Cities, Communities, Homes

Is the Urban Future Livable?

AMPS Proceedings Series 10.2
INTRODUCTION

This publication is the product of the conference Cities, Communities and Homes: Is the Urban Future Livable? held at the University of Derby in 2018.

The premise of the conference and this publication is that the forces shaping life in cities are complex. The economies they are based on are multiple. Some are growing exponentially, others are shrinking. Some pride themselves on architectural heritage, others are seeking to build and rebrand. Some are old, some are new. Inevitably their urban fabrics vary.

The communities that live in these places reflect these conditions. Some are long-standing, others are new and in-formation. Sometimes they are active, on occasion homogenous. More generally they are diverse. These communities need, and want, a say in their futures. Some are well connect and affluent, others suffer deprivation and social exclusion. A constant in the mist of this complexity is their need to be housed – whether by themselves, the market, or governments.

The conference and this subsequent publication seek to explore how the three issues of city development, sense of community and housing need, all combine to make lives in our cities livable – or not. How will our urban environments change in the near future? Are the cities we live in now likely to contract or expand? How will these changes impact on communities and the way they are housed? Will new technologies facilitate community engagement with planning? Will resident voices be heard by planners? Will unaffordable housing turn some cities into enclaves of the wealthy, or will the private sector and personal preference gate our communities?

These proceedings, and the conference which it documents, were organised by the research organisation AMPS, its academic journal Architecture_MPS, and the College of Engineering & Technology at the University of Derby. It formed part of the AMPS program of events, Housing – Critical Futures.
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THE UNBUILT AND THE IDENTITY: INFLUENCE OF PUBLIC SPACE IN THE POST DISASTER RECOVERY.

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INTRODUCTION
Cities are, by their nature, dynamic systems experiencing continuous growth and modifications, owing their appearance to physical, socio-cultural, economic, environmental features, synthesizing a more complex network of interconnected factors.
From the early settlements to the contemporary metropolitan areas, the interaction between these aspects shaped and determined the behaviour of the urban organism. The mutual influence of natural and man-made determinants has been responsible for place-specific layouts, changing according to location, climate, available resources and skills, as well as the predominant socio-cultural milieu. Any urban layout results by the juxtaposition of volumes and voids, respectively embodying tangibility and intangibility, solid reality filled with meanings and values. Building the environment means building its representation too, and complex spatial models turn into social models after a physical and anthropological contamination. The result is an organic concept of space made of stratifications, both physical and ontological. In time, mutated social models have been reflected in the physical appearance of the built environment responding to, or determining, needs and behaviour of the modern liquid society and proving Lefebvre’s statement that ‘’capitalism produced abstract space’’.
Non-places, separation, individuality, recently became the representation of a new experience of time, space, and social interaction, where the buildings turn into containers of individuals, labelled according to their function, whereas the unbuilt public space is a leftover, sum of meaningless gaps, a sort of ‘’waste product of architectural blueprinting’’.
The above speculation crumbles when it comes to deal with the disasters, and the urban systems appear like fragile man-made encrustations exposed to catastrophes: earthquakes, flooding, hurricanes, landslides invert the system of spatial values in a short time, setting aside any advanced theoretical conjectures in the name of the atavistic need of safety.
The following sections will be an introduction to a wider research, aimed to reconsider the role of the open public space in the post-disaster recovery. The paper will outline the features of the Unbuilt involved in fostering identities and sense of belonging of evacuees, offering a reading of how it could influence the community’s response to natural catastrophes. Beyond determining the immediate safety degree of a city in case of disaster, the gaps could reasonably address the later reaction of a community, fostering its resilience.
SETTING THE LEXICON

Built and Unbuilt

Built and Unbuilt represent the primary tangible determinant of the urban morphology, defining, in combination with the intrinsic predisposition of specific locations, the risk exposure and consequent response of cities.

The Open Public Space, including roads, squares and their minor unintended subcategories, plays a dual role: it is a spatial determinant and shaping element involved in the perception and fruition of the built component and it additionally acts as a crucial factor in the disaster response. In the first case, depending on urban form’s generators and growth mechanisms, it is assigned with functions and meanings: in the Middle-Eastern settlements the maze of narrow, dead-ended streets, arranged according to a symbolic and functional hierarchy, results in intricate, intentionally complex patterns, revealing the predominance of the built over the unbuilt. Same density, but a different socio-cultural framework, characterizes most of the medieval European towns, where the blocks are defined by a skeleton made of roads and squares.

The examples imply a service function of the Unbuilt, within a volume-oriented morphological hierarchy where the built elements play –for their nature- the role of the safe shelter that the external environment can hardly penetrate. In the newest cityscapes, the building absorbed functions traditionally ascribed to the Unbuilt: the concept of market square is replaced by the mall, a traffic-oriented planning cut the pedestrian itineraries or moved them to the underground transportation. The traditional, Public Open Space made of squares and roads, evidently weakened and deprived of its meaning, represents a criticality both for planners and urban designers, the latter acting punctually where the urban planning left unintended voids.

Nevertheless, if we look at the disaster recovery, it is intuitive that distribution, shape, accessibility and size of Public Open Space matter: in fact, they determine the immediate reaction as well as the long-term behaviour of the urban system and, consequently, its capacity of rebound.

Vulnerability of the Urban Systems

Every Urban System interacts with the environment, thus being subjected to several degrees of risk, increased by its exposure to disasters.

Conventionally, a disaster is intended as ‘‘serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resource’’.

The concept of vulnerability sums up the characteristics that increase the susceptibility of the system, both in terms of predisposition (hazard exposure) and in terms of expected response (how adversely it is thought to be affected, and which degree of resilience is it supposed to show).

Among the several factors whose combination determines the rate of vulnerability, the condition of human settlements and infrastructures is crucial. It includes both the buildings’ structural resistance to extraordinary actions and the capacity of Critical Infrastructures and open areas to uphold the emergency’s extra loads.

Beyond the CI network (the electricity provision, transportation networks, water supply, wastewater systems, hospital facilities and other systems which are essential to maintaining a satisfactory level of functioning in an urban environment) a capillary and homogeneous distribution of open areas for the temporary waiting is essential in allowing a prompt external aid, and to sew up the fragmented system in the further stages.
Social Infrastructure
A city, like a living organism, can’t be reduced to a mere juxtaposition of components: assembling its parts with meticulous attention is completely meaningless when the spark of life is missing. The life of a city is the spirit of its community, and the statement ‘cities are more than buildings’¹⁰ is accentuated in the post-disaster recovery, when the main task is to promptly and efficiently rebuild both physical reality and social structure. The primary element to be protected and efficiently restored is the Social Infrastructure that is the system of connections, often at the neighbourhood level, linking the individual needs in a wide network of activities and bonds. Its intangibility is counterbalanced by its influence in the social restoration after catastrophes, as demonstrated by most of the post-disaster reports worldwide: the evacuees’ first need, after escaping the immediate danger, is reactivating the broken ordinary life, as shown in several examples throughout the recent history. From the self-built neighbourhood refugee camps in San Francisco (1906) to Mexico City (1985) where soon after the earthquake ‘people began to organize on their own […] Their efforts ensured that certain activities were recovered or restored, ranging from housing to medical services’¹¹, up to Gibellina, Italy (1968) where the relocated people rose up moving back and establishing next to the familiar environment of their daily life¹², the common element is a strong identity and sense of belonging both to the place and the community. These intangible values are crucial in the post-disaster rebound, beyond the need to resort to existing, safe, available areas to establish camps and activities.

THE OPEN SPACE AND THE POST DISASTER RECOVERY
The Post-disaster scenario: The Response
Disasters imply dealing with the evacuation and displacement of population, to be managed promptly, with little or no forewarning, in the early emergency.
Fiorino¹³ states that, being these events cyclical phenomena, a likewise cyclical management is requested, made of interconnected, often overlapping stages: Response, Recovery, Mitigation and Preparation¹⁴. This sequence, activating soon after the event and synthesizing the gradual process to reestablish the balance in the affected systems, comprises the actions of Emergency, Restoration, Reconstruction, Capacity Building and Pre-Impact. We will focus on the early Emergency, injecting the Response that will predispose the system to Recovery through Restoration and Reconstruction.
A picture taken at this stage would include the first aid actions and the safety measures aimed to prevent the population from any further harmful situation. The Emergency Sheltering¹⁵, the makeshift allocation soon after the event, is generally achieved using cars until camps are set or alternative settling solution offered.
The function of public open space begins to change: waiting areas and available routes are crucial for escaping the zones at risk. With referring to earthquakes, after the main shock people escape from buildings, gathering in the open areas, showing a quick inversion in the perception of safety (indoor VS outdoor space). Capacity and accessibility of the open areas are crucial to facilitate the evacuation and safe positioning of people.

Towards the Recovery
Even if there is no sharp edge between the phases of Response and Recovery¹⁶ because the condition of the emergency characteristic of the first is persisting in the latter, we can consider the Recovery as the stage of reactivation of the population’s regular life after the disaster. It is preliminary to the actual reconstruction and it comprises the set of actions aimed to improve and redevelop the affected areas¹⁷. It starts with the Temporary Sheltering, consisting of moving homeless people to evacuees’ camps or safe locations, such as indoor sporting areas and barracks, specified in the Evacuation Plans.
The emergency is still ongoing, areas at risk are evacuated and patrolled in order to safeguard both humans and the empty buildings. The need to relocate the displaced people is contrasted by their reluctance to move far from their house or neighbourhood, both for safety and emotional reasons. For this reason, when identifying potential areas to set the camps, the evaluation of the public open space both in terms of safety and terms of meanings to the community becomes a determinant for a successful sheltering and early social recovery.

EXPERIENCING THE RESPONSE
Through the post-disaster literature, several degrees of correspondence between spatial meanings, common identity and community response can be inferred.

San Francisco
In San Francisco, after the earthquake that stroke the city on April 18th 1906, the Emergency Sheltering and Temporary Sheltering were almost coincident: the planned grid layout of the city, even if occasionally deformed by the orography, provided accessible safe areas. Inhabitants slept out on the streets soon after the earthquake and, driven by the neighbourhood spirit and aided by the several military corps headquartered in the city, they established camp activities, public kitchens and facilities in the following days as shown in Figure 1. Allan and Bryant quoting Greely (1906) refer that no relocation took place, since the well distributed public parks and open areas of the city, as well as roads and the accessible private gardens, provided the space for re-setting the ordinary life district by district. This decision was a grassroots initiative, which revealed to be extremely efficient: ten days after the earthquake, when the shipped external aid in the form of tents reached the city, the camps were already set and only some regularization and minor adjustment was necessary with the supervision of the military corps. Considering the number of settled homeless people (200,000) and the enterprising spirit permeating the community, the early emergency was handled with cooperation and efficiency providing a virtuous example of response.

The distribution and availability of open space can be considered a determinant element: people, sheltered in their neighbourhood, easily reestablished the preexisting network of social relations which allowed them to cope with the post-disaster stress.
L'Aquila
A different behaviour was recorded in L'Aquila, after April 6th 2009. The Medieval, planned historical centre within the city walls is characterized by high density of buildings whereas the outskirts, resulting after later expansions, show lower density and irregular layout. The historical city is defined by an orthogonal road system made up of narrow streets and alleys, massive palaces with internal courtyards and squares suddenly opening along the roads (see Figure 2). The aesthetic value of such a system is counterbalanced by a scarce efficiency in case of emergency, as shown after the event of April 2009, at 3.32 am. Soon after the event, the streets were filled with debris of the collapsed buildings, offering unsafe escape routes and low accessibility to the unevenly distributed squares: the perceived safety was inversely proportional to the sense of enclosure and scarcity of escapes. The Emergency Sheltering was unrealizable within the city walls and evacuees filled roads and open areas outside. Fire Brigade and Civil Protection intervened immediately, supported by regional and national volunteers. In the aftermath of the event the historical city was declared Red Zone (high risk) and evacuated by Administrative Decree. In less than 24 hours 170 camps for Temporary Sheltering were set and more than 70,000 evacuated people were given the option to be displaced to the coastal areas or to stay in camps. After the first 48 hours, more than 10,000 rescuers were operating on the several sites scattered around the city, to remove debris and support the affected population, setting the camps.

Common features to all the camps were the military presence controlling, patrolling, and supervising the activities, to guarantee adequate levels of security; the provision of common services and facilities such as toilets and dining areas; the common kitchen managed by the Civil Protection or Red Cross volunteers. Each tent contained 8 beds, therefore more than one family unit shared the same tent, assigned regardless of any preexisting social bond. In such a scenario, the communities reacted in opposite ways: two main trends recorded in the camps will be now discussed, referring to the urban (Piazza d’Armi) and the peri-urban area (Santa Rufina).
Piazza d’Armi

Piazza d’Armi is the public sporting area of the city, located in a district where the open spaces were unplanned leftovers converted into low-quality gardens or parking lots. After the earthquake, its size and accessibility turned it into a camp gathering 2000 people from the surrounding outskirts neighbourhoods and the city centre. Being it a crowded camp, a higher control from the tasked units was necessary, and grassroots initiatives were reduced. Additionally, the lack of environmental quality, landmarks and aesthetic value, and a skyline of evacuated blocks affected the spatial perception of an already exhausted community. The virtual space replaced the missing physical space; social networks and the camp’s online journal portrayed the difficult reality through the eyes of evacuees and volunteers.

“I am a volunteer and I spent one week working in your (Piazza d’Armi) camp. It must be said that [...] maybe some people are rowing in two opposite directions without understanding that it is important to row together in the same direction, to get results [...] we as volunteers are not there as freeloaders, but rather to help you, even if you should be able to help yourself [...]”

Forced inactivity, dissatisfaction and scarce social bonds due to a missing integration between people, in addition to the emotional reaction to the earthquake and the sense of loss, exacerbated the social segregation as well as the psychological diseases recorded by the health centre units. Many serious events recorded in the local hard news portrayed a not close community. When the temporary housing became available tents were dismantled (4th September-December 2009) and the area was returned to its former function, undergoing a requalification project to enhance its capacity of public sporting area.

Santa Rufina

Santa Rufina is a small village part of L’Aquila Municipality, 5 km distant from the city, counting a population of fewer than 500 people in 2009.

It developed along one main street, around which houses clustered; the village church marks the entrance, preceding the built-up area and the small square hosting the traditional celebrations.

After April 6th 2009 the town was declared Red Zone and all the population was evacuated. The square, gathering area soon after the event, was not suitable for temporary sheltering due to its proximity to many unsafe buildings. Civil Protection individuated an alternative option less than 500 mt farther, in the open field nearby the church, where 60 tents for 480 people were set (See Figure 4).
The camp was managed with the mentioned criteria but its size and location played an important role in reestablishing a daily routine and preserving the quality of evacuees’ life. The community participated in the main activities, groups of volunteers aided by the locals built the temporary church, moved the church bell at the entrance of the camp, established activities for kids. The parish spirit and empathy strengthened bonds and supported people coping with the emergency. The village’s neighbourhood spirit permeated the camp: the small community experienced the relocation nearby the areas where the social life had been taking place so far, close to the strong landmark and spiritual symbol of the church.

On the 10th October 2009 the camp was dismantled and, later, temporary housing modules (MAP) were established on the same site. The grassroots activities increased: the sparkle of cooperation and participatory initiatives led to a self-built public space for kids (named Parcobaleno) embodying the spirit of the community and its will to overcome the disaster repossessing the space.

![Figure 3. View of Santa Rufina (AQ) in 2009 including the village, the camp, and the church bell tower acting as a landmark (source: santarufina.org).](image)

**CONCLUSION**

After a catastrophe, the way a community copes with disasters is influenced by several factors but, since the very first stage of the emergency, the Unbuilt plays a pivotal role both in terms of safety and in terms of meaning. An even distribution of public open spaces, generally associated with a low density of the built component, allows a safe escape and a better management of the evacuees’ sheltering, whereas a highly dense layout impedes those operations.

In both the cases, the tangible and intangible quality of open areas selected for temporary sheltering is a substantial requirement. The proximity of the camp to the familiar neighbourhood, its size, the presence of strong symbolic elements -acting as positive landmark imbued with common values and stratified collective memory- revealed to strengthen the communities, in contrast with the weakening experiences recorded where the above conditions were missing.

The offered qualitative investigation exhorts to address the risk management planning towards additional criteria, beyond mere size and availability, when choosing the public open spaces for emergency purposes. A proper environmental, architectural, and social framework as a permanent background could positively condition the community response, thus producing virtuous models able to speed up the social recovery.

The above suggestions move from the deep awareness that rebuilding the physical component of a city is just one step towards its actual recovery.
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THE ROLE OF SOCIAL MEDIA FOR THE CREATION OF PLACE AND BELONGING IN TERMS OF DIFFERENT TENURE GROUPS

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INTRODUCTION
This paper considers how housing tenures shape (s)elective belonging and place making-maintenance. The impact of residential status, namely that of becoming a landlord, owner-occupier or tenant, is generally discussed in the literature in terms of these groups relationships with each other and the organisation of their daily life in terms of its similarities and differences. However, there has been little research to analyse the above aspects in terms of the role of social media. Existing studies have not adequately addressed the issue of the differences between different tenure groups in terms of the impact of social media. This new area requires further attention in order to re-evaluate existing studies from an online communication perspective. How does online involvement vary with residential status? This project sheds new light on the neglected issue of social media in the creation of place and belonging in a specific area, as related to residential status. In addition, when comparing this research with the existing literature, it is clear that differences in personal interests, preferences, age and generation also influence online involvement. In this project, the author considers Ocean Village in Southampton as an example of a redeveloping waterfront area in order to demonstrate the differences between owner-occupiers, tenants and landlords in terms of the function of social media to achieve creation of their place and belonging.

SETTING THE SCENE
In the neoliberal era, urban spaces have become increasingly valuable and important devices by which to derive greater benefit within the community. Urban areas are becoming increasingly available to private companies, allowing them to pursue their own projects with less overview, or indeed control, from the state. In the UK, neoliberal urbanism is created by such policies: after 1979, with the Thatcher era, the privatisation of social housing and subsidising of new owners began with inception of the Right to Buy (RTB) policy. Then, the subsequent Buy to Let (BTL) policy in 1996 and Help to Buy (HTB), which emerged in 2013, helped to support new homeowners in terms of securing a deposit or mortgage. The UK Central government and its local governments, under pressure from central government, supported these policies; while they continue to support them, they ultimately represent a considerable loss in terms of future income and customers.
In the course of exploring urban life in terms of community ties, types and social relationships, the meanings of place and belonging have become more complicated than in pre-modern times, and are clearly not connected to a mere single place. It is essential to note the importance of the relationships between place and belonging. According to Benson (2014: 3101) “...the relationships that people have with their places of residence are often framed through the language of belonging”. Furthermore, she argues that belonging emerges with a specific kind of residential environment and place. For belonging, people must initially have certain preferences, which might be termed ‘elective’ or ‘selective’ belonging. In order to properly understand the reactions of members of communities to place and other people, these two aspects cannot be thought of in a separate manner.

Lastly, in light of the existing situation in the housing market in neoliberal urban life and social life in this environment, the author will analyse how different groups use social media in the context of creating communities, place making and place maintenance. In this case, there are three main arguments in the literature that define the role of the internet and social media: the internet is creating weak communities, it is enhancing communities and/or it is transforming communities. This categorisation illustrates the fact that the aim and function of the internet, social media and other technological improvements, depends on users’ purposes. I will focus on social media groups in particular to understand the differences or similarities between tenure groups in these virtual community environments.

THE CASE OF OCEAN VILLAGE AND COLLECTION OF DATA

Ocean Village is a redeveloping waterfront area in the South of England, Southampton. In August 1842, the Outer Dock’s (now the Ocean Village Marina) construction was started in a 16-acre area. The transformation of the Outer Dock, now called Ocean Village, began in the second half of the 1980s. The redevelopment of Ocean Village began in 1986 with the construction of the Canute’s Pavilion shopping centre; 49 shops with galleries for exhibitions were also completed in the first years of the area’s redevelopment. Ocean Village has continued to change over the last few decades with the addition of new developments since its initial transformation; there was a slowdown in this regard in 2008 and 2009 because of the worldwide financial crisis, but there has since been continuous development. Admiral’s Quay officially opened in mid-February 2015, and offers Southampton’s residents a variety of new cafes, restaurants and flats for their enjoyment. Lastly, Ocean Village’s new five-star hotel opened in the last quarter of 2017.

Finally, Ocean Village comprises different online communities, which overlap with the offline communities. The various social media groups have between 100 and 1041 members (06.12.2017). These online communities offer alternative ways to socialise and contact other people in Ocean Village. Existing residents of Ocean Village have voluntarily managed these social media groups since 2014. The social media groups were established for different purposes: a) general groups, b) one of the residential buildings, c) exchange groups, d) a security group, and e) an activity group.

To achieve my aims and to answer my research question, I used mixed methods, both qualitative (semi-structured interview) and quantitative (online survey). I recruited 177 online questionnaire participants and 42 interview participants throughout the course of my fieldwork. The mixed method allowed me to examine my questions in considerable depth and provide a comparative perspective. During the analysis period, I used thematic analysis to analyse my data. The following sections emerged from my data in terms of the role of social media for the creation of place and belonging in relation to different tenure groups.
Social Media Group(s) and Personal Preferences
Participating in Social Media Groups

In this section, I will illustrate the role of social media groups in creating a community atmosphere and relationship. It is important to realise the function and importance of social media groups for different tenure groups. In these sections, I will focus on online atmosphere in particular to understand online participants’ feelings and actions towards other people in Ocean Village.

<table>
<thead>
<tr>
<th></th>
<th>Owner-Occupier</th>
<th>Tenant</th>
<th>Landlord</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully satisfied</td>
<td>20.9% (19)</td>
<td>21.1%</td>
<td>25%</td>
<td>21.1%</td>
</tr>
<tr>
<td>Somewhat satisfied</td>
<td>71.4% (65)</td>
<td>59.2%</td>
<td>75%</td>
<td>66.3%</td>
</tr>
<tr>
<td>Completely dissatisfied</td>
<td>7.7% (7)</td>
<td>19.7%</td>
<td>0%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

Table 1. How satisfied are residents and landlords with the “Community Relationship” in Ocean Village?

Source: Own Survey, N: 175.

Table 1 gives a summary of the answers to my online questionnaire. It is apparent from the table that owner-occupiers are more satisfied than tenants in terms of the community relationship in Ocean Village. While 71.4% claim to be somewhat satisfied, only 7.7% of the participants defined their feelings towards the community relationship as those of complete dissatisfaction. Additionally, landlords are more positive than owner-occupiers and tenants about the community relationship in Ocean Village. Tenants are the least satisfied with the community relationship within their living area.

Socialising

Socialising with social media groups, one of the most popular aspects emerged from participants’ answers. Besides that there are different views about this situation in the literature. To illustrate, the new technology of the internet is contributing to globalisation, accessibility, and the level of networking worldwide, though it could possibly be harmful to local social solidarity. However, the internet enhances communication between people, such as friends or relatives, who live in different places around the world. The internet and social media contribute to building relationships both online and offline, but particular cases or local aspects must be considered in order to analyse the influences of the internet and social media in their entirety. In this context, the examples from my fieldwork below are useful in terms of the variety of results and relationships they simultaneously offer in terms of socialising. One of the young male student tenants stated:

“We have a Facebook group, which is basically an active platform for the people to communicate…There is quite a lot of engagement on there, I think. It definitely holds more relationships (within Ocean Village).”

Similarly, one of the young professional male owner-occupiers said:

“I use the internet to find people who share interests or share ideologies and use those two.”

In the same way, one of the landlords who had previously lived in Ocean Village as a tenant and owner-occupier and still had connections with his former neighbours said:

“We are living in apartment block now. For example, I would not recognize my next-door neighbour, if I see him in the street. Where is in Splash, they have resident Facebook group. They always going drink once a time in each month. They all friend.”

Some participants like to socialise in Ocean Village. They use different means of succeeding in this aim, and use online communities to contact other people. Social media offers all tenure groups the chance to interact with people, both locally and globally. This means of communication depends on...
personal interest and preference. All tenure groups stated the importance of social media for their socialisation. Therefore, personal interests and preferences affect the ways of belonging in these groups.

**Accessing and Sharing Information**

Accessing and sharing information is another important reason for participating in social media groups. Initially, participants like to familiarise themselves with the place of Ocean Village through its online communities. This may be noted as being an important step in place making. For example, one of the older, non-British male owner-occupiers said:

“We have a Facebook group. Some people send us messages. Very nice… These messages are about… If someone makes noise around us, if someone did not park his or her car properly in the parking area. Communication. Just knowing what is going on in the area… It is friendly, mostly informative.”

The residents of Ocean Village (both owner-occupiers and tenants) discover and share information from the appropriate Facebook groups. The examples represent different ways of place making and maintenance for residents. For the maintenance of place and community, people need to create a certain familiarity with their living environment. In this, these online groups contribute to the creation of place, online, for both owner-occupiers and tenants. However, people do not have to create relationships between each other and live in Ocean Village to become a part of these online communities.

In this respect, one of the middle-aged British male tenants said:

“It is my only interaction with people here. Maybe it is a bit bizarre, but I am very comfortable with the technology, social media. It is just an extension of what I do, another aspect of my life... It has a different relationship. I can find out news from social media, what's happening here, in the area, in the building. In a way, I would not find out any other way because I am not involved with the local committee, resident group, or whatever. So, I can watch it passively as an observer, but not be involved.”

In the same way, one of the landlords, who will retire in a few years and is then planning to move to Ocean Village, said that:

“I am following it, because I am interested to see what it will be like, when I move in there.” These examples illustrate the function of social media for all tenure groups in terms of accessing and sharing information. While they are actively using social media groups to access information about their living area, they either improve or ignore their connection with the offline community and social life in Ocean Village.

**Convenience**

Convenience is another aspect of social media groups in Ocean Village. According to Elias and Scotson, the participants can be divided into two groups; namely, long-established residents and newcomers. In the same way, the connection between different groups in the same neighbourhood is related to the length of time they have lived in, and feel a certain nostalgia for, their area. The convenience of online communities is another reason to participate in them without time and place limitations. Even one of the young professional non-British male owner-occupiers said that:

“People can interact both through social media and the local facilities in Ocean Village. Obviously, we cannot deny its role. It plays a role not only for Ocean Village, but around the world… Keeps people in touch and interactive, I cannot say it is negative. If you are travelling or away from Ocean Village, you can easily communicate with people who are in Ocean Village”
In the same way, a female short-term tenant, noted the function of social media from her perspective in terms of its convenience:

“I think we are more interactive with the help of social media. Because, literately, we cannot text everyone and ask for a solution to something. But on social media, you can just ask and whoever has an answer can just put it on. I do not think you reach as many people on face-to-face or with texts.”

A strong relationship between long-term residents and recently arrived residents has been reported in the literature. According to these well-known studies, the length of stay in a current residence leads to a striking difference between people in terms of creation of social relationships. However, as the interview participant noted, people could easily participate in their online communities without restriction after moving to Ocean Village. Contrary to the existing literature, the length of time they have lived there does not create any kind of barrier for them, even if they are travelling.

**Non-Participation in Social Media Groups**

While some people are happy to join the online communities in Ocean Village, others avoid doing so. In this section, I will focus on the reasons underlying this decision in order to clarify the impact of tenure status on participation in social media groups and their connection with each other. At this point, privacy and strict rules were analysed to determine the impact of tenure status on this online environment.

**Privacy**

Privacy is one of the most important aspects in understanding participants’ reactions to the online communities in Ocean Village. According to a British, retired female owner-occupier resident:

“Anything that involves personal information, I’m afraid we avoid disseminating it. I am on LinkedIn. I am on anything, if it is professional. But when it comes to personal stuff, none of us are. It’s definitely negative, because you cannot remove your information once it’s on there. Privacy. Basically, privacy is a very big issue.”

In addition, interestingly, a young British gay man, and owner-occupier, stated his preference was to avoid joining these groups due to his sexual orientation:

“I am trying to minimise my social media presence…I try to passively consume. I am not going to be a member. I am just sourcing, because I have a very unique name. It makes it really difficult to control the security of your online presence, especially when, as a member of a minority group, you want to keep everything secret.”

The current literature invariably discusses elective and selective belonging in terms of offline communities and their relationships.\(^{22}\). However, the above examples illustrate the fact that people have preferences in terms of joining or avoiding specific online community environments. As one of the quotations showed, one person, while being happy to use LinkedIn, avoids using Facebook because of privacy issues. Here, privacy, similar to elective belonging in the use of the internet, but getting more professional during the use of internet is representative of the participant’s selective belonging rather than their elective belonging. As the above examples demonstrate, this situation occurs without the need to consider residential status. In light of these examples, it is clear that people from different backgrounds (i.e., age or gender) avoid participating in online communities either to socialise or to gain access to more information about their area.

**Strict Rules in Online Groups**

Lastly, rules and regulations influence people’s views and actions regarding specific social media groups. This situation can influence their decision to avoid participating in the online communities in
Ocean Village. In this regard, when a middle-aged male tenant explained his reasons for creating a private WhatsApp group with his close friends in Ocean Village, he stated that:
“Facebook groups are basically edited by that guy who controls the group, so you cannot say what you are thinking, actually, because otherwise you can be removed from the group... it feels too controlled.”
In the same way, one of the owner-occupiers, a male, stated that:
“Someone around who is the administrator. I do not know who this person is, this administrator. But there are certain rules. If I want to stick some ad. I saw many times, someone try to advertise, talking about a landlord, selling certain staff. Using social media to advertise. Then the administrator highlights the rules. Social media is a focus on social life, not advertising.”
The rules and atmosphere in online communities influence whether people engage with their community in different ways. While there are problems, the owner-occupier resident still continues to use these social media groups. However, in avoiding controlling Facebook groups, they can create new and more independent online communities (for instance, through WhatsApp).

**CONCLUSION**
In conclusion, social media groups offer tenure groups a new way to create their place and represent their belonging, both elective and selective. Residents and landlords in Ocean Village have various motives for joining, or avoiding, the various social media groups available to Ocean Village residents. However, when they explain their reason(s) (i.e., socialising, privacy, accessibility or privacy) for either avoiding or joining these communities, different tenure groups represent a variety of responses.
While the above examples show some similarities to studies in the current literature in terms of the preferences of tenure groups, in this case personal preferences and interests play a key role in whether to participate or avoid social media groups. The last two sections illustrate that age and generational differences also influence the level and type of connections and interactions within social media groups. While young people more inclined to use social media, older people use it less in their daily life and in connecting with other people in Ocean Village.
NOTES

1 I am a PhD Candidate at the University of Southampton in Sociology. I would first like to thank the Republic of Turkey Ministry of National Education for providing me with the studentship to do this research in the UK. I would like to thank my supervisors, Dr. Silke Roth and Prof. Derek McGhee, for their vital support. Email: ya2g14@soton.ac.uk
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LABOUR PRODUCTIVITY IN THE UAE CONSTRUCTION AND HOUSING SECTOR

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Institution: ¹UNIVERSITY OF DERBY, UK; ²UNIVERSITY OF BOLTON (UK), UAE CAMPUS, UAE.; ³UNIVERSITY OF BOLTON, UK

INTRODUCTION

Productivity is the efficiency in the process of transforming inputs (i.e. Labor and capital) into outputs (i.e. goods and services). Thus, productivity growth implies the ability and capacity to produce more goods and services from the same amount of inputs i.e. labor, capital, land, energy, etc. So, improved productivity can generate higher incomes, better goods, services and living standards. By implication, education and training can improve the quality of labor force which constitutes a key determinant of growth in productivity¹.

Labor productivity of a country is measured by the amount of income or GDP produced by one hour of labor (rate of GDP per hour of work). It is important to make clear that all officially acknowledged finished goods and services (the total output of goods and services within a country irrespective of who owns them) have a market value and the total of these in a given period is the country’s Gross Domestic Product (GDP)²,³. Growing labor productivity can be interpreted through economic growth (real output or long-run aggregate supply), international competitiveness and efficient production of goods and services. It could also be interpreted through rising living standards in a country. A country’s standard of living is often a function of its GDP per capita. However, in macroeconomics there are three principal determinants of economic growth and these are improved labour force, increased capital stock, and improved technology. The quantity and quality of these determinants that is available for production define whether economic growth increases or decreases. As a rule, economic growth will occur when the aggregate supply function of these determinants increases in quantity, quality or both.

It is a well-known fact that labor force is significant to economic growth. The level of output will increase if the size of labor force increases (and nothing else changes). Labor force may increase due to growing population, changing attitude to work or immigration (especially when immigrants often work harder and contribute far more than locals to output). Economic growth (increase in real GDP or long-run aggregate supply) can, therefore, change due to the size (quantity) of the labor force. But labor productivity is about the quality of labour force and more often than not a function of incentives, skills, education and technology¹. Similarly, the quality and quantity of capital stock available significantly influence economic growth (GDP)⁴,⁵,⁶. Thus, when a sizeable proportion of GDP is invested in new Plants, machinery and enabling infrastructure, there is a higher tendency for economic growth or increase in real output (long-run aggregate supply). With better facilities and
tools, the quality of output increases and this indicate a strong relationship between labor productivity and capital stock. Technological advancement or the rate of adoption of new technology is the third primary factor of economic growth or increase in real GDP (aggregate supply). But adoption of new technology and innovative schemes to boost and promote business is more likely in a competitive environment and slow in a noncompetitive and protective environment. So, governmental policies which deemphasize protectionism and monopoly of inefficient local industries and restrictive practices may lead to a much faster growth rate. Thus, one could argue that country’s productive potential is considerably dependent on the magnitude, competence (quality) and attitude to work of its labor force; the proportion of invested GDP over a long period (magnitude and quality of capital stock); and the rate of adoption of new technology.

In the UAE, capital productivity (ratio of GDP to capital stock) considerably surpasses its labor productivity (especially in construction within the housing sector) and the country’s technological access and advancement; which slightly presents an imbalance economic growth in macroeconomics. However, when considered by sector, labor productivity (in construction within the housing sector) is low when compared to the oil, finance and transport and manufacturing sectors. Previous studies have shown that total labor productivity for the Gulf Cooperation Countries (GCC) has witness considerable decline in recent years and the recent global financial meltdown and its negative impact on construction and the property market have not helped matters either. This is unsurprising because productivity measures the efficiency of the production of goods and services. Invariably, when resource input is low compared to output, efficiency is high. In the construction business, the low input could be due to job cuts/lose or improved technological advancement. Certainly, this is not the case in the UAE as there are enough jobs but technological evolvement is weak as most construction projects are labor-intensive and use basic tools, basic craftsmanship and basic equipment. Low productivity in construction within the housing sector increases the dearth or shortage of low cost and sustainable housing. Less supply of housing in a country with a significant shortfall of sustainable and low cost housing means higher demand, price rise (cost) with its attendant problems of social exclusion and affordability for the average poor. Colliers International Report in 2014 emphasized that there is significant evidence to support the claim that “an affordability gap” exists in the current Dubai housing market, and there is a disparity between the demand for and supply of appropriate mid-market housing (housing that is affordable for a household in relation to its income). In a seeming cyclic style, this shortfall now impacts on productivity; just as productivity had initially impacted on the shortfall in production of low cost and sustainable housing. Affordable housing is a global phenomenon and particularly not peculiar to the UAE; nevertheless, it is evident globally that millions of families are financially over-stretched by housing costs and subsequently compelled to occupy inadequate housing which often undermines or compromise basic health and safety. Adequate and affordable housing is a universal human right and should be at the heart of urban policy. Affordable housing must possess the following features: structural stability, use of sustainable and good quality materials; basic services: light systems, water, ventilation; sanitary fixtures, doors and windows, etc. It should also provide adequate privacy, car park space, and lesser running costs than typical housing. But productivity is about working smarter i.e. using efficient and effective techniques to produce marketable goods and services, allowing more to be produced with the same amount of effort. So, an improved working environment, higher skilled workforce, innovative culture and technology will produce higher-value-added products and services that are worth more. Although improving labor productivity in any sector is multi-faceted, this paper aims to identify major perceived external factors affecting labor productivity in construction within the UAE housing sector.
projects through relative importance ranking procedure using a Severity Index in Matrix Order (SIMO) model.

**METHODOLOGY**

The methodology or principle applied in this study is quantitative and centers on research survey. Quantitative research is the method by which data is collected and presented in a statistically quantified order to sustain or controvert a subject matter. However, the questionnaire used in this study was informed by the information gleaned from a pilot study (both literature and preliminary fieldwork).

Judgmental sampling technique was used for the major fieldwork of this investigation. Adopted sample size was 35, and the target sectors were contractors, consultant and clients. Five firms were selected by judgmental sampling for each of these sectors (see Table 1 for Fieldwork sample frame below).

This sample size was adopted purely from an experiential point of view i.e. the nature of the case-study (the difficulty of finding respondents in UAE who are willing to share information despite the guarantee of anonymity); logistical and financial reasons. Under these circumstances, the size of the sample becomes a function or dependent on ‘what is readily available’ or convenient for sampling if the research is to progress. The difficult with this type of sampling and sample size is the fact that it has a slightly weak statistical power due to wide confidence intervals or the tendency for high error in statistical prediction and hypothesis testing and the fact that the selection wasn’t random or unbiased.

Such tendency for higher error can impact significantly on the validity of statistical outcome in inferential statistics; which is very different from the basic non-parametric descriptive statistics (ranking) used in this study. Descriptive statistics simply pronounces what the data shows in manageable and acceptable format. Whereas inferential statistics infer or outspread conclusions beyond the immediate data. In this study, the authors simply intend to describe what the data shows not extending its conclusions beyond the immediate data (through the statistical/empirical model for the purpose of predictions).

Often for prediction or extending conclusions beyond the immediate data will require a random selection of respondents and a 95 % (or more) symmetric confidence interval is required (i.e. the sample population mean within this interval, or the sample has a 95% (or more) ‘chance’ of being a true representation of the surveyed population). The implication here is that at least a minimum sample size of 385 to 400 is required. Such size would be very difficult to achieve in the UAE; apparently far-off the financial resource and logistical capacities of the authors (or researchers).

These respondents (participants) are stakeholders in their various sectors, and they were selected by judgmental sampling, purely because of their experience in the field of housing construction. The designations of respondents were project managers and senior resident engineers for contractors, project engineers for consultants and supervisors for clients. The means of data collection was using questionnaires, and the total response rate was 80 percent (28 received out of 35 distributed). See Table 2 below for the breakdown of distributed questionnaires and responses.

The questionnaire was structured into five sections. Section ‘A’ comprises some personal questions concerning willingness to respond to the questionnaire; designation of the respondents; years of experience in the construction field; type of activity and number of employees working in the firm. In section ‘B’, respondents were asked to rate both external and internal factors that influence labor productivity in construction within the housing sector; then they were to rank the factors that affect labor productivity amongst the workforce. In Section ‘C’, respondents were asked to rank those perceived factors responsible for declining labor productivity in the UAE. In section ‘D’ and ‘E’, they
were asked to rate some recommended ways of improving labor productivity and some perceived benefits from labor productivity improvement. However, this paper only analyses those major external factors affecting labor productivity in section ‘B’. The analysis was carried out using the Severity Index in Matrix Order (SIMO) model.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Number of firms</th>
<th>Participants per firm</th>
<th>Total Participant per sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractors</td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Consultant</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Clients</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

Table 1. Fieldwork sample frame

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Designation</th>
<th>Questionnaire distributed</th>
<th>Questionnaire Received</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractors</td>
<td>Project Manager</td>
<td>10</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Resident Engineer</td>
<td>10</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Consultant</td>
<td>Project Engineer</td>
<td>10</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>Clients</td>
<td>Supervisors</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>35</td>
<td>28</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2. Distributed and Received Questionnaires Sample Frame by Designation

**ANALYSIS**

The following are the seven steps employed in building the SIMO model used in this investigation:

1. The external factors influencing Labor productivity in UAE were coded accordingly: F(1), F(2), F(3),..., F(17) (see Tables 3, 4, 5, 6 and 7).
2. Ranking positions of these factors as presented in Table 4 are in decreasing order of severity accorded by respondents i.e. P1, P2, P3,..., P18 (see the second row in Table 4).
3. Each factor frequency count is entered under the various ranking positions that were accorded by respondents (see Table 4). It is important to note that any of the factors could have frequency counts in multiple ranking positions.
4. The index factors column as shown in Table 4 is derived from the inverse array of arithmetic numbers 1,2,3,...,17 to give 17, 16, 15, 14,..., 1 multiplied by the inverse of 17 or (1/17 ) to give 17/17=1; 16/17=0.94; 15/17=0.88;......1/17=0.06 (see the last column of Table 4).
5. The severity of each of the factors is found when the matrix of frequency counts under the various ranking positions (i.e. 17 X 17 matrix) is multiplied by the column of index factors in the last column of Table 4 (i.e. 1X17 matrix) (see Table 5) to give the array of severity magnitudes in the form of 1X17 matrix (first and second matrices) shown in Table 6.
6. The external factors and their severity magnitudes above are then re-arranged in a decreasing order of severity i.e. p(1) > p(2) > p(3) >,.... > p(18) (see Table 7).
7. The threshold value or demarcation line is calculated by working out the statistical midhinge of Table 7.

The mathematical formats for the seven steps above are presented according to as follow:
\[ F(j) = \sum_{i=1}^{n} a_{ij} \frac{\sigma_i}{n} \] (A)

Where: \( \sigma_i = (n + 1) - i \)

\( j = \) variable factor under consideration: for \( j = 1, 2, 3, \ldots, n-1, n \)

\( i = \) ranked position of the variable factor under consideration: \( i = 1, 2, 3, \ldots, n \)

Thus: \( \sigma_1 \): represent variable factor position 1; \( \sigma_2 \): represent variable factor position 2, ..., \( \sigma_n \): represent \( n \)th variable factor position.

