
(Photograph: U.S Marine Corps, Lance Cpl. Eric Tso.)

Barriers in post-pandemic workspaces

Post-pandemic, some may perceive Plexiglas partitions as protection from the virus and an antidote to anxiety. However, as with transparent masks or glass building facades, even a clear Plexiglas blurs visual and aural perceptions. Many have experienced unconsciously stepping away from a clear partition at a hotel check-in desk or a post office counter in an attempt to see or hear someone more clearly, defeating the purpose of a protective barrier. Moreover, Plexiglass barriers are associated with high security, stressful interactions, such as facing police riot shields or passport checkpoints. As Shannon Mattern writes in her essay "Purity and Security: Towards A Cultural History of Plexiglass," Plexiglas barriers connote bureaucratic tedium and frustration; they prime the public to approach the counter with some degree of trepidation, preparing for imperiousness and interrogation."[27] Mattern also notes how the thick, bullet-proof acrylic partitions often demarcate class divisions in exchanges at banks, a pawnshop, check-cashing counters, or fast-food restaurants primarily in low-income neighborhoods. Lastly and importantly, as Nikil Saval, the author of the book *Cubed: A Secrete History of the Workplace* suggests, the resistance to partitions may be about power and agency. He writes, "The real problem isn't the furniture; it is how the furniture represents the arbitrariness of power in the workplace."[28] Similarly, the resistance towards the acrylic partitions during the pandemic may be more about who holds the power to choose and place the partitions. The walls abruptly appeared and divided individuals in the early days of the pandemic as emergency measures, often based on hasty decisions made by administrators. The employees were left out, without a sense of agency. Moving forward, to engage the company or school community to collectively shape our healthy work environment is a step towards to keeping people connected.

CONCLUSION

The pandemic has reinforced a human need to demarcate personal space around the body. Studying the materials of social distancing, including their physical properties, cultural meanings, and social context, illuminates the paradoxes and controversies that surround social distancing practices. As restrictions become eased, close examination of materials may offer insights into the outcomes of emergency charettes conducted during the pandemic, and suggest which practices, objects, and spaces to discard, refine, or reconsider.

NOTES

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RUNNING IN ROME: A BIO/DIGI-RHYTHMIC SOUNDSCAPE

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INTRODUCTION

This performative paper explores an empirical case study and sound "data-stream"[1], developed as part of a four-year doctoral research project titled *Bio-rhythms/ Digi-rhythms: Synthesizing the Digitally Mediated Body Through Performative Methodologies*[2]. The rise in contemporary digital, wearable biometric "self-tracking"[3] devices to facilitate subjective health and fitness-related pursuits in recent years, has indisputably proliferated a "culture of measurement" in relation to how we perceive our physically moving bodies; limiting our perceptions of the moving body in its inter-relational context to the unfolding rhythmic spatio-temporalities of our urban environments. In an increasingly post-digital globalized culture, as we integrate contemporary digital wearable devices into the functionality of our everyday lives as "technologies of the self,"[4] the quantifiable biometric data-language that self-tracking devices translate our physiological bodies into arguably reduces the multivocality of our sensorial embodied experiences into abstract representational "data-products", with "big-data"[5] implications.

In the case study *Running in Rome: A Bio/Digi-Rhythmic Soundscape,* the researcher's digitally-mediated running body is re-materialized as a dynamic data-process in flux, through the empirical and sensorial materiality of a sound "data-stream."[6] As her running body moves in affective inter-subjective relation to the rhythmic spatio-temporalities unfolding in and around the Villa Borghese Gardens public park, in the urban city centre of Rome, the research process is made audible to the reader/listener through the sound "data-stream."[7] Sound is used as an embodied autoethnographic[8] methodological praxis for re-imagining the "voice" of subjective agency, in resistance to biometric data-paradigms of quantification, which dominate contemporary health discourses[9]. Furthermore, philosopher and sociologist Henri Lefebvre's *Rhythmanalysis*[10] is applied as a methodology for re-imagining a rhythmic synthesis of embodied experience as it is mediated in real-time through the digital device. The "bio/digi-rhythmic" soundscape thus proposes a phenomenological "acoustic ecology"[11] of the digitally-mediated running body, which converges the body's "bio-rhythms" and "digi-rhythms" with the affective entanglements of the urban, environmental, socio-cultural and biopolitical rhythms of contemporary city life. This alternative subjective "data-set" further extends the potentialities for what embodied data can be, by affectively engaging the reader/listener's embodied rhythms in the theoretical/experiential space of praxis. Towards synthesizing existing binary perceptions between self/other, the bio/digital, the qualitative/quantitative and the virtual/actual dimensions of contemporary lived experience.

RUNNING IN ROME, JULY 2018

This performative bio/digi-rhythmic sound event, which extends its "liveliness"[12] through the sound "data-stream,"[13] was performed in and around the Villa Borghese Gardens, Rome in July 2018. The Villa Borghese Gardens is the third largest public park in Rome. Historically a vineyard within the paradise "Gardens of Lucullus" in the late Roman republic, and later transformed into extensive landscape gardens in the nineteenth-century inspired by the "English-style". In a city with an estimated population of nearly three million inhabitants, it is one of few recreational public green spaces, within the city limits of the sprawling urban metropolis of Italy's capital. In December 2017, at an international conference entitled *Health in The Cities* convened in Rome by the World Health Organization for Europe, the *Urban Health Rome Declaration*[14] was adopted and signed by the Italian Minister of Health, Beatrice Lorenzin, and President of the National Association of Italian Municipalities, Antonio Decaro. The declaration outlines a multi-sectoral, holistic approach for improving the health parameters in and around the urban environment of Rome, as aligned to the World Health Organization's constitutional recommendations; which recognize the concept of health beyond "physical survival" and "absence of disease,"[15] to include psychological, environmental, social, cultural, natural, climatic and economic aspects of life in the city.

Methodology

For the performative embodied intervention *Running in Rome*[16], which is the focus of this case study, the researcher attempted to renegotiate an alternative bio/digi-mediated method of autoethnographic[17] "data collection" that captured the phenomenological, embodied, experiential and environmental "bio/digi-rhythmic" dimensions of running through the park, whilst the body's movements were synchronously mediated through a digital device. To perform this, the researcher utilized the in-built audio recording "Voice Memos" function on a smartphone, to record the activity as it unfolded through a sound "data-stream"[18]; towards renegotiating a synthesis of the bio/digi-rhythmic spatio-temporal interrelation between the moving body, a digital device and the environment, using sound. While popularized self-tracking fitness devices and smart watches with integrated biometric-sensing functions which are designed to quantify our bodily movements digitally in "real time" (for example *Fitbit*, *Garmin*, and *Apple Watch*), arguably "merge with the body,"[19] becoming wearable extensions which can track our pulse, our every step, and our sleep cycles[20], this case study proffers that smartphones too have become extensions of the body in contemporary post-digital culture. Embedded with functional sound, speech and linguistic applications such as audio recording, note taking, voice recognition and dictation, this research suggests that smartphones enable alternative qualitative processes of bio/digital-mediation to emerge, alongside established quantitative biometric methods. In the performative bio/digi-rhythmic "event", holding a smartphone whilst running through the public park in Rome on a summer morning, the researcher's body undertakes an autoethnographic role; as an embodied, performing subject moving through this particular spatio-temporality, with the body's movements mediated sonically in "real-time" through the digital device. The researcher's body becomes a kind of qualitative, rhythmic metronome, recalibrating the "bio-rhythms" of body through the embodied, rhythmic activity of running; as those rhythms are synchronously digitally-mediated through sound in an attempt to engender a "bio/digi-rhythmic" process of synthesis.

Instruction- Play Sound Data-Stream

https://soundcloud.com/user-658364094/running-rome

For Lefebvre in *Rhythmanalysis: Space, Time and Everyday Life*[21], the rhythmanalyst "listens- and first to his[/her] body; he[/she] learns rhythm from it, in order consequently to appreciate external

rhythms. His[/Her] body serves him[/her] as a metronome." [22] In *Running in Rome* [23] , the researcher/runner becomes "rhythmanalyst" through the embodied performance of running, producing a subjective spatio-temporal mobility as her body moves through the park. The body's interwoven bio-rhythms of footsteps, breath, cadence and stride become regulated through the linear repetitions of movement, setting an embodied tempo and pace. The pragmatic rhythmic materiality of the body in motion as it is mediated sonically in real-time through the digital device, is discernible in the "wind noise" produced by the swinging movements of the researcher/runner's arms, as she holds the digital recording device in her hand to run. The synthesizing potentials for the bio/digi-mediated body using the sound "data-stream" thus emerge and materialize audibly and are heard in the intermingling "bio/digi-rhythms" which unfold through this performative embodied "event". The cyclical, seasonal "white noise" of cicadas arguably locates the researcher/runner's body in the particular warm climatic temporality of summer. This dominant ambient background noise forms part of the parks distinctive polyrhythmic chorus, which is interjected by intermittent intervals of bird call, the mechanical high-pitched whirring sound of recreational electric-powered pedal cars and "Segway" scooters whooshing by, and the occasional rhythmic vocal cadences heard in the conversational snippets of people passing by.

Digitally Mediated Intersubjectivity

In a recently published research article titled *Speaking the Data*[24], which forms part of the same body of praxis, the researcher introduces the "voice" of subjective agency into the oppositional biometric discourse unfolding between her moving body and a stationary "smartbike" machine. *Speaking the Data*[25] discusses the "white noise" produced by the cyclical machinic repetitions generated from the researcher's physically embodied rhythmic interaction with the stationary technological device. Performed in the context of an indoor public gym environment, *Speaking the Data*[26] could be considered a performative critique of the homogenizing digital health practices moulded by current biopolitical health agendas[27], which shape our leisure activities and construct our lived experiences in contemporary global-capitalist societies. The increased popularity and accessibility of commercial gyms in urban towns and cities, which is perhaps indicative of the decline in urban outdoor green space, arguably denotes our complicity in subjectively adopting what Foucault termed "technologies of the self"[28] in post-digital culture; as we striate and condition our embodied biorhythmic activities using biometric devices and stationary exercise machines. In Foucault's influential text *Discipline and Punish: The Birth of the Prison*[29], the philosopher notably described the socio-cultural history of the "treadmill" as a disciplinary mechanism of punishment and control, used to harness the labour power of inmates in nineteenth-century penal systems, "a disciplinary mechanization of the inmates, with no end product [...] The making of machine-men, but also of proletarians."[30] This research applies Foucauldian philosophy to establish a contemporary discourse on the shape-shifting mechanisms of biopower in the post-digital age; aligning digital health tracking practices (popularized in socially-networked cultural movements such as the *Strava*[31] platform and the *Quantified Self*[32]) to panoptical techniques of self-surveillance, which also entangle our digitally-mediated bodies into systems of "big-data" capture[33]. As such, this research suggests that the ubiquitous processes of bio/digi-mediation enabled by wearable digital-tracking devices, also render our outdoor recreational activities and embodied active pursuits equally subject to the homogenizing processes of data-capture and quantification that were previously only measurable in the constructed realms of sporting, health and fitness contexts. The GPS tracking systems that are embedded in our smartphones (through the Global Navigation Satellite System network) now render our subjective embodied movements geographically and spatio-temporally locatable across the globe. In *Running in Rome*[34], while the researcher/runner

attempts to generate an empirical subjective data-set using the sound "data-stream" as an emancipatory gesture towards "freeing" the body from quantifiable biometric data-tracking systems, this research recognizes that the moving bio/digi-mediated body becomes entangled into networked surveillance-tracking systems through the embodied act of carrying a digital smartphone device. Furthermore, this research proffers that the intensified homogeneity of our experiential worlds extends to ecological concerns in global-capitalist societies, audible in the "white noise" of the cicadas which prevails throughout the entirety of the sound "data-stream". In *The Sound of Life: What Is a Soundscape?*[35] Marinna Guzy contends that "an ecosystem dominated by a single sound source, such as the buzz of the cicada, illustrates a potential lack of diversity and resilience."[36] Guzy's article considers how our sonic environments "define communities- their boundaries, their actors, their geographic intricacies, and industries," with soundscapes arising "through the interactions between external and internal forces within a community."[37] The soundscape thus helps us to understand the "acoustic ecology of a place."[38] In a similar way, this research suggests that the sound "data-stream" *Running in Rome*[39], as an empirical material process which "captures" the moving body in flux, both renegotiates the subjective bio/digi-mediated experience at the same time as it articulates the embodied subject's affective relation to the particular environmental spatio-temporal context. The experientially subjective "acoustic ecology", namely the researcher's bio/digi-mediated body running through the Villa Borghese park in Rome, is captured and extended to the listener through the sound "data-stream."[40] This research thus proffers that sound enables the internal/external, virtual/actual spatio-temporal relations to be collapsed in the "bio/digi-rhythmic" sonic space of praxis, through the "force of sensory experience."[41] Applying Lefebvre's rhythmanalytic terms, the sound "data-stream" proposes a processual synthesis to the "struggle between measured, imposed, external time and a more endogenous time,"[42] proffering a "re-experiencing" of the body-data for the reader/listener in the praxis space.