\( \frac{\sigma_i}{n} \) = Severity index factor, for \( i = 1, 2, 3, \ldots, n \)

\( P(1) \) is the highest severity position

\( P(2) \) is the 2nd highest severity position………\( P(n) \) is the severe position

**Stage 2: Threshold Value (Demarcation Line)**

The Threshold value which is the Midhinge in the matrix of equation (A)

\[ D_1 = \frac{h_1}{4}[n + 1] \] (D)

\[ D_3 = \frac{h_2}{4}[n + 1] \] (E)

Where

- \( h_1 \) is the corresponding value of \( D_1 \)
- \( h_2 \) is the corresponding value of \( D_3 \)
- \( n \) is the total number of observations under consideration in equation (B)

\( D_1 \) and \( D_3 \) are within the matrix of equation (B)

Rules for \( D_1 \) and \( D_3 \) are as follows \(^{12, vi}\).
• If $D_1$ or $D_3$ is an integer, the numerical observation or item corresponding to the position of that integer in the matrix of equation (B) is chosen for either $D_1$ or $D_3$.
• If $D_1$ or $D_3$ is halfway between two integers, the average of the corresponding items or observations is chosen.
• If $D_1$ or $D_3$ is not an integer or halfway between two integers; then the resulting value should be approximated to the nearest integer, and the corresponding item or observation is chosen.

This threshold value defines the demarcation line between major factors and the minor factors (see Tables 7). Using Table 7 for example:

$D_1 = \frac{1}{3} (17 + 1) = 4.5$ and $D_3 = \frac{1}{3} (17 + 1) = 13.5$

N.B. $D_1$ and $D_3$ are halfway between two integers.

Therefore, using the second itemized rule for $D_1$ or $D_3$ above: $D_1 = 4.5$ and $D_3 = 13.5$.

Average of corresponding items to $D_1$ in Table 7 = $h_1 = \frac{1}{2} (22.52 + 19.73) = 21$ and $D_3 = h_2 = \frac{1}{2} (9.1 + 7.34) = 8$.

Threshold value = $\frac{1}{2} [h_1 + h_2] = \frac{1}{2} [21 + 8] = 14.5$

Thus, the demarcation line is between the magnitudes $P (8) = 17.21$ and $P (9) = 9.71$ (see Tables 7).

RESULT

<table>
<thead>
<tr>
<th>Variable Factors</th>
<th>Ranked Positions Frequencies of Variable Factors</th>
<th>Severity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>f1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>f2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>f3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
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Table 3. Ranked Frequency Positions of External Variable Factors influencing Labor Productivity
\[
\begin{bmatrix}
\mathbf{f} \\
\mathbf{H}_1 \cdots \mathbf{H}_n \\
\mathbf{f} \\
\mathbf{H}_1 \cdots \mathbf{H}_n
\end{bmatrix}
\]

Table 4. Result from Severity Index in Matrice Order (SIMO)

| \(f(1)\) | \(f(2)\) | \(f(3)\) | \(f(4)\) | \(f(5)\) | \(f(6)\) | \(f(7)\) | \(f(8)\) | \(f(9)\) | \(f(10)\) | \(f(11)\) | \(f(12)\) | \(f(13)\) | \(f(14)\) | \(f(15)\) | \(f(16)\) | \(f(17)\) |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 0 0 0 0 0 0 0 0 2 0 1 0 1 2 5 16 | 0 1 0 0 0 0 0 0 0 3 1 1 1 7 11 3 | 0 0 1 0 0 0 0 0 2 2 2 2 6 9 2 2 | 0 2 0 1 0 1 6 13 4 0 0 0 0 1 0 0 0 | 2 0 1 0 1 0 6 5 12 0 0 1 0 0 0 0 | 0 1 0 0 0 1 0 0 0 2 4 2 8 6 2 1 1 | 0 1 0 0 0 0 0 0 0 1 0 0 3 4 4 8 6 0 2 0 | 18 2 1 3 1 0 0 2 1 0 0 0 0 0 0 0 0 | 1 0 0 0 0 0 0 0 1 4 1 11 3 1 4 1 1 | 0 0 2 0 2 2 10 4 7 1 0 0 0 0 0 0 | 1 14 4 3 1 0 1 1 0 2 1 0 0 0 0 0 0 | 0 6 16 1 0 2 1 0 1 0 0 1 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 6 7 2 4 4 1 3 1 | 0 0 0 0 0 0 2 0 1 0 5 6 3 2 2 2 2 3 | 0 0 1 3 6 13 1 2 1 0 0 0 0 0 1 0 0 |
| 0 0 2 0 1 0 1 2 5 16 | 0.94 | 7.34 | 0.82 | 17.34 | 0.77 | 17.21 | 0.71 | 9.23 | 0.65 | 9.11 | 0.41 | 23.49 | 0.29 | 9.11 | 0.24 | 9.71 | 0.13 | 19.73 | 0.12 | 4.05 | 0.06 | 22.52 |

Note: The values in the table are results from the Severity Index in Matrice Order (SIMO) analysis.
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Table 5. Results arranged in descending order of magnitude

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Table 6. Severity Index Results and Demarcation Line

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DISCUSSION

Enabling technology and logistics were identified by respondents in this research as the most severe factor impacting on Labor productivity in UAE construction projects. It is obvious that to keep up the pace of development in comparison to other sectors there are needs for greater awareness and appreciation of contemporary technologies and advances in logistical techniques. While the UAE construction industry may seem to be typically aware of relevant technologies and logistics, there is no evidence to suggest that they are well appreciated or integrated into mainstream construction projects. This inadequacy in the UAE is gravely impacting on labor productivity in construction, particularly in areas of efficiency and effective delivery of projects. At the moment, in the UAE construction industry, there is an unprecedented level of unskilled labor from the Indian subcontinent (the southern region of Asia). This is despite there being enormous resources at the disposal of the country for the acquisition of the best technology and logistics. Poor logistics (equipment, materials, and tools) management logically results in project delays and cost escalations. This is because equipment, materials and tools account for over three quarter of the average construction project budget\(^{13,14}\). So it isn’t surprising that project delays and cost escalations are common occurrences in most UAE construction projects and this suggests poor logistics management and ineffective delivery processes. Again, one can argue that the country’s construction labor productivity is low and uncompetitive despite huge investment in the construction sector. If Labor productivity is considered as being the rate of GDP on the numbers of hours worked, any reduction in the number of hours worked without changes in total output would imply an improvement in labor productivity. But this can only be possible when there are enabling technologies and efficient logistical systems to compensate the shortfall in human working hours. A shortfall in working hours could be due to job cuts, which is certainly not the case in the UAE construction sector due to the regular influx of cheap, low-skilled migrant workers from India, Pakistan, Nepal, Bangladesh, etc. In fact, the numbers of working hours in the construction industry is increasing by the day resulting in low productivity in the UAE.

Procurement of materials and equipment was rated second amongst major factors impacting on construction labor productivity in the UAE. Procurement is the process of acquiring goods, works and services necessary for carrying out a project, excluding consultancy services\(^ {15}\). Works in context refers to the acquisition and installation of equipment and materials but it also encompasses all construction, reconstruction, demolition, repair or renovation of structures, site preparation, excavation, erection, building, decoration and finishing, as well as services incidental to construction such as drilling, mapping, satellite photography, seismic investigations and similar services provided pursuant to the procurement contract. Investment in equipment (machinery) and materials formed an

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<td>Stakeholders’ impact</td>
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Table 7. Major Factors in descending order influencing Labor Productivity in UAE
indispensable part of the previous factor (enabling technology and logistics) identified as the most important factor in this study and discussed in the preceding paragraph. Without procuring or acquiring the right facilities and materials, the aspiration for advanced technological and logistical frameworks is futile. This is particularly true since application and dispersal of the latest state-of-the-art construction technologies and logistics obviously boost labor productivity. This is very evident in countries where higher equipment and material investments impact on labor productivity and generate higher productivity growth rates. If a comparison was to be made with countries like the USA, Japan, United Kingdom, Turkey and even Saudi Arabia for instance, the UAE investments on equipment (heavy construction machinery) and materials as a percentage of Gross Domestic Product (GDP) will be lower and ineffective in terms of competitiveness and growth in the construction sector.

Adequate technical skills and services were the third major factor identified by respondents in order of severity impacting on UAE construction labor productivity. This factor is synonymously related to both factors previously discussed above and presented in order of severity, which was: “enabling technology and logistics”; “procurement of materials and equipment”. Enabling technology and logistics requires the right frameworks, materials, state of the art equipment (machinery), and much evolved technically-skilled workforce for application and sustainability purposes. At the moment, foreigners comprise about 99 percent of the private sector workforce in the UAE. However, most of these jobs, especially those in the construction industry are very low-skilled and often characterised by poor remuneration and working conditions. This is perhaps not surprising because the ‘Emiratis’ (nationals) are naturally very proud people and show a reluctance to take up low-skilled or basic labor intensive jobs. The consequent low-skilled labor influx, also the major result of immigration policies designed to compensate for the shortfall created by the prevailing social attitude, has severely impacted on the country’s labor productivity. This is true because it has become much cheaper and attractive in the UAE to employ, acquire or secure a foreign workforce than devoting resources to capital intensive equipment/facilities and logistics that could improve construction labor productivity. Even the global financial crisis has not helped matters; the immigration of low-skilled labor is still ongoing.

The global financial crisis was the fourth most significant factor revealed in this investigation which impacted on construction labor productivity in the UAE. As stated previously, labor productivity is a function of Gross Domestic Product (GDP) and productive hours of work. Therefore what affects GDP significantly affects labor productivity. Further, the apprehensions of the global economic downturn (like the financial crisis), slow down businesses and potentially reduce the market value of goods and services. This directly impacts on construction and its labor productivity. For instance, the emirates of Dubai in the UAE is currently witnessing a slowdown in economic growth and plummeting asset prices which has been further exacerbated by GCC countries declining oil prices and demand. The UAE is worst hit amongst the GCC countries during this crisis given its close links with global equity and credit markets.

The declining value of assets and oil prices and a decline in demand for both, reduced assets’ marketability (liquidity) conditions and reduced investors’ confidence. Global liquidity shortages caused in part by Lehman’s collapse in September 2008 further intensified the GCC financial sector imbalances. This situation severely impacted on Dubai in particular and the UAE construction industry in general.

The fifth most significant factor identified in this study that influenced labor productivity was health and safety regulations. Productive hours can be seriously reduced if a workforce is unsure about health and safety issues. When accidents occur on site due to poor adherence to health and safety, time is wasted both on site and in the time taken for staff to return to work after any injury. In the
absence of enabling technology and advance logistical frameworks, the amount of real GDP will greatly depend on manual working hours. So to some extent, poor adherence to health and safety could impact on a country’s labor productivity. In the emirates of Dubai, for instance, there is evidence to suggest that some construction companies do not adequately adhere to health and safety regulations notwithstanding the cosmetic prevalence of ‘safety first’ signage, especially at the entrance to construction sites. The laborers themselves are often complicit with this practice in their desperation to find work and do not prioritise their health and safety. This is clear anecdotal evidence of the degree of poverty in some countries within the Indian subcontinent and how the quest for survival potentially overrides rationality. The desperation reaches such levels that some of these laborers are prepared to work as usual even in adverse climatic and weather conditions.

The climatic and weather conditions factor is sixth in the hierarchy of severity identified by respondents amongst factors that influence labor productivity. Extreme weather conditions during the months of July and August in the UAE mean the maximum temperature sometimes reaches 50 degrees Celsius; this is without considering the high humidity levels in these areas. Under such conditions, productive hours are significantly reduced which directly impacts on GDP.

Another factor which impacts on UAE labor productivity is the public sector. In any country, the public sector takes responsibility for the provision of goods/facilities and services, regulations, enactment of statutory regulations, monitoring and enforcements. No doubt these responsibilities make it the most important stakeholder in any country. But it sets the benchmark for other sectors to follow. Except for climatic and weather conditions, the public sector directly influences all the other factors discussed above. Its influence significantly affects the working environment; which in turn impacts on the country’s labor productivity.

**RECOMMENDATION**

This paper recommends that an appropriate regulatory framework which encourages collaborative partnerships amongst construction firms be established. This is to create circumstances in which it would be advantageous for large construction firms to merge, pooling their resources to execute large projects within and outside the country. The right financial incentives and support packages should be provided by the government to encourage such mergers given their potential benefit to the economy by way of job creation and its direct impact on GDP. These firms are also to be encouraged to efficiently compete with other firms both within the UAE and with developed and developing nations. This is very important given the fact that landmark projects, and the multinational construction firms able to build them, are no longer the exclusive preserve of developed countries. As an example, in the latest ranking of the world’s biggest contractors, a developing country like Turkey now accounts for about 33 out of 225 of the biggest global construction firms; next to China, which has approximately 52 such firms\(^{18}\). Surprisingly, only 26 of these firms originated from the US (the world’s economic and military superpower). This was unheard of two decades ago; a clear indication that developed countries are now losing their dominant grip on the global construction market. Thanks to the favourable conditions in Turkey, the country’s construction and building materials manufacturing firms now rank amongst the best in the world, and Turkey’s GDP has witnessed greater growth than most developed and developing countries between 1980 and 2012; all attributable to the growth of its construction sector. The Turkish model incentivises, empowers and encourages the private sector; where resources are pulled together for the benefit of all.

Another recommended area of policy development in the UAE is in its greater understanding of - and participation in - the global competitive market, where an equal playing field exists, usually without heavy bias. While adhering to the spirit of collaboration, promoting activity in a healthy international
competitive environment could encourage better, more competitive practices within local, large construction firms in the UAE. Furthermore, the UAE government could enforce a compulsory, structured human resource development program to boost its current skills gap in construction and other relevant sectors.

**CONCLUSION**
The success of Turkey’s construction industry can also be replicated in the UAE construction industry if enough public-sector support is provided. All the factors identified in this study directly or indirectly depend on the government / public sector. An appropriate regulatory framework to incentivize and promote collaborative partnerships can only be possible and enforced through the backing of the government. Thus, the authors are of the view that the financial investments and size of the UAE construction industry is enormous and deserves to be properly regulated and supported to enhance its labor productivity. With improvements in labor productivity in the construction industry, construction projects are more likely to be completed successfully on time, to budget and the required quality standards. This, in turn, would provide a great boost to confidence in the economy and international competitiveness.19

**ACKNOWLEDGEMENTS**
My sincere gratitude also goes to our great friend and associate Tim Parker, British Broadcasting Service (BBC) who selflessly undertook the task of proofreading this manuscript.
NOTES


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INTRODUCTION

Architecture is an expression of socio-cultural factors that respond to both physical protections and material needs. To support this assertion, Rapoport indicated that house form is generally based on culture to express the meaning of architecture while other relevant factors including materials, climate and technology are secondary priorities in the process of design. In the work of Oliver and Rudofsky, traditional housing designs have their own characteristics reflecting harmony between local climate and cosmology of indigenous people. Though historical development, various evident in Vietnam show that culture was a significant influence on architecture. Therefore, the design of housing reflects the cultural aspects and lifestyles of the people. On the other hand, the lifestyles, social and politic aspects are changing overtime result in process of housing transformation. This paper focuses on the process of evolution of self-built housing regarding two major factors namely cultural needs and daily lifestyles. Both factors play significant roles to create sense of community and meaning of a home design. It is argued that despite the introduction of new materials, urban regulations, policies, and construction techniques, each having great influence on city development; that socio-cultural perception and daily activities taking place in the houses still play important roles that define the sense of community.

OVERVIEW OF BACKGROUND OF HANOI

Vietnam is located in South East Asia, and the country borders with China, Lao, and Cambodia. Hanoi is situated in the North, on the South bank of the Red River delta. Throughout history, Hanoi is known as one of the most ancient cities in Vietnam. The start point of Hanoi being occurred when Ly King moved the royal citadel to Hanoi in 1010. Since then, the sense of community has been identified with four main different built environments: an ancient quarter with typical shop houses that was influenced by Chinese merchants during the feudal periods; a colonial town during the period (1887-1954); a residential quarter during the central economic planning period (1954-1986); and a complex built environment since the economic reform. Apart from the residential living quarter that was planned by the government and state companies during the central economic planning period, in all the other urban residential areas are mainly filled with self-built housing. Today, self-built housing are still contributing approximately 70 percent of housing production in Hanoi city. Therefore, this
study compares and focuses on characteristics of self-built housing, including traditional town houses, colonial town houses and contemporary houses. The concept of self-built housing in this study is defined as: a house that is funded by the householders themselves and the owners invest and manage the processes of design and construction to meet their own living needs.

Figure 1. The development of Hanoi: top left: feudal period; top right: colonial period; bottom left: central economic plan period; bottom right: since the economic reform (Drawn by Ngo Kien Thinh based on historical maps, satellite map in 2016, photo analysis and site observation)

E.VOLUTION OF SELF-BUILT ARCHITECTURE
The traditional urban housing
The characteristics of traditional Vietnamese house reflect cultural needs, geography and nature. Hanoi located in maritime route from China to other Eastern countries and later, Western countries; thus, design of traditional town houses had various distinct features including functions, form and spatial layout to adapt with living conditions in urban areas. The traditional urban house is widely known as a shop-house because of two different functions: commercial area and living area. The commercial spaces including shops, storage, and workshop which are always located near the main entrance. Moreover, the shape of the building is long and narrow. There are two main assumptions about typological characteristics of urban house in Hanoi. Firstly, the housing plot is formed following the traditions of Vietnamese people. Children always have to move out of the family home after marriage and build a new house for themselves except for the oldest son who is responsible for taking care of ancestral worshipping and his parents in their old age. Also, parents would generally endow their son with their own land and parts of their business. In Hanoi, this distribution commonly occurred around the historical quarter and traditional residential areas. Over time, an original parent’s house would be separated into smaller houses. Furthermore, as a
traditional way of living, the family business is generally passed from generation to generation. Hence, each house had at least one small frontage as a shop front to inherit the family business. Consequently, the width of house became smaller and smaller.

Secondly, another hypothesis about the building typology stems from economic purposes. As the starting point, the old quarter was the marketplace and trading area. Each house always had at least one small frontage for commercial purposes. The frontage spaces in traditional houses were valuable in term of attracting customers to shops on the ground floor. Therefore, during the feudal periods, building tax was calculated according to the width of building. As a result, the small width of traditional house could avoid large amounts of tax. Nevertheless, the length of building tends to increase opposite to the respective width.

In addition, the spatial organization of traditional house is characterized by clear division of space and geometrical rules. A house generally has two floor levels: a ground used for public purposes and an upper floor used for private family spaces. Living spaces are linked by several courtyards, and as a result of Vietnamese culture, the layout of building should provide enclosed form, allowing the building itself to be filled with life energy. People in Vietnam believed that life energy was an essential element, according to Feng Shui, that was responsible for the quality of the residence. The ideology of Feng Shui principles was popular in traditional society and was followed to create a harmonious environment to bring life energy into the buildings. However, in reality, it is usually difficult to obtain an ideal site in the towns and cities. Consequently, in order to achieve a desirable living environment, the form of the courtyard house has been selected as symbolic ideal model in urban spaces. Although the size and shape of courtyard might vary in different houses, the courtyard, the enclosure of space by building and wall always represent the heart of dwelling units. The Vietnamese houses always surround their courtyards with main living spaces or walls to create sense of privacy, security, control of noise and dust, and to offer light and air.
In addition, under the Vietnamese culture, ancestral worship is significant. Thus, the location of the ancestral hall always has the highest priority in the process of design. The ancestral hall is generally located in clearest space in the house following Feng Shui principles.

**Housing during colonial period**
During colonial periods, the French attempted to develop Hanoi as a replica of Paris and started the processes of modernization and globalization, and new planning, landscape and architecture had generally followed Western principles. As a result, these changes in political and social factors have impacted on housing form. Land parcels were planned and shaped more geometrically in rectangular shape. Town houses generally applied new materials and construction technologies whilst the façade was copied from French architecture. Nevertheless, the function and spatial organisation of the building was heavily influenced by old custom and cultural aspects that often seen in traditional housing designs.
Contemporary self-built housing

Since the economic reform in 1986, Vietnamese urban has experienced with changes in built environment\(^\text{18}\). During the period between 1954-1986, Vietnam applied a centrally planned economy. Every production was distributed regarding rank and number of working year of employees. In addition, state fully controlled housing production and popular housing type after wars was a collective apartment in living quarters. Since the reform, there are various changes in political and economic factors. The country is moving from a centralized planning to a decentralized transitional economy. Both marketization and decentralization have boosted the foreign and private development. In term of social factor, census data show that nuclear family dominated the contemporary urban areas in Vietnam. For example, UN-Habitant estimated that the household size is decreased from 3.8 person in 2009 to 3.1 person per household in 2049\(^\text{19}\). The similar studies show that the average Vietnamese women in 1960 has a total of 6.39 children, it decreased to 2.05 children in 2012\(^\text{20}\). The figures show considerable demographic changes in household size and composition. However, although households have physical changes, they are still bound to traditional values and customs. In addition, although there is no need for large houses to accommodate extended families, there are higher living standards regarding living spaces.

All of those factors have contributed to the process of transformation of self-built housing. Architecture as the physical embodiment of social life has changed to adopt with new conditions. In historical urban areas (old quarter and French quarter), inhabitants often demolish the traditional houses and rebuilt new houses\(^\text{21}\). In addition, new self-built residential areas including urban villages, planned areas for the state employee and commercial areas are quickly dominated urban districts\(^\text{22}\). Although the size of housing plot is depending on regional planning and past development, a physical characteristic of contemporary self-built house in all urban areas has identified with three to six floors with concrete structure, and the façade design is based on perception of house owners. In addition, the building density is usually very high, and in most case, house could cover 100 percent of the plot (figure 4). The physical changes come from two main reasons:
First, due to change of built environment, land is considered to be a type of commodity; therefore, the urban housing plot is expensive and most families can only afford a small plot. The only way to create more living space is to increase building area and to extend the house vertically. Regarding building regulation, the building could cover most part of land if the plot size is too small (Table 1). As a result, the building is generally constructed with multiple stories and covered the plot.

Secondly, the relationship between commercial area and living area are still popular in Vietnam because it supports local needs. The commercial spaces help to maximize the income of house owners. Given the close relationship between living spaces and commercial spaces, any space inside the houses that is not used as living space would be transformed into a commercial area with small modification. Thus, if the family has good finance and the house is located in main streets, house owner would build the house as large and as high as possible to maximize commercial benefits.

In term of spatial organization (figure 5), the major spatial change for contemporary houses is a disappearance of courtyards. In traditional houses and French town houses, courtyards were frequently used to separate different living spaces. According to traditional rules, the living space was consisted of two parts: the main family living spaces and the supporting spaces.

**Figure 4. Overview characteristics of contemporary self-built housing in urban areas since the economic reform (Drawn by Ngo Kien Thinh)**

<table>
<thead>
<tr>
<th>Land lot area (m²)</th>
<th>&lt;50</th>
<th>75</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>500</th>
<th>&gt;1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum building density (%)</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>

**Table 3. Maximum net density of land plot for housing construction**
spaces, including kitchen and toilet, were located far away from living components in order to reduce the impacts of smoke and smell. On this account, the kitchen and toilet were regularly situated at back side of building, and those spaces were separated from other living spaces via a courtyard. However, in the contemporary house, a kitchen and other supporting spaces are directly attached to the main living spaces.

![Figure 5. Architectural characteristics of urban house forms in different built environment (Drawn by Ngo Kien Thinh)](image)

To explain these changes, it is suggested that the layout of self-built housing have reflected users’ contemporary social structure and living styles. Three main reasons for spatial changes are as follows: Firstly, the change of social structure led to transformation of housing forms. During the feudal and colonial periods, urban houses were always built by middle class, who normally had several servants. Domestic work was always carried out by a maid named “Con Sen”. By contrast, since the socialist regime started in 1954, the responsibility for domestic work shifted to family members. Our case studies demonstrated that (figure 6), after the reform, the kitchen is directly connected with other living components to provide more convenience.

![Figure 6. Examples of contemporary self-built house plans after the economic reform (Drawn by Ngo Kien Thinh)](image)
Secondly, the development of technology and home facilities led to new requirements for living spaces. Within new living styles, modern facilities such as gas and electric stoves have replaced traditional fire stoves. Subsequently, the cooking activities became more convenient with reduced effects of smoke and smell. Besides that, the new living styles have also encouraged people to use electric devices such as electric fans, sufficient lighting and air conditioning to achieve comfort. Thus, the courtyard’s role to create a boundary between supporting spaces and living spaces and for ventilation and natural lighting turns out to be less important with new living styles.

Thirdly, the family social life has changed rapidly resulting in increasing requirements for private spaces. In the traditional society, housing played a significant role for family activities and a number of open spaces were used to support traditional living styles. By contrast, people seemingly spend less time for family activities at home today, particularly the case with young people. People now spend longer time outside home to work or study in the daytime. Moreover, there is an increase in leisure and personal goods such as televisions, computers and phones that offer more alternatives that encourage use of private spaces. As a result, there are increasing requirements for more private rooms in a house rather than public space. Courtyard has become less important in design. Consequently, small sky-wells in staircase area have taken the functional role of the courtyard for ventilation.

![Figure 7. Different types of sky-well in contemporary self-built housing (Images by Ngo Kien Thinh)](image)

Despite various changes in form and spatial organization, living styles of Vietnamese are still based on traditional customs. Due to various kinds of traditional activities, it is not surprising that with every Vietnamese family, no matter whether the house is large or small; the location of ancestral altar is one of the most important spaces in the houses. Thus, the ancestral alters always located in the highest place in the house or in the cleanest area in the living room. Moreover, the arrangement of ancestral altar is significant because it influenced the arrangement of other furniture, such as the direction of bed.
CONCLUSION
In conclusion, this paper had critically examined the evolution of urban self-built housing in three periods in Hanoi: the traditional urban neighborhood period (during the late nineteenth century); the colonial period (1887 to 1954) and the period after the economic reform in 1986. A number of aspects, including: form, function and spatial layout were analyzed. In this study, it was argued that self-built houses have retained and involved two social-cultural aspects throughout history. First, houses have kept commercial spaces wherever is possible. Areas in the houses dedicated for commercial activities are normally at ground and facing public streets. Secondly, spatial arrangements have been designed to prioritize owners’ needs in daily life. Notably, those priorities have been changing throughout history: for example, courtyards in today’s houses are less important compare to those in the past. The reasons for the disappearance of courtyards include the restriction on building plot, increasing requirement of family spaces in each house, and advanced technology such as air-conditioning and kitchen facilities that became available in normal people’s homes.
The findings, therefore, will be beneficial to designers, architects and planners to aid them in understanding how to integrate traditional forms, expressions and ideas into contemporary designs. The process of modernization may be associated with design evolution. There are changed relationship between supporting spaces and living spaces in traditional and contemporary house respectively. New design needs to consider the importance of cross-blending of the contemporary and traditional concepts in Vietnam. Besides that, the architect should consider the use of courtyards or other open spaces in the process of design to create a sustainable environment. In addition, a concept of home is strongly related with ritual activities; thus, the room with the ancestral altar still plays a critical role in creating the identity of Vietnamese housing.

Figure 8. Ancestral altar in different Vietnamese ceremonies (Clockwise from top left: Wedding event, Kitchen’s god festival, death anniversaries and normal time)
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ARCHITECTURE AND THE BRAIN: BRINGING HUMAN IN THE HEART OF URBANISM AND ARCHITECTURE

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INTRODUCTION

Architecture and urbanism are not only about concrete, structures and aesthetics. It is about human, life, feelings and health. Most people live and work in/around buildings therefore professionals have a big role to play in the development, the well-being, the evolution and the state of mind of a person. Every visual element is captured by the eye and sent to the brain where the information will be treated, triggering instinctive, psychological and physiological reactions. “Our buildings arise out of our brains, and our brains – and our bodies- spend an average of 87 % of their existence in buildings. And yet, we know relatively little about the interaction of the two. How do we conceive of the ideas and cognitively marshal the information necessary to design buildings, and how does our built environment affect the neural activity inside our brain?”

We make buildings and cities for humans, but do we integrate them enough in our thinking process? Do we know what their psychological and physiological needs are? In the fifties, the biologist Jonas Salk was desperately searching a vaccine’s good combination. After numerous failed trials, while on holidays in Italy he got struck by the solution as he was walking in an opened area. Later he found the vaccine against poliomyelitis. His laboratory was underground, small and dark, which may help concentration but inhibit creativity and innovative ideas. He then became one of the first to realize how much the built environment could influence behavior and performance. With the help of the Architect Louis Kahn they initiated the research correlating architecture and neuroscience.

This paper explores new approaches of the design and planning process.

A new way of thinking Architecture and Urbanism

Most cities invest millions in buildings such as cultural centers, venues, spaces for young people and numerous others for community hoping it will enlighten a district, be popular and answer citizen’s needs. Unfortunately, sometimes they fail to reach their expectations. Obviously location and purpose play a big role in this, but not only. Buildings have a major impact on humans, on psychology, behavior and physiology. Researching this impact is key to a better design and urban planning. Every visual stimulus is treated by our brain, therefore knowing how the brain reacts to the built environment is crucial. Neuroscience is only at the beginning stage of research, there is still plenty to discover but experts already use it for education, psychology, cognition, sociology, even in marketing but not in architecture, where it has a crucial role to play. Psychology and neuroscience for architecture and urbanism offer us a chance to design and custom buildings and cities beyond
specifications, client’s brief and other regulations, it allows us to build an environment adapted to humans, to their conscious and unconscious needs.

In his pyramid, Maslow\(^5\) classifies the five main human’s needs in three categories: The basic needs (physiological needs and safety needs), the psychological needs (belongingness and love needs and esteem needs) and the self-fulfillment needs (self-actualization). The three first needs, including the two basic ones are related to architecture and urbanism; in the Physiological needs we can find warmth and rest, which relates to a home. The safety needs obviously refers to security and safety which are also expected from a home, but from a city as well. Finally, the psychological needs of belongingness and love will be sought in communities and urban organization.

![Maslow's pyramid](image)

Maslow’s pyramid of needs has since been controverted by many, talking about motivation rather than needs, however the primary needs are the same for most of them. In this paper we will go through three primary human’s reactions and attractions correlated with the built environment: The feeling of insecurity created by cities and streets, the need of belongingness to a community and the inevitable attraction to nature. These are part of the feelings and behaviours people cannot elude so it is crucial to integrate them in our design and planning process.

**FEELING OF INSECURITY**

The behavior\(^6\) is the physical actions and reactions of someone in a situation that are observable from outside. Feeling of insecurity is a big problem in cities and in urban planning, as a matter of fact it can alter the expected flow and circulation, ending up in isolating some places or crowding some others. It is well known that people are scared\(^7\) of what they don’t know, and therefore what they don’t or cannot see.

Walking at night in a dark street, where we cannot see ahead or around will almost always generate a feeling of insecurity and fear. There are two distinctive reactions to fear people may experience in streets; The instinctive reaction to seek for a shelter, an enclosed space when feeling threatened by surprise such as an unexpected loud noise. The human instinct will guide us to look for protection in a covered space. Whereas the feeling of fear that is more psychological, influenced by media and society that will raise an awareness towards aggressions and violence causes the opposite reaction. Walking in the streets, especially at night can be a scary experience for many people. It is interesting to notice that the feeling of security will be completely different than the one described above. Citizens will feel more secure while walking in a large, open, uncovered and bright space. The most uncomfortable streets to use will be the ones that are narrow, with multiple little corners and porches, the most enclosed ones. This phenomenon can be observed in many typical provençales cities in the
south of France that have an old city center. Despite its historical interest and “charm”, the streets are very narrow and enclosed which pull visitors and habitants off walking in when it’s dark. It is a problem because the shops and restaurants don’t open at night due to the lack of clientele which makes the old center deserted at night. It is interesting to notice that people will feel safer to walk in a wide open place where they can have visibility and room to run away from danger if it occurs, but at the same time they will seek for small covered places to shelter from danger. In the process of urban planning it may be interesting to consider these two different reactions to fear and evaluate what is the most appropriate.

Knowing about psychology and neuroscience can also allow us to make more appropriate use of the technology. The smart houses, automation and many recent innovations can be fun, make life more comfortable and also be energy saving but it can as well cause stress to people. A very good, yet simple and not so new example is the movement detector as interrupter for lights; It can be energy saving for those who forget to turn the light off, conversely it can waste energy when it’s not set up properly and also because it is not adaptable to the situation. Beside the pros and cons on energy, it can be a great source of stress, leading to a feeling of insecurity. As a matter of fact, a person alone in a library equipped with presence/movement detectors will trigger the light while passing the detector but if he/she stops to look at a book or stays still the light will turn off inducing stress, fear or even panic depending on the person. Another example could be a fully automated house undergoing a power cut. This problem has already occurred, leaving the habitants completely powerless over their house, so they are now rethinking the systems in order to allow some mechanical solutions. But it is still far from being ideal. The concept of automated technology is to be independent, to free people from thinking of it or having to control it. But at the same time it induces loss of control, so what should we do? The stress-fear-feeling of insecurity comes from the surprise factor in this case but most generally from the loss of control. It brings us back to the fact that humans fear what they don’t know or cannot master themselves. The decrease of empowerment that results from technology needs to be consider when using it in cities and buildings. In the battle between technology-peace of mind-loss of control versus less technology-more control, I would suggest the less technology option as the fear the other one can trigger is primary instinct against which technology will not be able to compete.

FEELING OF BELONGINGNESS (lack of belongingness in Detroit)

According to Abraham Maslow, the need to belong is a major source of human motivation. Amongst others, this idea is also supported by psychologists Roy Baumeister and Mark Leary8. Although it is controverted because some may feel under great pressure because society tells them “they have to belong”, also conditioned by our culture. However, the desire to have an action and belong to something more important than themselves seems to be in human nature. This will allow people to be clearly identified for themselves and for others.

Once considered as a symbol of American prosperity, up until the fifties when there were two million people living in Detroit, now there are only seven hundred thousand people and the city could become a national financial problem. The city used to be called the Motor City and proud of being a global leader in the automobile industry. Detroit started to decline in the fifties and the “Subprimes crisis” in 2008 has brought the city towards bankruptcy9. Many areas that once were pleasant suburbs became deserted, where houses are now abandoned and reduced to ruins. Obviously the end of the automobile industry is the main reason for its decline, but we may also consider another problem they had to face: The lack of belongingness. According to Maslow’s hierarchy of needs, belongingness is the third most important human need.
For most cities such as London, suburbs are well defined, they have their own identity; their names, their particularities and they are articulated around a lively center with its own facilities, like a small town within the city. Detroit was lacking such organization; its suburbs did not even always have a name. People need to feel part of a community, to be integrated in their home town. The most they feel they belong to a community or to an area, the most they will be attached to it and willing to look after it and stay. During the golden age of its industry, most of the manufactories of Detroit were gathered in the center, so were most of the facilities and the suburbs hosted mainly, or even only accommodations. Consequently, when the industry declined most people lost their jobs and had nothing to keep them there so they left.

The loss of a job is often a reason for moving but when there is an attachment to the city and a sense of belongingness to where they live, the habitants will be more inclined to seek another job in the area. When they get a strong sense of community and therefore an attachment people may even be inclined to lower their expectations concerning their jobs. We could use the case of Detroit to bring another asset in urban planning; the feeling of belongingness to a community will be more sustainable in the long term than betting on the success of an emerging industry, even if this one seems prosperous at the time. Industries, trends and aesthetics are always ephemeral whereas human’s universal needs may evaluate but are likely to stay the same. Therefore, it is important, while designing, to evaluate and making the citizen’s natural needs at the top of our thinking.

**NATURE IS CRUCIAL IN CITIES (New-York)**

Whether we like nature or not, humans are somehow instinctively attracted to nature. On the physiological side, researches have shown that having a view on nature lowers the hormone cortisol in the blood. Cortisol is also called the hormone of stress, it induces stress, hypertension, it can also influence the eating habits, the quality of sleep, it can improve the healing process, concentration and more.\(^{10}\) Cortisol is secreted mainly by the adrenal glands. Its excretion is regulated by the hypothalamus that stimulates the pituitary. Its natural secretion in the body follows the circadian rhythm (biological clock) which is regulated by the day/night cycle. The hormone reaches its higher level in the blood between 6 and 8 in the morning, and its lowest at night. This hormone is essential to life because it regulates the glycaemia in the blood, increases the blood pressure and neutralize inflammation. The total absence of cortisol in our body would kill us in a couple of days but a small excess of it can also have bad effects; the adrenal glands produce it in response to stress, and in case of an extended state of stress or a chronic stress, it can become harmful. It can cause hypertension,
influence the mood and the quality of sleep. High levels of cortisol can also inhibit the osteoblastic activity resulting in osteoporosis and problems with bony development in children, lower the immunity system leading to infections, and also delay the healing process of the wounds and impoverish the quality of the skin\textsuperscript{11}. Many studies\textsuperscript{12} have shown that walking in a natural environment rather that a street entirely made of concrete, having a view through the window, or apparently even on screen or posters will lower the levels of Cortisol and have a positive impact on health\textsuperscript{13}. The city of New York and its Central Park is a good example; as we can see on the picture from the Huffington post below, the park with its great lawn, its lake, museums, zoo and different fields and gardens is big (341 acres), varied and green.

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{central_park.png}
\caption{Figure 3.}
\end{figure}

On demand of the New Yorkers, Central park was created in 1873. It is now very popular and most citizens and tourists appreciate it a great deal but it has not always been the case. In the early 20\textsuperscript{th} century, between the development of automobiles and the wall street crash of 1929 it encountered a first failure and declined because of the economy and because people were now able to drive and take some time off outside their city, to the Atlantic coast or to other parks. Urbanist Robert Moses brought it back to life, but following his departure in 1960 the park encountered its second decline. For twenty years it was left abandoned and became unsafe until volunteers took the initiative to restore and maintain it\textsuperscript{14}.

Many cities have their big park such as Bois de Boulogne in Paris and Hyde Park in London. Having such large green space is great but on a daily basis only people who live on their direct borders can benefit from its good properties on health and well-being. We can notice that housing prices are very high around these three parks, although they are well situated near or in the city center, the demand and price are often higher for the accommodations with a direct view on the park. Buyers and renters may not be aware of it but it is not only because “the view is nice” that they like it, the view actually has an effect on their brains and bodies. Unfortunately, the infatuation for this view on green creates inflation on housing’s price which brings inequalities towards lower classes who won’t be able to enjoy the health benefits. Ideally there should be many small “green corners” so that more people can have a view on vegetation from their homes and walk through more frequently. This is also to take into account while designing a hospital or a school as recent studies have shown very positive results; In hospitals they noticed an acceleration of the healing process and in schools an improvement of the cognitive development.

\textbf{COULD BETTER HUMAN KNOWLEDGE MAKE THE URBAN FUTURE LIVABLE?}

Eileen Gray said “To create, one must first question everything”. Since we make buildings and cities for humans, knowing how they receive the information we send them through our designs is crucial. Doctors have the power to save life and cure people. Professionals of urbanism and architecture have
the power to influence the life of people, their health, their minds and behavior. Architecture and urban planning should be considered like medicines; they should be “prescribed” after a thorough examination of the habitant(s), considering their primary needs, their health, their psychological needs, their physiological needs and of course their brief which never mentions the previous details but only aesthetic, practical, environmental, legal and financial details. Artificial light, natural light, colors, shapes, volumes, heights, materials, and all the information we can transmit through the built environment will have a direct impact on the brain, behavior, body, psychology and feelings resulting not only in the success or failure of the design/planning but also on the health and well-being of the users. Yes, the urban future is most probably livable if we bring more humanity and interest as well as knowledge for the whole human to the heart of it. “All fine architectural values are human values, else not valuable” (Frank Lloyd Wright) so let’s go further and bring human values to their essence and reflect on the core of human as a whole.
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SOULFUL LIGHT IN LIVABLE SMART CITIES

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INTRODUCTION
Advancement of modern electric light during the Industrial Revolution expanded the wakeful hours of the day, fueling non-stop activities around the clock. Electric light made work after sunset possible, resulting in a “radical reconceptualization of the relation between work and time.”¹ It expanded economic activities beyond daylight time to all times of the day. With the recent advent of LED technologies and digitally-controlled interactive illumination, we are amidst another revolution in urban lighting. The past two decades have witnessed a surge in intelligent light control that responds to collected data, LEDs of remarkable brightness and color capabilities, and lenses that direct light with extraordinary precision. For example, streetlight controls can now respond to weather conditions or changes in surrounding surface materials, and roadway illumination automatically dims when the traffic flow decreases.² The post-industrial era has also witnessed an overabundance of artificial light around the clock. Neurologists’ research results have shown that overexposure to light at night from LCD screens or street lights disrupts sleep, while exposure to daylight enhances alertness in the daytime and deepens sleep at night³.

Figure 1. Woodblock print Harvesting by Electric Light (1882) La lumiere electrique by E.M. Alglave and J. Boulard. Generator mounted on portable steam engine supplies electricity for the arc lamp hanging from a tall mast.
As cities across the globe announce ambitious plans to build either brand new “smart cities” or turn an existing city into one, what does urban light communicate about the place and its people, and how? Anthony Townsend, the former Research Director at Institute for Future, defined smart cities as “places where information technology is combined with infrastructure, architecture, everyday objects, and even our bodies to address social, economic, and environmental problems.” Major technological, economic, and social changes (such as urban population growth, climate change, and increase in the aging population) generated surging interests in smart cities. As safety, efficiency, and sustainability dominate the rhetoric of smart cities, how could cities maintain the idiosyncrasies and nuances that characterized those of the past, the qualities that make one city distinct from another? Cities must not only offer efficiency and comfort but also delight; these attributes not mutually exclusive, and their co-existence is necessary for human wellbeing.

In current urban design discourse, livability is often assessed quantitatively though measurable impacts such as energy consumptions and illuminance levels. Conversely, there are ‘soft’ livability factors. This paper suggests an alternative, qualitative understanding of livability, specifically centered around urban light that delivers more than its practical functions. By combining advanced lighting technology and empathy, urban light can communicate a city’s collective memories and the represent city dwellers’ souls, as well as offer safety, comfort, and efficiency of livable cities.

**Utilitarian and Symbolic Functions of Urban Light**

Light in cities has historically served both utilitarian and symbolic functions. For a practical purpose, streets are illuminated for safety and wayfinding. In medieval European cities, pedestrians were required to carry a lantern to make themselves visible to others from a distance and conversely detect other lantern bearers. Recent researches have also shown that lighting pedestrians at night can be perceived as either dangerous or safe. This shift in perception depends upon factors such as the angle from which people are lit and the contrast between bright and dark.