Instruction- Play Sound Data-Stream
https://soundcloud.com/user-658364094/running-rome
It has been suggested that for Lefevbre rhythm, in particular repetition, is inseparable from understandings of time, found in the workings of our towns and cities, in urban life and movement through space[43]. As our natural biological rhythms and social timescales collide, the rhythms of our bodies, cultures and societies, the analysis of rhythms can provide perceptual empirical insights into questions of everyday life[44]. In post-digital culture, as conventional concepts of space, time, geographical location, movement and mobility are compressed through processes of bio/digital-mediation, we can cognitively and experientially "transport" ourselves between virtual/actual, bio/digital and theoretical/experiential realms, at the click of a button or the swipe of a screen. Furthermore, we are required to subjectively adjust to "multitemporal realit[ies]"[45] in contemporary life, as practices of bio/digi-mediation enact different spatio-temporal and geographical perceptions synchronously across digital platforms, which become entangled with the cyclical and linear rhythms of our lived daily experiences, thus reshaping them. This research suggests that the existing biometric "self-tracking" practices we incorporate into our everyday lives facilitate the re-calibration and re-territorialization of the spatio-temporalities and mobilities of our subjective bodies, through quantifiable methods. Digital "technologies of the self" which polarize our bio/digital experiences by striating our physiological rhythms according to homogenizing biopolitical structural systems of "data-capture" in global-capitalist societies, arguably reduce our "bio" and "digital" experiences to binary oppositional terms; which results in the representation of our digitally-mediated bodies as "data-products". In *Rhythmanalysis*[46], Lefebvre distinguishes the difference between reductive forms

of structural analysis which focus on binary oppositional terms, for example time and space, and dialectical methods of analysis which he proposes as "three terms in interaction: conflicts or alliances."[47] For Lefebvre using dialectical analysis, the oppositional terms "time-space" become "the triad 'time-space-energy' [which] links three terms that it leaves distinct, without fusing them in a synthesis (which would be the third term)." [48] Furthermore, Lefebvre formed his concept of rhythmanalysis around this dialectical relation, proclaiming that "Everywhere where there is interaction between a place, a time and an expenditure of energy, there is rhythm."[49] In this praxis, the methodological application of rhythmanalysis to the embodied bio/digi-rhythmic "event" captured using the sound "data-stream", is used to extend a dialectical, material understanding of our bio/digital experiences as convergent. In *Running in* Rome[50], the researcher/runner's moving body produces subjective spatio-temporal rhythms through an embodied "expenditure of energy,"[51] "made audible" for the listener by the bio/digi-mediation of the embodied "event", using the sound data-stream. This case study thus considers the bio/digi-rhythmic sound event to be a "third" space of synthesis, where the "energy" and spatio-temporalities of our bio-rhythms and our digi-rhythms converge, through sound and rhythmic affect.

Rhythmanalysis as Embodied Methodology

The cultural geographer Tim Edensor has undertaken a series of "rhythmanalytical" projects which explore the mobilities of moving bodies in relation to place-making, through the rhythmically embodied, experiential dimensions of subjectivity. Adopting and applying Lefebvre's theory of "rhythmanalysis" as a practical methodological research approach. In Edensor's "rhythmanalytical" practices of exploration into how "place" is produced through the multiplicity of collective inter-relational embodied routines of everyday life (for example through walking, running, driving, cycling, dancing, etc.), "the body is central to doing rhythmanalysis and is deployed as a key tool in the research process"[52]; arguably a parallel approach to the embodied interventions used by this research praxis. However, in contrast to the methods and processes used by this praxis, Edensor employs an autoethnographic writing practice and other qualitative research methods (for example, visual methods such as moving image and photography), to apply his interpretation of rhythmanalysis "as a means to analyze mobility and place-making."[53] For Dawn Lyon, in *What is Rhythmanalysis?*[54] Edensor and his research colleagues' approach to rhythmanalysis, which deploys the body and sensory experience "in conjunction with other instruments of data collection"[55] raises questions about "whose body registers which rhythms and what this means for the production of knowledge."[56] Lyon contends that while the body is centralized as a "tool" of "rhythmanalytical research" in Edensor's research practices, "the linkages between the actual flesh and blood, breathing and feeling body of the researcher and the experience of being in the field are often only faintly drawn."[57] Furthermore, Lyon considers that while research methodologies within the social sciences have given rise to empirical and embodied methods of enquiry in recent years, which foreground "embodied practices, process and materiality" as a way of thinking, existing research paradigms continue "to privilege the cerebral despite [...] acknowledgment of the corporeal."[58] This praxis, operating within a performative research paradigm [59], uses embodied intervention and the sound "data-stream" to extend the subjective corporeal experience of the researcher/runner's "breathing and feeling body"[60] captured "in the field" through the digital device, to the reader/listener. In this case study, the process of bio/digi-mediation afforded by the sound "data-stream" enables "a reflexive consideration of the researcher's body doing research"[61] to be performed in the same affective, inter-relational, bio/digi-rhythmic register as the listener's body. Thus, proposing a non-hierarchical research assemblage which renegotiates a

theoretical/experiential understanding of the embodied "bio/digi-rhythmic" running experience through praxis.

Instruction- Play Sound Data-Stream
https://soundcloud.com/user-658364094/running-rome

CONCLUSION

In conclusion, in the introduction to *Rhythmanalysis*[62] Stuart Elden suggests that Lefebvre believed that the role of the rhythmanalyst was not simply to reduce or scrutinize the body and its internal/external spatio-temporal rhythmic relations as the subject for objective analysis; but to use "the body as the first point of analysis, the tool for subsequent investigations."[63] In Lefebvre's theorizing around the role of the "rhythmanalyst", the methodological processing of rhythms through the body and the extent to which the "body serves us as a metronome"[64] were defining empirical elements of undertaking or performing rhythmanalysis. In *Running in Rome*[65], the researcher/runner's body becomes the metronome, as running regulates the endogenous biorhythmic cadence of embodiment through the heartbeat, breath, footsteps and movement. Lyon recognizes that by employing rhythmanalysis as a research methodology, there is "a sense in which the rhythmanalyst becomes rhythm as the body's own rhythms combine with the ebbs and flows of other people's actions and interactions and the liveliness of the material world in which they are immersed."[66] In *Running in Rome*[67], running habituates the researcher/runner's biorhythmic body to the unfolding lived everyday rhythms of the park, in mutual affectivity with the multiplicity of existing spatio-temporalities and mobilities in flux, in the public recreational space. The bio/digi-mediation of this embodied "event" through sound facilitates this rhythmic multiplicity to be heard and shared with the listener/reader. For example, when the researcher's running body stops at an intersection to allow for a bicycle to pass, and thus "rhythm is noticed through the difference its absence makes."[68] Similarly, when the researcher's running body moves towards a street musician playing a *Beethoven* song on the pavement, nearing the end of the sound "data- tream", the melodic rhythms of music temporarily intermingle with and surpass the audible "biorhythms" of embodiment, as the researcher moves "through" musical sound. This case study thus proposes that the sound "data-stream", unlike other qualitative methods of applying rhythmanalysis which privilege the cognitive, reflective process (as discussed through Edensor's practice), is a rhythmically affective process in "real-time". Extending an empirical, material and sensory "re-experiencing" of the embodied "event" to the reader/listener. This paper therefore suggests that the sound data-stream proffers an emancipatory response to Lyon's inquiry as to "whose body registers which rhythms and what this means for the production of knowledge,"[69] facilitating a "bio/digi-rhythmic" synthesis which collapses bio/digital, virtual/actual, theoretical/experiential and self/other binaries in the performative space of praxis.

NOTES

1 "Running in Rome," Soundcloud, accessed July 28, 2021, https://soundcloud.com/user-658364094/running-rome.

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WHAT DOES 'TAILORING' MEAN IN AGILE METHOD TAILORING? A CONCEPT-CENTRIC ANALYSIS OF EXISTING UNDERSTANDINGS OF AGILE METHOD TAILORING

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INTRODUCTION

Customer requirements are rarely constant during the construction project lifecycle. For example the influence of COVID-19 could be far beyond a delay in construction. Customers may request modifications to working spaces in offices to comply with the 2-meter social distancing requirement, or even a reduction in office use, which would not have been on the initial project plan. In this situation, projects need to deal with the changing customer requirements, otherwise clients will end with useless building blocks and dissatisfied end users. To ensure the product remains a useful and satisfying building, the project needs to have fast responses to deal with the changing customer requirements and close stakeholder collaboration that helps with collecting and meeting customer requirements.

The intentions and characteristics of agile project management methods correspond well with the capabilities that projects need to have in a changing world. Agile principles emphasize focus on customer collaboration and responding to changes following the initial plan and contracts. From 2001, the Agile Manifesto serves as a guide for industry users to learn, to imitate, or to justify their agile method attempts.[1] With the popularity of agile method use in software development projects, many other industries outside software development have started to consider applying agile thinking.[2] However, some agile methods, for example Scrum and eXtreme Programming (XP), were designed for small software development teams that usually contain 6-8 team members.[3] Construction projects do not have such small teams. Over time, agile users have recognized that different contexts when applying agile methods mean that a 'one size fits all' approach does not lead to project success. 'Agile method tailoring' is the concept to describe the action of a development team making exclusive changes upon a commercially available so-called agile method, for settling particular project obstacles.[4]

In studies related to agile method tailoring, researchers picked a range of verbs to describe this situation, including modifying[5], adapting[6,7,8], tailoring[9] and customizing[10,11], to articulate changes made to agile methods. The choice of words is important as they link to different understandings which in turn link to or trigger action. By reviewing related studies, the research gap in agile method

tailoring was noted: theoretical understandings of the 'agile method tailoring concept' consider tailoring the same as 'selection' or 'adoption', which fails to address the full understanding of 'tailoring' in terms of actions and processes, which, we argue, can lead to sub-optimal application. Also, existing tailoring research does not have a systematic tailoring process that project managers can follow. This paper will critically evaluate the common conception of 'tailoring' as used in agile studies by examining the analogy of garment tailoring, to identify what is commonly taken for granted in the use of this term and what is overlooked in research and practice. Secondly, it will propose challenges emanating from these overlooked aspects. This paper enriches the conceptualization of agile method tailoring and offers practical help to the management of projects by broadening the thinking of project managers involved in adapting the method to ensure a more thorough evaluation of 'tailoring' to enable a better 'fit' to their project context.

The research questions is: *"What implications does the word 'tailoring' have for the transferring of agile to a construction environment?"* Systematic literature review (SLR) was chosen as the research method because SLR forms a way of finding evidence of academic records to indicate the academic trends and progress in solving research questions.[12] Content analysis was chosen for exploratory analysis.[13] Figure 1 shows the research theoretical framework of this paper. *Google Scholar* was used as search engine to avoid online database selection bias and improve inclusiveness. 96 papers were identified and by checking the title and abstract, irrelevant papers and duplicate papers were excluded. Then quality assessment on papers and the assessment process was based on Papadakis *et al*.[14] Finally, 74 papers were remained in the pool and exported into EndNote 20 and Microsoft Excel for data extraction.
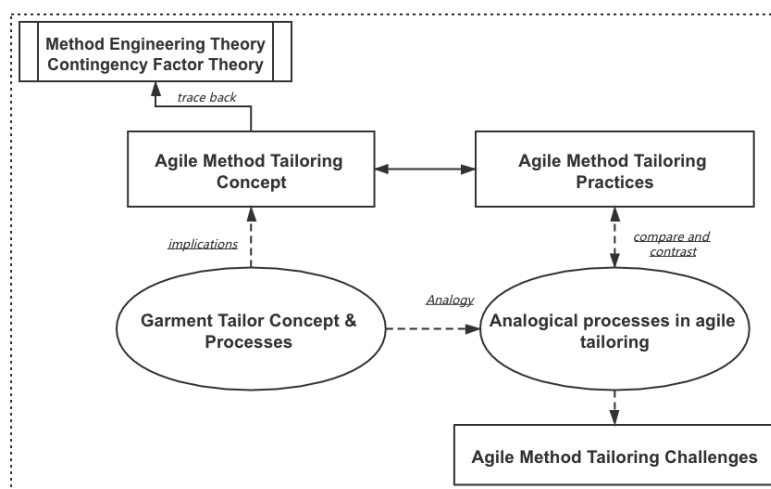
Figure 1. Research Theoretical Framework.

GARMENT TAILORING DEFINITION AND PROCESS

When talking about definitions, a dictionary always provides some basic dimensions of a term. The Oxford English Dictionary (OED) explains tailoring as (1) to fit a person with clothes, as well as (2) to design or adjust something to suit specific needs.[15] Sometimes tailoring illustrates the whole process from design to the deliver the product. On the other hand, the requirement can be fulfilled by only little adjustments, similar as changing the pads from a suit.

This paper takes a tailored shirt as an example to illustrate the bespoke tailoring process (See Table 1). The process was updated based on experience of a tailored shirt customer of Saville Row

Company as well as the bespoke tailoring processes on King & Allen and Savile Row Company website description. The process is a commercial exchange process, with divergent (maybe some conflicting) interests and value on both sides which all require resolution so that business can get done. The process starts by the client who has determined to acquire a tailored shirt and ends with the client wearing the shirt out, satisfied with their choice.

No	Value Chain (Client side)	Value Chain (Tailor side)	Tailoring process (taking tailored shirt as an example)
1	Determine mind	Find client	Client feels dissatisfaction with poor fit ready-to-wear shirts
2			Client has some money to spare
3	Choose the tailor		Client evaluates several tailors
4			Client has to be persuaded that this is the right tailor - there are many perfect alternatives
5			Client may look at other works of the tailor and seek reviews—online shopping habits
6			Or just walk around tailor shops and look at the windows-traditional shopping
7	Learn about options	Convince client	Client goes to visit the chosen tailor and looks around
8		Assess client	Client looks at some pre-made shirts and the full range of options
9			Tailor introduces client to the process of tailoring and what will be expected
10			Client explains the particular need
11	Choose		Client chooses fabrics and style and finishes from a selection according to his price bracket
12			Tailor measures every relevant element of the client's body, using rule of thumb and precise measures
13			Tailor complements and critiques the body of the client, reassures them that they have made the right choice to have a handmade shirt at that tailor
14		Design	Tailor draws up detailed plans which will be kept for future shirts for that client, tailor keeps those plans
15	Acquire		Client may pay a deposit for the shirt
16			Tailor gives out a time plan
17		Make	Tailor makes the shirt
18			Client visits for a first fitting, to check the basic shape and fit
19			Tailor makes adjustments and applies any customisations
20			Client visits for a final fit to pick it up, inspects it for suitability
21			Tailor ensures that client knows how to best look after the shirt
22		Supply	Tailor packages the shirt nicely, adding to the reassurance of the client that they have a premium product
23			Client pays complete price for shirt
24	Use/ reuse/ replace	Seek new business	Client wears the shirt out and satisfied with their choice, having third party recognition and recommending their choice to others

Table 1. Garment tailoring process.

AGILE METHOD TAILORING

Agile method tailoring researchers always cite De Marco's observation before starting their own analysis, whose argument suggests that no single method fits every project perfectly.[16,17] That is to say, in an agile environment, the prevailing agile methodologies (such as XP and Scrum) are used only as a starting point for tailoring. Agile method tailoring has been defined as a process of customizing agile method to fit context;[18] as selection (and /or deselection) and adaptation of the agile practices with a particular enterprise context;[19] and as practices adoption and selection insisting that the criteria of selecting the practices decides the success of the project.[20]

The majority of agile method tailoring papers are empirical tailoring studies but very few mention the process of agile tailoring clearly or to stress out the critical success steps of their agile method tailoring process. This paper is to critically evaluate existing agile tailoring efforts or failed applications of agile tailored for specific environments to see if the use of analogy identifies any category or element of the process that was overlooked or poorly performed.

Analogical agile method tailoring process

When the same system of relations holds across different sets of elements, the situations that elements belong to share a kind of similarity.[21] Analogical mapping is used to connect a traditional garment tailoring process (as the base or source of analogy) with agile method tailoring process, which is an unfamiliar and abstract situation.[22] (See Table 2)

No.	Tailoring processes (taking tailored shirt as an example)	Analogical processes in agile tailoring
1	Client feels dissatisfaction with poor fit ready-to-wear shirts	Client has a new project and feels dissatisfaction with their old project management methods
2	Client has some money to spare	
3	Client evaluates several tailors	If tailor is in-house, the organisation may chose the tailor by their experiences. If the tailor comes from outside, the organisation need to be persuaded that this is the right tailor and look at other projects of the tailor and seek reviews.
4	Client has to be persuaded that this is the right tailor, there are many perfect alternatives	
5	Client may look at other works of the tailor and seek reviews-online shopping habits	
6	Or just walk around tailor shops and look at the windows-traditional shopping	
7	Client goes to visit the chosen tailor and looks around	The first meeting between tailor and client
8	Client looks at some pre-made shirts and the full range of options	Client looks at the past project experiences and the options of tailoring
9	Tailor introduces client to the process of tailoring and what will be expected	Tailor introduces client to the process of tailoring and what will be expected
10	Client explains the particular need	Client explains the particular need of a project management method
11	Client chooses fabrics and style and finishes from a selection according to his price bracket	Client select the basic project management practices
12	Tailor measures every relevant element of the client's body, using rule of thumb and precise measures	Tailor measures the project characteristics, using personal experiences and precise measures
13	Tailor complements and critiques the body of the client, reassures them that they have made the right choice to have a handmade shirt at that tailor	Tailor convince the client for their choice
14	Tailor draws up detailed plans which will be kept for future shirts for that client, tailor keeps those plans	Plan the tailored agile method
15	Client may pay a deposit for the shirt	Client may pay a deposit to the external tailor
16	Tailor gives out a time plan	Tailor provides a time plan for tailoring
17	Tailor makes the shirt	Tailor makes the changes upon an agile method
18	Client visits for a first fitting, to check the basic shape and fit	Trial & error
19	Tailor makes adjustments and applies any customisations	
20	Client visits for a final fit to pick it up, inspects it for suitability	
21	Tailor ensures that client knows how to best look after the shirt	Tailor ensures the client knows how to use the management techniques to the best performance
22	Tailor packages the shirt nicely, adding to the reassurance of the client that they have a premium product	Tailor deliver the method to client with reassurance of the fitness and practicability of method
23	Client pays complete price for shirt	If tailor is the project manager, the organisation may not have to pay twice, depended on the budget plan.
24	Client wears the shirt out and satisfied with their choice, having third party recognition and recommending their choice to others	Client use the tailored agile methods and satisfied with their choice

Table 2. Analogical agile tailoring process.

CHALLENGES IN AGILE METHOD TAILORING PROCESS

By mapping the literature review results to the analogical agile method tailoring process, challenges of agile method tailoring are proposed and summarized in the Table 3. Some tailoring steps that may lead to challenges but have not been mentioned by agile method tailoring studies are about trust and communication. The first meeting between tailor and client is important in building trust and communication channel. If the two parties are unfamiliar, the first meeting may lead to challenges and more pressure to tailor and client in tailoring process. Another proposed challenge that has been overlooked in research and practice is about the difficulty of measuring the project because the project has not started yet.

Analogical processes in agile tailoring	Challenges	Related arguments with citations
Client has a new project and feels dissatisfaction with old project management methods.	Some clients may have agile experiences while other clients may be new to agile.	"adopting a modified Scrum development approach by a newly formed or distributed team may be a risky endeavor."(Horn and Obwegeser 2018) "agile adoption is hard for agile newbies, without an expert or experienced developer" (Diebold et al. 2019)
If tailor is in-house, the organisation may chose the tailor by their experiences. If the tailor comes from outside, the organisation need to be persuaded that this is the right tailor and look at other projects of the tailor and seek reviews.	Who is/should be the tailor?	"first time work with agile methods, begin with selecting practices by PM and a senior developer based on simple descriptions." (Diebold et al. 2019) "process owner tailored project process based on expected boundary conditions, then the process realized by employee in actual boundary conditions. Employees give feedback to process owner for apermanent improvement on the process tailoring." (Baschin, Inkermann, and Vietor 2019) "the most important activity for a scrum master is the process anchor activity, which is to own and disseminate the scrum process within the development team." (Bass 2014)
The first meeting between tailor and client	First meeting between unfamiliar parties might have additional pressure to both sides.	-
Client looks at the past project experiences and the options of tailoring	Tailor may not have related project experiences. Tailor may have less options for client to choose.	"The Previous Knowledge group is the criteria based on work done on previous projects and experi- ences of the organization with tailoring."(Campanelli and Parreiras 2015)
Tailor introduces client to the process of tailoring and what will be expected	Expectations are vague because the project has not start yet.	"…based on 'Mechanisms of action': target level and target implication of the object to design artefacts" (Schuh et al. 2018)
Client explains the particular need of a project management method	Client is not professional enough to say the particular need of a project management method.	"An important task of an agile coach is to understand the context of agile projects. Understanding the context will help agile coaches to adapt development processes to fit their project's contexts." (Stray, Memon, and Paruch 2020)
Client select the basic project management practices	The selection might be irrational because the client is not professional.	"the decision-making process regarding which agile practice to choose based on the context-related findings slightly less objective than one would expect."(Ayed, Vanderose, and Habra 2014) "The criterion used most for the selection of agile methods is 'Previous Experience'. Other criteria that participants use are 'Fit of the Agile Method to Existing Requirements', 'Applicability to the Team Size' and 'Previous Knowledge of Employees'. Interestingly, the literature so far tends to assume that ''Existing Requirements'' and ''Goals of the Team'' are the main selection criteria." (Zielske and Held 2021)
Tailor measures the project characteristics, using personal experiences and precise measures	Project characteristics are hard to measure since project has not start yet.	-

Tailor convince the client for their choice	If the trust fail to build between tailor and client during the first meeting, tailor may feel difficult to convince the client.	-
Plan the tailored agile method	Challenges based on use of agile method tailoring models, criteria and approaches	"the criteria used for method tailoring is an area that is not completely developed from both the research and practical stand points and that new drivers might show up and new criteria can be created as organizations face new challenges and new scenarios for software development."(Campanelli and Parreiras 2015)

"Although the need to tailor a software process to specific project require- ments seems to be widely accepted and unquestioned, the way of doing the tailoring remains unclear and is, therefore, often left to the expertise of process engineers or project managers." "the consequences of the criteria remain abstract and need to be interpreted on a project-per-project basis." (Georg Kalus and Marco Kuhrmann 2013) |
Client may pay a deposit to the external tailor		
Tailor provides a time plan for tailoring		
Tailor makes the changes upon an agile method		
Trial & error	Checking for fitness takes a long time	"a list of 154 situational factors affecting the agile transition and adoption process is proposed." (Jovanovic et al. 2020)
"Some cases have discarded tailored practice because the other departments not understand the practice and developers eventually did not consider them beneficial." (Könnölä et al. 2016)
	Trial & error adds more cost to client	
	Final checking takes a long time	
Tailor ensures the client knows how to use the management techniques to the best performance	The need to convince client and provide enough training to ensure the client knows how to use.	"The process anchor helps development teams make policy decisions about their use of scrum. The process anchor scrum master activity is responsible for ensuring scrum practices and processes are adopted by team members."(Bass 2014)
Tailor deliver the method to client with reassurance of the fitness and practicability of method	Problems on reaching common understanding arose	"first time work with agile methods, begin with selecting practices by PM and a senior developer based on simple descriptions. Then experts support in a workshop for them to understand the practices more. Nevertheless, problems on reaching common understanding arose." (Diebold et al. 2019)
If tailor is the project manager, the organisation may not have to pay twice, depended on the budget plan.	Tailor may face the risk that client refuse to pay the complete price.	-
Client use the tailored agile methods and satisfied with their choice	Client need to use the tailored agile methods for a period of time then to feel satisfied	"Some cases have discarded tailored practice because the other departments not understand the practice and developers eventually did not consider them beneficial." (Könnölä et al. 2016)

Table 3. Challenges of agile method tailoring process.

Who is/should be the tailor?

In-house tailor: if the tailor is nominated in-house, the project manager holds the advantage of high familiarity with the project and organization, however the project manager might not be professionally competent with agile methods. For agile team using Scrum method, scrum master activities include the process anchor activity, which is to own and disseminate the scrum process within the development team.[23] Scrum master can tailor the agile method proactively or reactively, based on the motivation of adaptation.[24] Proactive adaptation means that changes of methods were motivated by the development team's feedback or suggestion. Reactive means that tailoring of agile methods was in response to an external stimulus.

External tailor: An important task of agile coach is to understand the context of agile projects. Understanding the project context will help agile coaches to adapt development processes to fit their project's contexts.[25] Also, agile coach helps to compensate the lacking practical experience of the project manager.[26] An agile coach has a significant influence on the sustained use of agile methods.[27] Otherwise, the project can have a process owner, who responsible to tailored project process based on expected boundary conditions. Then, the process realized by employee and employees gives feedback to the process owner for improvement of the tailoring fit.[28]
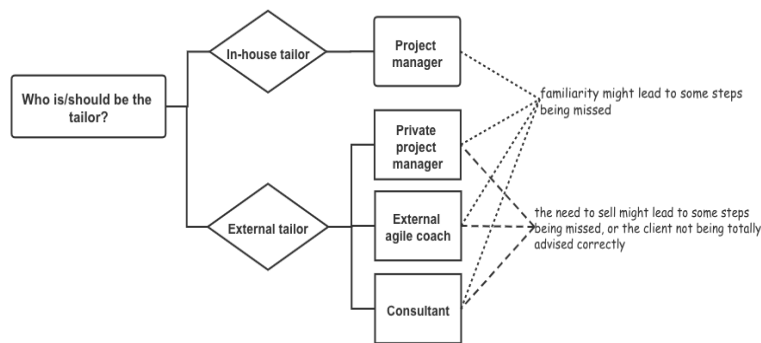
Figure 2. Who is/should be the tailor?