![Figure 2. Print by Gaetano Gherardo Zompini. Lantern-bearer, from the series The Arts of Everyday Life in the City of Venice, Le Arti Che Vanno Per Via Nella Gittà di Venezia (1753). Source: RISD Museum.](image)

Both natural and artificial light also serve symbolic functions. Before industrialization, when people awoke and slept in synch with the solar cycle, religions around the world associated light with the
divine. In Japan’s oldest recorded history, the sun goddess Amaterasu created the Japanese archipelago. Hindu culture brings in their new year with Divali, the festival of light, which occurs with the new moon in autumn. With industrialization, people could now control artificial light at will. This shift in control has overshadowed the divine powers of the sun and the moon. Nonetheless, artificial forms of light—including candle, gas, and electric light—have maintained an association with the soul. Gaston Bachelard wrote that a person will “perceive the lamp as a mirror of his inner self.” For Bachelard, the lamp was the soul of a house. Additionally, the types of lamps symbolized class and power. Mosques and churches impressed worshippers with large chandeliers whereas on the streets, ordinary citizens held torches and lanterns. Furthermore, as the municipality began to control street illumination, street light fixtures became a symbol of authority. Victor Hugo’s novel Les Miserables opens with the street child Gavroche breaking a street lamp, a symbolic act of rebellion against the authorities. In the recent past, residents of the Pruitt-Igoe public housing smashed corridor ceiling lights, which made crimes less visible to the police and subsequently heightened the sense of danger. Examples of contemporary lighting projects discussed later in this paper show that light continues to fulfill symbolic, communicative roles in today’s cities. With advancements in LED and sensor-control illumination, contemporary light has become more nuanced and responsive, presenting expanded possibilities for the ways in which light symbolizes life in cities.

**Smart Cities - Impact on Urban Light**

As seen in the examples of Hugo’s novel and Gaetano Gherardo Zompini’s print from Venice in the 1700’s (see Figure 2), candles in pre-industrial cities were a form of visual communication. This is comparable to today’s electric light networked with data collected in real time, ranging from the presence of people, the weather, to the traffic patterns. Philips, an electronics company based in the Netherlands, has worked with its hometown of Eindhoven to record the city’s parking usage, social media communication, and noise level on the streets. Philips analyzed these data to optimize light levels on the streets lined with bars and restaurants. Urban light that corresponds to actual usage can reduce electricity costs and protect urban dwellers from excessive light exposure. Recently built smart cities indicate, however, that economic gains, sustainability, and safety are insufficient to attract residents. Songdo in South Korea and Magdar in the United Arab Emirates are two high-profile, often-analyzed examples. Songdo International Business District (Songdo IBD) in South Korea is a forty-billion-dollar smart city built from scratch on a landfill adjacent to the Incheon International Airport, forty miles outside of the nation’s capital, Seoul. The project began in 2001 to mark South Korea as a trailblazer in sustainable developments. An array of sensors embedded in buildings and streets regulate traffic, thermal comfort, and energy consumption. Despite its safety, tax incentives, and efficiency, however, the developer struggles to attract inhabitants. Masdar City, built in the desert of Abu Dhabi, United Arab Emirates, is committed to zero carbon, zero waste. Designed by Foster and Partners beginning in 2006, Masdar is a brand new city for 50,000 residents and 40,000 commuters. It is largely funded by the government of Abu Dhabi, who was eager to become a leader in renewable energy and sustainability. The city is designed to be fueled by massive photovoltaic power plant and features pedestrian friendly streets and driverless cars, along with passively cooled buildings. As of February 2016, however, only five percent of the master plan has been executed, and only three hundred people live there. The world’s first planned zero-carbon city may become the first green ghost town. Reasons for these failings are complex, ranging from technical, economic, to political. One probable cause is the vast contrast between the fast rate of technology change and the slow rate of building construction. At Masdar, driverless car infrastructure planned ten years ago has been overtaken by the
automobile industry’s advancement in zero-emission electric cars. Additionally, its weaknesses are attributed to the local government’s agendas focused nearly exclusively on quantitative economic growth of a so-called eco-city. Songdo’s developer admits it is a challenge to replicate vitality and diversity of a city that grows organically over hundreds of years. Songdo and Masdar’s outcomes suggest that sustainability’s economic gain alone is insufficient to sustain a vibrant livable city. Rem Koolhaas remarks that smart cities are often visually portrayed with innocent, cute icon graphics which appear to shield the smart cities’ potentials to homogenize and suppress its architecture and inhabitants, making cities banal and predictable. He cautions that we should not “discard urban intelligence accumulated over centuries” in the name of the new trinity—comfort, security and sustainability—that replaces the traditional European values of liberty, equality and fraternity. As Sociologist Richard Sennett also writes, “no one likes a city that's too smart.” Efficiency and convenience alone provide neither a sense of community nor the sense of participation in shaping a city. “User-friendly” in Masdar means choosing menu options rather than creating the menu,” Sennett observes. A livable smart city demands its citizens’ engagement as authors of the menu.

Contemporary soulful light projects
Livability of a city is dependent upon both the hard and soft measures. On the other hand, there are hard, measurable impacts of light on livability, such as the impact of light on rates of crime or car accidents. On the other hand, there are aspects that are harder to measure. A constituent of these ‘soft’ livability, as seen in the art projects discussed below, is light that tell a collective narrative of city dwellers; light becomes an agent for participatory place- and identify-making. The new night-time characters could reinforce, or contrast, the daytime identity. Italian novelist Edmondo de Amicis writes in his 1872 travelogue that “Constantinople is by day the most splendid and by night the darkest city in Europe.” Because city dwellers of the 1800’s went to sleep after the evening prayer, pre-industrial cities became dark and invisible at night that lacked the night-time identity that artificial light enabled. Today, modern urban illumination has “colonized the night, effectively doubling the hours available for purposeful activities, and indistinctly and otherwise.” Put differently, when cities redesigns their lighting infrastructure, each place has an expanded capacity to communicate its distinct nighttime character after sunset.

Umberto Eco’s notion of opera aperta, or open work of art, offers lenses through which to see new possibilities in urban light. The artist hands an unfinished, or open, work to the performer or participants to intervene, resulting in a different piece each time it is played or viewed. Eco defines the term opera as “…an object endowed with structural properties that render possible a number of successive interpretations, a series of evolving perspectives, but that also enable us to coordinate such a series.” In order for smart cities to sustain themselves as vibrant communities, cities must not become prescribed and univocal but be open to interpretations and become plurivocal. The following three experimental light projects—Pulse Park, Broken Light, and Tribute in Light—suggest ways in which light could mirror collective and individual souls of a city through public participation. Pulse Park by Rafael Lozano-Hemmer is an art installation in Madison Square Park. As the park visitors hold the sculpture’s metal handles, sensors measure their heart rates. The visualization of the pulses is then projected in block-scale light patterns across the lawn in narrow beams, moving sequentially down the oval-shaped ring of spot lights. The artwork is as variable as the participants and their heart rates, becoming a piece that is never the same twice. Biometric data collected from the participants gives life to the work “a poetic expression of our vital signs.” This project introduces a novel way in which data might be collected tactically and projected on the ground surface of a public park instead of the ubiquitous flat display screens.
Broken Light by the Dutch firm Daglicht & Vorm\textsuperscript{38} is a street lighting project that redefines the characters of Katendrecht, a former red-light district of in Rotterdam’s harbor. Multiple scales and patterns of street lighting are layered upon each other. Poles on the sidewalk aim vertical beams of light between the windows. The precisely modulated light makes the facades visible while minimizing light spill into the interior. This sympathetic act protects the inhabitants’ sleep from being disrupted by light exposure at wrong times of the day. Additionally, the poles project dappled light patterns on the sidewalk, evoking dynamic shadows cast by tree branches during the day. In contrast to these playful, atmospheric lights, the vehicular roads are lit with uniform, bright light to improve driver visibility. The lighting project thoughtfully highlights the characters and intimate scales of the neighborhood while simultaneously being sympathetic to human health and nighttime safety. Most importantly, it brings pulses back to the sidewalk, a vital component of a livable, vibrant city.

In \textit{The Death and Life of Great American Cities}, Jane Jacobs writes, “sidewalks, their bordering uses, and their users, are active participants in the drama of civilization versus barbarism in cities.”\textsuperscript{39} She observes the intrinsic relationship between active sidewalks in cities and safe neighborhoods. Extensive networks of pedestrian paths exist in recent examples of smart cities such as Songdo, but without buildings that border the active paths and the observers’ eyes on the street, the paths bring little to ‘the drama of civilization’. The varied scales and qualities of Broken Light attract people to
the street; they become active participants in making of a neighborhood. Also, whereas many new urban developments have demolished buildings from the past, the *Broken Light* revitalized an existing urban block to bring a sense of pride to a neighborhood once associated with crime. It helped to preserve a neighborhood’s human-scaled buildings, prompt chance encounters, and recognize its historic individuality while giving it a renewed identity.

![Figure 6. Tribute in Light (2002). Source: Getty Images](image)

*Tribute in Light* is twin light shafts representing the World Trade Center towers in memory of the 9/11 attack. Located near the National September 11 Memorial & Museum, it is a public art work self-initiated designed by two groups of artists and architects with lighting designer Paul Marantz. Eighty-eight 7,000-watt xenon search lights are positioned into two 48-foot squares reflecting the shape and orientation of the Twin Towers. When co-producer Creative Time, a public arts organization, initially posted online the idea of ‘phantom towers’, over 12,000 readers responded. People looking to replace the immense absence voiced their positions, and the city reciprocated with monumental towers of light. *Tribute in Light* was first presented on March 11, 2002, over nine years before the 9/11 Memorial opened in 2011. On every anniversary of the attack, the beams of light appear for one day. Its ethereal, impermanent presence fills the void and leaves a mark on the psyche of the viewers. It is a powerful testimony to the light’s capacity to communicate with the mass and create a communal experience of a monumental scale.

**CONCLUSION**

Each of the projects above creates a night city in which light visualizes and celebrates biorhythms of people in a public park, pedestrian experience of a historic neighborhood, and collective memory of citizens who shared a tragic event. These light projects show smart urban light’s capacity to not only offer safety and efficiency but also represent individual and collective souls of its citizens. Historian David Nye writes, “electrification is not a neutral process. Rather, every night city has created a variant of its daylight identity, one that emphasizes only some elements of its history, location, architecture, and political system.” They combine technical advancement in digital, precise light control with a participatory approach that bring out characters of a place and prompt chance encounters. Soulful light in contemporary society does more than lower crime rates or energy consumption; it is an act of generosity to city dwellers.
NOTES

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11 Ibid., 1.
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28 Ibid., 59.
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THE CIVIC UNIVERSITY AND LOCALLY-ENGAGED PRACTICE IN ART AND DESIGN EDUCATION

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INTRODUCTION: THE CIVIC RESPONSIBILITY OF LOCALLY-ENGAGED PRACTICE

We have witnessed the unapologetic rise of financial profit at the expense of social, environmental and other forms of collective wellbeing. Concomitantly, the priority of education today, driven by market demand over the intrinsic value of knowledge, signals the end of the welfare state. This tracks with the waning of the post-war consensus in which united, cross-party majorities developed policies to promote cultural tolerance, gender equality, progressive taxation, fair pay and publicly funded mass education—values that are also central to the theory and practice of the civic university that underpins the position of this paper.

Many of those who voted against Brexit and Trump and deplore their value systems are struggling to imagine futures that are livable on the terms of our recent past: the heyday of liberal democracy in the West during the second half of the twentieth century. Some of us working in higher education are turning to experimental models and historical exemplars as alternatives to the present ‘academic capitalist regime’,\(^1\) to use John Saltmarsh’s descriptive turn of phrase, and the yawning inequality that marks neoliberalism.

As a result, the civic university and its holistic vision of progressive society is making a comeback. In what follows we reflect on the current relevance of this nineteenth-century reform, including its drive to embed learning in the communities where it takes place. Under the agenda of inclusiveness that motivates the civic university, education is an integral part of the public sphere and hence a shared resource—a common good. This is part of a broader project to mobilise civic education in the service of a civil society.

The main example we describe is from our own institution, Chelsea College of Arts (henceforth Chelsea College or the College), a constituent of the University of the Arts London. We discuss how our studio, one of seven composing BA (Hons) Interior and Spatial Design, seeks to embody the ethos of the civic university. This resonates in the context of growing interest in alternative art and design education and touching on the Civic University project led by our friends and colleagues of the London-based critical design practice ‘public works’, we argue that what differentiates our studio’s approach from theirs and others is a para-institutional mandate. This stems from our studio being embedded in a degree-granting institution of art and design and operating in the local community, beyond the ivory tower of higher education. This results in productive reciprocity between these two spheres of influence rooted in a strong sense of the space and role of the institution and its potential as a community resource.
Without locally-engaged practice and other forms of civic responsibility like the kind discussed below, the UK’s institutions of higher education run the risk of becoming international, while at the same time, increasingly insular. Higher education as an enclave for a global elite that foregoes responsibility to its immediate context is not the stuff of a livable future for the majority. It is our contention that grounded in locally-engaged practice, the civic university provides a relevant and empowering model for resisting this exclusivity and the exploitation that neoliberalism depends on. Moreover, formative work in our studio suggests that art and design education is especially well-placed to advance this project.

THE CIVIC UNIVERSITY
To prime discussion on how our studio is advancing civic learning for a civil society, a brief overview of the civic university aims to outline its history and significance as an expression of social reform. The term ‘civic universities’ (also known, with some variation, as ‘modern’, ‘redbrick’ or ‘engaged’ universities) refers to institutions of higher learning, mainly in England, that were founded in the nineteenth century and which subsequently became universities in the twentieth. These sprouted in the burgeoning cities of the industrial revolution: Liverpool, Manchester, Leeds, Birmingham, Bristol, Sheffield, Newcastle, as well as Dundee and Welsh universities beyond England. Nicknamed ‘redbricks’, for the material of their architecture, these institutions of learning transformed higher education in the UK, and by extension the Commonwealth, by making it more diverse, accessible and nationally-dispersed.²

While there is no question the redbricks offered an alternative to the coterie of Oxbridge, the terms of this are something that William Whyte is keen to impress in his seminal study, Redbrick: A Social and Architectural History of Britain’s Civic Universities.³ The book’s thesis is that there were contra tendencies to see these modern universities as ‘paled or failed imitations of Oxbridge’, the inclusive value system that motored redbrick universities was central to making them equally as rigorous and arguably more relevant in their distinctive but also shared approach.

At the time, Oxbridge only admitted the male elite who were in good standing with the Church of England to study a liberal curriculum, one that focused on the classics and mathematics.⁴ Conversely the civic universities developed from technical colleges and would soon admit not only men but also women, regardless of their religion or social background. The curricula focused on practical and professional training, if the express purpose of Oxbridge was to reproduce a social elite to lead society, the redbrick institutions prioritised the production of useful knowledge for a richer and more equitable society. These institutions of learning were built in rapidly expanding manufacturing towns and cities to serve these growing communities in order to better knowledge of engineering and scientific advance, as well as improving medicine and therefore enhancing the health and standard of living of the local population. As Whyte argues, a distinguishing feature of the redbrick institutions is that they are not only open - as in inclusive - but also local. This place-based approach was designed to equip graduates to work in local industries and with local materials. A strong sense of civic duty⁵ was central to this proximity, with this philosophy of education charging students, tutors—and their institutions—with the responsibility to give back to the communities that supported them.

A review of literature on the civic university suggests that it offers an alternative to the higher education sector’s growing preoccupations with their position in the ‘global marketplace’, the monetisation of learning in the ‘knowledge economy’, as well as pressures on educators to be financially demonstrable via ‘measurement and performance’.⁶ The civic university seems to confront these issues by the very fact that it is locally engaged, garnering this educational reform renewed and widespread interest as a potential antidote to globalisation. That said, this risks the civic university
being perceived as a provincial step back into the past in a globally-networked society. Lorlene Hoyt and Robert Hollister have argued against this by way of an extensive survey that demonstrates the international possibilities of growing discourse on civically-engaged universities (journal articles, conferences and partnerships, etc.). This scholarship and practice is self-organising thanks to efforts like those of the Talloires Network, an international association of institutions ‘committed to strengthening the civic roles and social responsibilities of higher education’ founded in 2005. John Goddard et al.’s Civic University: The Policy and Leadership Challenges echoes this scope via analysis of eight European universities, which, in addition to being research intensive and publicly funded, have achieved national and international profiles for their visionary work in civic engagement, therefore evidencing the international scope of sharing this pedagogical approach.

At the same time that interest in the civic university is gaining amongst colleges and universities, enrolment in higher educational institutions in the UK is down. The introduction of tuition fees is proving prohibitive for many home students and EU students are staying away in the face of Brexit and the threat of terrorism. It is therefore no surprise that colleges and universities are actively recruiting international students from further afield and are becoming increasingly dependent on their fees. As classrooms fill with student visitors to the UK who actively identify as mobile and global citizens, institutions of higher education could very well once again find themselves to be enclaves of the elite. When the bulk of the student body is transient it can be difficult for institutions of higher learning to create long-term programmes to engage with local communities that are more rooted and continuous. Taking up this challenge, our spatial design studio Chelsea Local has turned to the civic university as a basis for working with local communities to cultivate the wealth of local resources, history and the creative potential of Millbank.

To contextualise our studio within this discourse it is useful to note the shift in focus of the term ‘civic’ that has occurred since the founding of redbrick universities. Initially, their sense of ‘civic’ seems to have been ‘of or relating to a city or town or the people who live there’. This contrasts with the understanding valued by Chelsea Local and other proponents of the civic university today who foreground this term as ‘relating to citizenship or being a citizen’. This emphasis is being widely explored in current art, design and architectural practice and produces a sense of agency and political participation as well as an understanding and awareness of geographical site. This contemporary meaning is exemplified by critical design practice public works’ Civic University project. For more than a decade, public works has been investigating a terrain where activism, architecture, art and performance overlap. Their website asserts the following: ‘Together with our interdisciplinary network, we re-work the city’s opportunities towards citizen driven development and nurturing their rights over the city.’ Central to this project is engaging with the civics of cities; the structures that constitute and restrict the possibilities of contemporary public life. Whilst this drives many of public works’ projects, it finds explicit form in the Civic University, which is facilitated with other notable not-for-profit initiatives: R-Urban, The Old Tidemill Gardens, Interact Roman Road and Loughborough Farm.

To indicate how public works’ the Civic University compares and contrasts with that of Chelsea Local, three considerations will suffice. First, both live projects are pedagogical experiments that view the production of the city and its citizens as a collective process in lifelong learning. They both address real-world needs, not of a distant other but of specific neighbours and neighbourhoods. Second, both the Civic University and Chelsea Local spring from a deep appreciation of locally-engaged practice as foundational to relating to one’s place in the world in a meaningful way. Key here are the day-to-day interactions through which this engagement reproduces particular parts of London and how through coordinated action, creativity can enrich the shared experience of those who live and
work in these locales. Whilst for Chelsea Local this takes places in Millbank, the Civic University is anchored in Hackney but dispersed across London. This makes the projects complementary as their sites overlap and their enterprises operate at different scales. And third, both depend on relations that bridge informal associations and formal institutions. In the case of Chelsea Local, however, the latter is core, with the studio’s coursework being integral to Chelsea College’s curriculum for BA Interior and Spatial Design. Whilst there is no question that the Civic University’s extracurricular programme of builds, events, campaigns, etc. does invaluable work that takes place at arm’s length from any institution of higher education, Chelsea Local affords a different and equally urgent form of engagement. Principally, this stems from the critical reciprocity that our studio brokers between Chelsea College and the communities that surround it. It is beyond the scope of this brief paper to elaborate how in conducting this relationship our studio posits a modest, but also increasingly effective, form of institutional critique as it quietly troubles the current financialised educational system that is gripping higher education in the UK. However, to prime future discussions on this programme, the final part of this paper will sketch the para-institutionalism that motors Chelsea Local as a particular embodiment of the civic university. As such, it seeks to mobilise learning in art and design in the service of an alternative future in higher education, a future that is more desirable and hence more livable than our current reality predicated on an academic capitalist regime.

CHELSEA LOCAL AND PARA-INSTITUTIONALISM

Para-institutionalism is an emerging framework for analysing practices that are contiguous with institutions and other existing initiatives. More specifically, para-institutionalism wraps with the so-called ‘curatorial turn’ as its vision finds form in how the curatorial platform Para-Institution defines the term:

[Para-institutionalism] acts as a self-critical, self-reflective tool, examining the local context and [...] exploring the potentials of an institution of co-operation, and mutual focus, and inter-linking key organisations and practitioners that share the common goal of demonstrating the role of contemporary art practices in activating and instituting cultural change.\textsuperscript{14}

Underlying this sense of para-institutionalism as a catalyst for change is also how it acts in response to change; including shrinkage in the public sphere. We can think of para-institutionalism as a ‘self-critical, self-reflective tool’ for reframing and diversifying institutions that were formerly public and historically responsible for administering the post-war consensus. In step with deep cuts in public funding to higher education across the UK, many are in the throes of redefining their scope and mission. In the case of the Chelsea College, some are asking: What role are staff, students and local stakeholders playing in this process? What say do we have in how infrastructure, systems, networks—values—are revamped and managed? Faced with more questions than answers to queries like these, there is growing interest across the UK leading many sectors wondering about the foundational question: ‘What are universities for’?\textsuperscript{15} When the responses are unsatisfactory, some have chosen to leave or bypass the system by creating alternatives. Exemplars of trends in non-accredited higher education in art and design include Open School East and the School of the Damned in the United Kingdom and Bruce High Quality Foundation in the United States.

While inspirational, alternative schools of art and design also face many challenges—for example, their financial sustainability is often problematic—they may not charge their students fees but many forego paying their faculty and other workers. As naming and shaming is not our intention here, suffice to say there are countless reports of recent BA graduates approaching their former tutors to volunteer on free MAs. This means the social reproduction of alternative schools is precarious tethered to the institutions or employers who pay tutors enough to volunteer elsewhere. For all their
supposed autonomy from ‘the system’, unaccredited programmes feed off the expertise of more established networks. Para-institutions like our studio are also nourished by host institutions, in our case Chelsea College. Our institutions—in fact our former public sphere—is cash poor, but it still has some resources. For instance, Chelsea College has space, networks, infrastructure, admin and publicity support and occasional bits of funding which help to provide hospitality for our events, pay fees and finance publications. However, if historically resources like these were for the benefit of staff and students, the way that value is produced and distributed through Chelsea Local differs from many alternative schools16 and degree-granting programmes to boot. We consider this with reference to a live project that has motored the curriculum of Chelsea Local in recent years.

One of the key projects carried out by Chelsea Local is The Millbank Atlas, which brings together researchers, students and residents to trace the neighbourhood of Chelsea College of Arts. The ongoing project creates meaning through conceptualising the neighbourhoods of Millbank as comprised of reciprocal relations among the College and surrounding businesses, residential blocks, civil society groups, infrastructure, amenities and further aspects of this built and natural environment. In this way, our studio prioritises socially-involved spatial practice working in real sites through live, collaborative projects as we ask students to critically engage with the local context and communities in response to their particular needs. Since 2005 this has developed through Chelsea Local’s partnership with Millbank Creative Works and in particular Wilfried Rimensberger who heads up this local not-for-profit network that bridges critical fine art practice, enthusiast and hobbiest cultures and culturepreneurs. Our collaboration with members of this network finds form through shared practice-based research such as co-produced exhibitions, publications and workshops. For instance, as part of a public programme of events at the Cookhouse Gallery in January 2017 that activated an exhibition of these artefacts, we worked with Nicolas Fonti, a researcher from the Bartlett School of Architecture and a key member of JustMap (a collaboratively-produced map of London showing the city’s community resources and current campaigns with the aim of connecting people together) to facilitate a workshop with students and the local community. We worked around a large 2D map, annotating it with push pin flags and other tokens to create a richer picture of our immediate environment. This aimed to tap our collective intelligence about the lived experience of Millbank with the view of better understanding local resources and strengthening solidarities amongst housing and other community-based campaigns related to the built environment.

Figure 1. The Millbank Atlas Exhibition, Community Mapping (Marsha Bradfield)
The value of this process for local stakeholders was immediate: the exhibition—and especially the workshops—helped to raise awareness of local concerns, built momentum amongst community activists and valorised their ongoing activity that responds to housing needs pertaining to affordability, upkeep and ensuring that local residents enjoy a decent quality of life. By working with these urgent issues and observing them evolve through practice beyond higher education as a detached realm, students gained essential skills and knowledge regarding how to apply them, with The Millbank Atlas functioning as a case study of locally-engaged practice grounded in the ethos of the civic university. There is something profound about moving across representations—from the bird’s eye view of Google maps to what this type of search cannot see, i.e. the worm’s eye perspective that comes from spending time interacting with a local environment and stakeholders beyond the college who live and work there. In this way, knowledge that is produced not only benefits the students, who will take it with them upon graduation. This embedded process also benefits the College and local people. Holding a week-long exhibition in the College’s gallery is a case in point, with this public dissemination befitting each of the stakeholders differently.

On the one hand, as commented on by Millbank Creative Works’ Rimensberger, displaying work produced through student-community collaboration in a cultural institution of repute valorises the efforts of local activists when this is juxtaposed with artefacts and artworks produced and displayed at the College. We were also intrigued to observe that our exhibition was an unprecedented invitation to locals to visit. For many this was the first time they had ever crossed the threshold of Chelsea College, despite having lived or worked in the neighbourhood for many years. On the other hand, students benefited from having their work not only displayed but also activated through the workshops and written accounts in the exhibition’s catalogue. While contextualising their practice and making connections between their work and that of their peers, the curatorial attention afforded by this publication is highly prized by those wishing to establish their reputation as professional practitioners of spatial design.
All this is to say that whilst both degree-granting and non-accredited programmes in art and design tend to prioritise the needs of students through delivering curricula that takes place in the bricks and mortar of their campuses, Chelsea Local takes a different approach. The College serves as a base but our classrooms are the neighbourhoods of Millbank. Through this dispersion we invest in win-win scenarios where learning unfolds via a community of practice comprised of students, staff and other stakeholders. Students gain invaluable hands-on experience supported by their course and enriched by the situated knowledge of Millbank locals; local communities gain the students’ attention, enthusiasm and expertise as it is brought to bear on regional issues and by way of locally-engaged collaborative enterprise.

**CONCLUSION: PARA-INSTITUTIONALISM AND MORE LIVABLE FUTURES**

Parasitism may seem counterintuitive as a way of bridging formal institutions (e.g. Chelsea College) and informal associations (e.g. Millbank Creative Works). However, this is precisely the rationale for Chelsea Local’s practice-based approach to para-institutionalism. Inspired by the civic university and its emphasis on being open, local and practically-orientated, para-institutionalism is a loosely-knit framework for activating the interplay between Chelsea College and the communities that compose its neighbourhood of Millbank and, crucially, vice versa, in an assessment of local need. This critical reciprocity has consequences when reckoning with the systemic impact of neoliberalism. The values of liberal democracy that once underpinned our public institutions and other structures—the systems that were so hard won as an upshot of the great wars—are slated for the scrapheap unless they are fought for, renewed and become self-sustaining. Whilst many have chosen to leave higher education and establish alternative schools of art and design, Chelsea Local seeks to make the most of the welfare state’s legacy by working from within a formerly public institution. Using its resources, the studio is creating impact by building a richer public sphere that is rigorous and relevant in its immediacy because it is developed in collaboration with neighbourhood stakeholders. Proponent of the civic university John Goddard states that it is our, ‘civic duty to engage with wider society on the local, national and global scales’\(^{17}\). Chelsea Local aims to pursue these aims by working with an internationally-diverse student base who are embedded in the local history and surrounding built environment, forming links with external institutions and connecting with international debate on how
to create more liveable futures. It strikes us as a right and proper that this is the answer to the question, ‘What are universities for’?
NOTES


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12 Ibid.


14 As the Para-institution website is no longer available, see traces of this research project by Megs Morley and its definition of para-institutionalism in this Facebook post by Galway City Arts Service, accessed September 07, 2017, https://www.facebook.com/permalink.php?id=120775967992165&story_fbid=747116478691441.

15 This question pivots John Goddard, Reinventing the Civic University (London: Nesta, 2009).

16 It is worth noting that working in the local communities of Open School East are essential to the programme; moreover, it could be argued that as it was initially commissioned by the Barbican and Create London, it has operated as a para-institution at certain points in its history.

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QUALITY OF LIFE IN URBAN VILLAGES OF DELHI: IMPACT OF URBANIZATION AND CITY GROWTH

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INTRODUCTION

The world is urbanising at an unprecedented pace, with population growth and increasing number of people shifting from rural to urban areas in search of better quality of life; cities have no option but to expand their territory physically. In 2016, an estimated 54.5 percent of the world’s population lived in the urban settlements.¹ By 2030, urban areas are projected to house sixty percent of people globally, and one in every three people will live in cities with at least half a million inhabitants.² Although urbanisation is considered as a positive development, as it can make the economy of the area stronger leading to prosperity; many developing nations are not prepared for the rapid and exponential urbanisation and the challenges it brings along. Such rapid urbanisation and physical growth both horizontally and vertically put a direct load on the infrastructure, economy, and environment of the urban areas in the developing world. As the cities spread they engulf the agricultural lands and the rural hinterlands in the process. This leads to rural villages losing their agricultural land to the government or private developers for urban expansion to cater to the growing needs of land for urban settlers. The resultant is the formation of an “urban village,” a settlement which is forced to a rapid change of adapting to urbanisation.

These urban villages of the developing world bear a stark contrast to the same term whose concept developed during 1980’s in Britain as a response to decentralisation and sprawl in the developed countries. Urban villages in the developed countries are ideal villages within an urban setting which are strategically planned self-contained medium density settlements, with emphasis on high quality of life. Examples include Saifi garden in Beirut–Lebanon, Greenwich Millennium Village in London and Santana Row in San Jose–California.

The urban villages of the developing countries are unruly, informal, high density, lacking basic amenities and infrastructure. They have a low quality of life with the high migrant population. The government acquires the agricultural land for the city growth leaving the rural inhabitants without any choice but to move to urban ways of life for their sustenance. These types of settlement pattern within the cities and urban settlements are evident all over the developing world be it the Asian countries like China (Shenzhen, Guangzhou) and India (Delhi, Hyderabad, Bangalore, Mumbai), African countries of Nigeria, Nairobi or the Latin American nations of Brazil and Mexico.
DELI: URBANISATION AND GROWTH
The national capital territory of Delhi is now the world’s second largest urban agglomeration with over twenty-six million inhabitants.³ Delhi’s urban growth started after India gained Independence in 1947 when there was a sudden growth in the population of Delhi with refugees from Pakistan coming to settle in. A side effect to this was a vast number of skilled and unskilled construction labourers coming to the city, owing to the government’s fledgeling development drive. The census of 1951 reveals a decadal growth rate of 107%. With the rate of population growth being so high, Delhi engulfed the adjacent rural areas to cater to its rising urban population. New offices, institutions, residential colonies were being designed then as a part of its nation-building initiatives. The government began acquiring land around Delhi to settle the burgeoning population. Land of around forty-eight villages was acquired in the period 1951-61, mostly to develop refugee colonies.
Since then, the urban area of Delhi has expanded from 201 sq.kms in 1951 to 1113 sq.kms in 2011.⁴ It is interesting to note that currently seventy-five percent of the total area of the city of Delhi falls under the urban jurisdiction and 97.5% of the inhabitants reside in the urban areas.⁵ The urban population density has more than doubled in the last sixty years from 7150 in the year 1951 to 14700 persons per square kilometre in 2011.⁶ All these factors continue to exert much pressure on the housing, civic infrastructure, governance and quality of life.

ORIGINS OF URBAN VILLAGE
The origin of the urban village dates back to the British colonial era when they relocated some of the villages while building Delhi as its colonial capital in India. Later, instead of shifting the whole of the village they acquired just their agricultural lands circumscribing the village habitation within the “Lal Dora” literally meaning “red thread”. The land earmarked for village abadi (population) and the agricultural land of the village was duly demarcated in the land settlement of 1908-09, and the abadi site was circumscribed in the village map in red ink.⁷ The land falling within Lal Dora was not assessed to land revenue. Those falling outside the village abadi (Lal Dora) were meant for a purpose connected with agriculture and are subject to Land revenue.⁸ Figure 1 illustrates the various stages that a village goes through during its transformation to an urban village.

Figure 7. Various stages in the development of an urban village
Lal Dora was not entirely exempt from the building bye-laws but there were no strict construction norms and regulations, as regulated under the Delhi municipal act. This was mostly taken as having no building bye-laws as no one ever checked the areas within the Lal Dora. Moreover, there is still no need to apply for the building sanction plans within the Lal Dora. The drive of acquiring agricultural land and earmarking Lal Dora regions hastened after independence. As a result, the number of urban villages increased from forty-seven in 1951 to 135 in 2011. This expansion of the city has had physical and socio-economic implications on the rural areas for generations.

**VILLAGE OF MASJID MOTH**

This study dwells on the quality of life and the issues that the inhabitants of one of the oldest urban villages in Delhi face. The condition of the village of Masjid Moth and the quality of life that the residents lead resonates with not only the urban villages in Delhi but also in other parts of India and the developing world. The village is located in South Delhi and derives its name from the sixteen-century mosque – Moth ki Masjid, around which the village settlement came up. Primarily tobacco fields surrounded the village, and villagers were traditionally relying on agriculture and agriculture-related activities. Like many villages in and around Delhi, Masjid Moth village was also given the Lal Dora area status as Delhi expanded. The situation changed with the large-scale acquisition of their fields and farms at a meagre compensation rate during the 1950s and 1960s by Delhi Development Authority and Delhi Land and Finance (DLF) Ltd., a real estate developer, for the planned extension of South Delhi. The agricultural land that was acquired was used to build one of the prime residential localities for the well-off in Delhi. Figure 2 shows the Lal Dora boundaries of the urban village of Masjid Moth sandwiched by planned residential colonies.

![Satellite image of Masjid Moth village demarcating the Lal Dora area.](image-url)
Quality of Life in the Urban Village of Masjid Moth

With the loss of their fields and space for agriculture-related activities, the villagers lost their traditional agricultural-cum-cattle based livelihood and were restricted within the confines of Lal Dora. The sudden shift from rural to urban lifestyle was a difficult change to adapt. With a nominal compensation that the villagers got for their agricultural land and the limited knowledge of the urban occupations, some of the villagers opened shops, and some started small household industries. Many of them further sold their property to other developers to make instant money for survival while others started renting a part of their property to migrants at cheap rates.

With constant in migration, from almost all parts of India and primarily North Indian states of Uttar Pradesh and Bihar, the urban village of Masjid moth is an amalgamation of cultures. Currently, the migrant population has outnumbered the original villagers. These migrants range from working force to students who come to Delhi in search of better prospects – Figure 3 further enlists the reasons for the migration. The migrant population today form an essential part of the urban village with villagers and migrants both relying on each other. Sandwiched between the high-class residential urban developments, Masjid Moth provides the best alternative for housing to the migrant population at affordable rates within the area, and in turn, the villagers generate a substantial income from renting their informal housing units.

![Figure 9. Chart showing reasons for migration into the Masjid Moth Village](image)

The urban villages cater to the housing needs of lower and middle class, and this is very evident from the buildings itself. The lower class houses are more cramped with poor services; whereas the newer built structures to cater to the middle classes are built smartly with better elevations more floor area to get better rentals(Figure 4). As the village area is confined horizontally within its Lal Dora boundary, it is growing vertically, as illustrated in Figure 5. Owing to lack of building regulations and exemption from getting building plans sanctioned by the local authorities, the newer buildings have five floors on an average. Unplanned construction activities with the poor construction quality, encroachments and commercialisation of most premises can be seen within the village (Figure 6).

The unplanned nature of integration has led to physical and functional transformation causing degradation in the living conditions. The village area has turned into valuable commercial space and
very high-density dwellings for the migrants with appalling conditions for living. Gradually all the vacant pockets of land have filled up by haphazard developments; there are new constructions or expansions happening on a daily basis. Many of the houses have little or no light and ventilation making them inhabitable.

Figure 10. A visual comparison of village houses

Figure 11. Vertically growing urban village of Masjid Moth

Figure 12. Overnight rampant constructions and additions to existing buildings
The Urban Villages are repositories of the heritage of many earlier settlements of Delhi – vernacular architecture, historical monuments and cultural traditions yet the traditionally styled buildings are being replaced by with the modern ones. The village of Masjid Moth houses “Moth ki Masjid”, a sixteenth-century mosque that has been declared to be of national importance Under the Ancient Monuments and Archeological Sites and Remains Act, 1958. Under this act, no construction is permitted within hundred meters of the monument. Any repair, addition or alteration and construction/reconstruction within these areas need prior approval of the Archeological Survey of India. However, all the rules have been overlooked, with new constructions, alterations are being done till this date, even in the adjacent zone. This condition adds on to the deteriorated state of the mosque (Figure 7).

![Figure 13. Construction activity and buildings adjacent to the protected “Moth ki Masjid.”](image)

There is excessive commercialisation within the village. Almost forty percent of the buildings have some form of commercial activity going on. The small-scale local daily needs market has today taken the shape of substantial multi-storied buildings, with a shopping arcade and office spaces leading to increased mixed land use pattern (Figure 8).

![Figure 14. Local market is not a multi-storied commercial hub](image)
The village streets have their distinct characteristics and serve various functions. Most of the narrow village style streets are one and a half to two meters wide yet are encroached by parked vehicles, jutting out staircases and cantilever projections further narrowing them (Figure 9). Some streets have overflowing or clogged sewers and drain. While some still show the presence of social bonding between the villagers as they are used for holding small private gatherings like a pre-marriage ritual or religious meetings, owing to the lack of community spaces. Although the migrant population is more alienated towards these rituals and practices, many find it annoying and a nuisance but cannot do anything about it.

Few wider streets in the village turn into an informal weekly market every Thursday. This informal market is a weekly celebration where the villagers do not just buy their groceries but also have street food and do some shopping.

There is a lack of parks and open spaces. The few open pockets that are there are adjoining the posh residential area to maintain some degree of buffer but are not well maintained. Most of the village children use the streets or their terraces as their playgrounds. Villagers use the open spaces and parks for washing and drying their clothes and utensils, storing constructions material like bricks & sand, dumping garbage, and similar activities.

With the growing urbanisation within the village and increasing population, the demand for power supply has increased manifold. Urbanisation has led to the use of newer electronic items like air conditioners, televisions, refrigerator within the village. The growing power needs require growing supply too. However, the supply is met by stealing it from the electric poles. The random and exposed Power-lines close to buildings pose a danger of electric shocks, electrocution and fires. Many of such incidents have already occurred in the past.

CONCLUSION & RECOMMENDATIONS

Urbanisation and city growth is bound to happen, so shall the conversion of rural areas into urban ones. The force of urbanisation generated by Delhi’s rapid growth has had a substantial impact on the land and the villagers. The most prominent being the conversion of rural villages into urban villages, leading to change the occupational structure and the livelihood of the villagers. However, it is important to realise that despite being under constant urban influence from neighbouring urbanised areas, urban villages retain many of the characteristics of a rural village.
These urban villages provide a unique identity to the urban fabric of the city; they are resilient, culturally grounded, inclusive, alive, and flexible. Many of the urban villages have over the years developed themselves into self-sustained economies with retail, small business, industries, housing, healthcare and education facilities all included whether or not in an elaborate manner. Walking through the urban villages of Delhi one can understand that every urban village is unique, yet they all have commonalities in their growth pattern. Conversion into urban villages has ripped the villagers of their fundamental right to living in a clean, healthy environment with proper civic infrastructure. Over the span of time, these urban villages have densified, commercialised and grown into settlements which lack infrastructure and have a poor quality of life.

Therefore, there is a need for a Comprehensive Redevelopment Plan for the urban villages in Delhi including the village of Masjid Moth, which reflects the village characteristics within the urban form and retains heritage and residential character of the village in a manner so that the villagers are not estranged again.

This can be achieved only by generating general awareness amongst the villagers and involving them in the development plan and other policy changes. It is also essential to keep a strict check on the mixed land use development which is rapidly taking over the village. Norms should be made in this regard so that the mixed land use can be limited to specific areas to minimise the problems associated with it. Encroachments and poor quality construction should be taken down, and civic services should be upgraded with immediate effect. Also, there is a need to prepare a separate set of bye-laws for the urban villages while making building sanctioning process easier to promote villagers to get sanctions before construction to regulate the future development. Land pooling can be an option in the case of the old dilapidated building and adjoining residences to develop habitable housing.

Also, it is crucial to understand that making changes to an old, dense urban village is not easy. In fact getting villagers on board with the developmental changes will be a task in itself. The villagers will resist another radical change owing to their past experiences. The policy changes and development control hence need to be gradual yet steady while orienting and counselling the villagers on the need to do so for a better future and improved quality of life.
NOTES


2 Ibid., ii.

3 Ibid., 5.

4 Department of Planning. Economic Survey of Delhi 2016-17. (New Delhi: Government of NCT of Delhi, 2017), 16

5 Ibid., 200.


8 Ibid., 15.


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INFRASTRUCTURES UNDER TRANSFORMATION AS VOLATILE COLLECTIVE SPACES

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INTRODUCTION
In this article, the conference question, “Is the Urban Future Livable?”, is taken as a challenge to start imagining the future livability of our cities from embracing the complexity and instability of actual processes taking place in the city. The authors argue that thinking about “cities, communities and homes” is to have a starting point in collective spaces particularly when meeting infrastructures: those urban spaces which discontinuously and independently from domain or morphological configurations have the capacity to absorb uses and appropriations by a multiplicity of individuals or groups that have little or no common ground, inhabitants that act per contradictory logics, but that co-exist de facto in space, generating their own territories by presence, agency or claim. This frame has the potentiality to put speculations on the architectural level on a new perspective.