However, the choice of tailor triggers different challenges to agile method tailoring (See Figure 2). For all types of tailor, the familiarity with projects, organization and tailoring process may lead to important tailoring steps being missed. For external tailors, their need to sell might lead to some tailoring steps being missed or the client not being advised correctly. Also, external tailor may face the risk that the client refuses to pay the complete price.

TRANSFER OF AGILE TO CONSTRUCTION ENVIRONMENT (OUTSIDE SOFTWARE DEVELOPMENT)

Real experience is essential for industries users. If no real cases exist, the complexity of internal and external project environment makes the users overload in translating theoretical expressions into daily work language, especially when team members share uneven knowledge level of agile practices.[29] Lappi advocated that some traditional practices can be directly applied in agile projects, for example the contract arrangement; while some practices need to be modified for agile, for example the role and responsibilities of project manager.[30] Less academic evidence showed up in literature review analyzing transfer of agile to construction environment. Only one case focused on tailoring of agile practices to construction projects. Tomek analyzed the application of agile project management in the construction industry and synthesized the BIM and agile project management approach to structure an

integrated product and process model for addressing the on-site management phase of a construction project.[31]

When transferring the agile method to construction environment, the scaled agile approaches may be suitable to solve the high complexity problems with the agile practices tailored for scaled construction project settings. Adding practices to the traditional waterfall approach might be less risky than to adopt a whole set of agile practices. For construction projects, some challenges in analogical tailoring steps proposed in the Table 3 need to have further considerations than apply to small software development projects. Some projects follow the method of 'Trial and error' in tailoring agile practices for communication channel building and process planning.[32] To transfer this tailoring approach to construction environment, the cost of error in construction environment must be clearly considered because the cost of finding and repairing an error after construction can be huge.

CONCLUSION

This paper aimed to find what 'tailoring' means in existing research in agile method tailoring practices and the implications of the term 'tailoring' for the concept of agile method tailoring. An analogical tailoring process was structured for agile users and researchers which can have practical implications for agile method tailoring based on the analogy from garment tailoring process. For example, in tailoring a shirt, the tailor needs to package the shirt and reassure the client that they have a premium product. The analogical step in agile method tailoring is "Tailor deliver the method to client with reassurance of the fitness and practicability of method". The challenges of the whole analogical agile method tailoring process were proposed and mapped with existing studies of agile method tailoring. Some challenges that have not been mentioned in academic research before, were found. In some tailoring steps, the importance of trust building between tailor and client was neglected in the previous studies. Also, another overlooked tailoring challenge is that measuring the project characteristics is very difficult since the project has not started yet. Moreover, the choice of tailor may lead to challenges and risks. External tailors have the need to sell while all types of tailor may have missed tailoring steps because they have different level of familiarity with the tailoring process and the project. With better tailoring, some agile practices can be scaled to suit the construction environment and help with solving high complexity problems.

The analysis is qualitative and exploratory in nature. The results largely rely on the literature review process and the proposed agile method tailoring process model has not been validated by empirical study, which are the limitations of this paper. Agile method tailoring is not a new concept but lack of theoretical explorations and users guidance. To cope with the changing customer requirements and cultivating agility in projects outside of software development, the tailoring of agile methods should be further explored in future studies.

NOTES

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MAPPING SOCIAL CAPITAL NETWORKS OF FURNITURE INDUSTRY - RESILIENCE TO CLIMATE EMERGENCY IN DAMIETTA CITY, EGYPT

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INTRODUCTION

The evolution of people, their economies, and the physical space in which they live are formulated and are in constant change through the dynamic interactions between actors in the community[1]. Hence, understanding community networks and their reflection on economy and space becomes crucial for urban development, especially within the context of climate emergency. Social systems manifest uniquely within each context as culture, lifestyle and various other variables come into play. The type of economy and how people relate to it is also a significant variable to interpret a given context with its potentials and challenges. Within this context, environmental and economic sustainability and risk are critical where social structures display signs of vulnerability which at the same time offer solutions towards resilience.

For industry-based cities such as Damietta – Egypt, in which a certain industry or craft is imbedded in the culture and livelihoods of the community, most economic activities are directly or indirectly related to this industry (furniture making in this case) and passed down from one generation to the next. In such a dynamic, the small scale of the economic interactions forms an economic cluster[2] that functions and evolves within its context according to the possibilities and challenges. In this research, the context of MSMEs (medium, small and micro enterprise) is investigated within the centre of Damietta city, towards understanding the effect and magnitude of the social capital networks on the dynamics of the industry in this city, and how social capital has contributed to Damietta being a regional hub for furniture making in the middle east. This paper is part of this research project, where the paper focuses on the mapping of social capital networks in the city according to a field survey of 347 furniture enterprises in Damietta city and a total network of 996 actors in the network (respondents and contacts).

APPROACH

This paper attempts to draw connections between the following factors as reflected on Damietta's Furniture industry in Egypt: social capital components, community structure and spatial proximity. This is through analysing the survey results and visually conveying the social capital network for the whole network and selected clusters. The main hypothesis is that social capital with the compact spatial distribution of Damietta is highly prevalent in the industry and directly correlated with the

spatial distribution of small-scale grassroot economies in Damietta. Enterprises with higher connectedness in terms of trust, network and norms[3] are expected to be spatially proximal to one another and to exhibit higher 'control[4] in the market. In relation to community structure, its definition –open or closed– [5] is also a reflection of the nature of the dimensions of social capital.

This paper builds on the works of Putnam[6], Coleman[7], Lin[8], Bourdieu[9], Hunt[10] and Burt[11] to investigate the theoretical underpinnings that relate to social capital in literature. The work of Ruddick[12] has guided the theoretical base for understanding grassroot economies and social capital as alternative currency, in addition to Porter's Competitive Advantage Theories, which describes the situation in Damietta as an economic cluster.

SOCIAL CAPITAL: WHAT, WHO AND WHY

The concept of social capital can simply be explained as "investment in social relations with expected returns"[13], which is highlighted in various ways in the works of Putnam, Coleman, Lin and Hunt (as above). This implies that engaging in networking interactions produce profits. In other words, social capital is "resources embedded in relationships among actors"[14]. Social capital has evolved as a concept through the works of different theorists. Although Bourdieu's[15] work includes discussion of cultural capital theory, he also provides a structural view explaining and aggregating social capital, one which focuses on the size and volume of the capital possessed by members, and how the interactions of any given members enforce the mutual recognition of those members in the network[16]. Coleman[17] stresses on trust, norms, sanctions, authority and closure as forms of collective social capital, while also emphasising the individual's use of socio-structural resources in gaining better results[18].

Debated issues around social capital include relating the aggregation of collective values of economic, political, cultural or social connections/relations, with other collective terms such as trust and norms. Literature includes a display of substitutable terms or measurements that all convey solidarity and social integration with no specificity of each term's place in theory. Lin[19] argues that social capital must be distinguished from collective assets such as culture, norms and trust. It is a relational measure with which other collective assets (such as trust) causally correlate without being defined by one another. According to Coleman[20], A fundamental social network consists of two types of elements: 1) The Actors, and 2) The things over which they have control and in which they have interest. The latter can be classified into resources or events according to their characteristics. The relations between actors and resources/events can either be control or interest as earlier mentioned. These relations can be broken down into the dimensions of social capital: trust, networks and norms.

Social Capital Dimensions

Social capital has been studied as a domain and its dimensions have evolved through various researchers' additions over time to include more dimensions and concepts. Building on the works of Putnam, Coleman, Lin, and Hunt, a comprehensive assortment of social capital factors of measurements have been identified, namely; Social Cohesion, Networks and Norms as the main divisions. Social cohesion includes measures of social solidarity, trust and reciprocity. Networks includes Embedded Resources and Network Locations. Lastly, Norms comprise belief in activities collegiality and agreeing with collective rules. The following diagram illustrates the measurements adopted in the study for evaluating the volume of social capital.

Among the three Social Capital dimensions, networks are the most measurable and tangibly quantitation elements. According to Burt[21], focusing on network mechanisms that affect social capital offers a more transdisciplinary perspective across theory with empirical evidence rather than loosely

tied metaphors and indicators used in a number of social capital research. The empirical work of Burt[22] and Coleman[23] investigating Structural Holes Theory versus network closure as social capital provides a tangible quantitative base for measuring social capital. Burt argues that the two network mechanisms work differently and can bring various additions to the magnitude of social capital if utilised collectively within a "more general model of social capital"[24].

Social Capital and Geographic Imaginaries

The reflections of space and context on narratives of social capital conceptualisations has been widely debated in literature. According to Naughton[25], simplistic geographic imaginaries tend to fit within the dominant views on social capital, producing geographically reduced narratives that deprived of specificity and context[26]. A notable attempt is that of Naughton[27] to connect social capital concepts with geography and address economic latency on a theoretical level, trying to understand how specific communities resolve their problems by utilising resources of their social networks. This emphasises the spatial dimension of social capital, without which the narrative becomes simplistic and disconnected from real context.

This research adopts Naughton's argument on the significance of context-specific and context-explicit narratives of social capital, which defies the rhetoric of "social capital as a panacea that can be built from 'nothing' in any prevailing circumstances and for any desired benefit"[28]. Reflecting on Damietta's furniture industry, the patterns of daily life have generated a specific form of social capital networks over time, which is unique to this set of geographic and urban imaginaries for the community of Damietta.

CASE STUDY: DAMIETTA'S FURNITURE INDUSTRY

The Egyptian furniture industry is a well and long-established domain that is linked to geographical advantage with notable access to major markets, reasonably low costs, and highly experienced labour regarding woodworking skills. The wooden furniture industry in Egypt dates back centuries with mostly distinct styles that incorporate Islamic, British and French elements into the design, as well as part of the sector also producing rather international style designs. Exports in the furniture sector started in the 1960s and 1970s pursuing the Soviet Union and Eastern Europe. By the 1980s, the export market shifted in Egypt towards Arab countries to respond to the increasing demand for furniture resulting from booming urban growth in the region[29].

The dominance of micro and small-sized enterprises in the furniture industry landscape in Damietta and in Egypt generally is undoubted even with discrepant figures from different data sources[30]. The following table 1 shows not only the dominance of micro and small enterprises, but the notable rise of their numbers between the years 2006 and 2013. Hence, micro, small and medium sized enterprises (MSMEs) in the furniture industry represent 99% of total number of enterprises, with about 95 percent being micro businesses (less than 5 employees). Although this data dating back to 2013 can hardly be used to reflect the numbers today, the ratios they reflect feature undeniable patterns that seem to persist according to observations, interviews and survey results.

The pattern of the industry is also apparent in the spatial distribution of mixed-use buildings within the city centre as in the following land use map (figure 1). The mixed use highlights the live-work pattern in Damietta, where landowners have their workshops on the ground floor with their residents on the top floor. This also coincides with the entrepreneurial nature backed up by the extremely high percentage of privately owned workshops and buildings in the city (map in figure 2).

Year	Total number of employed persons	Total number of enterprises	Number of enterprises according to employee				
			Less than 5 employees	5-9 employees	10-24 employees	24-49 employees	50+ employees
2006	255,065	89,209	8,729	7,069	285	70	56
2013	270,222	104,250	98,728	5,006	369	56	91

Table 1. Distribution of Enterprises in furniture industry as MSMEs categories[31]
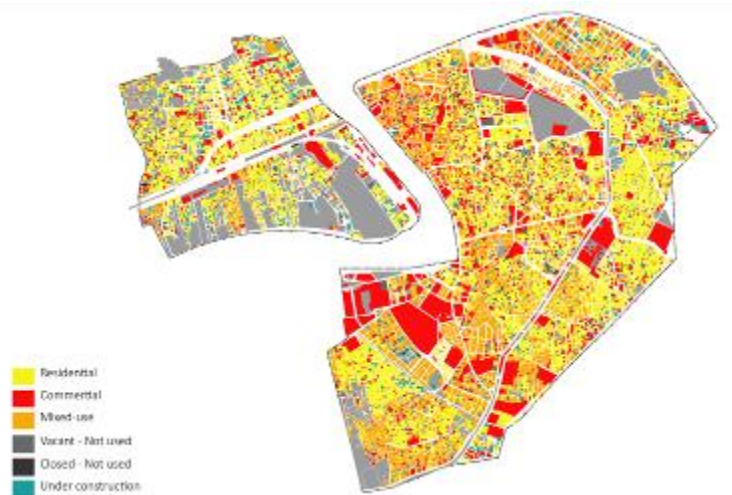
Figure 1. Land Use Map of Damietta[32] (developed by researcher)
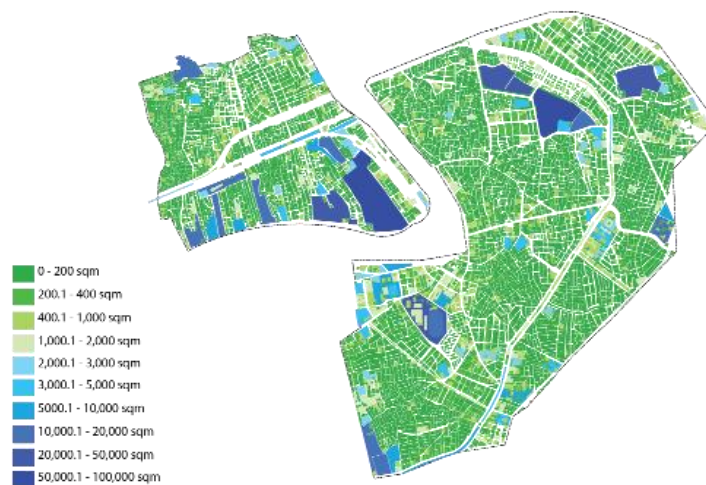
Figure 2. Map of land plot areas in Damietta[33] (developed by researcher)

Climate Emergency in Damietta

The current political landscape in Egypt is enforcing a national economic direction of creating new mega projects in different areas. Examples are the new Administrative Capital east of Cairo, as well as new cities such as New Alameen and New Damietta (which are independent cities adjacent to the old city fabric but disconnected from it). This direction can be challenged as the "old" urban and economic infrastructure of the nation is put out of focus for the sake of new projects, leading to questionable rational of the development agenda.