Collective spaces play a crucial role in urban livability, framing manifestations and potentially fostering most of the parameters implied in quality of life: long and healthy life, knowledge, a decent standard of living. Moreover, these spaces constitute the portion of urban space in which probably urban processes manifest most dramatically. The term “Collective” comes from Middle French collectif, from Latin collectus (past participle of colligere, “to collect”): com-+legere, “to gather together”. It is a highly charged term, broadly used in a variety of fields with social, political or economic connotations, being usually associated to a certain level of “consensus” among people. In architecture, it recalls projects in which physical forms and social engineering are related, with the phalanstery as paradigmatic example; or more simply, to coordinated actions with a spatial outcome. The authors step away from the historically controversial aspects of the term and from “coordination” as starting point, to focus on the basic condition of “co-existence”. Co-existence that may imply, in second term, an (un)conscioius aggregation or interaction of individual parts or a certain level of deliberate association among actors (or broadly, actants) ranging from individual or private actions; to groups, coordination or commonality, ultimately forming “communities” with a clear “shared identity” or “common goal”. The level of interaction goes beyond spatial factors to embrace a complex interrelation of material, symbolic and cultural aspects that are very hard to track (in the sense of pinpointing exactly what ultimately triggers someone to take a nap in a park, or on the contrary, search for a companion to cross it at night). The authors enquires “spaces” not as something that “brings parts together” (or pushes the generation of consensus on behavior, for example), but as something that diffusively “supports” the complex co-existence that take place in contemporary cities;
being “collective spaces” a part of “urban space”, where those complex processes condense and acquire temporal-spatial outcomes that can indeed be observed.

“Infrastructures” is a highly-charged concept as well, being commonly understood as systems that enable the circulation of fluctuant dynamics such as goods, people, knowledge, meaning and power. In recent years, their study has exceeded the technical aspects to include sociological ones, from a variety of fields such as urban sociology, geography and anthropology, with these qualities being put under question by emerging soft-infrastructures. To embrace the newly reached level of complexity that infrastructures imply, the strategy is here to use “space” to study the material manifestations of those dynamics, the processes they involve and the discussions around them. To this aim, the authors approach them in Deleuze and Guattari sense, as material-symbolic assemblages, “compounds or devices that include qualities and parameters: “qualities” as emergent properties (a whole with parts that interact and generate new capabilities inherent to this whole), discompose ability (the parts can be detached from each other), material and expressive components; and “parameters” including territorialisation and coding (its identity is defined by the parameters at any point in time). The accent is here put on those mobility infrastructures that have a strong relationship with the urban fabric in a direct way, in the frame of a long-standing history of interactions that gets now reinsignified. As described by Shannon and Smets “(...) initially, infrastructure was part and parcel of regional and urban structuring. It obeyed conditions imposed by the environment (...) and gave way to building form around it. Infrastructural systems acted as ordering devices, they were conceived as integrated man-made landscapes. (...) However, in the modern era, infrastructure (...) became progressively disconnected from its environ as it was turned into a transport system of its own.”

Studies like these, start from the concreteness of infrastructures to touch upon a variety of issues that put in tension contemporary urbanization processes and the urgency to rethink the tools to approach them. Global geopolitical reconfigurations, massive migrations, resource scarcity, just to mention a few, put in evidence the increasing uncertainty level and the incapability to control urban processes. Infrastructures and collective spaces put this in evidence, furthermore, areas of programmatic vacancy associated to infrastructure nodes or metropolitan (inner)peripheries are commonly taken as “conflictive areas”, reduced to non-places with problems “to solve” or at most, as resources for “future development”. On the contrary, these crucial urban elements have the capacity to act as buffer zones, intermittent or fluctuant territories absorbing contradictory forces, today. “How” this happens needs to be investigated to overcome this restricted vision. To this purpose, the authors proposes to merge infrastructures and collective spaces into a single layer to study them, and therefore cities, as manifestations of fluctuant dynamics with spatial qualities that aggregate and interact in time. A conceptual boost is triggered by transferring to cities terms like (morpho)genesis, as articulated by De Landa, Deleuze and Derrida for non-biological processes, particularly putting the accent in the constant struggles for adaptation and evolution, propelled by unpredictable influxes from the exterior world, in relation to interior processes; and evolution, as non-linear process in which unstable tensions fostered by different and contradictory parameters generate the merge and selection of resources from a pool of varied elements. Infrastructures and collective spaces are ultimately extremely reactive entities that can cope with the changes of pressing forces shaping urban space. These elements have been independently targeted by technical, urban and social studies, but its interrelation in terms of spatial outcomes is still pending a deep investigation. Enquiring them as
spatial, human and symbolic compounds, not as fixed conditions, but under transformation, as volatile spaces, namely as elements that “happen” in space, come together to define space, to define the quality of space for a more or less limited time, qualities that are liable to change rapidly and unpredictably. Spatial processes and practices that generate a certain “heat” in space, a certain intensity or significance, that can be partial, unstable, and temporal, but that gives quality to space, constitute qualities in space. (Figures 1-2)

Figure 16. New focus.

Figure 17. Theoretical Input.

GLÒRIES SQUARE AS CASE-STUDY
An extreme case of urban transformation is found in Glòries Square, Barcelona, Spain, in the sense of “activating a great variety of actors and processes”. Here, a great variety of qualities, spaces and scales can be spot. Simply, everything that can be imagined about mobility infrastructure under transformation has taken or is taking place in or around it. Glòries Square is situated in the geographical centre of Barcelona and linked to many metropolitan elements such as the potential green corridor between the city centre, the Ciutadella Park, and the Sagrera High Speed Train Station reaching the edge of the city; and it is part of several generations of urban development strategies linked to “urban centralities”. It was Cerdà who established for Glòries Square the long standing urban ambition of becoming the center of the city, the “centre of the world” for Catalan people. On the contrary, the area developed inconsistently and residually, basically becoming the dumping place for all sort of urban infrastructures: train tracks, fly-overs, inner-city high ways, etc. Paradoxically, this became supporting condition for the emergence of a great variety of temporal spatial manifestations: markets, both legal and illegal, physical alterations of buildings, occupations,
conflicts, life... “volatile qualities”. The current transformation process includes the replacement of these contradictory infrastructural elements (on and upper surface roads) for underground tunnels (that will pass under existing train tracks “tunnels” that originally lay on ground level but were covered generating a sort of artificial hill) and the constitution of a park and a series of building in the edges.

The process responds to historical demands for a “solution” for Glòries Square as overall city expectation along with communal claims for public housing and facilities for the four surrounding neighborhoods. These claims were incarnated by the neighbors’ associations and after an extremely complicated negotiation process, a long series of projects, controversies of all kind and several changes of plans, a “Commitment on Glòries” was signed in 2007, a commission for the surveillance of the works was established, and the “final” project reached a level of consensus being left in hands of the municipality and the neighbors’ associations, up to the shape it is now taking with works being launched in 2015. What is recurrently observed in the process and manifest in the media, is an explicit attempt by the State to domesticate the space, aiming to simplify and control it to facilitate its practicability, administration and the planned use by regular citizens. (Figures 3-11)

![Figure 18. Glòries Square green corridor and “centralities”. Own production based on Institut Cartogràfic i Geològic de Catalunya.](image)

![Figure 19. Timeline for Barcelona with a focus in Glòries Square. While this is not the place to go into detail on every event, the overall view of the timeline give a sense of the complexity of material and immaterial facts that lead to the current situation. Own production based on different sources, see references.](image)

![Figure 20. Timeline of Glòries Square development in recent years. While this is not the place to go into detail on every event, the zoom into the speed-up transformation of Glòries since the Olympic Games, putting in evidence the different levels and back-and-forth in discussions, project and works serve as a base for further speculations. Own production based on different sources, see references.](image)
Figure 21. From Cerdà imposing a “centre” ambition to “reality” imposing an undefined space. Source: Own production based on Institut Cartogràfic i Geològic de Catalunya

Figure 22. Old Market and Demolitions in 2015. Source: El periodico.com

Figure 23. New tunnel imagined for Glòries Square. Source: Ajuntament de Barcelona.
URBAN EXPLORATIONS
The authors have initially identified that the pursuit of control and simplification of elements at stake has lead to alter space in a way that complexities, expressed in existent “uncontrolable” qualities, are deliberately dismissed or overwritten. It is the aim now to expose such processes, to study their
implications and ultimately to denounce their negative effects on urban life, on urbanity, on what makes cities “urban”; by looking to existent qualities from a different point of view… starting from their volatile qualities.

Three Spheres
A methodology is currently being tested to spot processes taking place in collective spaces, recognize their intensity, that is the way they articulate different components, and their volatile qualities, that is their instability and proclivity to change. It is crucial to the authors to identify those thresholds where quantitative changes become quality ones, denoting the dynamic status of spatial-materiality that can be caught in act “in its search of new intensities and new spaces of possibilities”. The action frame are the “In-betweens”, the processes, not the fixed Transformation Moments. Bridging theory and practice, with the “collective” as co-presence of users that can eventually interact among them but temporarily co-exist in space generating processes and territorialities that eventually overlap (with different levels of tension); the interest is to unveil and explore the character of collective spaces as multilayered, overlapping, unexpected, and fluctuating. To this end, three “Spheres” are used: “Spatial Configurations”, where the focus is on the “Material, Domain and Programmatic Components”, the actual definition of space under transformation; “Marks of Human Presence”, where the emergent spatial outcomes of “Uses, Appropriations and Atmospheres” are studied; and “Spatially Localized Voices”, in which symbolic aspects brought in by different stakeholders, such as “Engagement, Discussions, Projects”, and “Imaginaries” linking material and immaterial aspects. Can the convergence of all these aspects be observed in time and in space? Does it constitute volatile collective spaces? (Figure 12)

Exploring Glòries Square
When deploying the methodology in Glòries Square, it is crucial to consider the different processes that determined its transformation along time from a point that is logistically manageable in terms of documentation and sources, particularly because this is not an historical research. Zooming in, we are now somewhere between “2015”, when the tunnels works began after the demolition of the upper circulation and the previsions for “2017” and “2019” when the local government expects to terminate the constructions of tunnels and park, respectively; previsions that are already under question due to technical, financial and political issues. (Figures 13-15)
Figure 28. Zoom in Transformation Moments 2015 when the demolitions had just taken place to remove elevated elements; and in 2017, when the first tunnel is expected to be completed. This last prevision is not completed and currently pending a definition. The drawings show the main spatial and infrastructural elements as "cleared up" in the first case, and as increased underground presence, in the second. Source: Own production based on document sources for the park competition, Ajuntament de Barcelona.
Figure 29. Timeline begins to work as Actor Network (In Latour’s Sense), when interrelating material, human, symbolic and discursive elements. This network is used to define the research frame.

Figure 30. Periodic checkups and intensive fieldwork.

Spatial Configurations
This sphere gathers a series of categories to study space not from the usual description of built space but starting from open spaces. Different tools studying the interrelations, fluctuations in time and interfaces, are used to target simultaneously a variety of scales. An overview of the different aspects under study include: material and property edges, accessibility, permeability, along with infrastructural elements at under, ground and upper levels, accessibility, materiality, etc. When looking at the “material edge”, namely, the open area or volume that is defined by built elements, a “simplification” is verified: it is evident that the actual line that determines the edge of open spaces went from having a variety of intricate delimitations and irregularities into having a clearly defined straight limit. Similar processes can be found when looking at the property edge and infrastructural elements such as roads, bridges and tunnels. (Figures 16-19)
Figure 31. Spatial Configurations: Aspects, relation and fluctuation in time. Own production based on Institut Cartogràfic i Geològic de Catalunya.

Figure 32. Zoom on Material Edge, showing the open area or volume that is defined by built elements: a shift from variety to regularity can be spot in the frame understudy (2015-2017). Own production based on Institut Cartogràfic i Geològic de Catalunya.

Figure 33. Sections of fluctuation and relations among spatial configurations aspects. Own production based on Institut Cartogràfic i Geològic de Catalunya.
Marks of Human Appropriation

This is the observation of the appropriation processes and their spatial outcomes both related or independently from the spatial configurations.  

To represent some critical aspects, one of the most evident alterations of the territorial organization of the collective space of Glòries Square, related to the slow reconfiguration of the park edges is the relocation of a primary school. The “Escola Les Encants” originally faced the open space and on-surface and elevated roads; in 2015 it got moved to a new building that turns its back to Glòries Square to face a busy back street. The front courtyard, informal playgrounds, meeting places between parents and kids, city and facility, used to extend spontaneously towards the open space,
constituting an ambivalent space that belonged to both realms. Now, the entrance is reduced to a frontal setback of the building from a busy street and the extensions for outside playing needs to be formally encouraged by planned activities in a quieter side street. The formal inner-courtyard of the school borders the future park but it is rather hard to imagine that it will naturally extend to it due to the scale and target users as materialized by its thick fence. (Figures 20)

A critical case is the “manteros” market,30 the illegal street markets in which usually cheap, fake branded, low quality or plainly garbage products are exchanged. In this case, the investigation is done on alternative occupation logics and particularly the time factor as crucial component of appropriations of collective spaces. The commercial exchange of products in not-assigned spaces is illegal in Barcelona, so these markets deploy and retract based on the level and tolerance of control forces. “Deployment” are here the moments in which goods are taken out and exhibited and traded, while “retractions” are when goods are suddenly packed back, and the market goes into a “latent” state, in which they are hidden and carried around in all sort of adapted vehicles, such as suitcases, supermarket and shopping carts or baby carriages. People involved in this process try to camouflage among the “formal” market users and it is extremely interesting to observe how sellers, potential buyers and supporters develop a sort of tacit agreement for defining a kind of rhythm, to determine when it is appropriate for the market to happen, while the size and extension depends on the time they get to accumulate. The “latent” stage is probably the most exciting, because, when connecting with it, the adrenaline building-up can be felt, while a certain level of dispersion in space can be registered. The urban space used during these moments is in fact larger than the market itself (market people stay further away from each other, while stay connected by signs or phones), and if observed carefully, this “action” space gets “broken” by the constant crossing through of external actors, other aware or unaware urban users with their own agendas, for example, people walking through to get to a metro station, tourists taking pictures, etc. (Figures 21-24).

Figure 36. Case 1: “Escola Les Encants”.
Figure 37. Case 2: “Maneros” market to study temporal dynamics: Deployment.
Figure 38. Case 2: “Manteros” market to study temporal dynamics: Retraction.

Figure 39. Case 2: “Manteros” market to study temporal dynamics: external actors. These images constitute an illustrative picture, showing the dynamics of occupancy around “manteros” markets directly observed in space during fieldwork in 2016. Further development of the research will focus on the systematization of the mapping and representation techniques of such processes.
Spatially Localized Voices
The notion of territories acquires a predominant role in the understanding of the “collective”, and its definition in highly controversial because it demands the consideration of all aspects, including cultural and symbolic ones. At this point, the main narratives or positions of the main stakeholders are brought in. This aspect constitutes probably the most difficult to address and sensitive point of the PhD-research, and where the most evident limitations emerge and understanding it “from inside” is not even ventured. Nevertheless, the sole fact of putting symbolic components on the table and localizing them in space via its identification on the media, forces to move from “what” discussions are about, into “where” discussions are about, as well as helping moving from spaces to territories in a variety of senses: not only material-morphological territories, domain territories, programmatic territories, territories of appropriation, but also discussion territories are in constant change. (Figures 25-27)
Figure 41. Stakeholders and “Comisión de Seguimiento” (CS - Surveillance Commission).

Figure 42. Spatially Localized Voices through the media.
Figure 43. Heat map, gray zones and black holes of Spatially Localized Voices. The drawing constitutes an illustrative picture, showing the location of elements under discussion in the media, long with issues that escape the frames of Glories “concern”: “gray zones” and “black holes” around which vague or no reference in the media could be traced. Further development of the research will focus on the systematization of the mapping and representation techniques. Own production based on Institut Cartogràfic i Geològic de Catalunya.

SPARKS FOR DEBATE

Around the expressions used for describing the process (identified via interviews with local actors, and media analysis), a “problem-solving” approach can be detected, the intention to “redeem” this area, free it from its troubled character both social and materially and to “give it back” to the inhabitants by turning it into “the” centre of the city, linking neighbourhoods that were ones totally disconnected. The main risk that is run when engaging with this attitude is to attempt the domestication and simplification of space, as shown in the spatial configurations. Along with this, existent qualities are dismissed and little room is left to any kind of alternative urban process.

Another finding from observing the surrounding discourses, is that the process seems to be charged by certain tension among the stakeholders; an effort is made to use Glories Square as an example on how cities “should be” developed. Probably also stressed by Barcelona’s visibility worldwide. Within a particular history characterized by decades of open doors for international developers and the celebration of signature architecture, it seems that “global” forces, multinational real estate capital, “top-down strategies”, have been declared the enemy. This attitude runs the risk of putting too much pressure on “bottom-up strategies” (the representation of the park as an oasis, basically an “anti-urban” space for a variety of micro activities, such as urban farming, is an example of this); simplifying the participatory process and living out civic and representational qualities that are spontaneously linked to urban centres (there is for example no place for mass manifestations nor public building to manifest at). Issues such as diversity, density and complexity may get reduced.

On top of the symbolic implications, there is also the operability of the official “fight” against speculation, and probably its overlook: beyond the good intentions of local administrations, when
taken into account the way urban development is established and operates in most parts of Barcelona, including paradigmatically the citycentre and the seefront, with the latest unveiling of its consequences for local and weaker sectors of the population, along with its proximity and articulation to the mayor rezoning operation of the former industrial area of Poblenou into the 22@ “Innovation District” and immense land resources towards Sagrera Station, it is rather to expect that such interventions will relaunch real estate operations in the North-East of the city as new frontier. From the point of view of the technical sustainability, it is to study closer if the immense financial-technical effort put on the demolition of existent elements (along with their qualities) and the construction of tunnels to hide and deny inner-cities infrastructures in a context of overwhelming flows of private vehicular traffic, is viable alternative. Not to mention the question on the waste material and the recurrence of car-centered urbanism.

Infrastructure as collective spaces reveal as the contingent and instant intersection of the three spheres in the sense that they constitute the overlapping and superposition of a multiplicity of material and immaterial components in constant fluctuation. The internal qualities and the mutual interactions between spheres can be now further investigated in concrete terms, in the sense of trying to identify what triggers assemblage emerging conditions.

To start with, it is recurrently detected that collective spaces are related to the formation of (micro) territories that materialize, mark space, and are temporal in the sense that they indicate both actual past occupations of expected future appropriations of which partial hints can be caught (for example, the presence of a traffic light on a street that is not used anymore as observed in the school case). Secondly, that the uses and practices in space, along with the accumulation, dispersion, interaction or separation among users is highly related to the level of intimacy or exposure, and the perception of this, which is at its time tied to different (micro) atmospheres, spaces, or material fragments that emerge from the fluctuating spatial configurations. Further, spatial configurations, morphological and domain aspects are linked to distances, materialities, and levels of accessibility; along with the practices that they are able to support, enable, encourage of discouragage, as a mix of objective components and the subjective perception of them. Moreover, the shift from programmes and uses, to appropriations and atmospheres brings about a certain density of relationships at the human level. Particularly, in the sense of manners and intensities of establishing those relations that are situated both physically and symbolically in space and in time.

It comes out from the research process up to now, that the overlapping and interaction of material-morphological spaces, domain spaces, programmatic space, spaces of appropriation, spaces under discussion, they all converge in what could be called Infrastructure Collective Spaces, with the notion of space giving room to collective territorial configurations as crucial components of urban environments. Is the deep understanding of Infrastructure Collective Spaces what may bridge theoretical enquiries with potential practical implications?

The authors advocate for the detection, description and investigation of these temporal spheres’ intersections and the apprehension of those volatile urban processes condensed exemplarily in infrastructures under transformation as collective spaces. It seems feasible to think that through this, a new way to investigate urban space and the qualities of urban environments, particularly those related to infrastructures under transformations and collective spaces, may come to be. Is this a way to pursue urban studies and design, in contrasts with the conception of development as static outcomes, in which in the name of a “perfect picture”, the crystallization and extreme formalization become the ultimate goals. Is this a way to potentiate the appreciation of alternative urban realities and potentially lead designers to overcome a dichotomy between bottom-up and top-down approaches to move into more hybridized approaches?
Figure 44. Overlapping spheres as volatile collective spaces. The drawing constitutes an illustrative picture, showing overlapping of the different aspects at stake in Infrastructure Collective Spaces. Further development of the research will focus on the systematization of the mapping and representation techniques. Own production based on Institut Cartogràfic i Geològic de Catalunya.
NOTES

1 The authors are active members of the Research Group “Urban Projects, Collective Spaces & Local Identities” directed by Kris Scheerlinck and Yves Schoonjans at KU Leuven, in which the overall starting point is the development of insights on sustainable interactive regeneration and development of new urban strategies, in combination with the territorial organization of streetscapes, i.e. the interface between buildings and streets and how their inhabitants give meaning to them. Urban space, understood as a discontinuous collective space, where infrastructure in pivotal scale conditions performs actively, is studied from the intermediate-scale and a multiplicity of perspectives (formal, spatial, cultural among others). The PhD-research aims to put these complex variables in deep interrelation in order to generate integral insights on collective spaces. http://www.collectivespaces-kuleuven.be/?page_id=489


4 Agency as the capacity to act. An example of this, is the co-existence of “registered”, “permanent” citizens and the spontaneous uses of urban space for activities that are considered both legal or illegal (for example tourism on the one hand, illegal trading on the other) that can also reach a certain level of stability and materialization, as found in markets in interstice areas related to mobility infrastructures in many Western cities.

5 As articulated by the UN Human Development Index: http://hdr.undp.org/en/content/human-development-index-hdi

6 Dramatically both in the rhetoric and literal sense, in the frame of a current situation highly tensioned. In reference to recent terrorist attacks taking place in Europe.

7 http://www.etymonline.com


9 A recent list of examples can be checked in “Collectivize! Essays on the political economy of urban form” (Marc Angélib and Sarah Nichols (Eds.), Collectivize! Essays on the political economy of urban form. Berlin: Ruby Press, 2016).


11 In García Canclini’s sense of the way we relate to thing (Néstor García Canclini, La globalización imaginada. Mexico: Paidós, 1999).


16 There is a series of compilations that illustrate designers are going back to the scene; for example, Lloyd and Stoll (Scott Lloyd and Katrina Stoll, Infrastructure as Architecture. Berlin: Jovis Verlag, 2010.) have gathered a series of contemporary speculations, studies, reference projects and attempts to tackle infrastructure as (architectural) composite networks “that include ecological, political, cultural, spatial and network attributes”;

http://老头们研究都市集体空间与地方身份”
in Infrastructure Space (Marc Angéll (Ed.), Infrastructure Space. Berlin: Ruby Press, 2016.), a wide range of scholars expose cases of infrastructures performing as “thing, network, and agency”, exploring ways to take them to the “foreground”, namely charge them with more “inclusive political, economic, social environmental, and even aesthetic responsibilities. Further references are found in OASE 85 (Teerds, Hans, Havik, Klaske and Patteeuw, Veronique, OASE 85 Productive Uncertainty. Indeterminacy in Spatial Design, Planning and Management. Rotterdam: NAI Publishers/Rotterdam & de Singel International Arts Centre, 2013), here, the acknowledgement from the design point of view on uncertainty is the starting condition. In the same fashion, De Geyter (Xavier De Geyter (Ed.), After-Sprawl: Research On The Contemporary City. NAI Publishers/Rotterdam & de Singel International Arts Centre-Antwerp, 2002.) makes a point on uncontrollable sprawl as overall condition. 

17 Ibid.
19 This work engages with Lefebvre (Henri Lefebvre, La production de l’espace. Paris: Economica, 1974)
20 This term is used in sciences like chemistry, computer sciences and finances for expressing similar connotations.
21 The relevancy of an “Extreme” Case Study is expressed by Flyvbjerg: “Atypical or extreme cases often reveal more information because they activate more actors and more basic mechanisms in the situation studied. In addition, from both an understanding-oriented and an action-oriented perspective, it is often more important to clarify the deeper causes behind a given problem and its consequences than to describe the symptoms of the problem and how frequently they occur.” “The extreme case can be well-suited for getting a point across in an especially dramatic way.” “(…) to obtain information on unusual cases, which can be especially problematic or especially good in a more closely defined sense.” (Flyvbjerg, Bent, “Five Misunderstandings About Case-Study Research,” Qualitative Inquiry, vol. 12, no. 2, April 2006, pp. 219-245).
23 As heart while discussing the case with local scholars in Barcelona, in March 2015.
24 Some of these elements were already present at the times of Cerdà and constituted some of the view elements to which his grid expressed a sensitive reaction, with the alignment of the angle of shift to the existing train track to France.
25 Which is nevertheless highly conditioned by Regional and National transport entities which for example imposed the high-speed train overpass Glories Square to stop directly at La Sagrera Station.
27 Periodical check-ups as this PhD-research proceeds are being performed (intensive site-work has been conducted in 2015, 2016 and 2017 by now, and is expected to go on until the end of 2018).
28 Several techniques are put in place: photography, diary, direct observation, tracking.
29 Carrer del Consell de Cent.
30 Mantera comes from the Spanish word “manta”, blanket, where goods are normally exhibited and carried around.
31 The authors are not from Barcelona, nor permanently based there.
Glòries Square as the location of “Jean Nouvel’s” Agbar Tower, the DHUB and Les Encants Markets by local renowned architects, along with the failed ambition to host “a Zaha Hadid’s”; being on the axis of the controversial Forum de las Culturas.

Critics come from voices like Manuel de Solá-Morales in Enredados en Glòries, 2005(?).


There are hard attempts to test what a hybridized approach may implied currently being pursued with the students at the Design Studios at the International Master of Science in Architecture, Orientation Urban Cultures and Urban Projects, at the Faculty of Architecture, Campus Sint-Lucas Brussels, KU Leuven, in Belgium, where the authors teach. More information can be provided upon request.

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CREATING COMMON GROUND: THE VALUE OF PARTICIPATORY DESIGN IN ARTICULATING A COMMON ETHOS

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INTRODUCTION
Philosopher Karsten Harries defines the ‘ethical function of architecture’ as that of articulating a ‘common ethos.’1 From this stance, this paper considers how architectural processes may help to, as Harries describes, articulate a common ethos to help us dwell. Our close examination of an ongoing renovation of a small Bowls Pavilion in a popular neighbourhood park in Grangetown, Cardiff, led by a group of residents with the aim of gathering community, is set within the context of an ‘age of austerity’2 in which volunteers are encouraged to ‘step up and take over the management of services and assets in their own communities.’3 Our research scrutinises challenges and opportunities faced by residents taking on a Community Asset Transfer, and examines the challenges for participatory design and appreciative inquiry in supporting the pursuit of a common ethos for dwelling.

A Common Ethos for Dwelling
In his introduction to The Ethical Function of Architecture, Harries voices the hope that architecture may ‘help us to find our place and way in an ever more disorienting world’,4 defining an ‘ethical function’ thus;

"Ethos” here names the way human beings exist in the world: their way of dwelling. By the ethical function of architecture I mean its task to help articulate a common ethos.5

The articulation of a ‘common ethos’ was core to a small group of residents as they first voiced ideas for redeveloping a 134m² vacant 1960’s Bowls Pavilion in Grangetown, Cardiff. Defining their aim as creating ‘a vibrant, friendly community facility where people of all backgrounds can connect and are made welcome,’6 all understood the task to be extraordinarily complex. In lieu of a predefined organization, the project was initiated by a loose group of individuals seeking to act as a catalyst, rather than as operators of the space. Making no claim to predict what ‘the community’ wanted, the group identified a first step as bringing together Grangetown’s communities. ‘To be experienced as a genuine centre’, Harries writes, highlighting this challenge, ‘a place must be experienced as gathering a multitude into a community.’7 Our interest, as participants, partners and researchers, is how approaches to participatory design might support such a task.
A micro-study of a small project
As participants, partners and researchers, our embedded role in the project is captured by Kathy Charmaz’s description of Grounded Theory:
Researchers are part of the research situation, and their positions, privileges, perspectives, and interactions affect it. In this approach, research always reflects value positions. Thus the problem becomes identifying these positions and weighing their effect on research practice, not denying their existence.8
While our close proximity to the process and its participants allows for an ‘in-depth’ understanding of the process, it also raises methodological issues regarding how we might distance ourselves to see more objectively what is going on. To address this, we develop written and visual analyses of documentations, through which we attempt to see the world anew. Charmaz describes a cyclical process of collecting, closely reading and analyzing data throughout research, a process we used in exploring and confronting mechanisms and processes along the way. Documenting emails, meeting notes, event feedback, interviews, films, photos, flyers, newsletters, tweets and conversations, we treat all communications as valuable, with the view that even the most seemingly prosaic communications give insight into the messy actualities of the endeavor.9 Through close quantitative and qualitative analysis, the ebbs and flows of enthusiasm, optimism and progress of the project become more apparent. Visual analysis, such as Figure 2, captures the quantities and emerging themes of email correspondence over two years, tracking the project as it races ahead, stalls, or takes an unexpected detour. Analyzing daily communications begins to capture what is asked of those who ‘step-up’ to the complex task of taking over an asset in their community. At the Grange Pavilion, we began by trying to understand what ‘community’ might mean.
'WE SHOULD INVOLVE THEM IN EVERY PART OF THE PROJECT'
Cardiff’s most ethnically diverse electoral ward, Grangetown is home to a population of 20,000 residents. While well served by facilities including Mosques, Temples, Churches, social clubs, and bars, a resident observed; Grangetown doesn’t feel like it has a center where the whole community can meet. At the moment, the community is made up of pockets of different cultural populations who mix in either the mosque, the temple, the pub, church - but they do not mix in one place. Grangetown’s diversity is highlighted in consultations as a key strength, and the lack of a neutral meeting space is identified as both challenge and opportunity. An early email circulated amongst the group expressed ‘something of a question rather than a set of definitive expectations or resolved framework.’ From the outset, the group of residents voiced the need to first ask questions and listen: Firstly we should get to know the local population to find out what they want. We should involve them in every part of the project so that they feel ownership and ultimately run the place.
**Stepping Up and Taking Over**

The Grange Pavilion project was formerly set into motion when a resident attended a local area Councilor surgery and began an ongoing discussion about the catalytic effect of quality, and the opportunity offered by a Community Asset Transfer. As guidance and context, Cardiff Council’s Stepping-Up Toolkit notes:

In an age of austerity, public bodies have been under increasing pressure to find new and more efficient ways of delivering their services. This has impacted across the board, but perhaps no more so than on community services delivered at a local level. The situation demands a creative response. Local communities have traditionally been very resourceful in acting to help themselves. Indeed, community organisations have been at the very heart of local service delivery for decades. The need and the opportunity, however, is to enable more community-led activities to take place. To encourage more volunteers to ‘step up’ and take over the management of services and assets in their own communities.  

Participatory Cities’ ‘Designed to Scale’ publication similarly highlights ‘that the state is a waning power in the lives of many, and it is seizing the opportunity to suggest that this may be no bad thing.’ Recognizing the ‘implied risks’ of devolving civic responsibilities, the commentary proposes that the state should ‘not simply withdraw’ but rather radically redefine its role. Redefinitions are similarly urged in RIBA’s ‘Guide to Localism’ as ‘a radical devolution of responsibilities to the local level, giving new powers and opportunities to councils and communities to plan and design their places.’ Localism, RIBA proposes; requires a shift to partnership approaches with local people, requiring new skills in building effective dialogue and developing a shared understanding of places, their challenges and their potential. RIBA advocates that Architects, ‘can emerge as integral design enablers and facilitators of localized plan-making, helping communities helping communities and local authorities to maximise the potential of their places.’ At the Grange Pavilion, expectations - and fears - of collaborative working between community members and external partners focused on how professional organizational structures might give credibility to, or threaten, a community-led idea.

Despite advocacy for early engagement with professional services, the loose group of residents were initially in no position to apply for funding for professional services at a meaningful scale. Recommendations in Stepping Up that ‘you may be able to secure some pro-bono work (provided by professionals at no charge),’ meanwhile, pose a challenge to hopes that professionals can resource the time required to develop ‘shared understandings’ at a meaningful level ‘This project,’ a resident noted in 2013, ‘could become an all-consuming project that would overpower those who were tempted to step in such matters,’ an observation extending to professional as well as voluntary services. Our role as participants, researchers and partners through Cardiff University’s Community Gateway offered a unique opportunity to quantify what developing a ‘shared understanding’ might demand of all.
Community Gateway

Our partnership with the Grange Pavilion project was formalized through the development of Community Gateway as a Cardiff University Flagship Engagement project. In 2013, Cardiff University made a long term commitment to Grangetown, launching Community Gateway as a three-year pilot with an open call for ideas for Community-University collaborations. Over forty partnership projects launched to date include a Business Forum, Youth Forum, Philosophy café, and Mental Health networks, bringing together residents and area organizations with staff and students across Cardiff University.

From earliest discussions, residents proposed that the University should enter into ‘a relationship, not an affair’, emphasizing that knowledge, skills and resources should flow two ways, and that the University should support ‘creating the notion of belief in the people, in the area.’ Initial discussions with the Grange Pavilion group led to our first three-week co-produced live teaching ‘Vertical Studio’ in 2013, tasking twelve BSc students with gathering ideas for a community space, gauging interest and support, and spreading the word. We imagined, ambitiously, that the students’ output might form a design brief. It quickly became clear that our role was instead that of helping to gather community and collating what a resident identified as ‘a growing catalogue of local knowledge.’ Gathering stories in order to gather community would form the basis of co-produced public events over the next three years, framed by our introduction to appreciative inquiry.
Gathering stories

Appreciative Inquiry is defined by Mathie et al as:

a process that promotes positive change (in organisations or communities) by focusing on peak experiences and successes of the past. It relies on interviews and storytelling that draw out these positive memories, and on a collective analysis of the elements of success. This analysis becomes the reference for further community action.28

Karsten Harries notes, too, that architectural language ‘is inevitably mediated by particular landscapes, particular histories, particular stories.’29 As residents waded through the logistical hurdles of developing an expression of interest for a CAT, our second co-produced Vertical Studio in 2015 opened the Pavilion for an Ideas Picnic, with students baking cakes and collecting stories. A resident summarized:

A bit of free cake and tea was always going to draw a crowd, and Grangetown excelled itself. We are now sorting through the comments and ideas that were flying about on the day.30

Comments and ideas confirmed wider support for the idea, the need for tangible things to happen, and the ongoing importance of the project being ‘community-led.’ While the Ideas Picnic gave an impetus to carry on, the complexity of the endeavor was becoming clear:

As our project relies on pulling together many threads from within the community and other interested parties, for us to provide such a comprehensive business plan within an indicated and limited time frame would be very difficult.31

Emails identify the barriers involved in progressing from speculative conversations around kitchen tables to that of forming an organization. Defining ‘who’ an open group consisted of led a resident to observe that ‘Our list of emails/members is a bit chaotic presently. I’m trying to figure out who exactly is a (willing) member of our group, officially or not.32 ‘Any project of this diverse constituency’, another emailed, ‘needs to maintain public momentum and cohesion when things are apparently not happening.’33 ‘Anyone can be positive towards an ‘idea’ such as this’, it was noted, ‘it’s how that positivity translates into committed action.’34 These observations align with Participatory City’s list of eight ‘reasons why projects die’, the burdens of ‘too many meetings and too little action’, of enthusiasm lost through ‘waiting too long’, and of an over-reliance on one or two people to carry responsibility.35 Progressing the project demanded early, tangible action, as well as reaching out for wider participation and support.
Gathering community

Our third co-produced event, Love Grangetown 2016, paired architecture students with community ‘gatekeepers’, identified through previous consultations to represent faith, ethnic, age and interest groups in Grangetown. Visiting mosques, temple, bingo, and family settings to gather stories, student-resident teams connected over 100 community members to set strategic aims for partnership working. Identifying nine themes of value in Grangetown, the participants prioritized community meeting spaces. Co-produced community-university events continued with a Storytelling Day in October 2015, the installation of a Storytelling booth as a first architectural intervention in the Pavilion (Figure 6); a second Love Grangetown in 2016; a 2016 ‘Vision of Grangetown’ walking day; and a third Love Grangetown 2017, establishing a regular and repetitive cycle of public events to gather ideas and stories, invite commitments to action, and update all accurately on progress. As use of the Pavilion progressed from pop-ups to regular activation, community-led programming began: a cinema at an annual Festival, an Eid celebration, a seasonal solidarity evening, a winter Fayre, a weekly Friends and Neighbours group, Tech café workshops, a locally-led Café running regular culture café sessions inviting representatives of Grangetown’s many communities to have conversations over coffee.

Figure 6. Storytelling Booth, 2015
Image by Marius Dirmantas

Figure 7. Key public events and their impact, 2013-14
Image by Sarah Ackland
Often knee-deep in paperwork and stalled by seemingly insurmountable barriers of the logistics of individuals and small and large organizations coming to agreements, in the midst of real life carrying on within the group - births, deaths, moving out, jobs changing - every co-produced event brought in new members to activate and progress ideas. Every event brought a slightly different energy and direction; each offered a visible, celebratory reminder of what the project was about; each reaffirmed how much input and support was still needed to make things happen over the long term.

The role of the architect
Our research started with the intent of tracking an architectural design for a Community Asset Transfer. Instead, three years of engagement focused, before any design proposal, on first gathering community. That this took three years and is still ongoing aligns with Participatory City findings that it takes an estimated three years to build ‘a dense participatory ecology at scale.’ Micro-level participation, Participatory City observes, requires 10-15% of local residents at any one time, with costs of ‘building and maintaining a participatory ecology in an area with approximately 50,000 residents’ estimated at ‘£300,000-£400,000 per annum.’ These findings align with our own experiences in Grangetown, highlighting the depth of commitment and resource required to establish relationships critical to the emergence of shared understandings.

Interviews we held with the Grange Pavilion group similarly emphasized expectations that architects should take the time to get to know the area and offer an ongoing relationship. An architect, a resident noted, should:

engender a confidence to demand better of everything from the client, the architecture and the funder […] an architect can raise the game and the quality of thinking to answer the question that has been posed.

Describing architects as ‘orchestrators’ who can create ‘an intellectual envelope in which things occur, spaces or events occur’, a consistently expressed concern was the fear an architect would impose a design, and then leave the residents to deal with positive or negative consequences. ‘Better Architects will stick around and genuinely create a relationship’, a resident commented:

…who would we trust to come and sort out the mess the day afterwards because it is a year down the line and it’s not working, who is going to come back and say, actually ok we went too far and we are going to pull it back […] who is going to correct the correction that needs to be made?
Prior consultation experiences underpinned cynicism regarding how feedback might be implemented. ‘How do they act upon that?’ a resident questioned. ‘It is one thing to have post-it notes on the wall, it’s another thing to actually look at them and feed that to inform your practice.’ The key criteria for the Architect was, finally, ‘not about the visions but how they understand the ‘us’ of us.’ Such understandings take time, and suggest rethinking processes more suited to formal organizations. A resident described the barriers posed by external expectations that formal meetings should be necessary:

It's the actual culture of the machineries the way that the meeting happens I think is for me quite difficult and draining. If you for a walk and you had a rant or you go for, I don't know… you're making something or if you're gardening. It's, you might spend longer having a cup of tea. But I would say that as the community group, the way we’ve displayed ourselves, as being serious, to demonstrate our properness, we go to a meeting…and it's a really delicate thing, isn’t it?

![Figure 9. The Hideout café, Grange Pavilion, 2017](image courtesy of Community Gateway)

‘Gently revolutionary’ space

We are still unpicking the wealth of evidence underlying the ongoing evolution of the project. From the first voicing of an idea by residents in 2012, the project has so far directly involved over 300 individuals in the community, university, council and external partners, working through over 500 emails, 50 ‘formal’ meetings and uncounted cups of tea around kitchen tables just to reach the point of proposing a design brief which might be responsive to community ideas. The task of ‘stepping up’ from the bottom up is enormous and often overwhelming, delicately balancing the task of carefully maintaining multiple communities’ trust, belief and resources against the often contradictory demands of externally-imposed deadlines and procedures.

Karsten Harries ends The Ethical Function of Architecture with recognition of the complexity of any claim that architecture can resolve the problem of community. ‘With good reason’, he argues, ‘we have learned to be suspicious of all architecture that confidently embraces architecture’s traditional ethical function.’ Harries proposes ‘introducing into the context of the modern city theatrical and festal spaces, punctuated by works of architecture that, lacking authority and responsible to no one, are gently revolutionary and let us dream of utopia.’ In Grangetown, having tentatively gathered a form of community to reach a first agreement for a design brief, the project proceeds towards nurturing a relationship between communities and designers in pursuit of a space which may balance the certainties demanded by external agencies of planning and funding, and the open-ended, incremental and uncertain processes which support a community in gathering in a small civic space.
NOTES

3 Ibid, p.4.
5 Harries, Ethical Function, 4.
7 Harries, Ethical Function, 199.
10 2011 Census, Grangetown and Cardiff, accessed 1 June 2017, https://www.cardiff.gov.uk/ENG/Your-Council/Have-your-say/Ask%20Cardiff%20Library/Cyifrifiad%20Grangetown%20-
%20Census.pdf
11 Resident feedback at May 2013 consultation.
12 Resident email, 18 May 2013
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14 Cardiff Council, Stepping Up Toolkit accessed 15 August 2015, https://www.cardiff.gov.uk/ENG/Your-
Council/Council-finance/Council-Budget/2017-18/Documents/SteppingUpToolkit.pdf. The Toolkit was launched in December 2014, with workshops offered in 2015 to support community groups. The launch was met with mixed reviews, with local media reports questioning the ability, experience and availability of volunteers to run council services. Emma Sisk, ‘Step up’ and get involved in the running of our community facilities, says Cardiff council”, Wales Online, December 9, 2014. http://www.walesonline.co.uk/news/wales-news/step-up-involved-running-
community-8260953
16 Ibid.
18 Ibid.
19 Ibid.
21 Resident email, 20 August 2013
22 In anecdotal conversations with the authors, architects engaged with long-term community partners have consistently reported taking on this work on a pro-bono basis.
23 In 2014 Cardiff University launched ‘Transforming Communities’ with five ‘Flagship Engagement’ projects, operating at local, regional, national and international scales, of which Community Gateway was one. See http://www.cardiff.ac.uk/about/our-profile/who-we-are/engagement/transforming-communities
24 See http://www.cardiff.ac.uk/community-gateway
25 May 2013 consultation.
26 May 2013 consultation.
27 Resident email, May 2013
28 Alison Mathie and Gord Cunningham, "From clients to citizens: Asset Based Community Development as a Strategy for Community-Driven Development" Development in Practice 13 No 5 (2003): 474-486
29 Harries, Ethical Function, 202.
30 Resident email 19 May 2014.
31 Resident email 2 November 2014.
32 Resident email 20 February 2015.
33 Resident email 20 February 2015.
34 Resident email 13 January 2015.
36 Love Grangetown 2017 was led by Community Gateway project manager Rosie Cripps and Neil Turnbull.
38 Ibid.
39 Resident interview, 2016.
40 Ibid.
41 Ibid.
42 Ibid.
43 Ibid.
44 Harries, Ethical Function, 367.
45 Ibid.
46 This research is a collaborative endeavor between numerous individuals and organizations, including: the Grange Pavilion Project; Grangetown Community Action; Community Gateway; Cardiff University's Engagement team; students including Sarah Ackland, Claudia Petre, Josh McDonough, and Louie Davie; teaching and professional support from Dan Benham, IBI Group, Nudge, and Ash Sakula Architects. Funding acknowledgments include: the Vice Chancellor's Office, and College of Physical Sciences and Engineering, Cardiff University; 2015 RIBA Research Trust Award; Big Lottery Fund CAT2 Development award; support from Cardiff Council Neighbourhood Development Fund, Cardiff Bay Rotary Club, Ikea, Cardiff and Vale College, and Nathan White Construction. The authors would like to thank representatives of the Grange Pavilion project, Grangetown Community Action, and Cardiff Council for their kind permissions in including email correspondence or interview transcripts.