Regarding Damietta's development, the government's new mega project (DFC) is focused on furniture industries with international funding and foreign investment and stated to be situated outside the boarders of the old city as a purposeful encouragement of the already existing furniture industry in the city. According to the sea level rise map below (Figure 3 and 4), not only is the whole region subject to sea level rise, but more specifically DFC site lies completely on land of elevation zero and +1m at most, leaving the whole plot vulnerable to sea level rise by the year 2080 (or 2100 at best). Given the magnitude of the investment in this project, it would be rather controversial to execute it on a plot that is expected to be submerged within 50 years' time.

From a socioeconomic perspective, Damietta's economic nature has been always associated with the entrepreneurial essence of its furniture industry. It is a unique context where cluster economies (similar to Sassuola, Italy) has evolved through decades and has been passed down from one generation to the next. Such a mega project outside the city would be drawing out not only the employment pool in the city, but also the income and local investment. Instead of developing the city's economy, the project –in its current form- is offering an autonomous industrial base where Damietta's population shifts to be worker-based rather than owners and entrepreneurs.
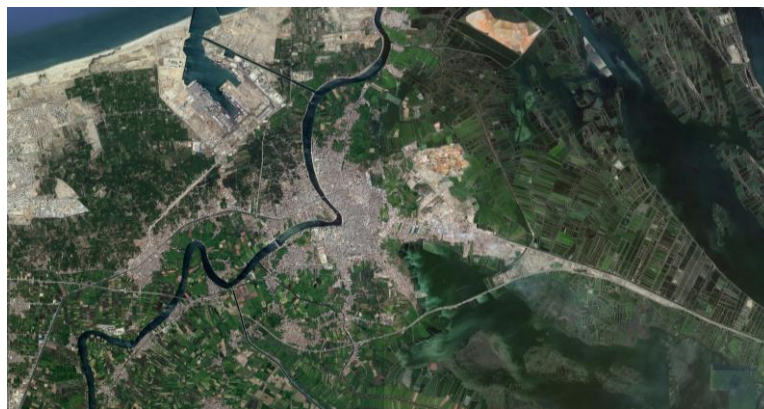
Figure 3. Google Satellite Imagery of Damietta[34]

Figure 4. Simulation of 2m Sea Level Rise scenario [35]

METHODS

The methodology presented in this paper is part of a more inclusive quantitative and qualitative inquiry towards quantifying and mapping social capital networks for a spatially concentrated industry for the case study of Damietta city. The overall research methodology involves several data collection

methods including semi-structured interviews, systematic observations, field survey and geospatial network mapping. This paper focuses on the field survey and the subsequent visualization and analysis of the social capital network in Damietta. This included visualizing and analysing the total network of the survey sample of respondents (347), the total overall network connections between respondents and contacts (996 actors) with 716 directed mapped ties. Questions in the survey examined trust, networks and norms, as well as variables related to other market dynamics such as power distribution within the network. This is also the basis of the following spatial mapping (GIS) of the relevant survey questions results to highlight whether the relations identified have a different spatial dimension that the statistics does not fully cover (such as proximity, transport, infrastructure, … etc).

It is worth mentioning that the results of this research have an inherent limitation as they rely on a sampling approach rather than bigdata for the network mapping. This has been selected due to the limited access to data and the semi-rural nature of the community in Damietta, which meant that online crowdsourcing was not feasible. The research acknowledges that the measured random sample, although statistically significant, would not represent all the network connections, but rather provide information on some of the connections within the overall network in Damietta's industry.

RESULTS
Survey Analysis
The survey was conducted with a total of 347 respondents. The age of respondents is normally distributed with a range of 19-60 years. The mean age of respondents was mid-40s, with a wide range of ages within the sample. In terms of ranges, the most prevalent ranges are 40s and 50s, followed by 30s. The highest value for respondents' role in enterprise/workshop was sole owners with 57.3%, followed by senior workers (17.6%) and co-owners (12.7%). With 70% of respondents owning and co-owning enterprises, there is a clear indication of the entrepreneurial pattern in Damietta's furniture industry. Cross-examining the age and role of respondents shows that the highest captured category is workshop owners aged 40-60 years old.

Regarding the role of enterprises on the value chain, most respondents did not report one activity (carpentry, upholstery, etc.), but reported on working in multiple activities that correspond to a certain type of product, process or pattern of work, which was contrary to the literature about this industry, and reflects on the specific pattern of work in Damietta. One of the patterns that prevailed in the responses is that many businesses that identify as carpenters also chose distribution and sales as part of their activities. These enterprises mostly adopt the product order pattern, where the central enterprise/owner is a carpenter who gets an order/transaction that they outsource to neighbouring enterprises to finish different parts of the work. The work is then collated at the end within the central carpenter's workshop to be delivered to the client.

The results of different questions for each section all show positively skewed responses favoring the abundance of social capital dimensions within the sample. These values have been used as basis of calculating a relative score for social capital in the survey sample as an attempt to estimate the magnitude of social cohesion, networks and norms based on the collective results of questions from the survey. Table 2 below shows the calculated values and synthesis of what these indicate. In table 2, almost all mean values are towards to higher end of the scale, indicating a positive abundance of social capital in the sample. The only indicator that was below medium mean value is the norms, and even in this case, the mode (the most abundant value in the dataset) value is still above average towards higher social capital.

These relative values reiterate the previously identified results in a collective manner, where measures of trust, reciprocity and networking for the whole dataset indicate prevalent social capital. The lower value for norms can be analysed as a reflection of the vernacularity of the evolution of social capital as a collective value in the community. The lack of driving/supporting bodies that push forward and stir the market into capitalising on the existing social capital might justify the values arising, and propose a gap in the structure of the market and industry society in the city with a lot of room for development and further research.

| | | Calculated Trust Score | Calculated Norms score | Calculated Total Network score | Networks Themes | | |
					Calculated Embedded Resources score	Calculated Contact Status score	Calculated Network Locations score
N	336	339		702	702	702	702
	11	8		14	14	14	14
Mean*		6.6443	4.9846	6.2553	5.2637	7.9076	5.5945
Median*		6.6667	5.1389	5.9251	5.4142	7.5000	5.5556
Mode*		6.88	5.83	7.41	6.66	10.00	5.56
Std. Deviation		1.08638	1.18675	1.05511	1.30583	1.65126	1.38696
Skewness		.010	-.096	.314	.043	-.209	.256
Std. Error of Skewness		.133	.132	.092	.092	.092	.092
Range		6.53	5.08	5.78	5.54	7.92	7.11
Minimum		3.47	2.83	3.67	2.79	2.08	2.89
Maximum		10.00	7.92	9.44	8.33	10.00	10.00

Range: 1: least value for social capital.
         10: highest value for social capital.

Table 2. Calculated social capital measures according to survey results (Source: Calculated from author results)

Social Capital Network Visualisation

The network as visualised separately from geolocation reveals a pattern of smaller networks between enterprises that mainly relates to their position on the value chain. This also relates to the small scale of the enterprises and how almost all actors in this network are not of high power in the market with a large variety of connections.

There are a limited number of nodes that exhibit higher level of connectivity, and this would suggest that these enterprises are either bigger in scale of work and connections in the market, or possess higher skills in their precise business activity, which would justify their higher connectivity. That said, these nodes still do not exhibit great influence on the larger scope of the network in Damietta.

Observing the clustering pattern of the network as in the below Figure 5 shows that the network (as reflected from the survey entries) consists of a collection of smaller networks that are clustered separately from one another, with some connections between some of the clusters through centric nodes (highly connected nodes). This data supports the research's understanding of the nature of the furniture industry in Damietta as being small and micros enterprises and implies that the sample is highly representative in terms of reflecting the existing patterns of the industry in the city.
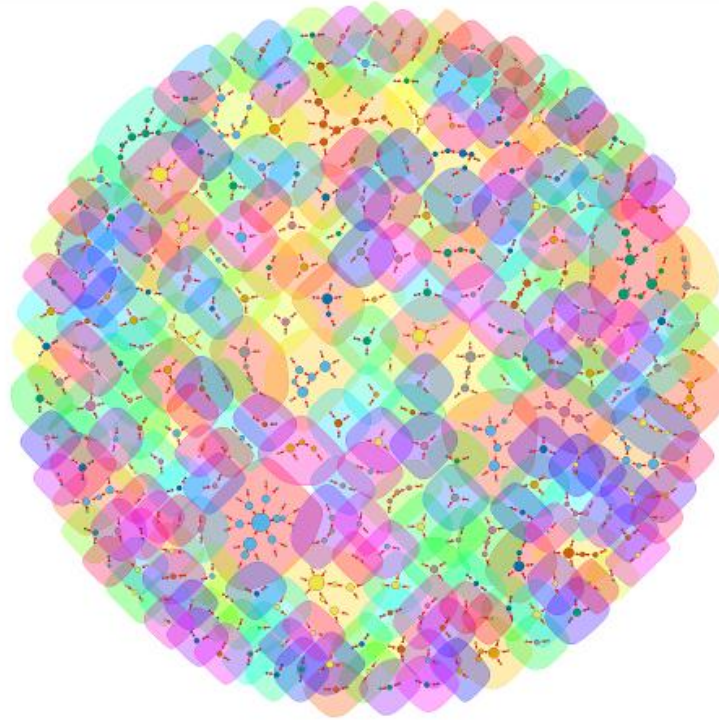
Figure 5. Visualising Network Clustering in Damietta (Source: Author analysis)

DISCUSSION

The primary hypothesis of this research on the claim of the abundance of social capital agglomeration within the economic cluster of Damietta has been supported through the data. The findings exhibit evidence of the vitality of trust, networks and norms as a main structure of business interactions between MSMEs. The spatially dense urban fabric of the city also suggests a link between proximity and social capital, which will be further investigated through the following phases of this research. Even though this case implies clear industry-related indicators, the potential for generalisation lies in the common factors found in global south cities with local industry concentration, small-scale (MSME-based) economic cluster, and a strong long-term social structure. Through context examination and consideration, the research methodology can be replicated in different contexts for comparable industries.

Contrasting to conventional municipal perspective, according to Ruzek[36], embracing local economies (including those informal in nature) can allow for more sustainable economies. For the case of Damietta with the underlying climate emergency factors in the argument, the dynamic suggests that the local MSMEs economies in the city offer a viable and more resilient alternative to the DFC project. This is in addition to the literary argument that supports that local economies are a sustainable alternative to capitalism and can shift the global focus from a globalized capitalist society to eco-localism[37]. From this notion, quantifying the magnitude and scale of social capital as a major driver for success in Damietta opens a greater discussion on sustainability and development choices for the future.

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PLACE BASED PEDAGOGY: RE-THINKING TRANSFORMATIVE LEARNING

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INTRODUCTION

Informal and formal action led learning across community, practice and education can lead to the development of social capital which enhances the vitality, vibrancy, and wellbeing of a place. This opportunity can facilitate a transition in design of future careers. The benefit of lifelong learning as an embedded value within the experience of higher education can be reciprocated within the wider concept of citizenship. It can shape the values and identities that we develop through our experience and that of others.

This experiential approach benefits both learner and community; adding social & economic value, enhanced citizenship and challenging a traditional approach to place-based transformation. The value of learning undertakes a holistic transdisciplinary model beyond that of current methods of collaboration and can encourage a new way of thinking within local government and private practice.

Evidence is demonstrating the value of social and educational capital by facilitating transdisciplinary conversations within a place, tackling the complex range of issues inherent in urban areas, and enhancing graduate opportunities.

Transformation and Transdisciplinary

Transformation is not only the physical change when a project is undertaken but that within an individual as a part of social transformation where "learning does not mean simply receiving and understanding transmitted knowledge; it also means mobilizing the inner resources of individuals who are in the process of constructing their selves" as posed by Belanger.

Transdisciplinary working prior to employment shapes the placemaking career of the future, tackling complex issues and builds a community of trust. Early evidence indicates students are more equipped with skills sustained beyond existing academic programmes and barriers between practitioners and community are reduced.