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LEARNING FROM SELF-PRODUCED HOUSING EXPERIENCES IN BRUSSELS

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INTRODUCTION

Living in Brussels today
Over the past twenty years, housing production in Brussels has become a central issue. This concern is based on three main observations.
First, the demand for housing has increased in Brussels while accessible real estate has shrunk rapidly¹. This lack of accessible housing in Brussels affects mainly the middle and popular classes². Housing production currently amounts to approximately 4000 housing units per year of which less than 10% are social housing. Moreover, the housing demand has increased constantly. The target of The Brussels-Capital Region’s Sustainable Regional Development Plan (SRPD) is to increase by 2020 the public housing stock by 6500 with 60% for social housing and 40% for middle class housing³.
Second, as a result of this first observation, there is a clear worsening of the social inequalities. These inequalities are geographically distributed in a zone along the industrial canal, which connected the port of Antwerp and the industries of Charleroi in the 19th century. This area – “le croissant pauvre”, the poor croissant - is characterized by its poor housing conditions (overcrowding, lack of privacy, sanitation, etc.). This situation is getting worse every year; figures indicate that the sale prices evolution undergoes an accelerated growth since the first decade of the 21st century.
Finally, the city’s household configurations have been evolving dramatically. The traditional nuclear family is no longer a shared standard. A great diversity of households has emerged (isolated people, roommates, people in transit, blended families, one-person households, etc.). The traditional housing spatial configuration does not correspond to this social diversity⁴.

Living in Brussels tomorrow?
In the light of these observations, it seems necessary to find new and affordable housing configurations, production and organization modes able to shelter a great diversity of people. Such housing solutions need to guarantee the daily quality of life of its inhabitants and favour relations with the outside world. More generally, the purpose of these solutions is to produce more resilient answers to a fragmented territory.
This essay looks into housing cases offering unusual modes of spatial configurations and production systems. In Brussels, citizens’ movements for the right to housing are growing and the cases studied are presented as alternatives to the current housing production.
An approach through the concept of Commons

The hypothesis made in this essay is that the concept of Commons can play a role in integrating housing in its environment as well as in articulating a variety of ways of life. The various places of life and the journeys of people through the territory are illustrated by J. Lévy in the examination of the scales of life

Commons can perform as interface between a broad diversity of life trajectories. Commons make references to the management of common goods by a group of people. The common goods can be of two kinds. On the one hand, they can be external to humankind as it is the case for natural resources. One speaks then of intangible assets. On the other hand, they are directly linked to humankind when they are built and controlled by humans. In this case, one speaks of tangible assets for objects or places. This latter part of the definition of Commons is at stake when questioning inhabited and urban spaces.

According to Dardot and Laval, “The central issue of Commons lies in the prospect of subtracting something from the private or the public realm, to turn it into a potential use benefiting to all those who could relate to it”

Therefore, in order to exist, Commons must be present at the same time in space but also in the decision-making and the organization of the lifestyles. Through modes of production of housing environment advocating the common good instead of individual needs, the stake is to enhance citizens’ initiatives and collective decision-making.

This issue is addressed in the case of housing in Brussels. The lack of accessible housing and the resulting urban fractures as well as the morphology of the Brussels block often endowed with former industrial plots make Brussels a fertile ground in the quest for the development of Commons.

SELF-PRODUCED HOUSING EXPERIENCES IN BRUSSELS

Three cases of self-produced housing in Brussels have been selected for this essay. They all support collective living but on different levels and with diverse ways of functioning.

“Brutopia”, a collectively built housing estate

The first case study is a collectively built housing estate inaugurated in 2013. It is located in lower Forest, a poor neighbourhood to the South of Brussels. This collective housing project consists of 27 apartments with 53 adults, 31 children/teenagers, 2 cats and 1 dog.

Due to the lack of affordable housing in Brussels, a group of people gathered their resources. The purpose of the group was to collectively play the role of a standard developer that is the purchase of a piece of land and the construction of an apartment building.
The project has been developed in the perimeter of the “Saint Antoine district contract”. In Brussels, the purpose of district contracts is to reinforce disadvantaged neighbourhoods by creating or renovating housing, rehabilitating public spaces, creating public proximity infrastructures, improving the environment and the social cohesion. In addition, for the past few years, the district has undergone a new dynamic through the establishment of cultural facilities for the neighbourhood or the metropolitan region, such as the Wiels, Center for Modern Art in Brussels. From the start, the inhabitants of “Brutopia” desired to be involved in this perspective.

To carry out their project, the inhabitants have developed a specific organization. They have created work groups on various topics such as architecture, accounting, or communitarian aspects. Within each group, a spokesman was responsible for making a report during the general assemblies. This collective work continues even though the project is completed.

The project consists of various types of spaces. The inhabitants had the ambition to favour the relations between their collective housing and the neighbourhood. With this objective in mind, most of ground floor spaces are dedicated to neighbourhood services. There is a Community Supported Agriculture center, a Homework School, a Center for Sick and Elderly Confreres, a Debt mediation service for disadvantaged population. There are also three architecture offices.

In addition, they have various community spaces to promote the group dynamic and favour relations between the different types of residents but also to limit individual domestic spaces. The community spaces are a common garden, a multi-purpose hall and a common laundry. They also have a parking with shared cars.

However, the inhabitants value the individual realm. In this case, the surfaces of the apartments are not significantly different from those of traditional housing. Each household has an apartment, usually a duplex with a private terrace. Collective life is not necessarily present on a daily basis but takes place during gatherings or within the common spaces.
“123”, a collective and inclusive, yet precarious, housing project

The second case study is a squat in the centre of Brussels.

Its story begins in May 2007 when a group of people decides to illegitimately occupy a building on 123 rue Royale. An agreement of temporary occupation is concluded very swiftly with the Walloon Region, the owner of the place. This agreement persists until the owner decides to renovate the building for another occupation with a one-year notice before the group must leave. The group may occupy the building for free and, in exchange, it allows the owner not to pay for the vacancy taxes.

“The building occupants are students, homeless persons, artists, people without papers, or simply people wishing to participate in a non-classical life plan. Most of them have had difficulties finding a dwelling in a context of housing shortage or for more personal reasons, and felt the desire to live in a grouped and united housing.”

In “123”, there are 65 inhabitants. They pay for charges according to their personal situation (60, 90 or 120 Euros). All decisions are taken together during general assemblies every Tuesday and within smaller groups about specific subjects (e.g. cultural or festive events).
Their philosophy is to open their doors to the largest number of people possible. To this end, they open a series of public spaces every week such as a bike workshop, a table d’hôte, or a library. Those public spaces are situated on the first floor and on the ground floor of the building. Every other floor is organized almost in the same way. They display shared spaces: a kitchen, a small lounge, sanitation equipment and several specific communal spaces like a wood workshop, a painting workshop or a yoga room. There are two kinds of residents in “123” that determine the size of the private space and their right to vote during the general assemblies: permanent and temporary. Only the permanent inhabitants vote during general assemblies. They have a 35 m² private space corresponding to 4 window-spans. If an inhabitant decides to leave, he will always have a priority to come back. This measure is taken to allow inhabitants to leave easily without being afraid of not finding anything else. The temporary inhabitants, or guests, can take part in the assemblies but do not vote. They live in the guest rooms, which are smaller. The inhabitants’ partners can take part in the assemblies but do not vote in the beginning. After some time they can become permanent inhabitants and have a right to vote.

The waiting list to live in “123” exceeds one hundred people. It is a significant sign of the housing shortage in Brussels and illustrates the fight against unoccupied buildings by allowing such initiatives.

Figure 3. “123”.
“La Poudrière”, a self-managed community

In 1958, two priests settled down in the district “The corner of the Devil”, a disadvantaged district of the capital. Their only purpose was to provide a reassuring presence in the neighbourhood. Little by little, the priests welcomed disadvantaged people and the community built itself up. In the 1970s, the community joined the Emmaüs movement. The philosophy of this community is to experiment an alternative to capitalism where humans become the only priority. They have five founding principles: presence, friendship, hope and personal fulfilment. The notion of community is extremely important. Salaries are shared and everything is bought in common.

In the beginning, the priests were looking for activities for the people they welcomed. Their first activity was moving for the neighbourhood. Today, their main activity is the recuperation and sale of objects of all kinds. The community also has a farming activity on the side.

The sixty members of the community are living in three different geographical locations: Brussels, Pérulwez (near the border with France) and Rummen (70km from Brussels).

All decisions are discussed together during the general meetings one weekend per month and they are then legally or administratively formalized by the association council and the administrative council (5 members of the community). The decisions concern the activities of the community or the buildings. The association council is composed by thirteen members, ten community members and three non-members including a notary. The administrative council is composed by five members of the community. They meet once a year or when it is necessary. Besides the regular community members, some people work as volunteers. They do not participate in decision-making but can be responsible of a specific task/activity.

The community owns an important patrimony inherited from persons close to the community. In total, the patrimony of “La Poudrière” is composed by sixteen buildings worth 8 million euros. The buildings are located in five different places: rue de La Poudrière in Brussels, Anderlecht, Vilvoorde, Pérulwez and Rummen.

“La Poudrière” location occupies almost a whole urban block with industrial constructions on the interior. The community relates to the district through its stores and their hospitality facilities. All the buildings of the block owned by the community are pierced to allow connections to the community spaces. The community spaces occupy a large area in the centre of the block while the private spaces are at the periphery. The private spaces are divided according to the different needs of the inhabitants. For example, the families have a kitchen and a dining room to allow some family time during the weekends.

Nowadays, the community has been less successful than in the 1980s. While there were 120 members in the 1980s, there are only 60 today of which 20 inhabitants in “La Poudrière” location. Hence, the community is looking for renewal solutions and new forms of organisation for the collective life. For example, they are thinking of using their assets to implement a system similar to the Community Land Trust.
Figure 4. “La Poudrière”

AN ANALYTICAL FRAMEWORK

Each case study displays a certain form of Commons. The central place given to Commons seems to be an attempt to respond to the housing issues regarding the production modes and the changes of the society. However, they differ by their organisations, their uses and their spatiality. This essay questions which criteria favour the development of Commons as spaces for domestic as well as for urban life through a comparative analysis. The purpose of this analysis is to establish links between social and spatial factors to understand which arrangements support best the “vivre ensemble” (living together), integration in the surroundings and sustainability.

The experiences studied in Brussels are small but display variations in their spatial and social organizations. Moreover, given the current problems of our territory and the Brussels urban morphologies, those types of experiences are likely to increase in the future. In this perspective, it seems interesting to develop an analytical framework offering an understanding of those housing developments regarding our contemporary issues and enlighten the social and spatial indicators that
are capable to cater for the needs and to support the changes of the society. The indicators of this first analytical framework will be completed by in-depth research fieldwork.

From a social point of view, the first indicator relates to the network established around the housing project. The different residences of the community “La Poudrière” belong to the same organisation. “123” is part of the “Woningen123logements” association like other temporary housing in Brussels but each of them has its own organisation. “Brutopia” is working on its own.

![Figure 5.](image)

The second indicator specifies the production mode and the type of property (individual or collective) of the housing projects. Distinctions are made between several elements: the land and the building, the individual and the collective property. The inhabitants of “Brutopia” own collectively the ground and the commons spaces but individually their apartments. The inhabitants of “123” are not owner of the building but can occupy it for an indeterminate period of time. The inhabitants of “La Poudrière” own collectively of all their estate.

![Figure 6.](image)

The third indicator defines the diversity of uses or functions. It varies between in all three projects; “123” organises non-profit activities for the neighbourhood, there are services for the neighbourhood in “Brutopia” and retail in “La Poudrière”.

![Figure 7.](image)
The last social indicator identifies the type of social organisation. It is divided in “Brutopia”, collective in “123” and hierarchical in “La Poudrière”.

![Social Organisation Diagram]

Figure 8.

From a spatial point of view, the first indicator refers to the building typology. In the present cases, they are all a part of urban block but they could also be separate housing units or buildings.

![Form Diagram]

Figure 9.

The second indicator specifies the nature of the multi-functional uses. Those uses can be superimposed, coupled, central, peripherals or distributed. The services of “Brutopia” are on the ground floor. The activities are distributed in “123” and the retails of “La Poudrière” are situated in the periphery. Those uses can also be contiguous or central.

![Diversity Diagram]

Figure 10.

The third factor differentiates the level of intervention of the inhabitants on the built and non-built spaces. The inhabitants of “Brutopia” constructed a new building. The inhabitants of “123” invested the building and the inhabitants of “La Poudrière” transformed the urban block.

![Condition Diagram]

Figure 11.

The fourth factor questions the commons spaces as an interface between the domestic spaces and the surrounding environment. In both “123” and “La Poudrière” Commons are provided by the inhabitants and create the interface with the urban spaces. “Brutopia” has internal Commons spaces but as the services are not organised by the community it does not create an urban space interface.
Finally, to understand the ratio given to the various types of spaces, an analysis was made of the percentages of public spaces, private spaces and the collective yet non-public spaces. The public spaces account for 10% of the total area in “Brutopia”, 16% in “123” and 18% in La Poudrière. The spaces that an inhabitant can dispose of (including collective spaces and his individual spaces) represent 24% of the total area in “Brutopia”, 32% in “123” and 66% in “La Poudrière”.

**CONCLUSION**

This analytical framework leads to a series of conclusions and research hypothesis. From a social point of view, the diversity of housing production systems presented in the case studies could be a clue into a better accessibility to housing. However, limitations subsist in each of them. Despite the contract concluded with the owner of the building, the housing future of the inhabitants of “123” is uncertain. Indeed, the contract of precarious occupancy offers only a temporary solution. For its part, the system of “la Poudrière” does not specify the possibility of leaving the structure after
several years, engendering thus a rather exclusive lifestyle. The production system of “Brutopia” allows for purchasing together at a lower cost but it does not allow avoiding speculation upon subsequent resale of the private apartments.

Moreover, upon observing the social organisations, the most hierarchical and the most communal systems are the ones to have the most difficulties to engage renewal. Indeed, the life constraints of “la Poudrière” endanger its future development and question its very organization for the next generations.

From a spatial point of view, the comparison of spaces shows that the size and the use of Commons are proportional to the level of communitarianism. The inhabitants of “La Poudrière” have a high percentage of communal surfaces at their disposal. In return, the individual spaces are reduced.

Likewise, this level of communitarianism seems to influence the diversity of uses and the connexions to the surroundings. In “123” and in “La Poudrière”, the inhabitants organize themselves the diversity of the uses in the building as activities or services for the neighbourhood. It is also in these cases that the greatest share of disadvantaged people and variations in inhabitants’ profiles is found.

“123” presents a large opening towards the neighbourhood through its various activities. “La Poudrière” also welcomes a large number of disadvantaged people such as migrants or former prisoners.

Eventually, one of the hypotheses resulting from this analysis is that the reduction of the individual sphere in favour of the common spaces allows an opening towards the neighbourhood through the implementation of activities and services by the inhabitants. Spatially, this is translated by a permeability and a continuity of the inhabited and urban spaces. Yet, this study enlightens the difficulty to generate Commons while allowing a flexibility of uses and lifestyles. This limitation could be a setback for future sustainability.

However, the ability of these housing projects to welcome heterogeneous sociocultural profiles, to stimulate urban space and to reconsider the traditional limits of the private sphere advocate their interesting role in the reduction of the social and spatial fragmentation of the territory.
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ABANDONED URBAN STRUCTURES AS A FRAMEWORK FOR HOUSING DEVELOPMENT

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INTRODUCTION
Abandoned structures are usually linked to useless maintenance costs (“white elephants”), increasing crime rates, vandalism and arson (“hideouts”) and declining property values (“eyesores”). These negative impacts could nevertheless be counterbalanced by the opportunities these structures might as well present, particularly in the face of the housing crisis.

Through this article, I would like to discuss the relevance of an update of the “structuralist movement” in architecture, which was developed in the 1960s, mainly within a group of Dutch architects. In particular, the proposal formulated by the architect John Nicolas Habraken, around the notions of support-structure, could be re-read with a renewed attention in order to address the potential of abandoned urban structures. This renewed interest in structuralism in architecture relies on the presence of a large variety of urban abandoned structures in many cities, some of them sharing common characteristics with structuralist projects.

Usually, the search for new accommodations relies on our capacity to build next to or above already existing structures. Instead, this article investigates the abandonment as another possibility to explore. In what extent could the notion of “structure in architecture”, applied to large abandoned buildings, play a positive role in the housing crisis faced in some cities?

URBAN ABANDONED STRUCTURE: WHAT ARE WE TALKING ABOUT?
Absence of a universal definition

The phenomenon of abandonment covers a broad spectrum of buildings: from derelict houses to vacant offices, from hospitals in disarray to dormant factories, from obsolete military platforms to moribund malls. The phenomenon presents an important variety in term of former use, form, scale, state of decay and location. This variety leads to a difficulty in establishing a generally accepted definition: “there are nearly as many definitions of abandonment as there are municipal governments tracking the issue and scholars writing about it”. The lack of a universal description addressing this diversity steers cities to define a property as abandoned for different
reasons: it is uninhabitable (the physical condition of the structure is prevailing), it remained unoccupied for a long time (the length of time is prevailing), the relationship between the potential owner and the building was broken (in this case, the ownership status and the related responsibilities are prevailing). Moreover, we can distinguish several forms of abandonment. According to Hillier\(^2\), the abandonment can be physical, financial or functional. These three aspects may or may not be interconnected.

**Focusing on structures of high potential**

From this diversity, we will focus on a specific kind of abandoned structures. Not all of them are equivalent to tackle the housing crisis. We conducted a first analysis that led us to describe the abandoned urban structures through three different categories (which must be regarded simultaneously). The first refers to the initial project (characteristics inherited from the original impetus), the second refers to the abandonment of the project (characteristics tied to the stage of decay) and the third addresses the characteristics linked to the current neighborhood dynamics.

<table>
<thead>
<tr>
<th>Characteristics of the structures</th>
<th>Initial project</th>
<th>Abandonment process</th>
<th>Current neighborhood dynamics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large size</td>
<td>Skeletal / Scrawny (unfinished or released from the obligation to be finished)</td>
<td>Dynamic economy / urban growth</td>
<td></td>
</tr>
<tr>
<td>Reinforced concrete structure</td>
<td>Limited state of deterioration</td>
<td>Need for housing solutions</td>
<td></td>
</tr>
<tr>
<td>With or without heritage value</td>
<td>Long-term abandonment</td>
<td>Public property / unknown ownership</td>
<td></td>
</tr>
<tr>
<td>Urban environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 1. Selected characteristics of the structures*

In the rest of this article, we will only consider structures sharing those specific characteristics.

**STRUCTURALISM IN ARCHITECTURE: A SEARCH FOR STRUCTURE**

From Team X to Forum

Shortly after the Second World War, while an intense period of reconstruction affected Europe, serious objections arose within the ranks of the CIAM\(^6\) against the Charter of Athens which advocated a strict separation of functions (living, working, recreation and circulation). A young generation of architects rejected this functional-deterministic understanding of architecture in favour of a different design approach that seeks to translate human relationships into built form. This critical emergence, motivated by a desire to reconnect with the social and cultural realities of the city, gave birth to Team X. The group was searching for an alternative to the static and functional city. They developed an anthropological and humanistic knowledge, fueled by an interest for non-western societies. The Dutch development of Team X has crystallized around the editorial board of the architectural magazine *Forum*. Among the most famous protagonists: the architects Jaap Bakema, Aldo van Eyck, Herman Hertzberger and Nicolas John Habraken.

Although different, their projects shared a number of common characteristics, such as a durable and visible skeleton made of concrete, an intertwining of architecture and town planning, an active participation of users and a deep consideration of time. These characteristics had strong
implications for the built form, the design process and the role of the architect within this process. These architects were witnesses to the postwar housing mass production. According to them, public housing failed to present a proper solution, in terms of both design and social challenge. The double attempt to increase production and to reduce cost has led to standardized mass housing. People became unable to properly take possession of their accommodation: “this sentiment was summed up in the word ‘inhospitality’”

Therefore, the possibility of coping with large numbers of dwellings in a humanist way became central in their reflections on architecture and the city.

The support structure
In the early 1960s, the architect Nicolas John Habraken tried to solve this equation: "How can we design large projects without necessarily imposing uniformity and rigidity where variety and adaptability over time are desirable? How can the big project nevertheless do justice to the small scale?" His book, De Dragers en de Mensen (known in English as Supports and People), proposed an alternative to mass housing based on the notion of “support structure”. According to the Dutch architect, “A support is a building containing dwellings that can be built, altered and taken down, independently of each other.” In other words, Habraken’s proposal aimed at a clear separation between loadbearing construction and secondary one (interior walls, windows, doors,
etc.), between support and infill. The support structure (for which the government was responsible) had a very long lifespan whereas the dwellings installed within it could be renewed much more often. The responsibility for the dwellings was a matter for private enterprises or individual impulses.

Habraken’s principles were not based on a morphological or a formal definition of the dwelling. This is the reason why the book does not contain any picture or plan. Habraken did not discuss the support in an aesthetic sense, but rather for its capacity to enable communities to inhabit a structure.

**UPDATING ARCHITECTURE STRUCTURALISM FOR RENEWED CONTEXTS: THE ISSUE OF HOUSING**

**The need for interpretation**

The contemporary situation is no longer the one described by the structuralists in the 1960s. Specifically, it is no longer a matter of producing new constructions based on structuralist principles, but of learning to observe existing structures in order to evaluate whether or not Habraken’s housing alternative could be of interest. Therefore, a significant challenge of our time lies in our capacity to read and interpret the existing urban fabric. I would like to explore this interpretive ability through three avenues:

1. Abandoned structures as proto-structures
2. Abandoned structures as frameworks for multiplicity
3. Abandoned structures as meaningful repositories

**A persistent proto-structure as an efficient guide for design**

The structuralist approach is based on a defined set of rules to guide the design process. Habraken’s support structure relied on a proto-structure: a primitive construction framed by simple rules. This proto-structure fulfilled two basic requirements: “The support structure must have, as far as possible, the same section at any given point, and it must be as long as possible”. These requirements meant that vertical connections (such as elevators and stairways) had to be located, as much as possible, outside of the support structure. In Habraken’s approach, the structure was then highly visible: the structure was the architecture.

Many abandoned structures, and particularly the unfinished ones, can be read as proto-structures: grids, or simple systems of axes guiding the design stages to come and setting the rules for further development. The contribution of this preexisting geometric arrangement is plural. Not only does it incur less costs – as the shell is already built –, but it also allows for a project implementation of greater speed. In certain cases, it can also be read as a framework awaiting later extensions, allowing different phases of growth within a single structure.

Other abandoned structures do not offer such a ready-made proto-structure. Nevertheless, with the introduction of minimum interventions, an analogous exoskeleton can be created on the façade. For example, the prospective project « Momento Monumento », developed by the French architects EXYST & Coloco in 2009, proposes the activation of an abandoned building located in the center of Sao Paulo in order to turn its 25 storeys into a place to live in for 6 months. The proposal follows an incremental development, but the very first step is to install an external elevator to free the structure from its vertical connections, just as advised by Habraken, offering an open structure for the development of ephemeral activities. A similar approach can be found in the project « A layer of non-permanence » designed by the architect Massimiliano Botti to reactivate a vacant housing complex (unbuilt project, 2012). The architect proposes to “make
buildings capable of reacting to the constant change in which they are, with a layer of nonpermanence, an adaptive exoskeleton that modifies relationships between building and surrounding space.”

An exoskeleton is added on the façade but also on top of the building. It is conceived as an adaptive element, a grid that is both conceptual and operational, whose characteristics derive from the preexisting structure. In this case, we would refer to an external protostructure.

A gradually filling structure as a framework for multiplicity

The second example of interpretation proposes to read the abandoned structure as a framework for multiplicity. Habraken’s clear separation between a loadbearing construction and a secondary one, also known as the “support-infill process”, activated the possibility to create a structure of forms, which could further develop. The construction remained a structure of forms both in its beginning and its further growth, preserving the coherence of the parts. In other words, a multiplicity of elements was permitted but every fragment was then subjected to a single structural and constructional principle in order to make the pattern recognizable and homogeneous.

Such a relationship between a collective framework and individual interpretations has been observed in contemporary instances of abandonment, in particular in situations of informal occupation. We find an illustration of this in the unfinished hospital in Buenos Aires (Argentina), abandoned in 1955 and squatted for more than 20 years. At first glance, the façade is still wide open and the skeleton seems empty. However, a closer inspection reveals that small houses are there, built independently from one another on the vacant floors of the structure. The inhabitants used the concrete floor slabs as parcels of land to build their houses. The incompleteness of the hospital allows for a multitude of interpretations and proposals. A kind of ‘Exquisite Corpse’ is created: several projects, rather than just one, are taking place simultaneously. Each occupant is building his own house within the framework offered by the abandoned structure.

Another illustration of a gradually filling structure hosting a multitude of interpretations is found in a project called “Housing Italy”, from the Italian firm Studio Albori (unbuilt project, 2008). In Italia, the number of abandoned structures, as well as their scale, overwhelm the capacity of the
government to manage it. The project aims to transform an unfinished railway station in Milan into a dwelling place. According to the architects: “The intention is to use every single part of the large discarded construction, avoiding any demolition, using it as the framework for a group of houses of different kinds (...) the marked variety of types, forms and techniques which the project hints at is a response to a desired active presence of the inhabitants in the planning and construction process, reflecting the multiplicity of possible choices and needs, extending with time to progressive modification, maintenance and adjustment”[14]. In this situation, the involvement of the inhabitants is not only seen as an ethical value but also as an esthetic appeal. Indeed, the structure gains a specific visual power of peace and unrest, order and chaos, monumentality and bric-a-brac, through the incremental process.

A meaningful structure as a repository of community memory
The last avenue explores our capacity to read the abandoned structure as a meaningful repository. After the Second World War, structuralism in architecture repositioned the meaning of architecture at the heart of the discipline. This argument was of particular relevance for the development of housing alternatives. According to the architect Aldo Van Eyck: “It is a question of finding large significant structures, which are recognizable to all city-dwellers, and continue to be so, and in which every city-dweller can recognize himself”. This need is partially met by the second avenue we have outlined. Nevertheless, to be meaningful, a structure should also participate in the collective construction of the city.

Figure 3. “Talk to the Station”, an internet-based platform dedicated to the Michigan Central Station, Detroit (http://www.talktothestation.com/)

One might think that abandoned structures are inert, that they have lost their meaning, but this is not entirely true. Abandoned structures convey, despite their state of abandonment, narratives, histories and myths that can contribute to a housing development: “once an element has lost its meaning and no longer works in its original context, it can be read differently and do duty in another context (...) whatever loses its meaning becomes available for use elsewhere”[15]. Achieving a shift in meaning is a crucial step. The Michigan Central Station, in Detroit, sheds light on this issue. Narratives and legends surround the train station, unoccupied since 1988. Various internet-based platforms provide information about the structure but, more importantly, they invite citizens to “talk to the station” and share “ideas and love for Michigan Central Station”[16]. These platforms enable inhabitants to play a part in the preservation and potential redevelopment of Detroit’s iconic landmark. They initiate a new dialogue with local communities. We should also mention that the number of film and video-clip shootings in abandoned structures is increasing. Aside from their commercial agendas, these interventions
also contribute in giving a new meaning to the structures, allowing for further development to start.

PERSPECTIVES
This article explored three avenues outlining the role that abandoned structures could play in the housing crisis. Drawn from the structuralist principles, it proposed an update of Habraken’s support-structure in the light of present-day concerns. It was found that the possibility of an update of the “structuralist movement” was mainly due to its capacity to consider buildings as processes in motion and democratic supports. Nevertheless, the illustrated in this article are either unbuilt or tied to the informal fabric. It is not an anecdotal comment and it underlines some sticking points that act as a brake on the implementation of projects. To better understand why we did not find any built examples, we could refer to the words of Habraken himself. Talking about the differences one might draw between the support structure and the abandoned structure, he specified that: “A support structure is quite a different matter from the skeleton construction of a large building, although to the superficial viewer there may appear to be similarities. The skeleton is entirely tied to the single project of which it forms part (…) It is therefore not an uncompleted building, but in itself a wholly complete one”17. We believe that this difference is not just formal; the reference to a “wholly complete building”, used to describe the support structure, has two fundamental implications. The first one addresses technical and safety issues connected to the reuse of an existing structure. In most cases, building regulations are formulated with permanent and fixed uses in mind18, whereas the support structure considers change, multiplicity and hazards. The notion of jurisprudence should then be explored, on a case-by-case basis, to bring about potential exemptions and deviations19. According to the artist Rudolf Schäfer, architects need to “embark on an objective review and ask whether this or that particular measure is really necessary in this form or whether one could resolve the issue differently”20.

The deadlock might also be due to a need to redefine the role of the architect. Indeed, when “structure is architecture” and it turns out that the structure is “already there”, what remains to be achieved by the architect? Habraken already had raised the topic in the last part of his book, admitting that “[he] will probably become somebody quite different from the current conception of the professional architect”21. More specifically, the starchitect configuration seems incompatible with the support-structure concept: “[he] will assume a certain anonymity, and will become part of a larger whole”22. This new role has yet to be imagined.

These problems are however not insurmountable and they are worthy of being discussed and challenged. In 2015, the architecture agency of Christophe Hutin delivered the first phase of a project entitled “Les Hauts Plateaux” (literally, “The High Plateaux”) in Bègles, France. The project presents a skeleton of concrete on which future inhabitants can freely build individual houses in a collective structure23. The connections between this project and the reflections initiated by the structuralists in the 1960s are obvious but, in this case, the concrete structure is newly built and its size does not reach the projections made by Habraken. Nonetheless, it appears to be a promising precedent towards an update of the structuralist approach.
NOTES


2 Referring to the re-issue of Habraken's work, the Professor of Architecture Kenneth Frampton raises enthusiasm about the relevance of his theoretical work « *in the face of the perennial problems of providing a truly appropriate habitat for large sectors of the population, the decision to re-issue Nicholas Habraken's support of 1961 could hardly be more timely. Now, after nearly forty years, it remains in many respects as pertinent as ever; and still, strangely enough, insufficiently known by architects and policy makers worldwide.*»². The extended relevance of Habraken's argument, after more than thirty-five years, is also linked to an alarming observation: housing is not a « *focus of mainstream architectural concern* » anymore, making of Habraken's theoretical treatise an important contribution to revive housing discussions. Quotes from: John N. Habraken, *Supports: an alternative to mass housing* (London: The Urban International Press, 2011: 1961), back-cover.


8 Habraken, *Housing for the millions*, 91.

9 John Nicolas Habraken was named Director of the Foundation for Architecture Research (SRA) in 1965, a structure founded by ten architecture offices. This research group participated in the development of Habraken’s concept of support and infill.


12 Habraken, *Housing for the millions*, 92.


2016), 218.


17 Habraken, Supports, 72.


20 Ibid, 127.

21 Habraken, Supports, 104.

22 Ibid, 104.

23 Ibid, 105.


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CITIES, COMMUNITIES AND HOMES: IS THE URBAN FUTURE LIVABLE?

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INTRODUCTION
The city of Riyadh presents various and somewhat unique urban characters which are hard to see in other modern cities. First, geologically it’s located approximately 560m-600m above sea level in the central part of hot and dry Arabian Peninsula. The old town, Diriyah which is the origin of Riyadh, had grown out from Wadi Hanifah, the watershed. Secondly, the economy shift to oil producer urged to implement an urban planning 1972 designed by Constantinos Apostolou Doxiadis for its unprecedented expansion equipped with new technology, automobiles. Thirdly, the gap between the first and the second created ongoing struggles to people in Riyadh. This paper will seek the lost from the original geological character of Riyadh. Reviews on the adjustment immediately followed by 1972 urban planning will show the needs and demands as a bottom-up approach to the top-down urban design approach. Analyses on the third will unfold the potential urban conditions by residents’ daily living pattern which will be changed by the first public transport system in Riyadh, the Metro and transit buses that will question urban environment operated solely by private transportation network for decades. It aims to investigate an opportunity to find and propose accessible places for commuters followed by public transportation.

Growth of Riyadh
An urban spatial structure was fabricated on a mega scale to accommodate the maximized speed of automobiles for the unprecedented urban expansion in a decade. Since the master plan failed to provide open, public, and green space for the city, Riyadh in Saudi Arabia has struggled to cope with the raw condition of speed and scale disorienting the specific sense of place and communities. Ironically, the meaning of Riyadh is Gardens in Arabic. This paper aims to identify the dominant urban features of Riyadh especially in “Doxiadis’ Grid” to find the potentials becoming an Urban Oasis where homes and communities come together to each other. It will promote to engage, and generate more of public activities that would integrate with new public transportation network, Metro, and transit buses soon. It is said that there were some conflicts between Constantinos Apostolou Doxiadis, a Greek Urban Planner, who designed the master plan of Riyadh in 1968-1972, and Saudi Arabian officials on the lack of green space for family and cultural identity.¹ Doxiadis’ master plan presented a rational, Dynopolis.² It might be the scientific and practical response to Riyadh having the unprecedented urban expansion propelled by the oil industry. However, to Saudi officials, Riyadh could be a modernized urban oasis, an Islamic city as the old town. At-Turaif District in ad-Diriyah
had been near to watershed; Wadi Hanifa. Riyadh development has been divided into two periods; the beginning to the middle of the twentieth century (Figure 1), and from the center to the end of the twentieth century. (Figure 2)

The Rational of Doxiadis’ Grid
The fractal figuration of Doxiadis’ grid symbolizes the dynamic growth of Dynapolis formally. Excluding the absence of green space from the master plan, there is a duality in Riyadh urban block formation of Doxiadis, which represents his rational, Dynapolis on the grid of 2km x 2km for its urgent expansion representing dynamic and organic growing forces of communities. (Figure 3) However, every block is disconnected from other blocks by full and high-speed roads of about sixty to eighty-meter width with six lanes. The units inside of block were arranged in radial road networks like a pinwheel as individual cell units in a dynamic growth pattern pinned down by the common core of 200m x 200m as illustrated in Figure 3. However, its formal application of the internal road networks in repetitive fractal figuration created inefficient traffic flows causing wayfinding issues, isolated by roads, and colliding points around the center block as illustrated in Figure 4 that results in the controversial role of the communal area though providing community programs such as mosques and parks. The modernist’s rationale also could be found in the urban axis of roads towards Mecca. Riyadh contains prolific and historical spatial structures which only radical and topographically sensitive minds could have built in the harshest inhumane environment. The central spine axis was set towards...
North West considering future expansion. Therefore the axis of major roads from northeast to southwest was laid towards Mecca to form superblocks for future expansion. The existing radial formation of the city development shown in Figure 1 could inspire Doxiadis to propose the pinwheel formation of the block. However, it’s questionable how the religious axis implemented against Doxiadis’ scientific method of urban planning, dynamic growth. The general orientation of the city toward the northwest allowed its parallel streets, roughly oriented southwest-northeast, to face Mecca and the direction of prayer. Doxiadis wrote a letter to King Faisal, “a symbol for a Mosleum city” and a place “governed by the spirit of Arabia.” “We have been happy to find out the overall topography has allowed us to direct the main streets toward Mecca,” However the Town Planning Office criticized the “many awkward and unnatural shape” caused by this orientation. (Figure 5)
Experiencing the Rational

Firstly, roads around the center have been adjusted in many ways as possible to manage access and generate smooth traffic flows of automobile-oriented communities as illustrated in Figure 6. Also, it is worth of mentioning how the deformed and disfigured centers would affect the formation of transit buses routes linked to Metro shortly. Due to intervened traffic flows caused by the pinwheel formation of the internal block streets, the establishment of sidewalk networks connecting houses to the pinpoint center of communal space designed to program mostly parks and mosques, had been compromised and neglected. Inconsistent pedestrian walks could be the challenge for communities where family-oriented value is honored and protected culturally and socially to accommodate new public transportation system. The centers designated as the communal place for the community with Mosques and parks and located at the pinpoint of pinwheel formation become a highly inactive place and isolated at the critical point of residential blocks due to the absence of walkable pedestrian’s network. It is apt to become static urban places due to the absence of procedure of joining to the public space from the private space such as houses and automobiles. There is a definite physical hierarchy of roads in residential blocks according to Doxiadis’ Ekistics. However, what is clear is the geometrical layout of the formation of roads, and a pinpoint wheel symbolizing a dynamic growth formally on the map. Furthermore, the spatial hierarchy in the width of roads for vehicles is worsening by the absence of proper sidewalks.

Therefore, it’s not perceptive in human senses and dangerous for residents when anyone walks to the center due to consistent traffic flows in specific speed at the core of residential blocks.
Secondly, the superblock grid was implemented for the automobile-oriented city by flattening the voluptuous topography. It has secured speed of private automobiles in Riyadh where has no public transportation in Doxiadis’ master plan. It changed daily rhythm deeply than any other city considering five times of prayer in a day. All different daily activities are paralleled to the roads laid in the direction of Mecca. (Figure 7) It reduces chances of different daily rhythm varied with different motions. With the lack of pedestrian networks, it’s challenging to find intermediate space mitigating between the high-speed automobiles and the pace of human activities. Flattened topography (Figure 8) and singularized axis have accelerated the speed of the city and weakened the sense of community by the extreme shift between the public and the private with high walls adjacent to questionable sidewalks shown in Figure 9 (Top). Subsequently, the grid induced massive parking lots around mega malls compromising human scale in Riyadh. (Figure 9, Below)
Public Transportation as an Urban Integration
The unique urban setting of Riyadh on Doxiadis’ grid will be challenged with public transportation network coming in 2018. (Figure 10, 11) A sophisticated living pattern and its operative mind can’t be fabricated in a short time. The unassigned and unregistered radical living pattern of Riyadh were feeble to be noticed at the time of Doxiadis’ master planning, automobile-oriented city. The absence of it weakened and questioned the need for public space. The imbalance between private space and open space regarding quantity and programs caused the unpleasant urban experience due to the extreme gap to handle it on a daily basis. To be in private or to be in public by jumping in a private car, there is no transitional experience of the urban environment suitable for the human level to process the journey. The repetitive spatial structure implemented by Doxiadis brought residents to shun off themselves from the public due to complicating and incomprehensible community layout with lack of human scale urban settings.

Figure 10. Riyadh Metro and Transit Buses Map

Figure 11. Detailed Illustration of Public Transportation Networks of Riyadh
Doxiadis implementation of top-down urban planning and images of Islamic value superficially weakened fundamental values of life as well as the existential value of the city of radicals who secure human settlement by having keen sensitivity on their environment. The disturbed sophisticated living pattern and rhythm can be regained with Metro and transit buses by bringing back the idea of sharing, allowing users longer in a public realm as one of the commuters, and increasing opportunities to engage more. Metro and transit buses will improve mobility of people. Moving together from one place to another place with a group of strangers will be an exciting challenge to citizens in Riyadh. The problem would be how to tame the spatial structure designed for automobiles especially, the scale of space and absence of transitional space or sidewalks. Fundamentally, it is a chance to recover the forgotten sense of sharing and gathering with 85 stations of 6 lines in Metro networks and 6785 Bus stops in 4 levels of Transit bus networks. Bus Stations and pedestrians of Level 1, 2, & 3 Stations connecting Riyadh Metro Lines are introduced. Then, the question is remaining: Can Riyadh Metro bring back the lost sense of vital community as in AtTuraif District in ad-Dir’iyah with multiple public gathering points? (Figure 11) Can there be sidewalks linking homes to Feeding Bus Stations within walking distance? (Figure 12)

![Figure 12. Different Levels of Transit Buses and Typical Residential Block](image)

**Revisiting the Past for Pending Urban Integration**

There have been a series of revision of the Doxiadis master plan since 1978. A French firm, SCET, mainly revised infrastructural issues that infrastructural water supply was not considered in the Doxiadis master plan. MEDSTAR, Metropolitan Development Strategy for Arriyadh, reviewed the single axis of expansion to multiple axes and cores and the local scale of modulus in 1996.9 the lack of consideration of the social and cultural context of Saudi Arabian life were the major dilemmas including Doxiadis axis which is set against natural topography. Recent development around Wadi Haifa rediscovers and recognizes the value of fundamental resource of the city. Understanding its ecology gives numerous clues and resolution of current urban environment issues of Riyadh by increasing public awareness of the origin of the town. (Figure 13)10 The expansion of ecological rhythm of Wadi Hanifa integrated with ordinary urban life instead of being categorized as parks and can initiates users friendly environment in the automobile-oriented city concerning scale and speed of a garden in the desert as it used to be, but embracing larger communities. Similar to this cultural expansion of Wadi Hanifa, if the major flow of Metro and the minor flows of transit buses can
integrate with the residential blocks, friendly communities linked by homes and pattern of uses which are longed for many years can be achievable in Riyadh. The radial existing growth pattern before the Doxiadis master plan was a confirmation of self-sustaining growth finding a way to link their homes to each other regarding social, political, economic, and cultural needs. Because it is a desert city, the watershed comes first to sustaining homes more for their existence. The value they share, a religion, a critical factor is to increase the existential value of community. The shift from the private transportation networks to public transport network introduces radial urban expansion with layers of rings around the center pinned down with satellite sub-cities. (Figure 14) It is an escape from one major axis oriented development to encompassing all potential communities where spread green and livable places in the desert like the urban oasis.

Scale and Speed
Homes were built adjacent to Wadi Hanifa. Diriyah is the old town, and an extension of habitable area sustained by the watershed, Wadi Hanifa that changes its speed and level seasonally or at every turn of the flow, slow and fast or high and low detecting air currents, temperature, and differences in pressure or composition of the air. Homes in Dir’iyah are courtyard types. Major criteria for the orientation of a house were based on how to live with dynamic flows of the watershed and deal with the climate concerns, sun, and wind. Homes in Dir’iyah produced the dynamic flow of the streets shaded and generated wind which was cooling off heated walls. (Figure 15) Streets are grown out from the openings of homes which performed inhaling and exhaling air to both parties. The town
shared the watershed in the physical setting and had a communal factor of gathering, a religion. The vector of roads is set toward mosques. All elements were interactive, responsive and interconnected to each other. Recovering the interrelated forces and an intricate mixture of rhythms in its formation was not considered rationally by the Doxiadis master plan for securing the scientific expansion planning operated by the singular flow of automobiles. It can provide a scenario of networking; the strategical locations of transit bus stations in the residential blocks and the portal point of all home entries secured by definite sidewalks. Metro stops, the new communal factor will be the major flow affecting the formation of the periphery by handling massive flow of users, not the individual rider. The massive flow on linear paths can be branched out to multiple flows into the residential blocks as water, and wind flow bent in Dirí’yah to vary the speed and scale of flows. (Figure 16) Depending on transit stops, the duration that users would spend at each bus stations, the various architectural program can be contrived. Aligning with the rhythm of mosques and prayers, the slow and staggering time in places require open space to accommodate them. The character of communal space in the block can be diversified due to arrival and departure of transit buses and various journeys to the stations of users. (Figure 17) Low density and inaccessibility of the central area of Doxiadis superblocks can be reconsidered to be a place of collecting contact points of growth taming the scale and speed. Then, there is a task to figure out what and how the sidewalks can be established to reach the center from highly confined homes.

![Figure 15. Townscape Sections of Diríyah & Doxiadis](image1.png)

![Figure 16. The potential role of Metro Stations and Bus Stops](image2.png)
Fence Walls as a Generator of Sidewalks

The quantity and quality of empty and unused spaces at the pinpoint center suggest transit bus stops to vitalize the communities as the origin of dynamic forces. Increasing encountering moments with needs of communities can characterize the identity. Most of the pinpoint center of wheel formation are empty. Otherwise, they are different proportionally to each other with the combination of mosques, parks, institutions, entertainment, and sports facilities with their entry points. If the locations of station become the arrival point of individual journeys departed from homes, the network of sidewalks can are confirmed correctly according to the pattern of uses. The task of confirming the location of the station is to network entry points of homes and commonplaces of an existing environment. Then, the networking will enact as the dynamic force of generating sidewalks by users. Various and constant flows generated by users can mitigate the immense scale of current pinpoint center space with unpredictable but pleasant human activities if the function of a wall and multiple openings at the frontal fence. The design process of movements from individual homes to the pinpoint center of wheel street layout can indicate social gathering places and moments to share by increasing accessibility with sidewalks. The absence of stimulating sensory experiences from one point to another means thin layers of memory of their community. Ironically, the procession of prayers, the sense of direction, and the building materials of old towns reassure the presence of the culture of highly sensitive perception on the physical ground. Along with the questions of what to share, physically diverse architectural programs in different rhythm and scale being dispersed on its 200m x 200m size plot can induce movements of various users traveled in various motion. If the constant flow of transit buses and stations of arrival, departure, and accidental encountering are injected to it, stores and facilities would be set up to attract potential customers lingering around the pinpoint, though the
place would be vibrant enough with the movement of diverse neighbors with character. Typical walls have three entries for men, women and helpers, and car. The difficulty to have even sidewalks are due to narrowly paved walks, trees in the middle of the walks, and the slope for car entry. (Figure 18) Perception of walls is universal and dominant. However, the construction process, materials, character, and usage of walls can be different in every culture. Therefore the perception delivers different cultural and social meanings. The current housing type in Riyadh was started from AL Malaz district houses where ARAMCO staffs built their houses in an American style. Propelled by the confusing pinpoint center layout, houses in Doxiadis’ residential blocks adapted and revised the type; a house with the maximum height of 12m in the middle of the plot with 3m to 3.5m height wall fences on the property lines. It is the most dramatic change shifting the way of living. Walls and doors are the starts and end point of any journey. Typical formation of fence walls in Riyadh is different. Functions belong to the body of a house are collected and attached to them. Why do they act like the body of the house? Fence walls that are active socially in Riyadh. Many things are happening around the walls. They are the site of social contacts as they had been in Dir’riyah. (Figure 19)

Architecturally, it can be considered as an inverted condition of figure and ground. Walls performed the dual function in Dir’riyah; boundaries and rooms. (Figure 20) The body of the home itself was the boundaries and fences which is the contrast with a housing type like an object in the middle of the plot. As shown the middle diagram in Figure 18, homes allocated on the Doxiadis master plan take a hybrid type of the traditional housing type from Dir’riyah and the ARAMCO modern housing type introduced around 1950’s to Riyadh. The current housing type is a resistance striving to keep own identity in the automobile-oriented master plan; widened streets, undefined sidewalks, and noise from constant traffic flow. The function attached to the fence walls and is the real reminder of the radical living pattern of Dir’riyah in the Doxiadis master plan by adding fundamental housing elements to the wall. Walls were not a physical boundary only. They were the body of living. Current fence walls of homes in Riyadh carry out multiple functions; an event area such as a fireplace, charity water tap for strangers who need water in any circumstances, and official contact points of house utilities. (Figure 19, 20) If social contact points on fence walls can generate the line of sidewalks to reach the station, the communal space at the core of residential blocks, the dead open space can be revived as a communal space not formally but actually. The potential is evident as shown in Figure 9. Trees are planted along the fence walls hampering sidewalks to secure the shade. If the fence walls can generate shades from each house, the
pedestrian walks can be attainable to reach the pinpoint of the residential block where transit bus stops will be implemented. People lingering around the station can be the start point of initiating various community programs that will vary social activities; sharing stories and gathering to grow together and enhance the living quality of communities. The local community supporting programs in the same context, transit bus stations or governmental service program can be inserted; they can attract more frequent and regular visitation to the place of the same interest. Most of the mega stores took the peripheries of superblocks to attract customers but causing traffic congestion and incomprehensible size of a parking lot at the front as illustrated in Figure 9. Currently, its parking area and its capacity played the major role in the formation of stores and public places. The composite relationship is horizontal and parallel to each other. If sidewalks networking homes to the center is clarified, the new positioning of the parking lot should be contrived correspondingly as water slows down around the rocks changing its speed and direction. Those massive plot units program and parking lots around the periphery can be fragmented and stretched into the superblocks on the line of transit bus stations for safety and commercial purpose letting the new flow go circling them fast and slow. The question is how to humanize the rational and configure urban settings in local residential blocks tacking the speed and scale with the new flow.

Figure 20. Evolution of Fence Walls in Riyadh
CONCLUSION

The spirit which built the radical town should be recovered from the sheer layer of the rational planning. It belongs to users, who live in and with the desert, transcending undisturbed human existential value which is fundamental and so radical in forming their homes, communities, and the city with a sensitive configuration out of multi-layered extreme environmental constraints shifting in a day. Before proposing architectural programs to share, different users type and their rhythm should be investigated to register own sensitivity instead of categorizing them as potential customers. The research of this paper is collecting what and how people will react to the new rhythm if the social and cultural impacts of the rational are identified.

People walk on the street already in Riyadh. When one walks on a street, stops are mandatory to take a rest next to water, trees, walls, stores, and now stations. What is in common in all stops is the shade that emerges from own characters, not in formal representation or functional order. Before one talks about the meaning of public space in Riyadh and the identity of Riyadh, it is critical to reviving the dead center and inactive residential block designed by the rational. Sidewalks from homes to stations recalling the lost rhythm and activating homes’ social contact points will be the start of Riyadh with the new public transportation networks on the rational Doxiadis’ grid. (Figure 21) Public space is open to all. It yields place and time to all; locals and strangers. They belong there temporally but carry a memory of place and moment forever. It does not have to be a large open space, but flexible enough to accommodate the complexity of various rhythms in its space and time. Evidently, it is neglected and compromised due to the expansion of Riyadh with superficial imagery of modernism, locality, and automobile-oriented planning. As the major watershed gave the value to the old town of Riyadh, Al-Turaif Quarter Addir’iyah, where homes were sustained by sharing or attaining it, Wadi Hanifa, the seed of an urban form generated by Metro and transit buses will recover the logic radically. It will be the new seed as in Table 1 of social and cultural growth taking a step out from the rational, designed for expansion, turn to nurture experience of users in a vibrant city with dynamic and diverse motion in the old but new garden. Table 1 lists potentials to elaborate on those answers. There will be six lines of Metro with 85 stations, and 4 Levels of Transit buses with 6765 stations. What if they are not homogeneous? It implies the object-oriented and rational urban planning to consider new urban field condition that various vectors are integrated that is not new ironically to the radical town of Riyadh, Diri’yah. Stations, the future urban vectors, are collecting points generating fields condition filled with various urban flows. (Figure 21) If the flows, secured sidewalks can be sustained by ramification of shade from homes, fields of urban oasis can be imaginable for sustaining a city in the desert, where people walk to stations from homes experiencing various settings stimulating engagement for multifaceted communities. It is the start of sensing and sharing own community. It becomes Riyadh. The ramification of flows of homes integrating to each other will bring the sensitivity of the radical lived in Diri’yah back to Riyadh for building up the future city. (Figure 22)
Figure 22. Field Diagram of Riyadh Urban Conditions in Variance
The change starts from the fundamental social unit, homes, that have an option of mobility and rhythm of own. What are they in Riyadh? The physical and social barriers to identifying potential

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Table 1. Urban Seeds
sites; fence walls and the pinpoint centers of superblocks by Doxiadis as sidewalks, a new network, generator. The role of community is to stimulate and ease them to engage more to the flow with density, weight or depth, and vectors of living and pattern of uses by multiplying procession of moving one to another.

As Doxiadis had been implemented to accommodate the rapid urban expansion justifying the replacement of the existing topography, local experience, and human environment with the singularized transportation network, new pedestrian-friendly urban environment required for public transportation will generate the collective will to recover the regional human environment. Walking networks from homes to Metro will challenge the rationale of Doxiadis grid in Riyadh. The experience from homes to Metro in walking rhythm will increase the recognition of neighborhood as in intricate old town. Then local community programs will come to support users walking on the streets as seeds of a new urban oasis.
NOTES


2. Ibid, 47-53.

3. Arriyadh Development Authority. “Historical Arriyadh”


5. Ibid, 103 - 113


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IS CO-OPERATIVE HOUSING A CREATIVE SOLUTION FOR AUSTRALIA’S HOUSING AFFORDABILITY CRISIS?

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INTRODUCTION
With housing affordability in Australia expected to worsen over the next decade, it is becoming essential to find viable alternatives to the current marked-driven housing system. Many people are priced out of any secure housing, for renters and mortgage holders alike. The problem is across the board from homeless people to young people and people who are working. A staggering 50.1 per cent of low-income renter households experience housing stress (Thomas and Hall 2016). Housing researchers, housing professionals, communities and Governments are exploring a number of solutions to the current crisis. But although government policies address housing affordability, they typically focus on finding solution for home purchasers and not for renters. Australia has a fixation on home ownership. But over time, the Great Australian Dream, owning a home on a quarter acre block, has meant different things to different people. Out-dated housing policies are preventing progress in the housing market. Made for the nuclear family, the basic social unit from 40 years ago, they simply don’t reflect the modern household structures. And although Australia is not alone in its housing affordability crisis, countries such as Germany, Switzerland and Sweden with far lower rates of home ownership, seem to provide some answers. Their Governments and other stakeholders have tackled housing problems with various strategies including easy finance options for non-mainstream housing like co-operate and community housing. Likewise, their housing policies support a strong tenant ownership system (Co-operative Housing International 2017). Alternative housing models only represent 0.06 per cent of the housing market in Australia. Commonly seen as social or welfare housing, community housing has had a difficult time gaining momentum. But overseas examples show that housing models such as co-operative and co-housing can provide cost effective and practical solutions. In Europe, the co-operative housing model has a long history of responding to market failure and has been a successful contender in increasing supply and diversity of affordable housing (Co-operative Housing International 2017).

THE HOUSING SITUATION IN AUSTRALIA
Housing equality in Australia is deteriorating. The dream of a quarter acre block in the suburbs for the nuclear family has changed. And alongside, the households living in these homes have also changed. Today, Australia has a diverse range of housing structures. Single parent households make up 16 per cent of all households, while single-person households make up 24 per cent and families with children account for 38 per cent (Australian Bureau of Statistics 2017). Such household structures are
becoming more common in a more diverse Australian society. Although Australia is still a nation of homeowners, the 2017 census is showing an increase of 31 per cent of households now renting. This figure is on the rise and the predictions are that this number will climb and that more renters will rent for their entire housing career (Dallas and Dufty-Jones 2015).

Since the 1980s, housing equity concerning affordability, access and wealth distribution has deteriorated significantly (Yates 2012). This is partly due to the rising costs in housing for post baby boomer generations but as Yates (2012,3) elaborates, some of these change can be attributed to a lifestyle preference for renting because of the flexibility it provides in a world where changing jobs is the norm rather than the exception. Furthermore, technology is altering how we will work in the future. The very definition of an office is changing with more people finding more efficient ways of working. The daily commute to the office will soon be a thing of the past. The workplaces of tomorrow will be collaborative, flexible and mobile places, where the majority of people work remotely on a freelance basis (The Guardian 2017). And the way we live and work in the future will have a direct impact on housing options.

Yet, housing choices in Australia seem out-dated. Government policies are still directed to promote conventional home ownership. In Australia, this means ownership of a strata title or freehold title. A freehold title simply means the purchaser owns the land and building where as a strata title refers to multiple owners of properties on one piece of land where all owners enjoy private spaces but are responsible for the areas that are shared known as ‘common areas.’ These models can be inflexible and do not reflect the changing households, nor do they address the ‘affordability’ crisis, which extends to housing stress. Detached houses still account for most homes in Australia (72 per cent) but other forms of dwelling, such as units, apartments and town housing are on the rise and now account for 25 per cent of Australian housing – all higher density residential development (Australian Bureau of Statistics 2017). But with housing affordability at an all-time low for home ownership and rents, Australian cities offer little else in regards to housing choices. Opportunities elsewhere suggest that buying a house or renting an apartment isn’t the only housing arrangement available in the marketplace. Communal living options such as co-operative housing and co-housing are common forms of real estate in many parts of the developed world. Their main advantages are affordability, social and communal benefits.

As single parent households, single households and multi-generational households are becoming increasingly represented in a more diverse Australian society, Australia needs housing models that can accommodate this change. Affordability, lifestyle choices and changing households are driving these alternative forms of housing that have been popular overseas but have failed to make any significant impact in the Australian housing market. This is largely due to current policies on finance and housing, dating back 40 years and made for a different society. And it is these slow changing policies that make it difficult for these emerging trends to grow.

**ALTERNATIVE HOUSING MODELS**

The success of housing co-operatives is evident in many parts of the developed world. Countries like Germany, Switzerland and Sweden and many more have shared a long history of embracing different forms of housing models and co-operatives and co-housing have become well integrated in the housing market. In those countries, housing cooperatives and co-housing provide an alternative to the traditional methods of acquiring a primary residence. Democratically run, a housing co-operative is managed by its residents, who take on the responsibility for its operation. The co-operative owns the building and residents purchase shares. Residents become a shareholder in a corporation that owns the property. As a shareholder, members are entitled to the exclusive use of a housing unit in the property.
Co-operative ownership offers a lot of flexibility. Tenants will still have their private spaces, but the model is based on sharing facilities. For example, this might include workshops, common rooms, laundries and cars. This allows for consuming less space individually and using fewer resources. An alternative to co-operative is co-housing. Although the two terms are largely used interchangeably when referring to alternative housing models, the concept of co-housing differs from co-op housing in several key areas. The legal structure in co-housing falls within the mainstream concept of the familiar strata title scheme. However, co-housing differs from duplex or multi-unit housing in that more of the space is shared, enabling more efficient use of land. It is similar in principle to a granny flat development but less restrictive, allowing for more varied and flexible household groupings (MCGee and Benn 2015). Often, a co-housing community is a a non-profit housing community where a group of people, independently or in partnership with developers or building owner, organise to create a collaborative neighbourhood; an alternative way of living based on mutual respect for each other and the environment. “Private homes contain all the features of conventional homes, but residents also have access to communal facilities such as an open space, courtyards, a playground and a common house where optional shared meals are prepared and eaten with neighbours and other social events occur” (Holtzman 2012, 35).

The first modern housing co-operative was built in Rennes, France in 1720. Significant housing co-operatives first emerged around 1850 in Denmark, France, Germany, Norway and Sweden in response to the massive movements of populations from rural to urban. The idea quickly spread and in 2017, co-operative housing and co-housing have a significant presence throughout the northern European countries and the world. In Australia, co-op housing can still be linked to radicalism associated with the squatter movement of the 1970s and has failed to make any significant impact on the housing market. Despite there being over one billion members of co-operatives worldwide, this housing model has been rather sporadic in Australia ((Co-operatives Federation of New South Wales 2013). Viewed largely as a fringe or alternative-lifestyle housing model and often stigmatised as social housing, community housing is nonetheless growing in popularity, especially in the face of increasing community concern for affordability and environmental sustainability (Holtzman 2012). There is a growing trend to support flexibility and innovation in the housing market, particularly in urban Australia (Holtzman 2012). Though each model of co-op housing is unique, they all share one fundamental element: collective ownership. Collective ownership means affordability, security, a decent place to live, and transparency in management, a strong commitment towards social goals and the possibility of personal growth by gaining new skills and knowledge. Similarly, co-housing comes in many forms but their main focus is people centred. The physical designs encourage both social contact and private space. Both models share an interest in creating community.
Cooperative housing main characteristics

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Co-housing main characteristics</th>
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<tbody>
<tr>
<td>• The housing co-operatives own the properties and members own a share but</td>
<td>• Greater cooperation between the</td>
</tr>
<tr>
<td>have no equity in their units</td>
<td>neighbours</td>
</tr>
<tr>
<td>• They are non-profit: rents are based on operating costs, no dividend</td>
<td>• Opportunities for the residents</td>
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<td>or interest is paid and proceeds from liquidation go to similar</td>
<td>to interact and therefore</td>
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<td>organisation</td>
<td>create community.</td>
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<tr>
<td>• The board of directors holds the administrative and executive power in</td>
<td>• residents manage the physical</td>
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<tr>
<td>the co-operative.</td>
<td>aspects of the neighbourhood as</td>
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<tr>
<td>• Security of tenure, affordable rents and involvement opportunity</td>
<td>well as the social aspects</td>
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<tr>
<td>• The shares are reimbursed to the members upon leaving at the original</td>
<td>• Economical advantages of sharing</td>
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<tr>
<td>amount</td>
<td>resources with other community</td>
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<td>• Rents in housing co-operatives are considerably lower than in private</td>
<td>• Concept it is similar to a body</td>
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<td>rental; an average of 20 per cent lower up to 50 per cent in larger</td>
<td>corporate in a strata development</td>
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<td>towns</td>
<td>but</td>
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<td>• Most co-operatives offer complementary services – childcare, health</td>
<td>• Security</td>
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<td>services, social services, common activities</td>
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Disadvantages

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<th>Disadvantages</th>
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<tr>
<td>• Member do not own real estate</td>
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<tr>
<td>• Share holders pays monthly/ quarterly maintenance fees</td>
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<td>• Share holders have to undergo a rigorous approval process</td>
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<td>• Contribution or share price can be high</td>
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<td>• Restrictions imposed by corporation</td>
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<td>• Tenants need to embrace co-op lifestyle</td>
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<td>• Re-sale value- can be difficult as it attracts a smaller percentage of</td>
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<td>buyers</td>
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<td>• Finding tenants can be more challenging as the committee needs to</td>
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<tr>
<td>approve</td>
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<td>• Finding a mortgage lender might be more difficult</td>
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<tr>
<td>• Relying on strength of community to</td>
</tr>
<tr>
<td>• Owners need to embrace co-housing living</td>
</tr>
</tbody>
</table>

Table 1. Cooperative Housing International 2017

Both types of housing models are innovative and have demonstrated, through design and resource sharing, the capacity to develop a neighbourhood characterised by strong social cohesion and a reduced environmental footprint (ECOS 2012). Although the positives some co-op and co-housing communities in Australia exist, neither model has made any significant impact on mainstream housing.

THE SITUATION IN EUROPE

Alternative housing does not have as strong a foothold in the Australian housing market as in the rest of the western world. Switzerland for example has a total housing stock of 172,000 for co-op dwellings. This is 57 per cent of the non-profit rental stock and 4.3 per cent of the total housing stock in Switzerland (2011 –Federal Statistical Office). Switzerland has one dominant type of housing co-
operatives, called ‘membership’ housing co-operatives. This type is similar to the co-operative housing model described earlier. All tenants are members of the co-operative, which grants them a preferred position. The majority of co-operatives are located in Zurich where housing co-operatives make up 20 per cent of the market. Typically co-operative housing can range in size from a few units to upwards of 5000 units. Switzerland has a long history with co-op housing and the initiative has received federal, cantonal and city-based support through financial assistance and land agreements for around 100 years (Cooperative Housing International 2017).

Kalkbreite in Zurich is a radical form of collective living for around 250 people, offering a range of apartments form one person to families or groups sharing apartments of up to 12 people. The complex was built on top of an existing tram station and includes features such as raised gardens, courtyards, a cinema and cafes. (Jones and Shelly 2016). Opened in 2014, the project is one of the most recent examples of co-operative housing. The development features a real mix of commercial and residential tenants in a vibrant Zurich neighbourhood. Often referred to as an urban laboratory due to its architecture, Kalkbreite is seen as an innovative urban development in a busy inner city location, blending 24 businesses with residences without loosing the feeling of community (Jones and Shelly 2016).

Similarly to the rest of the western world, Germany has a major issue with housing affordability. In Berlin, Germany’s capital city, about 1,000 buildings and co-housing groups have been developed over the last 40 years ("Co-Housing In Europe #3 : The Case Of Berlin" 2017). The community-led housing and baugruppe model is in high demand in Berlin. The term ‘baugruppe’ translates as ‘building groups’. In an interview, La Fond ("Co-Housing In Europe #3 : The Case Of Berlin" 2017) explains that the availability and affordability of land combined with a surplus of apartments have created a lot of possibilities for experimenting with new forms of housing. As a city that had to be rebuilt after the war, Berlin is home to self-organized communities who turned vacant lands and buildings into squats, housing cooperatives and communities of students living together. Therefore, the city became a fantastic field of play for alternative projects, which cemented the local co-housing culture ("Co-Housing In Europe #3 : The Case Of Berlin" 2017).
In Berlin about 200,000 apartments are part of housing co-operatives, which represent about 10 per cent of the total housing stock. In the whole of Germany, co-op housing represents five per cent of the total housing stock and 10 per cent of the total rental housing stock (Cooperative Housing International 2017). Many of them have been around for decades, but there is a new generation of co-operatives emerging that emphasize the idea of a community, participation and affordability (Co-Housing In Europe #3: The Case Of Berlin 2017). Over the last five years, alternative housing communities have been growing and the projects have become bigger. The larger developments have seen professionals specialise in the planning, conceptualising and delivery of projects that create a lot of opportunities for self-organization, community life, ecology and sustainability. They are not just nice places to live, but they also integrate the whole neighbourhood through community gardening and co-working (Co-Housing In Europe #3: The Case Of Berlin 2017).

![Figure 2. Spreefeld co-op in Berlin – Retrieved from https://citiesintransition.eu/interview/co-housing-3-the-case-of-berlin](https://citiesintransition.eu/interview/co-housing-3-the-case-of-berlin)

In Sweden, co-op housing provides more than one fifth of housing (Cooperative Housing International 2017). Just after World War Two, the Swedish government started subsidising co-op housing in a similar way to other housing types. The tenant movement at the time quickly took advantage of this development and HSB, one of the largest housing co-ops, was founded as part of this movement. HSB and other similar co-ops were price controlled until 1973 and subsidised until 1990, gradually expanded before being exposed to market forces. The Netherlands, Denmark and Sweden top the European list in alternative housing models. Most people associate Swedish co-housing and co-op housing with the hippie lifestyle of the 1970s, but today’s updated model of communal living has come a long way. Long appreciated values like interests in self-organisation, collaboration and cooperation still exist, but recent developments show passionate engagement of increasing numbers of people from various backgrounds communities and cities, interested in forms of housing that recognise changed household structures of today, bringing a revival and new energy to this unique movement (Cohousing Cultures:Handbook For Self-Organized, Community-Oriented And Sustainable Housing 2012.) As one of Sweden’s oldest and largest housing co-ops, HSB has 550,000 members. One of their latest developments is the Living Lab in Gothenburg. A ‘Living Lab’ is a research concept but for HSB and the university of Chalmers, it is also names a residential housing project for students and researchers. The project is quite radical and acts as a research platform for HSB developing the home of the future. In close collaboration with Chalmers and Gothenburg
Universities, HSB uses the student housing project to experiment with different materials, products and different ways of living. The building comprises of 25 units for students and researchers on three levels. The units allow for much flexibility and the layouts can easily be reconfigured over the 10-year research period. Like other community housing projects, Living Lab includes some common spaces like community rooms, laundry facilities and an exhibition area. HSB is hoping that the research findings will provide solutions to today’s housing challenges of affordability, and sustainability (Cooperative Housing International 2017).

**Figure 3. An early artist’s impression of the HSB Living Lab in 2015 – Retrieved from http://suslab.eu/partners/chalmers-th/hsb-living-lab/**

**ALTERNATIVE HOUSING MODELS IN AUSTRALIA**

In contrast to the housing situations overseas, community based housing in Australia only represents 0.06 per cent of the total housing stock (Australian Bureau of Statistics 2017). However, with a growing international attraction to alternative housing, there is interest in expanding co-operative and co-housing developments in Australia, particularly in the inner suburbs of cities. There is also a speculation that this form of housing could provide some answers to the housing affordability crisis (Co-Op Housing: An Affordable Housing Solution 2013). Although co-operative housing today does not have a strong position in the Australian housing market, this was not always the case. There are a number of co-op developments dating back to the 1990s that were considered successful and forward thinking. Cascades, a well-established cooperative housing community in Tasmania was established in 1991, and has inspired a more recent development, ‘Tasman Village’ in Tasmania. Similarly the Pinkarri community in Western Australia is one of a number of smaller, recent ventures into co-operative housing that is enjoying moderate success (Schwartz 2017).

Further interest for co-op housing has been expressed from the city of Fremantle in WA. The cite was inspired by Germany’s Baugruppen housing co-op type developments and are hoping to build a fully council owned co-operative housing development in East Fremantle. Housing affordability is the driver for this recent pilot project in Fremantle as the medium house price in Fremantle is considerably above the medium house price in Perth. Geoffrey London, inaugural WA Government Architect (2004–2008) and former Victorian Government Architect (2008–2014), is leading the research and elaborates, “that in order to maintain a diverse community and welcome people of all types to our town, we need to look at innovative ways to house them” (Cheng 2016).
Holtzman (2012) argues that the difference between recent attempts at community housing in Australia and their counterparts overseas is that a movement towards more sustainable lifestyles largely drives them in an attempt to regain lost social capital, rather than affordability. Contrary to this belief, another recent project in Melbourne, the Nightingale Housing project promotes, supports and advocates for high quality affordable housing that are ecologically, socially and financially sustainable, all located in inner city suburbs. The project is the brainchild of a few Melbourne architects. United, they lead the charge on sustainable urbanisation and created Nightingale Housing, a not-for-profit social enterprise. “Each Nightingale project is a triple bottom line development model, meaning it sees investment from the future residents, a group of architects, and 25 ethical investors – mum-and-dad middle-class Australians interested in creating a social impact” (McDonald 2016). While the drivers are multiple – mitigate climate change and lessening the city’s collective footprint on the earth, they also promote affordability, equitability and liveability (McDonald 2016). Nightingale currently has four projects; Nightingale 1 is under construction, with a completion date of October 2017, and the remaining three projects are all in various planning stages.
CONCLUSION

Moving into the twenty-first century, Australia’s housing industry is still dominated by housing authorities that tightly control the market. Although Australian household structures have changed significantly over the last few decades, housing consumers still struggle to initiate housing developments different to detached housing. Further more, households struggle to find adequate and affordable housing in their neighbourhoods due to insufficient income and high rents or house prices (McMahon 2013). But there is evidence that many Australian households would welcome more housing options, valued in many parts of the western world. Community oriented housing has become rather mainstream internationally and people enjoy real cost benefits. Residents live close to work, can eliminate car use, enjoy community life and there is the added possibility to integrate commercial services like childcare as part of the development. Costs stay lower because rents are not market based and purchases are cheaper because often the community members themselves act as developers, self-managing the property or ethical investors agree to a capped low profit margin. Australia has several hybrid models of community housing, a fusion of the corporation owned/shareholder co-op model and the common (yet different) strata title co-housing model. Many are successful and current initiatives driven by consumer demand, ethical investors and forward thinking professionals show promising signs in upsetting the status quo of speculative housing. But can these few, new, progressive and innovative community oriented housing projects change the mindset of a nation, who wants to own everything, close the gap in the market?
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TESTING THE THEORY OF ‘PLANNED COMMUNITIES’: AN EXPLORATION OF THE LINK BETWEEN COMMUNITY DESIGN AND EVERYDAY LIFE THROUGH A PARTICIPATORY APPROACH

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INTRODUCTION
The interdisciplinary research project ‘Place and Belonging: what can we learn from Claremont Court housing scheme?’ examines the case study of Claremont Court, a Modernist housing scheme in Edinburgh, built between 1958 and 1962 as part of the Scottish national housing drive. The research project relates to the critical understanding of the linkages between the spatial features of the place and the individual and collective sense of belonging. In particular, this paper introduces a reflection on Spence’s idea to foster a sense of cross-class community in Claremont Court through the design of areas dedicated to communal activities and the combination of diverse housing typologies. In fact, the scheme comprises of 63 dwellings of six different typologies, grouped in L-shaped low-rise rectangular volumes around two landscape courtyards.

Consistently with the key principles of the postwar Scottish housing drive, this scheme aimed to improve the living conditions of the masses, enabling at the same time the idea of a mixed development, based on new meanings of home and communal life. This was a constant aspect of Spence’s design approach since his appointment as President of the RIBA (1958-60): to improve the
public profile of architect and drive architecture to the wider socio-political debate, sustaining the role of the architect in an era of developer-led architecture.

The original social approach contributes in making Claremont Court a relevant case study within the broader framework of Modernist housing in UK. Although Spence did not make explicit his theoretical agenda, the spatiotemporal of Claremont Court may suggest connections with the avant-gardist theory of a planned community, developed by the Team X as an alternative to the socially alienating developments proposed by the orthodox Modernism. According to the Team X, spatial hierarchy was essential for social life to function and to foster a sense of community. This principle has been translated into specific architectural features, such as grouped medium-rise blocks, joined by open decks for pedestrians or organized around communal courtyards.

This paper first contextualises Claremont Court project as an advocacy of the idea of planned communities. In the following section, it is introduced the link between architectural features and community behaviours, taking Coleman’s study on post war mass housing in Britain as the starting point. Finally, the authors discuss the outputs of a participatory workshop, through which the effectiveness of Spence’s attempt in relation to current spatial practices has been assessed.

THE DESIGN OF A ‘CROSS-CLASS’ COMMUNITY IN CLAREMONTE COURT

Inspired by traditional patterns of socialization, the thesis of planned communities linked spatial arrangement and social behaviour. In particular, Claremont Court is considered here as a relevant case study to analyse and interpret how architectural spaces in postwar mass housing design have enabled or fostered the process of cross-class community formation.

With reference to the postwar estates designed by Spence, Glendinning notices how they were structured upon the principles of fostering ‘community’ through planning of self-contained neighbourhoods, sparsely laid out to maximise sunlight and open air, with low-rise blocks of flats and cottages, frequently in parallel rows or around cul-de-sacs. In fact, Claremont Court development is set up with the six blocks facing the two internal courtyards, closing up on East Claremont Street and creating a more private secondary road for car access along the northern side. This ensured a clear division between pedestrian, bikes and car accesses, provided the scheme with an inner mobility system and parking provision and allowed to give the communal areas the character of enclosed spaces for the community. Thus, building on the CIAM guidelines Claremont Court dwellings were provided with open space, sunlight and integrated social facilities responding to the need to improve the quality of life in residential areas. Raising the living standard of the masses and promoting the creation of inclusive communities were ideas carried out by Spence in the postwar period, consistently with his public commitment as RIBA president. By doing so, he tried to translate into architectural language the Modernist ideal of designing houses ‘for all’. This involved a radical rethinking of the type of users the units were addressed to, as suggested for the very first time on the occasion of the cutting-edge exhibition ‘Britain Can Make It’ in 1946 and later the ‘Ideal Home Exhibition’ 1949. In fact, Claremont Court includes overall thirteen housing types, such as two-bedroom flats and maisonettes, cottages for the elderly as well as one-bedroom dwelling units, offering a home of own’s own to new family types (married couples with no children or single people, including the increasing proportion of working women).

According to Spence, a sense of community and belonging could be created through casual encounters in the stairs and drying areas, informal chats on the balconies and by sharing common facilities. Consistently with the Smithsons’ theories at the time, vertical living was seen as a cause of lack of social contact among neighbours, while generously sized public areas, with open decks, and triple-height crossings were considered able to ‘invite one to linger and pass the time of day’.
Similarly, Basil Spence paid attention to the design of stairwells (mainly at the junctions across different blocks) and open decks. Within these premises, the spacious landing at the junction of blocks I and II would allow members of the two families to engage in conversation when coming in and out or using the refuse chute. Also, the generous stairwell allowed easy visual contact with the adjacent floors.

Four main design actions\(^\text{10}\) have been identified in Claremont Court through which Spence aimed to rise a sense of community and catalyse social interaction:
- Typological variety, suggesting that units were design to house different users and family groups;
- Vertical and horizontal distribution across the different blocks, with attention to the design of stairwells (mainly at the junctions across different blocks) covered walkways and open decks to increase the opportunities for neighbours’ interaction;
- Units interior layouts, so that all the balconies (and in particular those serving the living room) face the courtyards and eventually facilitate neighbours' communications;
- Provision of communal areas such as the two enclosed landscape courtyards and the drying area on the roof of blocks II and IV.

**ARCHITECTURAL DESIGN AND SOCIAL BEHAVIOUR IN POST-WAR HOUSING ESTATES**

Building on Newman’s theory of ‘defensible space’ (1972), in 1985 Alice Coleman conducted a comprehensive study to assess how the spatial arrangement could affect the quality of life and influence social behaviours in Modernist housing schemes. According to Newman, ‘anonymity’ is one of the three principles explaining how antisocial behaviours were made difficult to prevent and most likely to happen. It is defined as “‘impersonal character of areas where a community structure has failed to develop and people know few other residents, even by sight’\(^\text{11}\). The lack of interaction between residents makes also difficult for them to establish relationships and co-operate as they’re not sure whether they can rely on other residents. Drawing on these premises, *Utopia on Trial* reports an extensive set of data referring to over 4,000 residential blocks to demonstrate how specific architectural design features (such as corridors, types of entrance or number of storeys) have a direct impact on the residents’ perception of safety and overall comfort in those residential areas\(^\text{12}\). Even more recent works, such as Gehel’s *Life between buildings*, endorse that communities grow spontaneously when opportunities for even causal social interaction are offered within the housing’s communal areas\(^\text{13}\).

Coleman agrees with Newman on stating that community structures and behaviours are affected by the layout and spatial arrangement of the housing development. Coleman lists ‘design variables and design values’\(^\text{14}\), divided into four main categories:
- **Size variables** (Dwellings per block, dwellings per entrance, storeys per block, storeys per dwelling);
- **Circulation variables** (Overhead walkways, interconnecting exits, vertical routes, corridor type);
- **Entrance characteristics** (Entrance position, entrance type, blocks raised above stilts, blocks raised above garages);
- **Features of the ground** (Spatial organisation, blocks in the site, access points, play areas).

Based on Coleman’s classification of these design variables that typically describe the communal areas in postwar housing tenements, a photo survey has been conducted in Claremont Court focussing on: (1) **Types of entrance and relation with the street**, (2) **Covered walkways and stairwells**, (3) **Landscape courtyards**. The survey of these design variables in Claremont Court communal areas, confirmed that they are typical of some post-war Modern housing estates in Britain.
Although an initial stage of the investigation related to communal areas was structured on Coleman’s design variables, in a later stage we developed an original cross-disciplinary methodological approach to integrate the data describing the physical space with the community’s perception of those areas. In fact, as Coleman noticed, during the interviews, interestingly a large number of participants “voiced criticism of the common parts of the block without specifying precisely which”\textsuperscript{15}. Similarly, throughout the first and second round of interviews with the research participants, we collected a number of complaints in relation to the quality and maintenance of the shared spaces in Claremont Court, with interviewees reporting uncomfortable feelings attached to these. For example, Nicolas and David, a young couple in their thirties who recently moved to the court, highlighted the gap between
the outdoor areas, perceived as unsafe, and the familiar, safe interior. With particular reference to the open-deck access, for them this type of access 'has maybe a stigma to it'16.

INVESTIGATING COMMUNITY AND SENSE OF BELONGING THROUGH A PARTICIPATORY APPROACH

The variety of research strategies that we have applied to the case-study responds to the understanding of place as a physical and socio-cultural reality17. According to the theoretical framework underpinning the project, we consider places as “repositories and contexts within which interpersonal, community, and cultural relationships occur”, and “it is to those social relationships, not just place qua place, to which people are attached”18. With these premises, biographical and photo-elicitation interviews allowed us to study verbal behaviours, while the outcomes of the interactive session described in the following sections helped us understand more critically what are those spatial factors affecting the development of a sense of belonging to Claremont Court.

Most scholarship on place relates place attachment to place identity, which is intended as “a component of personal identity”19 and the process through which people come to describe themselves as belonging to a particular place and adopting identifications which reflect places20. In the case of Claremont Court, we assumed that the sense of attachment to the place can be of a different nature if we refer to the private space of the dwelling or to the communal areas of the development, such as the landscape courtyard and the roof terrace.

The novel methodology we developed included a session of data gathering through a participatory workshop, organised in November 2016 in partnership with Claremont Court Residents Association. Voluntary research participants have been recruited through word of mouth and by circulating an email invitation among the members of the Residents Association.

The findings of this facilitators-led workshop allowed us to test the original intention of designing a community in the ‘60s with the current communal life in Claremont Court.

Workshop methodology

The workshop aimed at understanding the users’ perception of the shared spaces in Claremont Court and defining a hierarchy of elements according to their criteria. During the workshop, the participants have been invited to take part in two main facilitators-led activities. First, they have been asked to sketch their ‘mental map’ of Claremont Court, where the architectural space resulted distorted according to the individual perception that one had of such a familiar place.
Inspired by Robinson’s exercise, the process of developing a cognitive image of Claremont Court served to develop the ability to gain a spatial understanding of the place and reflect on the meaning that the individuals associated to that place. The cognitive images varied from person to person and were shaped heavily by past experiences, personal perceptions and their everyday lives: “Cognitive mapping is a process of a series of psychological transformations by which an individual acquires, stores, recalls, and decodes information about the relative locations and attributes of the phenomena in his everyday spatial environment”. However, when different individuals relied on some of the same features in composing their mental maps (such as oversizing the parking area, or putting landscape elements at the core of their map) they intended to reinforce the importance of these features in representing the physical environment.

The second type of activities complemented the mental maps and allowed to decode hidden meanings attached to the representation of the place. The participants were given a simplified map of the court and asked to highlight (through icons): A. Where the neighbours you interact with most frequently live; B. The access you use more frequently; C. Your path to go home/go out; D. Your most-liked places in Claremont Court; E. Your least-liked places in Claremont Court. Some of them, added keywords to explain more effectively positive (such as open, pleasant, scenic etc…) or negative feelings (such as messy, dark, oppressive etc...) associated to the place.

The outcome of this second stage, overlapped with the mental maps, and compared with Coleman’s findings confirmed or denied some initial assumption about the community perception of the place and the sense of attachment.

**Perception, attachment and sense of belonging: a visual narrative**

The outputs produced by the participants in the short time given provided an interestingly rich variety of clues for critically understanding the character of the communal areas in Claremont Court. Some of those spaces already identified as critical by Coleman, have been confirmed to be associated to behavioural or perceptual stigma in Claremont Court too (such as the secondary stairwells and accesses from the side road where antisocial behaviours have been widely reported). However, in addition to these, the sketches suggest the need to analyse more deeply some original aspects of the communal areas in the court, such as the perception of the courtyard as a privatised community garden and the relevance of the landscape elements in it, or the pleasant feeling associated to the visual connection to Edinburgh city center.
We notice, for example, that although the design of the landscape courtyards does not correspond to Coleman’s design values which make the residents perceive a place as “safe” (such as clear boundaries, private access from the public street etc.), in Claremont Court they have been sketched as starting points by most residents developing their cognitive map of the scheme. This partially suggests the effectiveness of creating an enclosed neighborhood to create a sense of belonging; with this premise, the courtyard could be seen as the core of a potential community life. The two landscape areas are definitely most-liked spaces in Claremont Court, and positive adjectives have been associated to them. However, only 2 over 10 participants are used to cross the courtyard in their everyday in/out paths, even when they come from the main road. Instead, they bypass the (intended) main access and use secondary accesses, although most residents associate bad feelings to these, reported antisocial behaviour and lack of maintenance, consistently with Coleman observation.