Place Based Learning

As educators and continuous learners, we learn in parallel with our future, existing and previous students about how we not only develop the programmes and modules but also ourselves. Everything that we do is situated around place.

Place has always been more than just a location, a construct of physical and virtual locations. Our ability to teach as an educator and learn as a learner seen an almost overnight shift as we responded to the CoVID_19 global pandemic in March 2020

The experience is much more than that; they are social transitions, senses of belonging and identity markers and each one is a learning opportunity. For some in Scotland we are seeing wider shifts in delivering education within the place. We then must ask ourselves does place become the education? What value can this deliver?

A place-based pedagogy that supports increased academic achievement with "the process of using the local community and environment as a starting point to teach." as described by Sobel can encourage a transition which can tackle complex issues in society. It fosters the opportunity for transformative learning for students and the community where "the notion that one's frame of reference becomes more "inclusive, differentiating, permeable…critically reflective of assumptions, emotionally capable of change, and integrative of experience." According to Mezirow.

Panic-gogy

Our experience is being shaped on a global and local scale, creating increased challenges in a need for equality in education and in our recognition for what we need in our places. In higher education many are shifting from a longer term, informed pedagogical approach to the now phrased panic-gogy posed by Baker. The panic-gogy informed change sees both student and educator responding to a digital shift which perhaps eradicates their original, well tested approach whereas Kamenetz suggests it should be concerned with responding to the student situation. However, this digital experience is creating an opportunity to reshape how we can collaborate with communities, sharing skills and seeing engagement as an inclusive learning opportunity, an opportunity to practice reflexivity.

INVESTED REFLEXIVE LEARNING

In many professions including education, medicine and architecture, practitioners can be influenced by the concept of being a reflective practitioner as defined by Schon and in particular architectural education which focusses on research by design to support active reflection and reflexivity outlined by Finlay and the process of praxis as outlined by Dewey in Hein as a means of continuous learning and growth in professional knowledge.

Experiential and Situational Theory

This experiential approach benefits both learner and community; adding social & economic value, enhanced citizenship and challenging a traditional approach to place-based transformation. The value of learning undertakes a holistic transdisciplinary model beyond that of current methods of collaboration and can encourage a new way of thinking within future practice.

When we look at the experiential learning theory set out by Kolb, we see it as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience". Reflection however was only one part and there is a need to consider reflexivity and application of situational learning in Lave and Wenger where knowledge should be gained in the place it would be used. Creating a "community of practice" where the approach suggests "effective education requires learning that is embedded in authentic contexts of practice, wherein students engage in increasingly complex tasks within social communities" poses Besar, but this approach can also create conflict when considering this within the context of community in Macpherson & Clark. A shift through the pandemic from place based situational learning e.g. on site visits and applied learning in live projects to a digital version created

both a different digital community which could also be classed as a form of situational learning theory in that it was reflecting what is happening within practice.

In reviewing both reflection and reflexivity to support practice beyond education has informed the development of a learning context as well as process. The adaptation of both Kolb and Zuber Skerritt as shown in Figure 1. results in a streamlined version of reflection within reflexivity.
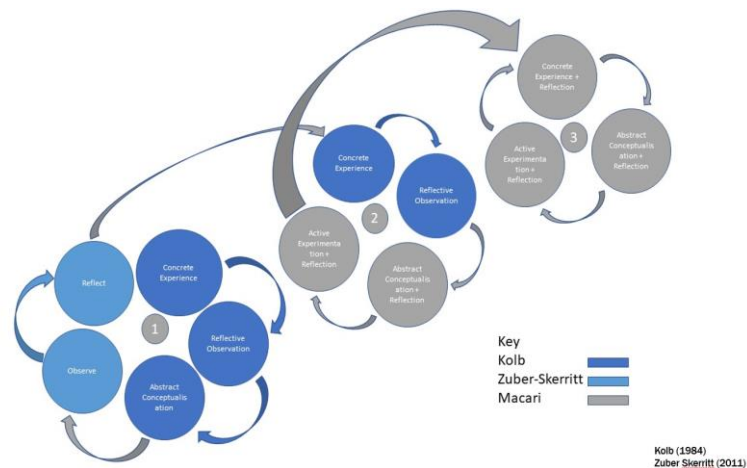
Figure 1. Redefining Reflection. (Author's Own).

Equality and Equity

The approach to reflexivity must be informed by adaption and recognition of oneself and that there is more than one position in this approach as we transition from educational research to research in practice. This is outlined by Doucet and the three sets of relationship which inform our ability to reflexive in both research and practice. There is potential that the profession of those within the built environment require a shift in its membership from reflective to reflexive practitioner as supported by Cousin. This was considered within the confines of Health and Social Care but which can be equally applied to many other practices. Currently the planning profession could be easily described within the context of Ernest Greenwood and their critical attributes, particularly in relation to knowledge, professional authority, a regulatory code supported by the culture of the professional association. A planner makes decisions on a place, for the common good, based on information and data provided by others with their own self-interest therefore there is a need for more awareness of this in the profession and also in the educating of the future planners to be. A driver for this is the need for equality and more enhanced ethical considerations in the profession and this has been highlighted in relation to the digital divide and the role of the expert or "design outsider".

The ability to learn and evolve in place as built environment professionals is further complicated by the intrinsic link to other societal factors which influence and are also influenced by decision making in the built environment. It includes issues such as those determinants described in Whitehead and Dahlgren's Rainbow Model, see Figure 2.
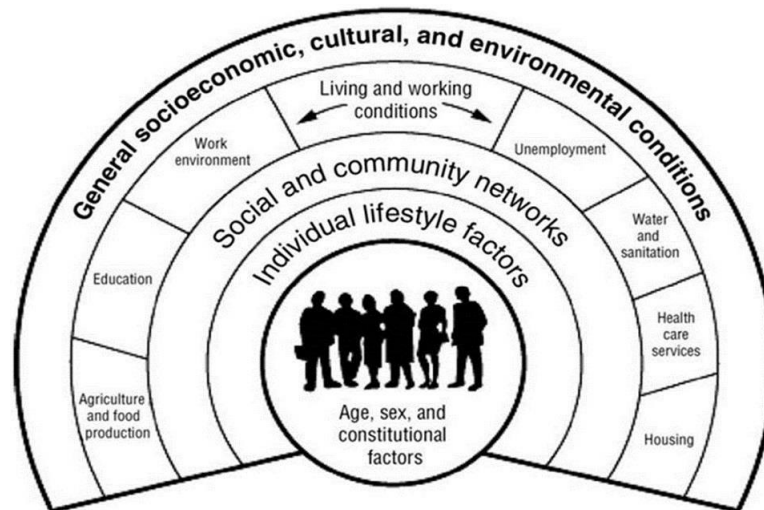
Figure 2. Rainbow Model (Source: Dahlgren and Whitehead 1991).

The focus on social connections and a sense of community with and for learners has emphasized the need for experience which balances both evidence with experimental and experiential design. Something perhaps recognised by Pring in relation to "one aspect of the scientific paradigm, which education research might emulate is the experimental design". For example, the experience of digital learning in a pandemic has been experimental for all and its results will inform my approaches to education in the future with an emphasis on inclusion and equality.

APPLICATION IN PRACTICE

At the point of entry to a collaborative learning experience we are often shaping the skills for those careers that are yet unknown. A need for identity can be derived from both oneself and that of those around us.

Through a case study approach of sustainable city exploration in Scotland as the process for learning, evidence is demonstrating the value of social and educational capital by facilitating transdisciplinary conversations within a place. The learning is layered within the experience brought to a programme[1], the experience within the learning needs of professional accreditation and that of the variety of other learners in the situation.

Tackling the complex range of issues inherent in urban areas it tracks the experience through the eyes of recent graduates who have used not only their transdisciplinary experiences but the resulting opportunity including CoVID, to reshape their approach to collaborative placemaking and their framework of the Design Outsider[2]. Where emphasis is on rethinking the role of the design expert as the central experience for both the client and the business.

Not only does this create action in enabling the designer to be the community but the participation that comes from this and the learning experience that continues to allow for growth both from the "professional" but also the community. It allows for consideration of roles and influence within the process of learning in place prior to embedding their value and role in practice. From a traditional experience in facilitating physical, social and behavioural change as a series of processes that are either top down or bottom up there is a need to engage within the middle out section articulated by Janda and Parag as shown in Figure 3.
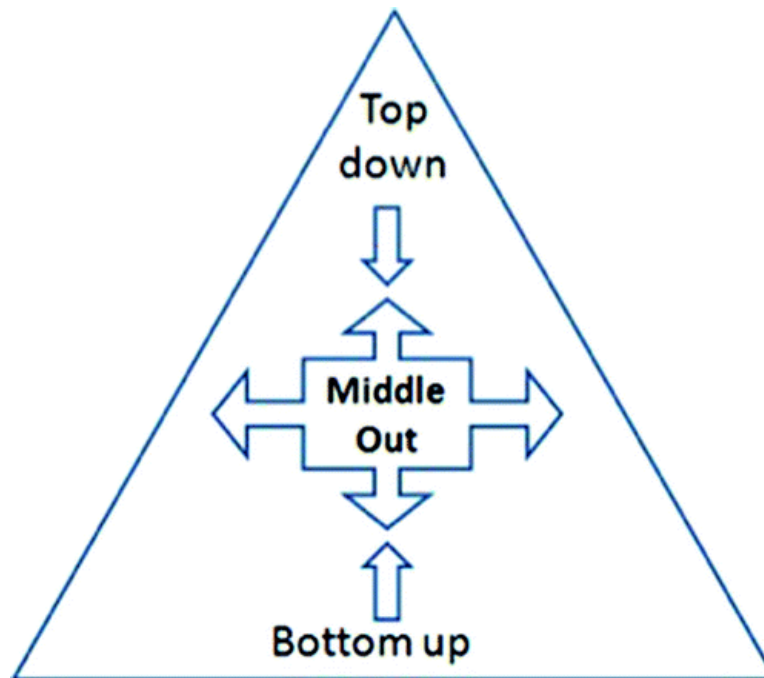
Figure 3. Roles and competencies for the integration of low carbon refurbishment into a system of professions. (Source: Janda and Parag 2013)

Students had learned specific knowledge in the classroom, but it was outside of the classroom where the 'magic' happened. The authors as educators along with other tutors, acted as 'guides on the side' offering suggestions and questions to provoke thinking, a questioning approach based on interrogating the problems, way before the solution was even considered.

For everyone, tutors, and students alike, it was important to have this academic approval for an interdisciplinary approach but balanced with a clear structure and purpose to the collaboration. It was therefore necessary to embed that reflection and reflexiveness which was so clearly seen in the diagram on the previous slide as part of the process.

Their experiences learning and working on projects grounded in a specific place, provided a connective tissue.

The Outsider

While they had diverse backgrounds, they were experiencing 'place' together. For the wider team, viewing Perth as a place in transition - as an ongoing incomplete project – transforming the city into what Ellsworth has coined a 'transitional space'.

"…[the transitional space] is an "answer" that provokes us to keep thinking…[the transitional space] allows us to use the environment to get lost in oneself, to make a spontaneous gesture, to get interested in something new, to surprise oneself, to organize bits of experience into a temporarily connected sense of self and then to allow those bits to "un-integrate" so that they can be surprised by themselves and reconfigured into new thoughts and ways of being with self and others".

The experience of learning in 'place' was transformative. As students were learning about 'place' - they were at the same time learning about themselves, their abilities, their unique knowledge, their goals, and future possibilities. There was no guarantee that they - or the other students - would take advantage of this unique learning experience.

Pushing themselves outside of their usual 'element' was critical to continued growth as learners in a multidisciplinary team. For some it was driven by my unique position as a curious 'outsider' on the course alongside future architects, planners, and urban designers.

While they had learned from each other during the live projects they also learned to play off each other's strengths. The experience working in multidisciplinary teams also reaffirmed their belief that creativity takes many forms - from creative policies to creative design decisions. Learning new perspectives, data and understandings outside of their hybrid discipline is something they then took forward into their careers and could be likened to that of Mauthner and Doucet's epistemological critique of collaboration in research where "collaborative research is highly valued precisely for its ability to bring together multiple researchers with distinctive and specialist perspectives to tackle large or complex research problems."

This approach resulted in the creation of a collaborative learning output[3]. Not only does it demonstrate their skills and attributes as learners but as a tool that can support conversations and dialogue with communities and practitioners in any given place about transformational futures.

Learning in Context

Their experience mimicked the collaborative nature that fosters start-up culture as they were surrounded by a constant stream of new ideas. Building off these collective experiences, Callum, Daniel and Joshua co-founded 'Design Outsider' a multidisciplinary design studio integrating traditional 'design outsiders' into the design process."

We have big problems but sometimes we need the small solutions. That starts with collaboration. The design and education delivery of the learning was based on the premise that we should all learn by creating experiences with and for learners, where learners extend beyond those that are enrolled on a course. The experts in our communities who live in the places that we are learning in; the practitioners who may be so engrained in the process of practice and trying their best that the chance to think differently can be constrained by the process, policies and politics that prevent testing prototyping and reflecting on concrete experience to effectively collaborate. We need to change the perception of who the designer is and where the embedded approach is built on the continuous cycle of three things:

1. Concrete experience and reflection
2. Abstract conceptualisation and reflection
3. Active experimentation and reflection.