**CONCLUDING REMARKS AND FUTURE RESEARCH**

This work contributes to the still open debate on the idea of ‘planned communities’ and questions, in particular, whether the provision of communal areas (such as open decks or landscape courtyards) within post-war residential clusters have been able to replace and reproduce the liveliness of the street in working class districts. Just before the design of Claremont Court began, Young and Willmott’s influential assessment of post-war housing estates had criticized their alienating loss of community and social solidarity. We questioned if Spence’s intention to build up a cross-class community could be seen as a response to the growing negative view of the estates of the 1930s and 1950s as less social than other housing forms.

In particular, this paper focused on the value of the communal areas as places able to catalyse processes of social interaction and foster a sense of belonging. To this extent, the outputs of the
participatory workshop allowed us to make a critical reflection on the effectiveness of Spence’s attempt in relation to current spatial practices in Claremont Court.

A future stage of this research project will put the findings of the photo-survey and the narrative originated from the community workshop in relation to the verbal behaviours included in the interview. This will allow a comprehensive understanding of the physical and socio-cultural evidences determining a sense of belonging to the place.
NOTES

1 Sandra Costa-Santos, Nadia Bertolino, Stephen Hicks, Camilla Lewis and Vanessa May, “Place-making theory behind Claremont Court” (paper presented at the 19th International Conference on Architectural Theory and Construction Process, Zurich, January 17-18, 2017).


3 Smithson 1968[1962]. Team 10 Primer, 36.

4 Such as Sunbury Urban Districts near London (1947), Beechwood Avenue (1947-52) and two in southern Scotland, Bannermanfield in Selkirk and Summerfield in Dunbar (1945).


8 According to the guidelines released by the Scottish Housing Committee of the time.


10 Costa-Santos, Bertolino, Hicks, Lewis and May. Place-making theory behind Claremont Court.


14 Coleman, Utopia on Trial: Vision and Reality in Planned Housing, 34.

15 Ibid, 33.


23 Moran, ‘Imagining the street in post-war Britain’, 166.


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CITIES, COMMUNITIES AND HOMES AS BLIND FIELDS: A LEFEBVREIAN ANALYSIS

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INTRODUCTION
The understanding of cities, communities and homes, rather than being discrete autonomous entities, can be seen as parts of the same continuum, which parallely reveals our failure in projecting them in a cohesive way. In our attempt to find where is the origin of such a disconnection, we are paradoxically sent back to the origin of architecture as an official discipline. The formality of the Acropolis and the Roman Forum, have little to do with the rich messiness of the homes that created most of the urban tissue in ancient Athens or Rome. The causal processes generating the civic fabrics of the old cities were always far from the commandeering decisions in charge of the significant architecture that provided the formal architectural monumentality to the city. This disconnection was an unintended expression of the social and economic differences between the socio-political elite and the common people inhabiting these cities, difference that became much more evident in the capital cities, where the political power is usually more explicitly manifested. Cities were planned with a strong dismissal of the community life and the differences between the official architecture serving the status quo and the casual character of the architecture of homes became a very clear expression of this disconnection. Official architecture was from its beginning an authoritarian tool for expressing power and we are still under the influence of this stigma that explains the disconnection between cities (a political entity), communities (a social one), and the homes (as the frame for the emotional unit of human cohabitation). Even when we recognize in each of us the confluence of an emotional human being, a social person (etymologically coming from per sonare --for sounding--, an italian opera mask that amplified the voice), and a political citizen; these differences become pathological when one of these roles acts against the others. This confrontation is at the base of the disconnection we are trying to explain in this paper.

If we study the urban fabric of more politically neutral old cities, as for instance any small village in so many places all over the world, we can notice a much stronger feeling of connectivity between these three levels of cohabitation. In these relatively politically inactive places, we can recognize the importance of the residential fabric in creating the public space—which also entails framing and accommodating community life— resulting in cities with a very strong identity and a very effective way of functioning as a social institution. In these places the official planning and architecture are almost non-existent and even if they manifest in specific moments (as in a church or the city hall), they are usually embedded into the civil fabric. It does this with a very moving modesty that tries to
recognize the importance of homes and communities (the emotional and social glue of the city) against its own political expression of power. If we observe the informal settlements, (where the official architecture is non-existent based on its subversive condition and its intentional denial of political statements), we could find communities extraordinarily resilient—a resiliency that’s based on their social and affectional ties (in its community and homely values). Hence the slums became efficient territories of self-governance and social resiliency that resist the political control, and not surprisingly, the authorities have tried to discredit them historically through the false identification between anarchy and chaos. The efficiency of these territories of anarchy is also a reflection of its condition as an-architecture (or without-leader-for-the-built).

Tracking this issue throughout the Twentieth Century, we find a continuation of the disconnection between the three scales of a city’s making. The Modernist Movement in architecture was extremely focused on the idea of the whole city as an artefact, planning carefully how the different parts of the machinery would work together with a very scarce consideration of how this would affect the two minor scales-communities and homes. Coming from a mechanistic clockwork universe model, modern planners usually refused the existing communities of the city as a fundamental base for the planning and they were very reticent to accept the existing entities as a necessary background of the new planning. Instead of thinking in terms of emergence and evolution, the pursuit of novelty pervaded modernity. The arrogance of the modern planner wasn’t so different to the one of the modern artist, and both expressly refused to regard any pre-existent norm as necessary or valid anymore. In the smaller scale of the house, the modern architect systematically ignored people's concerns and aspirations, creating with this a growing gap between architects and society, a gap that lasts to this day. The question about a more affective consideration of the habitation was also a strong controversy between the modern architects themselves, which finally caused the dissolution of the CIAM tangled in the habitat discussions.

The second significant moment in the planning of the city during the Twentieth Century was the suburban phenomenon that spread especially in the post-war period. The New Towns in United Kingdom were a romantic recuperation of Ebenezer Howard’s old idea of the Garden City, based on the recognition of the modern planner’s failure of dealing with the complexity of the modern city. Confused between the plans for the post-war reconstruction, the New Towns were a clear dissolution of the city as it overplayed a home-focused plan. The bucolic idea of living in the country in poor quality architecture stylized with a neo-vernacular cliche was sold to the people (usually young families from the low-medium class) as a classy object of desire and they bought it as a possibility for skipping their meaningless lives. The houses were carefully planned following design manuals developed by the British Government’s design offices with the idea of engaging people not through architectonic quality but with a kind of social-realism-populism formula. The operation was also done with an absolute dismissal of the existing communities living in the small places where the New Towns were established, creating with this irresolvable conflicts between new and old inhabitants. The social and racial uniformity of the new communities made authentic “social ghettos” from the New Towns, and the program resulted in a deafening failure to create community identities causing paradoxically the dissolution of the pre-existing ones.

In the American context, the development of the suburbia was suffering similar problems. Based also in the idea of selling dream-homes for the middle class, the post-war extension of American suburbs wasn’t rooted in the growing complexity of the existing city, but in the recognition of an American idiosyncrasy grounded in the denial of a life-in-community. The settlers’ spirit was established as a one-on-one connection between the inhabitants and the inhabited land, as Frank Lloyd Wright had
reflected in his Broadacre City—an anti-city utopia for the American urbanism in 1932 (based on his ideas expressed in same year book, *The Disappearing City*). The Case Study Houses program—launched by the magazine *Arts and Architecture* and supported by public initiative after the World War II—included proposals by some of the most significant American modern architects and it was just nothing more than a modern-style-home option for materializing the official idea of rehoming three millions soldiers coming back from the front in suburban neighbourhoods. The architecture of the house had little effect on generating a thriving community and inversely, the spreading sprawl only had a negative impact on the communities. The suburban phenomenon in both contexts wasn’t exempt of political and economic intentions, and resulted in a huge fiasco in creating community life and social resiliency. This was again a consequence of a home-based thinking dismissing the city and the communities.

In both cases—British New Towns and American Suburbia—the ultimate victim was the third place. Ray Oldenburg defines third places as in between places that allow an informal public life, such as the American taverns, the British Pub, the coffee shops, the food carts etc. Since the discipline of architecture was concerned only with the formal processes, it disregarded the importance of the third places as a social glue that holds the first place (home) and second place (work). We assert that these places were lost in the blind-fields of modernity.

If we look at the self-called American New Urbanism, as one of the most successful trends in American city planning since the 1990s, we can find again the recurrent disconnection between the three scales studied in this paper. In this case, based on a pretentious idea of community, all the principles defended by the New Urbanism (including the idea of the Transit-Oriented Development) are deeply suburban, denying the city as a more complex way of living. New Urbanism proposes a planning based on the idea of community, but with a very poor understanding of what the communal is, caught in the idea of a controlled neighbourhood where problems of scale doesn’t need to be addressed and the conflict of the real city are almost non-existent, symbolized well by the orderliness of the town in *The Truman Show*. On the other hand, the homes that conform to the suburban fabrics of the New Urbanism plans are formalistic regurgitations, based on a populist elitism that uses fake materials and a collage of typologies for pretending the spontaneity of an urban village, paradoxically through strongly coded plans. In this case, the city and the homes are dismissed and the planning appears just as a tool for the creation of a community deeply rooted in the idea of exclusivity. Instead of seeing the community as a spectrum that ranges from the home to the city, New Urbanists fixated community as a discrete object in itself which is precisely why their neighbourhoods are not one. Communities happen in productive cracks between the homes, in aggregation and in their relation to the city, and cannot exist independently without these relational aspects.

With a modernity focused in the city as an artefact at the beginning of the Century, a suburban trend centred on the home in the second half, and New Urbanism referring (very poorly) to the community at the end; the Twentieth Century has been a confirmation of the difficulties of thinking in a cohesive way about cities, communities and homes for fronting the planning of the city.

Henri Lefebvre pointed in his book *The Urban Revolution* (1970) a similar phenomenon. He said that the three fields that started the transformation of the people’s life from the Industrial Revolution—the rural, the industrial and the urban—showed a common difficulty in being thought of together despite their interdependence. The rural environment covering our basic needs, the industrial one framing the work space, and the urban context as the place for the enjoyment; conform a whole scope of the human beings’ activities, a “tripartite division that is found... in every social practice”⁴. Between these fields which Lefebvre qualified as “regions of force and conflict”⁵, there are “blind fields”⁶ that we are not able to see and that are very significant for understanding the connections between the fields.
and their hybrid conditions. This effect is due to **blinding causes** --the luminous sources--, which Lefebvre identify with **knowledge and ideology**\(^7\) as inevitable factors that strongly condition the way we see things. These factors are also able to explain the impossibility of thinking cities, communities and homes, as interconnected realities, very strongly in the Twentieth Century.

An ambience of extreme rationality, increasingly growing from the Industrial Revolution’s Era, was strongly present in the architectural avant garde at the beginning of the Twentieth Century. Although some of the avant garde master’s writings were a confusing mix of reason and emotions --as Walter Gropius or Le Corbusier, for instance-- the rationality was in the end the argument more publicized for explaining the new architecture. The same idea is seen in the International Style, which portrayed itself as an undeniable architectural truth, which was rooted in this scientific mode where **knowledge** is the definitive target of human facts and, as universal knowledge, do not need to change due to contextual situations. From this understanding, the planning of the city became an engineering fact with the ambition of being able to predict and accommodate the complexity of the urban fact for whichever community in whatever time. The modern architects committed to this gigantic task, blinded with the arrogant attitude of believing being in possession of the truth, dismissed radically the consideration about the way of living of the communities and the emotional comfort of their homes coming from social bonds. These were insignificant pieces of the urban machine, not that important for a smooth run. Recently, Isabella Stengers questions this blindness coming from the belief of possession of knowledge and advises towards a more cosmopolitical plural accommodation of various forms of knowledge system, not just uncritically upholding a scientific epistemology\(^8\).

If we think now about the suburban phenomenon, from the English New Towns to the American sprawl, we recognize the presence of the other blinding factor mentioned by Lefebvre: **ideology**. The suburban city was ideologically charged in two ways, from the bottom up and from the top bottom (from the inhabitant’s perspective and from the administration’s one, respectively). From the user’s point of view the proposal was appealing because it was based in an ideal way of living that resisted the existing city conditions (urban and communal) for promoting an individualistic life in a more rural context. From the perspective of the administration, the operation was charged with an economic and political ideology that tried to be unnoticed, but no less authoritarian. In the English’s New Towns, the proposal was a hidden system of land property nationalization, because it gave to the Government a protected privilege to acquire land as rural and sell it as urban getting back with this an important added value. In the case of the American suburban development, the relationship between the sprawl phenomenon and the Government financial support benefiting the interstate highway system instead of promoting the urban public transportation, is very well known. It clearly shows ideological statements being manifested which favoured the car and the mass-produced-houses industries. In both cases, the English and the American, the government support for the suburban was also a tacit political ideology of mass control through isolation. So, ideology was, in a very wide sense, the blinding factor for projecting the suburban, focusing on an individual perspective with dismissal of the city and community approaches. Third places are also where political dissent happens and communities are shaped, hence, it is easy to notice the simultaneous decimation of both the third places and politically mature citizens.

Now, in the case of the American New Urbanism, we find a subversion of ideology as the blinding factor, which is **demagogy**. This concept is a popularization of ideology and is a political ruse based on invoking people’s emotions instead of people’s reason, more as a marketing strategy. New Urbanism in essence is, as David Harvey mentioned, a “communitarian trap”\(^9\), selling to the people an idea of community “privileging spatial form over social processes”\(^10\), resulting in ghettos where people are willing to live attracted by the social image of living in community more than by the real
fact of a communitarian shared experience. As Harvey pointed, living in community in New Urbanism is a code-word for controlling the community, as a guarantee of social order. The accumulation of keep-out signs and the deadly calm of most of the New Urbanism’s developments are very clear proofs of these realities. To build “places people love”, the New Urbanism’s motto, is the peak of demagogic rhetoric, a blatant call to the people’s emotional affinity where architects renounce (or we should more properly say, sell) their competences. There resides a total misunderstanding of architecture as a public service and as in any other professionally curated public service, the goal is to deliver the best quality product for the wellbeing of the people, both as an individual and as a community (case in point is a doctor not only being responsible for personal health but also for the public health issues). No doctor would recommend junk food, even if people love it, because this would be a dismissal of his/her professional competences. In any other socially engaged professional role, the New Urbanism motto sounds unprofessional, to say the least.

As we have seen, knowledge, ideology and, its populist version, demagogy, have been the blinding factors responsible for the strange disconnection between cities, communities and homes that we are analysing, at least in the most significant planning trends throughout the Twentieth Century. For skipping this problem in the future we would need a radical paradigmatic shift, one that is not based on the “trueness” of a single ideology or knowledge system. The new paradigm will have to be plural and employ trans-logic that allows for starting with blind fields rather than the object (homes and cities) themselves.

Richard Sennett explained in his paper “The Open City”, that we are unnaturally expecting too high a degree of perfection from the city—and this could be applied to the other included scales: communities and homes. The city must be clean and safe, with efficient public services and economy, and also able to provide cultural stimulation and promote equality in all levels (racial, social and economic). This is the same as to think about the city as a closed system, which means the absolute prevalence of coherence when, as Sennett said, dissonance is a more strong condition in contemporary life. The tendency to understand the city as a closed system also entails the rejection of any phenomenon that doesn’t fit the clean classification. As Sennett argued, they are “contestatory or disorienting”, which is another way to understand the dismissal of the in betweenness, the Lefebvreian’s blinded fields. These ideas are not different to Lefebvre’s conclusion in The Urban Revolution, where he complained about the fact that “concrete space has been replaced with abstract space”. Concrete space is not only physical but also metaphysical (including the intangible), and especially, we could say, pataphysical (which means the inclusion of the exceptional); hence it is extremely difficult to be planned in a closed way. The architect and the planner have been traditionally working in an abstract space with the illusion that things can be overdetermined, and from their abstract world they can reproduce the wild and exciting reality of lived experience with all its contradictions and conflicts.

When Sennett claimed for the qualities that has to be considered for the design of the open city (blurry edges, incomplete forms and unresolved narratives); he is insisting in the Lefebvrian idea-logic blinded factors. Knowledge takes us to the definition of concepts, which also means clarity in the determination of borders and shapes, and ideology is the background for the resolved narratives. We need to avoid both as determinants of urbanism. We need to be emancipated from their stronghold on the discipline of architecture so that we can imagine beyond the given frames.

This emphasis between the open and the closed, the concrete and the abstract, and the way that all of it is entangled with the idea-logic background is also a recognition of the paradigm shift from modernity to trans-modernity. In our trans-world, strict classifications are not valid anymore because
we know nowadays that the significant concepts always unfold in between the formal, always in flux in the informal spaces.

Because of this, the future design of the city cannot be accomplished without thinking about the way in which the familiar life of every citizen unfolds in a specific community and communities interact in the discussion and construction of the city; it can’t be designed dismissing the connection between the political consciousness of every citizen and his/her most intimate self. Rather than a generic conceptual understanding, we would like to propose third places as a design heuristic towards rejuvenating the connection between home and the city fostering the community.

Placing third places on the design agenda is a move towards uniting the neighborhood. What we suggest is that the design of the homes must begin with an active consideration of community spaces such as the yards, the garages, the porches, the patios, and design investigation must develop new typologies of informal communal spaces where people come together spontaneously (not a prescribed formal community center). Older typologies such as the coffeehouses, bars and taverns needs to be re-inserted into the city fabric to give a social life, a home away from home.

Beyond the blinding effect of rigid ideological/epistemic stances, trans-design configurations need to factor in the in-between socio-spatial aspects of the homes, communities and cities. Only when we allow the design to have such oscillations from the physical to the metaphysical and to the pataphysical without being dogmatic, can there be a cure to our collective blindness.
NOTES

1 It is interesting to note here that Kropotkin observed that throughout the history of civilization two oppositional tendencies have confronted each other, “the authoritarian and the libertarian”, calling the first “the Roman” and the latter “the Popular” in Peter Kropotkin, *The State: Its Historic Role* (London: Freedom Press, 1897), 55
2 For a better understanding of this historical misconfusion: Peter Marshall, *Demanding The Impossible. A History of Anarchism* (Oakland: PM Press, 1997)
4 Henri Lefebvre, *The Urban Revolution* (Minneapolis: University of Minnesota Press, 2003), p.32
5 *Ibid.*, p.29
7 *Ibid.*, p.31
8 Isabelle Stengers, *Cosmopolitics I (Posthumanities)*, (Minneapolis: University of Minnesota Press, 2010)
10 *Ibid.*, par. 4
11 *Ibid.*, par.10
14 Henri Lefebvre, *op.cit.*, p.182
15 Lefebvre use this term, “ideo-logic”, as a combination of knowledge and ideology as blinding factors (*Ibid.*, p.183)

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SUSTAINABLE CAMPS: SELF-ORGANISING DESIGN IN COMMUNITY CENTRES

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INTRODUCTION

“Sustainable camps” is a capacity-building initiative in camps in Lebanon that have received large numbers of Syrian refugees. The initiative increases the capacity in the camps to provide learning hubs for camp inhabitants, organise different training events relevant to camp needs, as well as providing a frame for long-term collaboration on the challenges of sustainable low-cost infrastructure solutions. By collaborating with academics both abroad and in Lebanon, refugees and camp inhabitants improve their ability to use academic resources for problem-solving. They develop their capacity to participate actively and creatively in research and development work, as well as building self-confidence, gaining insights into a variety of academic specialisations, and building personal contacts and networks in academic environments.

The initiative aims to address the dual need for education and improved living conditions in the camps in Lebanon\(^1\). Existing community centres are used as hubs for learning, training and innovation. Young people living in the camps can thereby collaborate with students in Lebanon and abroad to develop low-cost and environmentally friendly solutions to the local infrastructure challenges, in the context of carrying out necessary repairs and upgrades. Interconnecting centres in different camps allows sharing knowledge and know-how. The research circles in this collaborative initiative bring together young refugees and camp inhabitants, local professionals, students and academic staff from Lebanese institutions and universities abroad, to improve local infrastructure, develop innovative and sustainable solutions, as well as creating livelihood opportunities.

In the context of the Burj El Barajneh camp, the hub is formed by a group of architects and engineers from the camp itself, working with camp management and a network of NGOs established in the neighbourhood. The training presents some of the Scandinavian forms of higher and further education, characterised by being participant-driven, problem-solving, self-organising, creating knowledge and know-how that has direct relevance to practice\(^2\).

BACKGROUND

Burj El Barajneh is a neighbourhood situated in the south of Beirut, Lebanon. It is one of the twenty-two Palestinian refugee camps which were established after 1948 to accommodate the Palestinian refugees who fled or were expelled. The United Nations Relief and Works Agency for Palestine
Refugees in the Near East (UNRWA) is responsible for these refugees, and the agency’s services encompass education, relief and social services, camp infrastructure and health care.

Lebanon has for several decades suffered from poverty, war, and political instability, and is not well equipped to host the largest per capita population of refugees in the world. Following different armed conflicts in the region, and most recently the Syrian crisis, the number of refugees in Lebanon has swollen³, reaching altogether at least 1.5 million refugees today. Approximately half a million of these are living in the Palestinian camps. Estimates are highly uncertain however, since many refugees live in Lebanon informally, due to stringent Lebanese residency regulations and the massive crisis in neighbouring Syria. The ongoing war has not only led to a housing crisis, but also affects social relationships, and fears of conflict spill-over have been voiced⁴. Although the war appears to have entered a new phase, many of the Syrian refugees will not be able to return in the foreseeable future⁵.

![Figure 1. General map of Beirut with locations of Palestinian camps: Mar Elias, Chatila and Burj El Barajneh. With a comparative diagram of Downtown Beirut versus Burj El Barajneh Palestinian camp showing the dense urban fabric. © Nihal Halimeh, 2014](image-url)

Besides the Palestinians newly arriving from Syria, camp populations have increased rapidly due to the general economic crisis, pushing migrant workers and poor Lebanese to seek the cheapest possible accommodation. Most camp inhabitants are struggling to make ends meet. Camp conditions were difficult already before the recent war, but have dramatically worsened. The pressure on infrastructure and housing has multiplied. In the case of Burj El Barajneh, the number of inhabitants has more than doubled since the start of the war in Syria.
Infrastructure Challenges

The recent arrivals of Syrian refugees are placing strain on infrastructure and services, particularly in low income neighbourhoods. These strains combine with the impacts of changing climate, and other environmental concerns. At the same time, restricted livelihoods and skyrocketing prices of materials leave little resources to proceed with necessary upgrades and maintenance of facilities and the built environment. Desperate homeless families are prepared to live in buildings that are compromised and unsafe, since they have no other options. Poor infrastructure also leads to a vicious circle, since local workshops that could provide livelihoods depend on access to transport, power supplies, water, and effective management of wastewater, waste and fumes to minimise environmental impacts. As an example, the strains on water in Beirut have some climatic and geographical components, but very many components are social and political. Effects on low income neighbourhoods are particularly noticeable.

Figure 2. This image shows a sign of newcomers: “Hanging clothes on the street”. Syrian refugees have to hang their clothes to dry on the streets. © Nihal Halimeh, 2014

Figure 3. Common image of streets in Burj El Barajneh Palestinian Camp. Water pipes, electricity wires, telephone wires and internet wires are distributed by hanging over alleyways. © Nihal Halimeh, 2017
Whereas urban planning in many parts of the world takes place in stable institutional contexts that enable a centralised overview and long-term projections, the Lebanese context is multi-layered and contains a high degree of uncertainty about the future. Political factions in the city have difficulties cooperating, which affects provision of municipal services. Problems of governance have become highly visible in the debates surrounding the Beirut garbage crisis for instance. In the face of such challenges, numerous grassroots movements have emerged, with initiatives aiming to protect the environment and improve quality of life.

THE URBAN FABRIC OF BURJ EL BARAJNEH
Palestinian refugees in Burj El Barajneh have defined for themselves a distinct, collective identity, closely resembling the camp's compound urban fabric, which distinguishes itself from its surrounding context. The camp's spatial configuration has produced what may appear at a first glance as a square kilometre of brutal mass, but with further observation, we discover a complex organism designed according to the dwellers' needs and assets.

While other refugee camps such as Shatila are arranged in grid layouts, Burj El Barajneh has grown organically according to a radial multi-focal pattern with one or several main public spaces organised around a so-called Saha (square). This resembles the fabric of Islamic cities and the towns of origin of the refugees. With time, the camp has grown seemingly randomly, producing a maze-like web of narrow alleyways and buildings, around which there are wider, vehicle-accessible roads. The morphology of the camp is highly related to the topography of the camp site. It first started as a tented settlement on the flatter, south-eastern part of the site, and with time was replaced with tin houses and concrete block shelters with zinc-roofs and gardening terraces on the higher topography. Later these became more permanent, concrete structures with drastic height differences between ground floors (partly due to building on the terraces). At present the camp presents a dense urban fabric with concrete buildings constructed on foundations capable of supporting two stories, yet which have in most cases been built up to four or more stories. The buildings are constructed informally without any sufficient engineering and very low structural efficiency. In many cases wall slabs are only held on by a few reinforcement rods leaving them in extremely precarious positions.
Many generations of the same family live in the same building or more commonly in a cluster of buildings, forming a private courtyard for the buildings bounding it. As ground level space is used up, stories are added to accommodate the growing family. In many cases additional floors are built, into which the family move, leaving the lower floors to be rented out to earn income. However, with no consideration to safety and or building codes to regulate growth, many buildings have inadequate vertical support to hold the added levels, and others are structurally dependent on the surrounding buildings.

![Morphology diagram of Burj El Barajneh Camp from 1949 to 2012. © Nihal Halimeh, 2014](image)

It is not uncommon to see overhanging floors or in some cases tunnels between houses in narrow streets that result from added floors. Slabs are extruded from walls and column reinforcements are left exposed for possible additional floors. As taller structures are built, and old ones added, the risk of catastrophe ever increases. Any project introduced needs to deal with the issues of height and weight and reduce the use of bulky materials.

The camp dwellers are constantly having to work within the changing conditions, to find the most beneficial and profitable function for their space. For example, a ground floor space could be successively reconfigured to fit a commercial use such as a mini-market, a network-space, a barber shop, a tutor’s classroom, a residential living space to be leased to newcomers, or whatever proves most useful at that time for the beneficiary.

**Interfaces of Private and Public Space**

The housing usually consists of a central open space with rooms built around it, the kitchens and bathrooms are located adjacent to the rooms. Over time, buildings of the same larger family have come to touch each other through series of additions. In some instances, they end up overlapping, with floors of one building sitting on the lower floors of another. This layout allows for several nuclear families of siblings, parents and grandparents, to share common spaces, such as a kitchen or bathrooms as well as the central courtyard, while conserving an acceptable level of privacy from the surrounding street and nearby buildings.

The camp at large is divided into districts relating to the refugees’ villages of origin. The typology of the districts varies only slightly - most notably in building height, depending on the closeness of the community and their acceptance of foreign development in their district. Members of a group of related families can make up a block of buildings. Some of these comprise up to twenty buildings, where the only entrances to the block are from their exterior boundaries, while inside the block the separation is an interior corridor like maze. This makes such blocks appear as one large building, where the smaller buildings are its rooms. At the entrances to the houses on the ground floor level
within the block, the only boundary between public and private is a door that is often found open, leaving the private cramped sitting room exposed to the passer-by. It is surprising, given the overall cultural concerns about privacy to find some windows exposing the kitchens or living spaces.

Figure 6. This image was taken from a street in Burj El Barajneh camp looking through a street level house window. © Nihal Halimeh, 2017

Health Impacts
Due to the topography, streets and alleyways are not accessible to the handicapped since they often comprise steps. This renders handicapped persons totally dependent on their families and in many cases housebound and unable to reach critical destinations such as a hospital or a clinic. Another hazard is the networks of electricity cables and water pipes that run together down every street and provide a constant threat to all inhabitants. There are also many instances where electrical control boards, that are a chaotic mess of electrical wires, are exposed to rainfall. These urgently need to be cleaned up and organised at a camp-wide scale.

Little natural light penetrates to the street level and barely any to the ground floor rooms. Alleys are so narrow, it feels like being underground on the streets. The rooftops are favoured by the inhabitants since they now perform the functions of the inner courtyard of the traditional Islamic housing typology due to lack of horizontal space. They have in many instances been privatised with improvised temporary covering and cladding. With the recent growth vertically, the inhabitants are even moving to the higher floors, while they rent out the lower floors due to the damp and darkness.
Public Space

There is an extreme lack of public space within the camp, with most rooms shared by three people or more. The only spaces in which people can gather are the residual spaces around markets and between buildings. These so-called Sahat are scattered around the camp and include spaces created by a souk on the periphery of the camp, spaces adjacent to institutional buildings such as the UNRWA clinics, or adjacent to a mosque or Rabta (a league or society for each refugee town in Palestine). Smaller Sahat are used only by the surrounding group of buildings and are less commercial or linked to the outside of the camp. Other breathing spaces are “dead spaces” within the building blocks that are left unused or used for technical purposes only.

Figure 8. Palestine Piazza, the oldest Saha (Piazza) in the camp which is the only public space of neighborhood around. © Nihal Halimeh, 2017
The Informal Condition

The refugees have a protected “right of tenure” when it comes to their buildings, apartments or plots of land, although formal ownership resides with the government. This system has allowed refugees to sell the right to other refugees as well as to non-refugees. In this case, ownership is attained through the actual act of building the home themselves, or purchasing or inheriting it. UNRWA takes responsibility for building and rehabilitating shelters in cases that it has designated as special hardship cases (SHC). These include underprivileged households in the official camps. All other shelters are built or rehabilitated by the refugees themselves when financially possible, and after building materials have been successfully smuggled into the camp. Recently with the Syrian refugee arrival, the government has been more lenient in dealing with building materials, and as a result, numerous buildings have emerged towering over the skyline of the city. In the latter case the construction process is not regulated by building codes or laws of any kind, and according to Lebanese law these are considered illegal expansions of the camp.

Figure 9. Burj El Barajneh Camp plan showing the existing piazzas in relation to the urban fabric. Each neighbourhood resembles the refugees’ village in Palestine, in which each Saha serves a neighbourhood “village”. © Nihal Halimeh, 2014

Figure 10. This image shows a wall-like structure formed by the camp’s houses, defining it from the outside. © Nihal Halimeh, 2014
DISCUSSION

Significant international projects, such as BinUCom in India\(^{15}\) are now addressing the need for urban planning and approaches better adapted to the needs of high-density low-income neighbourhoods. With accelerating impacts of climate change and other environmental challenges, there is also added emphasis on sustainability, including resilience and proactive preventive or mitigating strategies. An important feature of BinUCom, in particular, is redesigning programme curricula and training for architects and urban planners, to better reflect needs and concerns of low-income neighbourhoods. At the same time, such approaches retain some of the limitations of conventional top-down planning. Participation of inhabitants\(^{16}\) tends to be limited to mapping and documenting concerns, or incorporating inhabitant’s feedback into curricula and city plans. The “Sustainable camps” initiative instead takes its point of departure in the people who live in refugee camps and neighbourhoods. It aims to strengthen the capacity for collective design originating from the neighbourhood itself, by networking with professionals, associations and academic environments in other places. Research circles\(^{17}\) make it possible to mobilise resources and self-organise in developing know-how and knowledge needed to solve practical challenges\(^{18}\). An objective of “Sustainable camps” is also to integrate design processes with training, so that necessary repairs and improvements can be carried out locally.

By working to improve infrastructure solutions, the initiative is in line with the needs of the host society. Importantly, “Sustainable camps” involves camp inhabitants as a community, working to improve living conditions for all, and thus does not aggravate potential friction between the host community and the Syrian refugees.

![Collective Refugees' Workshop Location, Burj El Barajneh Camp, Beirut. © Nihal Halimeh, 2017](image)

**Figure 11.** Collective refugees' workshop location, Burj El Barajneh Camp, Beirut. © Nihal Halimeh, 2017

Designing for the Future

Despite the challenges, the “island” of Burj El Barajneh has a potential to be economically self-sufficient and thriving. The sophisticated social order and unique aesthetic of Burj El Barajneh has provided its residents with a stronger community and higher quality of life than do many formal social housing projects. Underneath the overwhelming weight of air, sound and structural pollution, there is an undeniable richness that exists within this informal space.
To conclude from the example of Burj El Barajneh in Lebanon, it appears that refugee camps act as extreme cities where the issues of scale, permanence versus temporary arrangements, as well as challenges in community forming can be confronted. Their highly charged political nature provides the groundwork for operating within a tight system. Informality in settlement calls for other approaches to planning, beyond a top-down paradigm of organisation. In such contexts, collective design processes not only hold potential for local ownership and engagement, but the processes can also serve community building, by collaboratively working on visions for a shared future. Finally, at a time when environmental challenges are accelerating globally, approaches for developing low-cost sustainable infrastructure design adapted to dense urban settings should be among our most prioritised concerns.
NOTES

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RESEARCH ON THE ELDERLY MUTUAL-SUPPORT BEHAVIOUR AND SPATIAL SUPPORT CONDITION IN URBAN COMMUNITY—A CASE STUDY OF CHENGXIANJIE COMMUNITY IN NANJING, CHINA

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INTRODUCTION
The mutual-support pension in community is an initiative that aims to provide the elderly with timely and efficient support both in terms of spiritual comfort and daily care, while reducing social cost. Based on ideas such as the time bank, senior cohousing and etc., it has been serving as a bottom-up social and spatial strategy to tackle the aging crisis around the world, as well as in China. As a country with long moral tradition of mutual-support among neighbours, China is facing a severe challenge of population aging and an urgent demand for the elderly-oriented regeneration of the built environment in numerous old communities. In this context, it will be of great significant to have an investigation into the elderly mutual-support behaviours and spatial support condition in Chinese urban communities.

Taking the Chengxianjie Community as a case study, this research involved conducting a 200-households interview and questionnaire to investigate the social and spatial condition for the implementation of mutual-support pension. This research concentrates on the specific types of both daily-care and spiritual-comfort support behaviours among the elderly, the social relation between the support giver and receiver, as well as their preference on the types behaviour and relation. On spatial aspect, supportive spaces which support the occurrence of corresponding behaviours, as well as the geographical location of support relation, will also be investigated. This research provides a basis for a follow-up study on the Spatial Support System for the mutual-support pension initiative and also functions as a reference for retrofit of existing neighbourhood settings in old urban communities in China.

BACKGROUND AND RESEARCH PRECEDENTS
In order to deal with the important global challenge of population aging, human beings have explored variety of pension patterns. The specific behavioural patterns and spatial demands of elderly, along with the corresponding residential patterns, will make profound challenge to the existing urban spatial system. Among various pension patterns, the mutual-support pension, which bases on residential patterns such as multi-generation housing, senior co-housing and share-a-home, begun to generate increasingly social influence around the world. China’s exploration on mutual-support pension
sprang up in the rural areas in 1990s, which at present serves as not only a strategical response to the absence of pension system in rural areas, but also a useful supplement to the formal pension system in urban areas.

Dating back to 2008, the peasants in Feixiang County, Hebei Province, began to spontaneously explore the way to regenerate the abandoned schoolhouses, and transfer them as the “Cooperation Happiness House” for the congregated living of the older people in villages. Thereafter, it was brought into the “12th Five-Year Plan” and “New Countryside Construction Plan” of Hebei Province. Meanwhile, in February 2012, the Civil Affairs Department of Hubei Province issued “The Guidance on the Pilot Work of Rural Mutual Support Pension Service”, and selected 100 villages for the experimental construction. Other places in China, such as Langzhong in Sichuan Province and Pudong District in Shanghai, also implemented policies for the exploration of mutual-support pension.

In September 2016, the government of Shanghai formally proposed to create and develop the “Informal Care System” for the aging population in “Shanghai’s 13th Five-year Plan on the Development of Aging Industry”, with specific measurements such as “to carry out Older-Partner Plan”, “to create neighbourhood support-circle”, and “to encourage the reuse of idle spaces to create cooperation-sites in neighbourhood”, thus to promote the implementation of mutual-support pension. According to the Plan, 2000 typical demonstration sites should be established by 2020. Besides, the 13th Five-Year Plan in Jiangsu Province (issued at March 15th, 2017) also advocated the development of mutual-support pension.

It is also worth noting that the old communities in China’s metropolises have become the most prominent areas with aging problems. On the one hand, evidence from China’s big cities such as Beijing, Hangzhou and Shanghai has shown that the tendency of aging population’s gathering to old urban communities was deepening (ZHOU Jie, 2014; WANG Jiwu, SHAO Yulian, 2015). On the other hand, the existing facilities and infrastructure, which were mostly built with low construction standard during 1980s and 1990s, could not provide sufficient support for the residents, especially the older residents, both in types and quality. Besides, those older residents were not capable to purchase service from market because of the generally low income-level. At the same time, the coverage of government’s service is limited. Therefore, the gap is still significant in the supply of care service for the older residents in old urban communities.

Scholars also have long been interested in older people’s mutual-support. J.K. Eckert and M.I. Murrey (1984) introduced several modes developed in America for elderlies’ cooperative living, such as House-Sharing, Cooperative apartment and Share-a-Home. Similar research could also be found in the articles by Lawton (1981), McConnell (1979) and Streib (1975). Glass (2009, 2012) studied the origin and development of the senior cooperative living communities in America. Jung Shi Choi (2004) evaluated the scale, planning and common activities in 28 senior cohousing communities in Northern Europe. Jo Williams (2005) studied the influence of different spatial design factors on the social interaction of residents in co-housing communities. QIAO Qi and CAI Yongjie (2014) introduced the multi-generation housing in Germany. Marian Brenton (1999) summarized three mutual-support modes among elder women in western countries.

**RESEARCH CONTEXT AND SURVEY DESIGN**

**Research Context**

The selection of the research object—Chengxianjie Community, Nanjing—comprehensively takes four aspects of representativeness into consideration, which are the degree of population aging, the location, the date of construction and the residential pattern. 1) The degree of population aging:
Nanjing is one of the metropolises in China which confronts with the most severe challenge of population aging. According to the statistic from Jiangsu Province (Nanjing is the capital city of Jiangsu Province), 20.65% of the people in Nanjing were over 60 years old by 2015. And this figure in Chengxianjie Community was higher, which was 24.09% in 2015. 2) The location: This community locates in the core area of Nanjing city, with the relative high building density and quite limited space resource, decreasing the possibility of the expansion of new facilities. 3) The date of construction: Most of the buildings in this community was constructed during 1980s and 1990s. The deterioration of the infrastructure leads to a severe demand for regeneration. 4) The residential pattern: The congregated housing, commonly with 6-7 stories, is the most general residential pattern in this community, which also serves as a typical form in China’s old urban communities. And ordinarily they are not equipped with elevators. (Figure 1.)

![Figure 1. location and built environment of Chengxianjie Community](image)

**Survey design**

The data in this research was collected by questionnaire. Considering that some older people might not be capable to finish a questionnaire by themselves, all the questionnaires in this survey were completed by the face-to-face interview between the staff and interviewee. Due to the significant differentiation of space distribution among the residents with various income levels in this community, respondents were selected covering all the districts to ensure the representativeness. Eventually, 210 households, with householders over 60 years old, were chose to conduct the survey and 195 questionnaires are valid.

The content of the questionnaire is made up of four aspects, including the socio-demographic characteristics, the types of mutual-support behaviour, the social relation between the giver and receiver, and the space distribution of behaviour and relation. 1) The socio-demographic characteristics includes gender, age, education level, residential area, storey, length of residence and living condition (living alone, with spouse, with children and with nurse). 2) The types of mutual-support behaviour are divided into two categories: daily-care and spiritual-comfort. Referring to “The Community & Home Care Service Standard in Nanjing (2012)”, the specific content of daily-care includes meal support, medical support, housework support, bath support and emergency support. And that of spiritual-comfort includes leisure activity, health activity, culture activity and housework activity. 3) The social relation between the support objects are defined as relative (blood relation), neighbour (geographic relation), colleague (career relation), and friend (interest relation). 4) The distribution of behaviour covers three levels, including household space, downstairs and street corners, and public space around the community (community centre, squares and parks, campus). And the
space distribution of the support objects refers to the support givers’ and receivers’ residential location.

FINDINGS AND DISCUSSION
Socio-Demographic Characteristics of Respondents
Referring to Figure 2, female respondents (67.2%) are nearly twice as many as males (32.8%). People aged between 76 to 80 (23%) and 66 to 70 (22%) are the major cohort, followed by 60 to 65 (17%), 81 to 85 (14%) and 71 to 75 (13%). 11% are over 86. This means that more than half of the elderly are in their middle age: less than 80 years old. As for education level, 64% of the respondents obtained middle school (36%) and high school (28%) education. A considerable 18% got higher education, while the same number was primary school education and illiteracy. Besides, 71% of the residents live in the house with 46-90 m². 13% are in 31-45 m². 4% lives in the house under 30 m². These two factors, education level and residential area could relatively reflect the income level of the elderly, which they were not willing to confess when interviewed. Concerning the length of residence, most of the respondents (89%) are living in the community more than 10 years, while only 11% are less than 10 years, which is a typical attribute of the old urban community. Of the living condition, 38% of the elderly are living alone. 32% are with their spouse, followed by the those with children (18%) and others (12%). Besides, 21% of the respondents claimed they had idle rooms in their house. It indicates the phenomenon of the underutilization of dwellings among elderly. Building storeys elderly live are diverse. The most frequent storey is 1 to 2 (35%), the next is 3 to 4 (26%) and 5-7 (23%). In short, quite a few older adults will confront the difficulty of getting downstairs.