That is what will shape our future hybrid professionals, challenge the transdisciplinary approaches to place, taking risks with shaping the professional capital needed and which is reliant on the interdependency of both human and social capital as suggested by Hargreaves and Fullan.

Globally and locally we are facing challenges where many "are defined by their interconnectedness and by change. They cannot be solved with the old processes, but require new forms of thinking and working, combining a planetary consciousness with a responsible humanism that respects and enables local expertise" according to Harriss et al. Design Outsider has embraced their experience of collaborative and situational learning in defining their identity and values in place where they feel an obligation to not only talk about the benefits of bringing unique voices to the design discussion, but show co-design in action!

CONCLUSION

A continuous change in learning experience, alongside the unexpected digital shift has refocused the process of learning but also the ability to learn in place. The shift could be likened to change in any institution or organisation as Lewin recognises where an unfreezing, changing, and refreezing of teaching methods has three parts of the process of change. This change can potentially support a greater collaboration and refined situational learning when it is combined with a reflexive approach to delivering higher education which extends beyond the traditional university years. It can reduce the risks of significant change needed, an ability to adapt should an emergency arise again, and a paradigm shift in education. This new normal will require dialogue and patience by all parties for longer term success rather than reactive measures. It is also ongoing and therefore we cannot be purely reflective and wait for the pandemic to be over. As quoted by Greek philosopher Heraclitus "change is the only constant in life".

In itself it is a dilemma which resonates with the concept of Zygmunt Bauman's liquid modernity as outlined by Smith and further enhanced by Barnett in relation to the role of educating in strangeness, very much like we have experienced with the pandemic, of the unforeseen and unknown future. However for those such as Design Outsider it creates the opportunity to create action and engagement as a further enhancement to education to facilitate future change in practice.

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ARCHITECTURAL DEMOCRACY: A FRAMEWORK FOR MAPPING THE RELATIONSHIPS BETWEEN ARCHITECTURE AND DEMOCRACY

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INTRODUCTION

Architectural Democracy is an ongoing doctoral research at Aalto University proposing a conceptual framework for a structured exploration of the relationship between Architecture (exemplified as the life cycle of a building) and Democracy (defined here as the assurance of all person's rights and freedoms, that every person can access information and is able to use one's voice in the process of decision making). It aims to create a common ground for diverse stakeholders to better understand the complexity of cities and to participate more actively in the urban planning processes. For concept development and testing the usefulness of the proposed framework, three characteristics for both Architecture and Democracy are crisscrossed as being the minimal possible ones to characterize both, to reduce the complexity of the matrix and thus guarantee the readability for the user. For architecture, these characteristics are its birth (acquisition, design, and construction), life (operations) and death (recycling or renovation). For democracy, the main characteristics are the civil rights and liberties, informed citizens, and participation. By crisscrossing these, a 3 by 3 matrix arises, in which bilateral questions are asked. These questions are answered by the stakeholders affected. The authors argue that this framework evaluates the quality of both architecture and democracy as it provides a reference on how to measure a standard, not by its similarities but by contextualizing its societal outreach. This paper highlights the relevance of this research by showcasing one case study of the city of Helsinki.

THE PROPOSED INFOGRAPHICS ON THE CONSTRUCTION PROCESS

The city is clearly our best attempt to make the world how we wish it to be, in changing the environment for our comfort[1]. But are we aware of this worldwide urbanization task and where is it leading us into? The kind of city we live in, is related to the kind of people we are creating[2], so if citizens are unaware of the process, in not understanding for example who owns the city, for whom and to which cost cities' infrastructure is being designed, '*sooner or later this combustible mixture of ignorance and power is going to blow up in our faces*'[3].

The designers (Architects) and regulators (Politicians) communicate between a complex array of markets and personal interests, for most of the times away from public scrutiny and environmental accountability. The following suggested infographic tries to make a general overview of the topic:
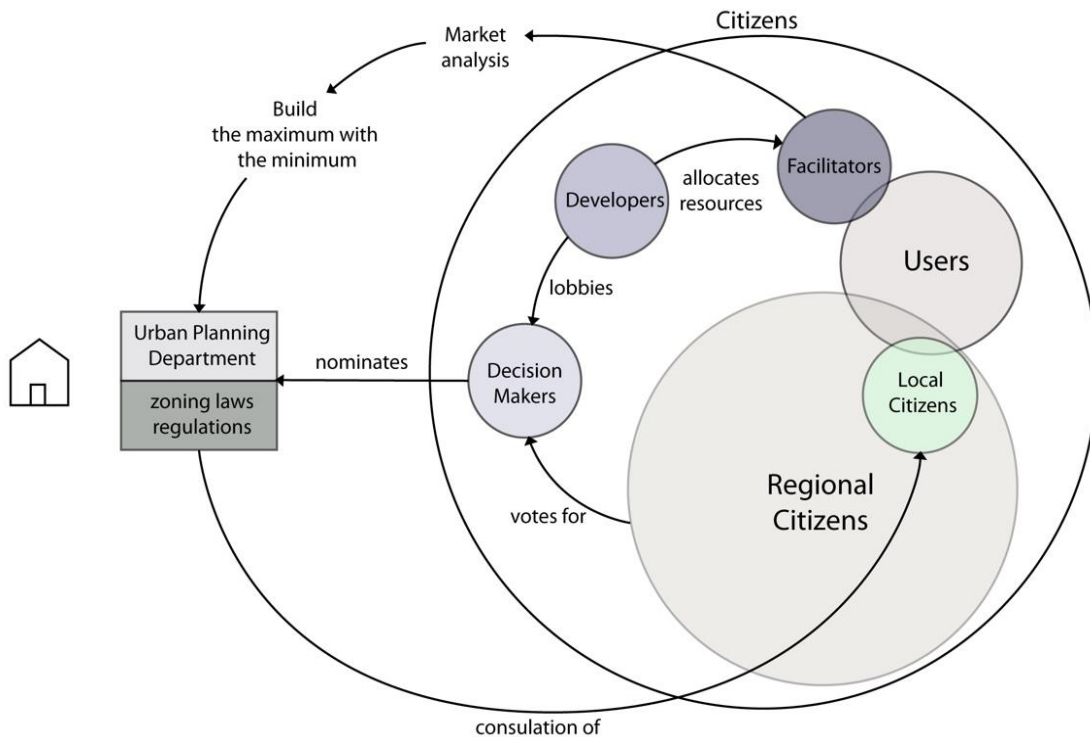
Figure 1. Suggested simplified infographics on the connections between politics and the construction industry

The "Decision Makers", for example the politicians, lead the top-down decision-making process via zoning laws and regulations. Despite a growing monitory system of politics in democracies around the world[4], corruption is still a widespread phenomenon throughout all political systems worldwide. Politicians also lack the detailed knowledge over the local problems for the generalized imposed solutions. To balance this, many countries have bottom-up decision-making processes lead by local citizens, via for example voting, consultations, participatory design programs, etc. This latter process is expensive as it takes much time to implement, and the locals usually lack the oversight over the bigger landscape of decisions[5]. Even if all goes well, who evaluates the quality of the built project and the quality of the democratic process over that decision?[6] The evaluation of buildings remains a subjective process as the tools available for such are limited, for example on sensors of users' patterns or statistics based on inquires of the users. It is not uncommon to hear stories of world-famous buildings portrayed as icons of architecture which functionality for the users, or its general maintenance are a failure[7].

Evaluating the democratic process is also a very difficult process[8], especially in everyday life operations.[9] Cities, as all organic entities throughout history, grow in complexity. Yet our human limited cognitive abilities are not at the same pace of growth. This growth in complexity might be the main reason why a growing number of decisions are being done automatically. For example, the traffic and surveillance systems. But as we noticed in the above infographic, if the allocation of resources is being done under a poor framework of checks and balances, replacing it by a black box, programmed by humans, aware only of that same framework, how are we to ensure that the earth's limited natural resources are not being misplaced with dire consequences for human survival?[10]

We can remain passive and let the automated smart city continue the control of us "lemmings", marching steadily off the cliff, or we can try to deal with the complexity of cities and break it down to make way for smarter humans by using the best of our cognitive abilities.

One can claim, that to participate in politics[11] and make thus collective responsible choices for us and future generations, all citizens need to understand how cities work at a deep level: who owns it, what goals, what memories, how open and adaptable it is, etc., all this through time (future and past generations) and in different scales. The task at hand is relevant, as cities consume most of our energy and resources. To bring this sort of understanding to a wider public we need to deepen the process by contextualizing the questions and enabling a discussion.

FRAMEWORK AND METHODOLOGY

Research on Architecture[12] and on Political Sciences is two folded: on the topics of engineering, technology, and behavior, it follows the scientific paradigm[13], but it is qualitative on its experience.

This research proposes a graspable 3 by 3 matrix on the relationship of both Architecture and Democracy, to verify if a systematic way to classify the link between Architecture and Democracy for a contextualized (scale[14] and time) practical analysis of both, and of our cities is possible.

For Architecture, which accounts for the factor time, the authors propose three parts from an altered version of the well-established development phases of the German HOAI leistungsphasen[15].

For Democracy, as there is no consensus of its definition, the matrix proposed is a simplified, also three-part version of some of the widely accepted main ideological principles. The authors then crisscross the two. In such a matrix, bidirectional 18 questions arise which will be answered by its main affected stakeholders, from the small scale, the developer, into a larger scale, the environment (answered for example by institutions). This will add the factor scale into the process.

The matrix of Architectural Democracy, filled in by the stakeholder's answers has been filled up by people attending short lectures on the topic. Requesting participation via online forms has proven to be very difficult with very low number of forms filled in. To date the authors have gathered 694 pre-forms and 571 Matrix forms. The audience is asked to fill in a form on general questions of the link between architecture and democracy before the topic is introduced (around 15 min). During the lecture (average of 15 min) the attendees are exposed to some notions and practical examples of the relationship between Architecture and Democracy and the proposed matrix. After the lecture the attendees are asked to fill in a new form, the matrix (around 15 min). In some cases, after these three steps, there is a fourth one: random groups are formed, they do a short discussion and then the same matrix is filled in by the groups.

Figure 2. Scan of the Architectural Democracy form filled in by an attendee before the matrix is introduced (pre-form)

Figure 3. Scan of the Architectural Democracy Matrix filled in by an attendee after the matrix is introduced (matrix form)

The data gathered (from both physical and digital forms) are being transcribed and analyzed. These parameters included: keywords from the answers, level of detail of the answer, number of words per person per answer, prominence of the examples given, region of the examples given, usage of the examples given, relationship level of the answers to the question posed, specificity of the answer, number of suggestions per question, type of suggestion, sentiment analyzes, words in common with the lecturer presentation, etc.

There are three types of forms: pre-forms (before the lecture), individual matrix form (after the lecture) and group matrix form (after a group discussion). The pre-form is composed mostly of close-ended questions. While the matrix ones are solely made of open-ended questions. The gathered data is manually transcribed and categorized into spreadsheets. Some of the semantic analyzes is done manually while others are automatically such as keyword grouping. The data accounts for 44 nationalities with an age range of 15 to 65.

RESULTS FROM HELSINKI

The explorative process of analyzing the gathered data was initiated with a smaller sample, from the data of the area of Helsinki in Finland between 2018 and 2019. The sample size is less than 10% of the total one with 61 people inquired. Yet the outcomes of this smaller sample seem to relate well to the larger set. The full data results will be published in later publications.

There were 20 nationalities present on the inquired. The pre-form's answering rate was of 82%. In the individual matrix forms it was 25.3%. In the group matrix forms it was 98.5%. The individual matrix forms showed a big drop in the answers' rate from the 1st questions to the later ones, yet in the group work the answer rate was close to 100%.
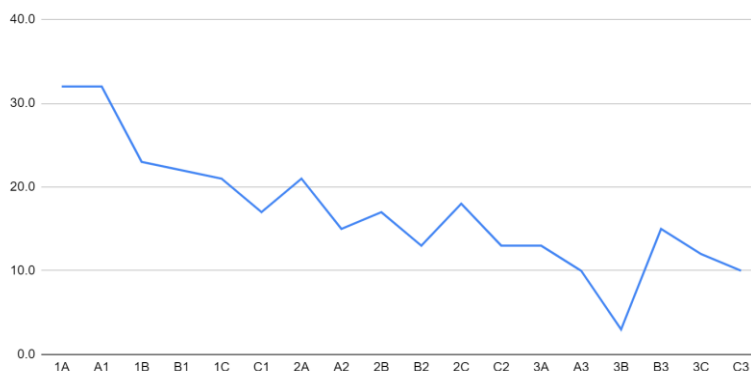

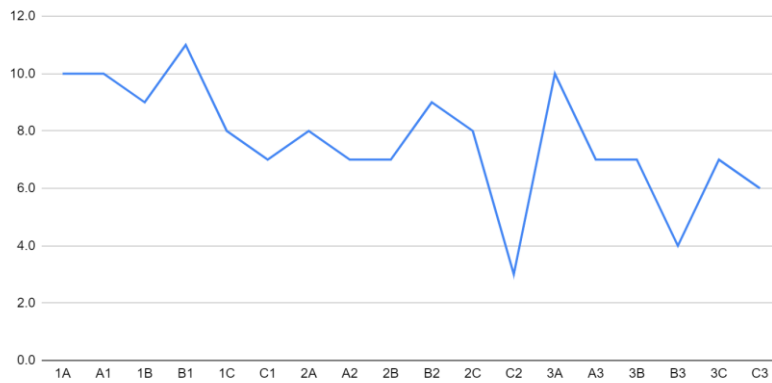*Figure 4. Development of the 18 questions answer from 1A to C3 in the individual matrix forms*

Figure 5. Development of the 18 questions answer from 1A to C3 in the group matrix forms

The index accounting for the level of relationship of the answer with the question posed (0 - No relation 1 - Somehow 2 - Good 3 – Strong) raised from 1.9 in the pre-form to 2.85 in the group matrix forms. Building references given were mostly of worldwide prominence. Most examples given as failed cases mixing architecture and democracy were of commercial buildings while as positive, educational related buildings prevailed.
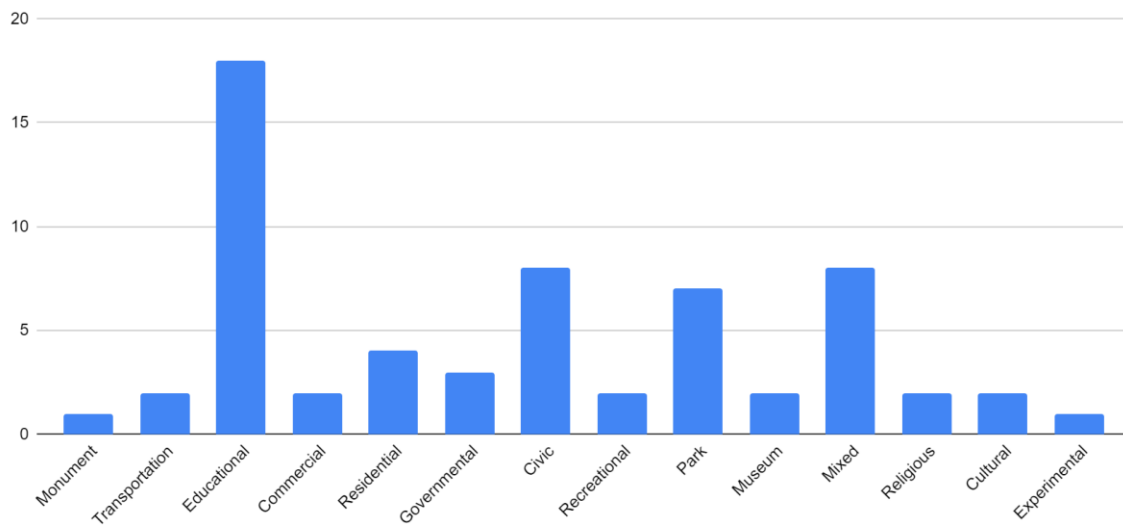

Figure 6. Distribution of types of buildings to the question "good examples of projects (or buildings) that in your view mix Architecture and Democracy"
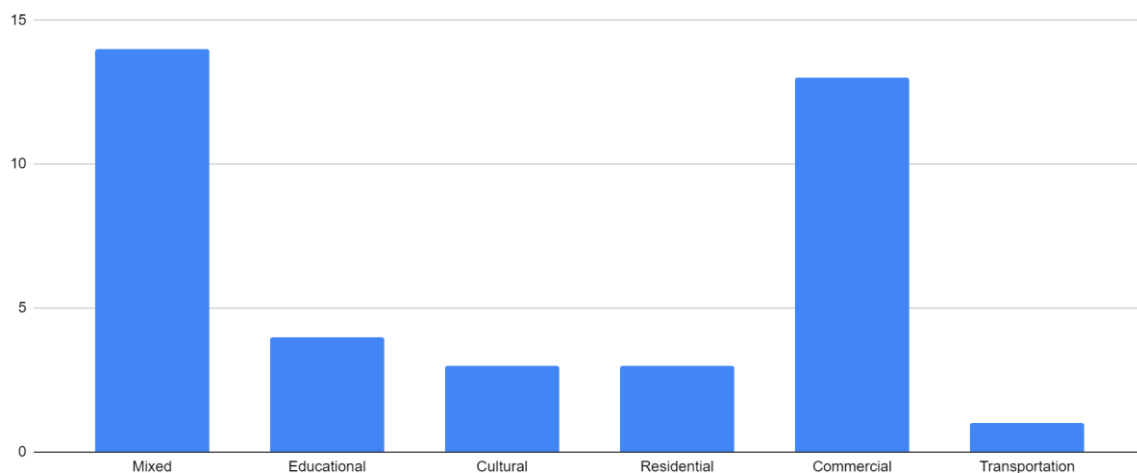
Figure 7. Distribution of types of buildings to the question "examples of projects (or buildings) that in your view FAIL to mix Architecture and Democracy"

To the questioning on the pre-form: "*Based on what you already know of Architecture, and what you think of democracy, please list down your ideas (as bullet points) on what is architectural democracy*", the numbers of answers per person was of 1.31.[16] The average length of the answers was of 5.5 words per answer. These answers were grouped into a set of clusters of related keywords[17].

CONCLUSION

The initial results from Helsinki show that the overall awareness of the inquired people is low about the relationship between politics and architecture, despite the vast majority of the inquired being professionally related to architecture, design, and construction. The study also shows that low effort is required to raise this standard: the depth of the questions of the matrix are matched with a clear increase of the depth of the answers. The matrix seems to have benefits in the increase of the understanding of both architecture and democracy and its relationships, but can such matrix be used as a stand alone for evaluating the design or existing specific buildings?

Logical next steps required in this study are: 1) to evaluate into which degree the pre-form and the short introduction to the topic (the lecture) affect the level of detail of the answers or if this is solely linked to the complexity of the questions. 2) The high bouncing rate of the individual answers contrasts highly with the almost full participation of the group work. Also there is a clear increase on the depth of the answers with the group work. What remains to be tested too, is if the group work could match the same level of detail or complexity in its answers, without the individual forms.

NOTES

[1] Park, Robert Ezra. *On social control and collective behavior*: Selected papers. Vol. 275. Chicago: University of Chicago Press, 1967.

[2] The design of cities are conditioned by the very cities themselves, a 'social antagonism' notably described by Adorno on functionalism. Wolfe, Posted by Ross. "Theodor Adorno's 'Functionalism Today' (1965)." House, November 4, 2012. https://thecharnelhouse.org/2011/11/19/theodor-adornos-functionalism-today-1965/. Also David Harvey's critical body of work on urban planning portraits these problems extensively: "*what kinds of social relations we seek, what relations to nature we cherish, what style of daily life we desire, what kinds of technologies we deem appropriate, what aesthetic values we hold.*" *Social justice and the city.* Vol. 1. University of Georgia press, 2010, 4.

[3] Sagan, Carl. *The demon-haunted world: Science as a candle in the dark.* Ballantine books, 2011, 22.

[4] The term "Monitory Democracy" was coined by Professor John Kean, whose seminar book "The life and Death of Democracy" is a great work on this subject

[5] Fischel, William A. "An economic history of zoning and a cure for its exclusionary effects." *Urban Studies* 41, no. 2 (2004): 317-340 and McTague, Colleen, and Susan Jakubowski. "Marching to the beat of a silent drum: Wasted consensus-building and failed neighborhood participatory planning." Applied Geography 44 (2013): 182-191.

[6] De Lange, Michiel, and Martijn De Waal. "Owning the city: New media and citizen engagement in urban design." *First monday* (2013).

[7] Fainstein, Susan S. "Mega-projects in New York, London and Amsterdam." *International Journal of Urban and Regional Research* 32, no. 4 (2008): 768-785.

[8] Högström, John. "Classification and rating of democracy: a comparison." *Taiwan Journal of Democracy* 9, no. 2 (2013): 33-54 and Munck, Gerardo L. Measuring democracy: A bridge between scholarship and politics. *JHU Press*, 2009.

[9] See Coppedge, Michael, John Gerring, David Altman, Michael Bernhard, Steven Fish, Allen Hicken, Matthew Kroenig et al. "Conceptualizing and measuring democracy: A new approach." *Perspectives on Politics* 9, no. 2 (2011): 247-267 or the yearly reports of the economist intelligence unit

[10] Harvey, 2010

[11] The etymology of the English word for politics can be traced back to the Greek term politiká (Πολιτικά, 'affairs of the cities').

[12] Here considering architecture as an inclusive term for AEC, Architecture, Engineering and Construction.

[13] Groat, Linda N., and David Wang. *Architectural research methods.* John Wiley & Sons, 2013, 69.

[14] Scale being likely the most relevant common feature of both disciplines, architecture, and democracy

[15] http://www.hoai.de/index.php

[16] Not all people answered but the ones who did, gave multiple answers.

[17] keyword grouping or keyword clustering is a list of semantically related keywords

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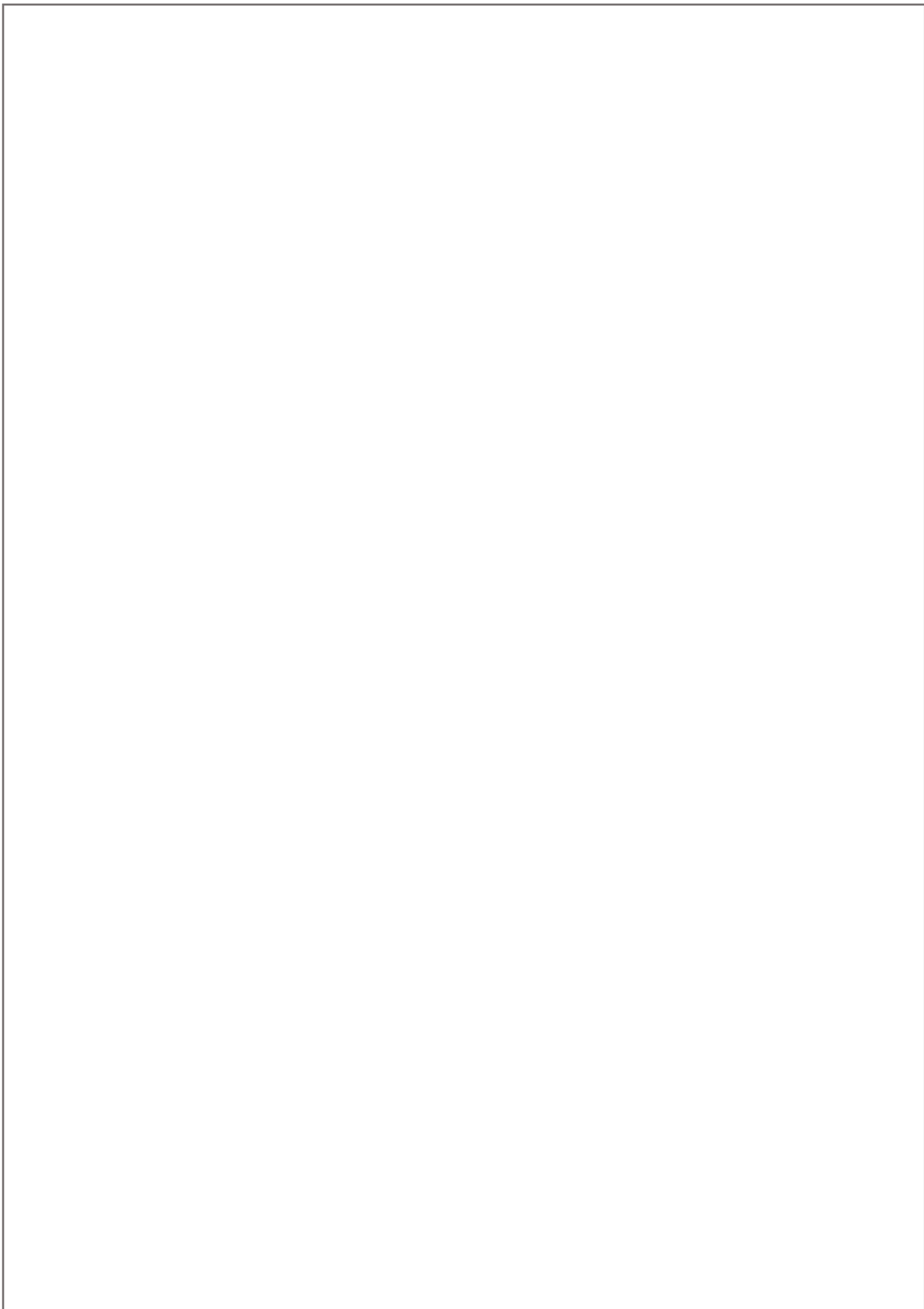
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