![Figure 2. socio-demographic characteristics of respondents](image)

The Behavioural and Spatial Condition of Daily-Care Support
As shown in the Figure 3, 33% of the respondents claimed that they had received or delivered daily-care support to others, while 67% hadn’t. It reveals that the spontaneous mutual-support behaviour only exists among a few elderlies at present in this community, especially for those over 76. However, further investigation shows that 74% of them have the intention or preference to build up mutual-support relation with others, which contrasts with the present situation. In short, the difference between present situation and preference indicates that although due to favour, moral or other social factors, they didn’t get opportunity to build up mutual-support relation, they have great demand on it.
The specific content of daily-care behaviour. The data was collected on both present situation and preference. As for the present situation, meal support, medical support and emergency support are most frequent among the five, taking over 25%, 24% and 27% respectively, while the proportion of bath support (9%) and housework support (15%) are relatively low. As for the respondents’ preference, the results show 40% of them are willing to build up meal support relation with others, followed by emergency support (24%) and medical support (15%) and housework support (13%). Only 8% prefer bath support. (Figure 4.)

The increase in meal support is most significant, showing this kind of behaviour is most welcomed by the older adults. According to the interview with the respondents, two major reasons account for this preference. On the one hand, to cook three meals every day is a heavy physical labour for older people. Cooking together with others could provide them with an opportunity to share this daily burden. On the other hand, in Chinese concept, dining is a great time for communication so that mutual-support on meal could provide them with social interaction at the same time. However, the drop in medical support and the low proportion in bath support are due to the value of privacy of the elderly. Unless the relation is intimate enough, or they are not willing to let others learn about their diseases and help them with bath.

The social relation between the support objects. Among the respondents who have mutual-support relation on daily-care at present, 54% is with their relatives. Next is those with neighbours (14%), with friends (9%) and with colleagues (7%). Other 16% said they got support from community stuffs. It reveals clearly that the kinship still plays a dominant role in older people’s social relation. The relatively low proportion of neighbours is worth noting, because it seems to be contradicted with the fact that most older people has resided for a long time. According to the respondents’ description, the intensification of population mobility in recent years decreased the stability of neighbourhood relation. Consequently, they are not familiar with their new-coming neighbours. But as for their preference, 38% choose relatives, followed by neighbours (31%), friends (19%), and colleagues (10%). It indicates that elderlies still think highly of neighbourhood relation. (Figure 5.)
The space distribution of behaviour and objects. The statistic shows that 50% of the elderlies’ supportive objects are living out of the community, followed by those living in the same building (24%). Other 26% are living inside the community. The overall average distance between the elderlies and their support objects is around 1500 metres. Besides, for the 50% who live out of the community, the average distance rises to nearly 6000 metres, which will take about 45 minutes by bus and 30 minutes by car in Nanjing. (Figure 8.) With the change of urban life and family structure in China, the miniaturization of family size and the separation of residential space between elderlies and their children have become a norm. Most of the older people’s support objects who live out of the community are their children. However, the fact is that 6000-metre distance makes it impossible for the children to provide consistent and timely support for their older parents. This could partly explain why neighbourhood relation takes a considerable proportion in old people’s preference of supportive relation.

As for behaviour, most of the daily care behaviour do not need specific spatial condition for support. However, according to the household survey, most of the kitchen and dining space in the house do need regeneration to support the cooperative meal. The existing kitchen and dining space in older people’s houses are generally small. Many households in the ground floor retrofit their courtyard to expand their kitchen, so there is a relative high demand for the reform of these kind of space.

The Behavioural and Spatial Condition of Spiritual-Comfort Support
The support of spiritual-comfort mainly refers to the interaction between elderly and others. According to sociology research, the social interaction is an important part of elderlies’ social support, which could generate considerable emotional or psychological gratification. In addition, consistent and steady social interaction could develop into formal care relationship. The investigation on spiritual-comfort support is also designed to make a comparison between the present condition and older people’s preference. Unlike daily-care support, the result between present and preference on spiritual-comfort is not significant. Thus the following analysis will focus on the present condition data.

The specific content of spiritual-comfort behaviour. Among the four categories, leisure activity is the most frequent way (41%) for the respondents to communicate with others, followed by housework activity (26%). Culture activity takes over 19%, while health activity is the least, taking only 14%. It shows that the most common interaction for older people is simply leisure activity such as chatting or playing cards. For the elder women, the housework activity, such as shopping or looking after children, also plays a dominant role in their social intercourse. While the culture activity is only preferred by some specific groups with same hobby or specialty. Little people communicate with others through health activity. (Figure 6.)

![Figure 6. contrast between present and preference Of spiritual-comfort content](image1)

![Figure 7. contrast between present and preference Of spiritual-comfort support relation](image2)
The social relation between the support objects. The data shows that friend (48%) and neighbour (31%) are two main social relations for the elderly to get spiritual-comfort support. The relative only takes over 8%, and colleague with 12%. Comparing with the composition of the social relation of daily-care support, it elaborates the fact that unless the requisite care service, elderlies rarely make connection with their relatives. Friends and neighbours serve as the most important objects of social support for the older adults. (Figure 7.)

The space distribution of behaviour and objects. 58% of the older people’s social objects live within the community, 37% is in the same building, while 42% are out of the community. The overall average distance between the elderly and their social objects is around 700 meters, which is much shorter than that of daily-care. And for those living out of the community, the average distance is around 3700 meters, which will take about 30 minutes by bus and 15 minutes by bike in Nanjing. It shows the geographical convenience is an essential condition for elderlies’ social interaction. (Figure 9.)

As for the sites for social interaction, downstairs and street corners are most preferred (28%), followed by nearby parks and squares (20%). 18% of the respondents choose home, 17% choose campus and 14% choose community centre. This relates to the types of their social behaviour. As mentioned above, most people prefer leisure activity as their way for social interaction, so that the informal sites such as downstairs and street corners cater perfectly for the occurrence of spontaneous communication. Squares and parks mainly serve for the group activities such as square dancing. In contrast, the community centre, as a formal site, mostly serve for specific groups with specialty.

In addition, the statistic shows the overall average distance between respondents’ home and their activity sites is around 250 meters, which will take 5 minutes by walk. Specifically, 81% is under 500 meters, 16% is between 500 and 1000 meters, only 3% are over 1000 meters. (Figure 10.)
CONCLUSION
Taking the Chengxianjie Community as a case study, this research was accomplished to investigate the social and spatial condition for the implementation of mutual-support pension in old urban communities in China. The specific mutual-support behaviour of daily-care and spiritual-comfort with the corresponding space supporting the occurrence of the behaviours, was studied through a 200-households interview and questionnaire.
Main findings are as followings:
1. **mutual-support behaviours.** As for daily-care behaviours, the participation degree is relative low under present condition, with one third of the respondents holding positive reply. However, the willingness of participation is considerable high (74%). Among all the categories, meal support is the most welcomed one, while emergency support is also worth noting. As for spiritual-comfort behaviours, most of the older people prefer to interact with others through leisure activity, while the proportion of culture and health activity is relatively low.
2. **mutual-support objects.** As for daily-care support, the service at present is mostly provided among relatives. Few of the interviewees get support from the other social relations. While the rising proportion of neighbours in preference reveals that the elderly hope their neighbours could share part of the care service from their relatives. As for spiritual-comfort support, the objects are comparatively varied. However, neighbours and friends play a much more dominant role in their social interaction than relatives.
3. **supportive spatial condition.** Under current situation, the geographical distance between the elderly and their supportive relation is generally far. Over half of the respondents have supportive relations living out of the community, with an average distance of 6 kilometres, which could not ensure the timely and consistent care service. Besides, considering the high demand of meal support and elderlies’ current living space, the regeneration is needed for the kitchen and dining space. As for spiritual-comfort, no matter of the objects or of the activity sites, the distance is suitable. Considering that downstairs and street corners are the most preferred interaction site for elderlies, more attention should be paid on these informal activity space in old urban communities.
NOTES

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WHY CAN’T WE LIVE TOGETHER? STOCKHOLM – VIENNA’S LARGE COURTYARD BLOCKS

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INTRODUCTION
The aim of this paper is to look back on some valuable accomplishments of metropolitan housing districts built at the beginning of the 20th century in Stockholm (1916-1930) and Vienna (1919-1933). Far from revising the narratives of modern history, those first attempts demonstrate how housing turned into a core-concern from that time, unlike the historians take as a starting point all those examples employing radical and functionalist models. The apt motto “from the block to the bar”1 marked out this transition. On the occasion of the IFHTP - International Federation for Housing and Town Planning in Vienna (1926) and later the first CIAM - Congrès international d'architecture moderne (1928) in Switzerland, there emerged a worldwide effort of theory and policy to respond to a serious housing shortage. Two contrasting urban and typological models animated the debate: the large courtyard block and the north-south oriented bars. Nevertheless, leading avant-garde figures mostly shifted their attention away from the densely built-up block of the 19th century city in favour of green settlements and housing estates.

The goal of this contribution is hence to examine in greater detail the large courtyard block through two case studies in Stockholm and Vienna. This type of building was defined by Walter Gropius and Ernst May as a mere intermediate step in the evolution2, but in actual fact it presented remarkable architectural qualities of morphology and spatial sequence. The large courtyard block was a convincing achievement in the process of reforming the urban perimeter block and it was a dominant and long-lasting model in some European cities. Such modern housing policies significantly influenced the history and structure of cities, as may be seen in today’s Stockholm and Vienna urban layout (Figure 1).
Housing started to become a public utility, part of a wider and multifaceted social vision. At the turn of the 20th, the response to accelerated metropolitan growth, an acute housing shortage and increased building costs came first in the form of continuous fabrics of high density multi-story or provisional barrack quarters in the city outskirts. Later, a favourable political and cultural milieu in both cities paved the way for approval of land policies and strategic urban plans allocating copious dwelling complexes equipped with improved sanitary conditions and many more facilities. The attention and the responsibility of planners, architects, cooperatives, and politicians focused on “the families (that) are the foundation upon which the society is built” and on “large masses of population.” In Sweden town planners of the municipality liaised with housing cooperatives in conducting these programmes, whereas in Vienna the municipality was alone responsible.

In comparing the case studies – Humleboet in Stockholm and Fuchsenfeldhof in Vienna (Figure 2) – one will recognize some formal and spatial analogies behind the attempt to reform the layout of the city and the conditions of living together. These large courtyards, carefully designed as a fine balance between green and paved areas, formed an appropriate living space for the community. The analysis is here carried out from original photos and re-drawings of plans done by the authors. Curiously, the two projects here investigated are also linked by an article published in the Swedish magazine Vår bostad, dealing with the great Viennese effort to increase housings, and in particular with the Fuchsenfeldhof.
STOCKHOLM

*Humleboet* belongs to a wider housing complex called *Röda Bergen* (Red Mountains). It is an extensive hilly area in the north-west part of the unbuilt outskirts. The peculiar features of the area interrupted the orthogonal east-west oriented grid-plan (*Lindhagenplanen*, 1866)\(^1\)\(^2\) causing radical changes to the pattern of streets and building lots.

The layout of today’s site-plan does not entirely correspond with the first urban plan (1907-1909) drew up by Per Olof Hallman\(^3\). He was the first to introduce Raymond Unwin and Camillo Sitte’s theories in Sweden, planners with whom he also had a close relation. Hallman tackled the irregular lie of the land by designing large partially opened courtyard blocks and buildings for the community (e.g. kindergarten, church and school). The picturesque result was a peculiar conflation of the two planning sources of reference previously mentioned, with which presents some points in common. Before the World War I an extensive portion of the South blocks, particularly those buildings facing onto the wide alley, were built. After the war, the urban plan was slightly revised by Sven Wallander and Sigurd Lewerentz who stressed symmetry and regularity more than before. However, the separation between traffic-bearing roads and residential streets remained. The merging of two topographically different areas – the two halves of the hexagon – by means of two main orthogonal axes was kept as well: the regular straight North-South alley was somewhat enlarged and the East-West axis presented some changes in its irregular widenings and narrowings, affecting the sequence of collective spaces.

What radically changed was the dwelling type employed: they substituted semi-detached and single-family houses, with multi-storey mass-buildings, whose ground floors were frequently used as shop, atelier, or common utilities. Wallander and Lewerentz captured the real needs of the Swedish population, seeking functional solutions for allocating families, especially elderly and low-income people. *Röda Bergen* presents an irregular hexagon shape formed by eleven large courtyard blocks. *Humleboet* (Figure 2) together with the partial symmetrical facing block is situated in the Eastern entry side of the district along one the two main street axes\(^4\). It consists of seven blocks of different shapes and sizes due to the local cadastral system, which actually even regulated the names of town lots. In 1924-1927 five architects, of whom Wallander was the leading figure in the *HSB* cooperative\(^5\), designed *Humleboet*\(^6\).

The layout of *Röda Bergen* comprises a series of interconnected spaces largely consisting of partially open courtyard blocks, stairways and right-angled or curving streets. Apart from the two large ones in the north, the remaining courtyards are usually not completely enclosed by building blocks, but open to the street and the park. One should note that there were courtyards shared by inhabitants of all the quarter and others exclusively accessible to people living in the blocks facing the courtyard. All these design choices reveal a decisive improvement in the spatial and collective qualities of the large courtyard block. On the one hand, one clearly feels Sitte’s ambition for the «city as unitary expression of the collective identity»\(^7\) where artistic and civic needs «do necessarily not run contrary to the dictates of modern living»\(^8\). On the other hand, the irregularities are actively exploited, which meant following the lie of the land with its ever-changing prospects. The Swedish hybridation of residential spatial features, such as «closes», “cul-de-sacs” and “quadrangles” which Unwin carefully illustrated in *Town Planning in Practice* (1909) made this possible. As he commented, the state of cities at that time showed that any sort of «amenities of life»\(^9\) was neglected. Beyond improving sanitary conditions, «there is also needed the vivifying touch of art, which would give completeness and increase their value tenfold; there is needed just that imaginative treatment which could transform the whole»\(^10\).

Like *Röda Bergen*’s other large courtyard blocks, *Humleboet* (Figure 3) is a combination of modest-scale buildings and extensive area of parkland and countryside\(^11\). In the first layout, Hallman gave a
particular care in distinguishing private greeneries from collective ones. Later, he actively participated in the debate about increasing green areas into the courtyards and reducing the separation walls, feature of the high-dense perimeter blocks. Conceiving the neighbourhood as a whole in terms of land laws and design principles also permitted the interactions between the inhabitants who started to appreciate living together.

The revised urban plan stipulated a medium density corresponding to 3-4 storey apartment buildings. Most of Humleboet’s blocks respect this rule, except for the buildings along the Eastern perimeter, which are 7-storeys. The five architects built 389 dwelling units: most of them are 1 room plus kitchen/kitchenette and toilette; in the cases where shower and bathroom were not included in the apartment, they were in the basement as a communal utility.

The case-study is characterized by three green courtyards differing in size, geometry and usage. On the east side towards the roundabout, the head of Humleboet has a rectangular green area in common with the facing block. Initially, the centre of this area was conceived as a small kindergarten, but this was never built. This function has been kept to the present: it is a planted area equipped with facilities for a playground area. Strolling down the two-lane planted alley of the cul-de-sac one passes the ground-floor archway-passage – accessible to vehicles and pedestrians – which divides the T-shape block to the U-shape ones. The one-way street that runs along one of the two parallel bars is delimited, on the right, by an irregular trapezoidal plot which follows the slope of the terrain (Figure 4).

The 1928 picture shows how the topography of site was cleverly used in the design process. Running along the buildings there is still a 10-metre strip of private gardens with drying racks, benches, flowerpots and pergolas. What does not exist anymore is gardening sheds and tiny vegetable gardens (Figure 5). There is still the same elliptical playground area, rather more fully equipped than the 1920s (Figure 6). Even though the size of open area is generous, the overall impression is intimacy provided by the protective ring of 3-4 storey blocks. Lastly, the rectangular courtyard between two parallel blocks – actually for private use – was designed by the Swedish landscape architect Ester Claesson. It was conceived as a series of green spaces: some gave an impression of cosiness and harmony; others were for vegetable gardens. The original layout has been modified, but the purpose is still for socializing and cultivating.
Figure 4. Humleboet, trapezoidal courtyard: collective spaces and private gardens, 1928
© Digitala Stadsmuseet – Stockholm

Figure 5. Humleboet, path and street dialogue with the collective sloping area
© Chiara Monterumisi

Figure 6. Humleboet, beyond the fence: the elliptic playground area
© Chiara Monterumisi
VIENNA

In 1922-1925, Heinrich Schmid and Hermann Aichinger designed the Fuchsenfeldhof, which was the first building entirely conceived as a Hof according to the city’s planning guidelines for communal housing blocks. Although scheduled for 1919, it was the first building to be built with the Wohnbausteuergesetz of the first municipal program in 1923. It can therefore be considered one of the first interventions of Viennese housing policy.

The building site is in Meidling, which became industrialized throughout the 19th century. Brickworks, textile and also metalwork factories were located there, leading to speculative building of tenement blocks. Thus, the urban plot of Fuchsenfeldhof had been partially built upon before the city acquired it in 1922. The complex was erected in two phases. The first began in 1922 and included 212 apartments, several shops and workshops, the city’s cooperative stores, a child-care facility, a central steam-powered laundry and communal baths. These functions were grouped in a 6-storey building around one courtyard, which occupied only the eastern side of the trapezoidal city block. In the second phase (1923-1924), it grew to encompass the rest of the entire city block, integrating two pre-war apartment buildings in the southwest corner. Grouped around three courtyards, the project added 267 apartments, four shops, two workshops, an instructional workshop, a kindergarten, a reading room, additional laundry and bathing facilities, playgrounds, a water pool and a new monumental entrance to the largest of the new courtyards. Two architects designed 481 apartments in the 6 and 7-storey buildings around a sequence of four collective courtyards.

The block shows a rational layout in its spatial organization and relationship with the urban fabric (Figure 2). The building considers the perimeter streets as limits. Tafuri stated Fuchsenfeldhof conveys the stiffness of the urban form, because it is not able to modify the rigid plot shape. This critical observation can be also interpreted differently: the rigidity of the urban form shows the ability of the block type to build new dwellings into the urban fabric without modifying the pre-existing general plan. This feature allows the Höfe to interweave intricately with the historic city. It is no coincidence that Werner Hegemann appreciated the Viennese complexes, stating they were «typically urban in character [...]. Note, however, the pleasing variety of detail in each group, and the ingenious way in which the plans of the blocks are related to existing streets and open spaces». In particular, the four enclosed courtyards of the Fuchsenfeldhof present valuable design solutions. Each is characterized by a different shape and volume variations. The relationship between the building and the size of the courtyard space is the special feature of the architects’ handling of the collective programme.

The model of the large courtyard block has a long tradition in Vienna’s history, and achieved a precise theoretical frame in two masters of Viennese architecture and town planning from the late 19th century: Camillo Sitte and Otto Wagner. Sitte theorised the large garden court in Greenery within the City (1900): «The sanitary greenery should not be found amidst the dust and noise of the streets, but rather in the sheltered interior of large blocks of buildings, surrounded on all sides». In line with good examples of historic cities and their suburbs, the courtyards contain recreational greenery that could be used as playgrounds, sports grounds and even markets. «What Sitte proposed here was nothing less than opening the formerly private ground of the urban block to the public – a strategy which later became important for the large Höfe of Red Vienna». In his lecture on The Metropolis at the Urban Design Conference in New York (1910), Otto Wagner presented the apartment blocks as the only appropriate housing typology for modern life, as opposed to the suburban detached houses: «The longed-for detached house in the still more longed-for garden city can never satisfy the popular need, since as a result of the pressure of economy in living expenses, of the increase and decrease in the size of families, of change of occupation and position in life, there
must be constant shifting and change in the desires of the masses. The needs which arise from such changing conditions can be satisfied only by rented apartment dwellings, and never by individual houses. This statement is important, considering that architects of some of the largest and most significant Red Vienna buildings were students at the Wagner Academy. In their turn, Schmid and Aichinger, the architects of the Fuchsenfeldhof, belonged to the so-called Wagner Schule. On the one hand, Sitte stresses the courtyard’s spatial quality, on the other, Wagner focuses on the typology and urban features of the courtyard. Both principles coherently came together in the socialist housing programme: the Hof typology blends urban density with the advantages of multifunctional garden courtyards.

The ground floor of Fuchsenfeldhof features a fully integrated combination of garden areas, public entryways, access to collective facilities, circulation paths and apartments (Figure 7). The block emerges as an interaction between public, collective and private spaces, accommodating many facilities and functions. The building «is in fact both public and private, domestic and civic, its courtyard spaces are both open to the city and enclosed within its walls». The sequence of four linked courtyards enhanced the size and the communal amenities (Figure 10); it also improved the urban character through two monumental gateways connecting the street to the internal public space. In this the Fuchsenfeldhof proved really innovative. It introduced a new spatial and functional quality into the urban district by incorporating public elements into the residential fabric. Despite using the well-established Hof typology, it was both larger and less densely built than the traditional and speculative Viennese apartment blocks. The spatial dimensions and the facilities in its courtyards made a key contribution to building practice in Vienna, demonstrating that Vienna’s large courtyard blocks could embody Sitte and Wagner’s urban theories and the social vision of “collective living”, as stated in the housing programme. In recent years, Fuchsenfeldhof has been renovated adapting easily to contemporary living requirements. Most of facilities and common equipment in the courtyard have been preserved. Although the water pool (Figure 8) is nowadays used as a playground, the transformed elements have not altered the collective character after all (Figure 9).

Figure 7. Fuchsenfeldhof, ground floor plan
© Alessandro Porotto
Figure 8. Fuchsenfeldhof, swimming pool: the unexpected amenity, 1930
© Wikimedia

Figure 9. Fuchsenfeldhof, collective space of the main courtyard
© Alessandro Porotto

Figure 10. Fuchsenfeldhof, sequence of arched passages
© Alessandro Porotto
CONCLUSION
Investigating *Humleboet* and *Fuchsenfeldhof* has shown how they still offer key suggestions for conceiving the collective space of the courtyard. Their legacy is all the more important nowadays since housing is such a central topic. They can be considered as models – if properly adapted – for contemporary architectural practice. The authors’ re-drawings highlight the peculiar features of the outdoor spaces, and these are also summarised by the chart data (Table 1).

<table>
<thead>
<tr>
<th></th>
<th>HUMLEBOET Stockholm</th>
<th>FUCHSENFELDHOF Vienna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of dwellings</td>
<td>389</td>
<td>481</td>
</tr>
<tr>
<td>Total surface</td>
<td>11,084 m²</td>
<td>10,680 m²</td>
</tr>
<tr>
<td>Greenery areas</td>
<td>2,612 m²</td>
<td>1,008 m²</td>
</tr>
<tr>
<td>Paved areas</td>
<td>1,089 m²</td>
<td>3,371 m²</td>
</tr>
<tr>
<td>Land occupancy rate</td>
<td>0.54 (54%)</td>
<td>0.59 (59%)</td>
</tr>
<tr>
<td>Site residential density</td>
<td>2.43</td>
<td>3.22</td>
</tr>
</tbody>
</table>

*Table 1. Comparative data between two case studies*

Although the two case-studies describe a similar plot surface, the density is significantly lower in the *Humleboet* due to the greater quantity of storeys in the *Fuchsenfeldhof*. Differences also concern the building features and the architectural layout of the courtyards as illustrated in the pictures. The percentage of green-paved areas is also interesting: in Stockholm, natural features are prominent, the unusual topography becoming an integral part of the project, whereas in Vienna the layout of the outdoor spaces is the result of careful design control. The comparison between old and recent pictures shows how in these courtyards common ground floor facilities and the outdoor equipment are still available for daily use. 44

Although they were designed almost one hundred years ago, they still lump together many individuals and families low on the social ladder into a large block with a shared courtyard, achieving a novel architectural urban unit. Secchi 45 sees such European examples of large courtyard blocks a common ground in the search for adequate forms of living together and the expression of democratic ideals. Today, the Viennese dwellings have been allocated to elderly people, members of the poorer class and immigrants to all of whom the municipality still guarantees a low rent. In Stockholm, the inhabitant’s backgrounds vary, as in the beginning: elderly people, lower and medium class families, single workers and single parents share those blocks. What is more, the skilful design of the two developments has prevented the buildings from deterioration, and, on a larger scale, from the urban decline sadly affecting so many neighbourhoods of big European cities.

To some extent, the song *Why Can't We Live Together?* written by Timmy Thomas 47 in 1973 and designed to inspire a return to “living together”, is here matched by architectural spaces conceived with the same community goal in mind.
NOTES


2 The two German architects summarized the typological evolution expressed by the motto previously cited (vom Block zur Zeile) in the well-known schemes. Gropius presented three schemes starting from a condensed block, later a regular large courtyard block and a barrier settlement. While, May added an additional step to the three diagrams.

The same was also done by a group of young Swedish architects in the manifesto acceptera (1931).

3 From 1850 to 1930 Stockholm's population increased from 93,000 to 502,200 inhabitants, while Vienna shows a growth from 551,300 to 1,935,881 inhabitants. As the data show, Vienna is 4 times larger than the Swedish capital.

4 They were called Hyrkasern in Swedish and Mietkasernen in German. These were speculative buildings in the sense that till the First World War private construction was struck down and construction costs rose sharply due to material shortages and rationing. The flats were overcrowded and with limited sunlight due to considerably reduced size of the courtyards. Sanitary conditions were terrible: no bathrooms, no water and lighting and no facilities. The phenomenon of wooden barrack quarters or provisional shelters (nödbostad) was more widespread in Sweden.

5 First of all, Sweden needed a Building Decree (Byggnadsstadgan, 1874) and a Town Planning Act (Stadspianelanden, 1909) to allow the municipality to purchase land from the Royal estates. From 1914 onwards, local communities established the Bostadskommissionen (Housing commission) and they also started to provide government subsidies for housing developments. The Tenant societies became vital organizations, as shown by the first cooperative (Stockholms Kooperativa Bostadsförening) established in 1916, but the driving market force was the HSB - Hyresgästernas sparkasse - och byggnadsförening (Savings and Construction Association of the Tenants) founded in 1923. Both of them are still managing the housing sector together with many others. Sanitary and design guidelines were finally regulated by the booklet Praktiska och hygieniska bostäder (1921).

In Vienna, the Building Code (Bauordnung, 1883) regulated the dwelling standards until 1930. Between 1922-1928 Vienna municipality succeeded in purchasing an extensive quantity of land (7,920 hectares) destined for housing purposes, approximately one-quarter of the total area of the city. The Federal Rent Control Act (Mieterschutzgesetz, 1922) expropriated all the landlord’s income from rents and destroyed private building speculation. The Housing Construction Tax (Wohnbausteuer, 1923) created financial aid for two five-year building programmes (1923 and 1927).

6 See Wallander, Sven. "Våra arbetsuppgifter", Vår bostad, 1 (November, 1-3), 1924. To quote the beginning of the article published in the first issue: "If a family needs to live their lives in a dwelling, which does not offer the minimum of space and well-being, which is the prerequisite for human dignity, yes, then it is at risk".

7 See Gemeinde Wien (1929). Vienna municipality promoted its two housing programmes through booklets. In the first one it stated: "There are no breaks: therefore, the municipality must continue its building initiatives! After the second building program will be a third and a quarter ones [...]. The construction of healthy and affordable dwellings for large masses of populations has become a durable task of the municipality. It will not fail to fulfil this great duty”.

8 About the quantity of dwelling units, Vienna municipality built 58,353 flats in the timespan 1923-1933.See Hautmann and Hautmann (1980). Regards to Stockholm the data are somewhat less precise in the sense that most case surveys were conducted on a national basis. For example, between 1916 and 1929, 129,800 housing units were built in 280 Swedish towns (See Bauer (1934)), of which approximately 70,452 in Stockholm and its suburbs (See USK - Stockholms stad, 1989). The data include all new buildings: garden settlements of small cottages in the suburban areas – result of the egnahem policy – and urban residential blocks. The Housing census (Allmänna bostadsräkningen år 1933, https://www.scb.se/Grupp/Hitta_statistik/Historisk_statistik/ Dokument/SOS/Bostadsrakningen_1933.pdf) illustrated a scenario of 750,000 dwelling units, of which those new residential units built in 1924-1933 constituted the 22% of the global amount investigated. The cooperatives built 17300 units in Stockholm in the period 1924 - 1933 (See Silk (1948)), particularly the HSB built approximately 4,960 units.
Curiously, from a language standpoint there are two slightly different words to describe the typology of the present study. In Swedish, the recent definition coined by the historian Bjorn Linn, Storgårdsområde, corresponds exactly to the English one, while in German Hof stands only for the inner space, that is the courtyard.

The re-drawings are based on a careful analysis of original items which the authors of the present paper consulted in archives of Stockholm (Arkitektur och designcentrum, Stadsbyggnadsexpeditionen and Stadsarkivet) and Vienna (Baupolizei MA37-West).


Here are some key passages translated by paper’s author: «When travelling the continent in search of cooperative buildings and new types of dwelling, one cannot go wrong in focusing on the city of Vienna. In actual fact, housing cooperatives did not exist there, but favourable policies provided the circumstances for the municipality to intervene vigorously and effectively, so that the formation of special organizations proved superfluous. In addition, Austria experienced a dramatic economic crisis that made it difficult for any private or cooperative agencies to intervene and, consequently, the municipality decided it was vital to tackle the housing shortage. What has been achieved in the last 5-6 years in this respect is extremely impressive and shows the municipal authorities in this area acted vigorously and promptly, wisely and socially, in order to create something new, something of value. During the next 5-year period, 25,000 apartments are planned to be run up. These residential buildings, which have attracted visitors from all over the civilized world, have been designed by the most distinguished architects, built of solid materials and located in various parts of the city. [...] Not 15% as was done before, but as much as 50% of the plot is reserved for courtyards. Inside these large blocks situated in the neighbourhood we now find beautiful, enclosed lawns, playgrounds for children and ponds on which they can even skate in winter. Airy gardening areas for the adults are missing, though. Everything is artistically designed, adorned with beautiful stone figures, and sometimes even a fountain in the middle. [...] Although the homes are small (most of the apartments have only 2-3 rooms), the Viennese people are pleased with that, being used to much less. But these apartments do enjoy direct sunlight and good ventilation. [...] Construction makes use of all modern technical aids. The management of the municipal houses is centralized in the city’s rental department and special offices in each housing complex maintain closer contact with the tenants [...] Vienna is fortunate to have had such excellent municipal leadership over the past few years. [...] Now the Danube metropolis is a good and educational example for other cities».

At the end of 19th century, Stockholm called for new town plans shaping its appearance of a real metropolis. The Lindhagenplanen was clearly inspired by Hausmann’s monumental renovation plan of Paris, but it was not completely realized because it did not utterly match with the morphology of the city.

Hallman was literally a pioneer in Swedish town planning theory and practice. He attended a town planning course in Berlin. He wrote and lectured extensively, and was the first professor of town planning at the Royal Institute of Stockholm (1897-1934). Together with Albert Lilienberg, he took part in the first Town Planning Conferences and, later on, after the First World War, they arranged the first IFHTP exhibition and seminar in Göteborg (1923). Hallman was also expert member of the Stockholm town planning committee, of which during 1922-1927 he became director.

They are the N-S Torsgatan and the Rödabergsgatan E-W.

Wallander built three big blocks, while G. Laurelius S. Kjellberg, P. Hedqvist and T. Kjellgren designed the other four. The HSB architects’ office was responsible for a large number of dwellings in the Röda Bergen. In the specific case of Humleboet only two blocks do not belong to HSB and they are in the East wing of the regular and stretched courtyard.

Most of the Röda Bergen lot names come from the Old Norse mythology, but also from surrounding nature as the case of Humleboet which literally means “nest of bumblebees”.


Unwin (1909, p. 4).

Ibidem.

Parallel to Hallmann’s great effort in renovating town planning ideals, one should also mention the prominent role of some members of the Social Democrat party sitting on Stockholm City Council, like the social reformer and women’s rights activist Anna Lindhagen. She was a driving force in introducing “allocation gardens” and stressing how important carefully designed and equipped gardens are in urban housing developments. Most of her suggestions and proposals were published in Koloniträdgårdar och planterade gårdar (1916).
22 Lindhagen (1916, pp. 52-53). Her analysis and design suggestions provided in the last chapter (“Planterade gårdar”; trans. “Planted courtyard”) were also supported by a Hallman speech dated 1916. The practise of building walls in the high-dense courtyard was the result of the speculative construction of tenement buildings.

23 Access to both of the parallel blocks is through a rectangular green approach, whereas in all the other blocks the principal entrance is on the main street.

24 She worked actively with the German architect Joseph Maria Olbrich at the artists’ colony in Darmstadt, where she was the only woman at his office (1905-1907). She also did an internship at Paul Schultz-Naumburg’s studio. Once she came back to Stockholm, she took part in many projects and competitions, collaborating for example with the English magazine The Studio and the German Deutsche Kunst und Dekoration. For a better understanding about the Swedish landscape architect, see Nolin, Catharina (2009).

25 See Wiener Magistrat (1924).

26 For how the English-speaking world received the policies and guidelines of the Viennese municipality, see Hardy (1934).

27 The first drawings for the first phase of the Fuchsenfeldhof project, held at Baupolizei MA37-West, date back to 1919. The start to building was conditioned by acquisition of land and financing. For more information about the economic and administrative system, see the text of the first housing program Honey (1923). A detailed reconstruction of all historical and political events is provided by Gulick (1948).

28 Usually, the Metzleinstalerhof is considered the first Hof of the Viennese experience. The courtyard block consists of a part designed by Robert Kalesa in 1919-1920 and a second one in 1923-1924 by Hubert Gessner. However, the Metzleinstalerhof was not yet included in the 1923 housing program. See Metzleinstalerhof (1924).

29 It is one of Vienna’s suburban districts (12th Bezirk).


31 Tafuri (1980).

32 The Höfe are predominantly located in workers’ areas where the urban fabric showed the signs of 19th century housing speculation. Their construction was based on the general urban plan of 1893, without any modifications to the urban structure as shown by Battisti (1975). For more information about the urban intervention tools, see Blau (1999).

33 Hegemann (1938, p. 93).

34 See Bobek and Lichtenberger (1986).

35 This article appeared in 1900 in Der Lotse: Hamburgische Wochenschrift für deutsche Kultur. It was printed as an appendix in the German edition of 1909 of City Planning according to Artistic Principles (Der Städtebau nach seinen künstlerischen Grundsätzen). The English translation of the article is available in Collins and Collins (1986).

36 Collins and Collins (1986, p. 319).


38 In 1911 Otto Wagner also showed his urban vision of Vienna in Die Grossstadt. The site plan and aerial perspective for the XXII Vienna Municipal District project presented uniform residential blocks interspersed with monumental public buildings arranged along a central axis of green spaces.


40 Some famous architects, such as Josef Hoffmann, Josef Plečnik and Max Fabiani, also attended the Otto Wagner Academy. See Pozzetto (1979).

41 See Wenzl-Bachmayer (2010).

42 “In the communal buildings, at least 50% of the surface of the courtyard (Hof) is generally not built. […] Careful attention is paid to making large courtyards in a way that they can provide ornamental gardens and that the sun can reach all the rooms as much as possible. The courtyard garden of the communal buildings guarantees lighting and ventilation of the houses, as well as, no less importantly, it offers playgrounds for children and rest areas for people” Gemeinde Wien (1929, p. 44).


44 In the recent years, both the districts have been partially renovated proving easiness to adapt to contemporary requirements of sustainability. For example, in Stockholm the works consisted in replacing with energy-efficient windows whilst keeping the same framework and performing roof renovations by adding dormers similar to those in the original. In Vienna, they added an exterior insulation system which does not alter the original idiom or character of the façades or affect the replacement of windows. In addition, the dwellings designed at that time show great flexibility and a capacity for adapting to current living standards, which generally amounted to merging two or three of them together by a few operations.
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CONNECTING THE DOTS: CITIES, COMMUNITIES AND HOMES FOR AN AGEING SOCIETY

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INTRODUCTION
Population ageing is one of the most profound social changes being experienced in the 21st century. It is an international phenomenon, though more advanced and rapid in some countries. Japan leads the world with 33.1% of its population 60+ in 2015, estimated to grow to 42.5% by 2050. Italy, the oldest country in Europe at 28.6% in 2015 is expected to reach 40.7% by mid-century. The UK at 23.0% is close to the average for Europe in 2015, and expected to reach 30.7% by mid-century. Australia is a little lower at 20.7% in 2015, projected to increase to 28.3% by 2051. Population ageing is also an urban issue, as cities are where most older people will live in future.

Population ageing has major social and economic implications arising from increasing dependency ratios and reducing tax revenue in the face of rising health and aged care costs. Governments have responded in various ways, including increasing pension age, compulsory superannuation, greater targeting of age related benefits, and encouraging ageing-in-place to reduce transfers to more expensive institutional aged-care. Ageing-in-place is seen as a win-win solution, by both governments because of savings in aged care costs and older people who prefer to remain living in their own homes for as long as possible. However, in Australia, as in many other countries, much of the conventional housing stock is not suitable for ageing-in-place. Neither are many of the neighbourhoods in which they are located, or indeed the wider city infrastructure to facilitate social participation and access to services. In Australia, progress toward more age-friendly homes, neighbourhoods and cities has been slow and reactionary, rather than proactive. This paper will argue that a significant contributing factor is that responsibility is fragmented between different levels of government, departments and agencies and subject to political cycles. It will do this by drawing on the findings of two research projects on ageing, housing and the built environment and discussing policy developments in the domains of home, community and city.

The Research Projects
Two research projects led by the author were funded by the Australian Housing and Urban Research Institute (AHURI). The first Housing, Land and Neighbourhood Use by Older Home Owners involved a national survey of 1604 people 55+ via the most widely circulated Australian seniors’ magazine 50 Something, and 70 in-depth interviews across five states of Australia (NSW, QLD, VIC, SA, WA), jointly funded by the Commonwealth Department of Health and Ageing (DoHA). The
second, Downsizing Amongst Older Australians\(^4\) involved a national survey of 2767 respondents who had moved since turning 50 via the \textit{50 Something} magazine, followed by 60 in-depth interviews and policy workshops in three states (NSW, SA, QLD).

**HOMES FOR AN AGEING SOCIETY**

The most immediate environment for supporting an ageing population is the home. Like many other governments, Australian policy has emphasized ageing-in-place in recent decades to reduce expenditure on institutional care, with an increasing level of care delivered in the home, including dementia care.\(^5\) The private home is therefore becoming more important in accommodating an ageing population. However, the bulk of existing housing stock is not suitable for extended ageing in place, and age-appropriate housing options are limited.

**Older people's housing in Australia**

Despite recent intensification in urban centres, Australia remains largely a suburban society, particularly so for the older population. While household sizes have been decreasing (due partly to population ageing), dwelling sizes have increased\(^6\). Allotment sizes have been decreasing to reduce suburban land consumption resulting in bigger two-storey homes on smaller lots, with living areas downstairs and bedrooms upstairs, and hence less appropriate for ageing in place.

At the 2011 Census\(^7\), 71\% of Australians 65+ lived in detached suburban dwellings and 83\% in dwellings with 3 or more bedrooms despite 84\% being in only one or two-person households. Three quarters (76\%) were homeowners, predominantly outright owners (67\%). Only a very small percentage (5.3\% in 2011) lived in retirement villages\(^8\). The predominant Deferred Management Fee/Loan-Lease model in Australia is not favoured by many older people due to its impact on intergenerational wealth transfer and uncertainties around unexpected maintenance fee increases. Nor is it attractive to many in the baby boomer generation rapidly entering older age. Multi-unit living, is also unattractive to many older people concerned about living at close quarters with neighbours, dealing with owners’ associations, and uncertain monthly fee escalation, particularly for those on fixed incomes. As a result, most older Australians remain in private housing in the general community, and this is likely to continue.

**Housing utilisation**

It is commonly argued by Australian policy makers that older people underutilise their homes, and should downsize to release their homes for family households. This ‘mismatch argument’\(^9\) is based on the ratio of permanent residents to number of bedrooms using a modified version of the Canadian National Occupancy Standard\(^10\), adopted as an official measure in Australia. Using that formula, we found that 84\% of houses occupied by Australians 55+ would be deemed ‘underutilised’. However, amongst our survey respondents (79\% of whom lived in separate houses and 85\% in dwellings with 3 or more bedrooms), 91\% regarded the size of their dwelling as suitable for their household. One quarter needed accommodation for temporary residents (staying at least 20 nights but less than 6 months per-annum) not included in the census count, and used so-called ‘spare’ bedrooms for other purposes such as guest accommodation (for family and friends) office space, hobbies, exercise equipment and so on – activities important to their health and well-being. Some claimed they needed more space post-retirement as they spent more time at home, and couples needed their own individual space\(^11\).
Moving and Downsizing
The findings questioning widespread underutilisation prompted our following study on downsizing. According to 2011 Census Data we found only 18% of Australians had moved since turning 50 within the previous five years, and from our survey findings estimated that only half (9%) of these downsized into dwellings with fewer bedrooms. Other researchers found that while 30% of people 50+ had considered downsizing, only 10% had done in the same five years. This raises the question of what barriers may prevent the additional 20% from downsizing. According to our research, what downsizing did occur was mostly for lifestyle improvement or maintenance difficulty reasons, sometimes arising from negative shocks such as death of a partner, relationship breakdown, illness or disability, and only rarely for financial reasons. However, certain barriers to downsizing were identified including: inadequate supply of smaller, affordable, well-located dwellings; financial barriers (including costs of real estate agent and removal fees, stamp duty on new purchases, and pension eligibility risk from equity release); and psychological barriers (including attachment to the home, neighbourhood and community, and the stress of moving and decluttering).

Housing policy
Four of the key issues in housing policy for an ageing population are appropriate housing typology, design, location and finance. In Australia responsibility for policy in these areas is divided between all three levels of government (Federal, State and Local). The Federal Government’s interest is mainly in the economic aspects of housing, but also in collaboration with States for building standards via the Building Code of Australia (BCA). Responsibility for housing typology and location is largely the province of State Government planning policies and local government planning controls, with outcomes largely market driven. Recent years have seen a polarization in the market in the larger cities between high-density apartments in urban centres and continuing expansion of low-density housing in outer suburbs, resulting in a ‘missing middle’ in the market – i.e. medium-density attached housing types. What is currently being built in this sector are primarily two-storey attached ‘town-houses’, also not suitable for ageing in place. Strategic planning documents have long called for more diversity in housing types to accommodate demographic change, but this has not yielded much diversity to date. Two state governments (NSW and Queensland) have recently taken steps to develop more strategic policy to address the ‘missing middle’, premised partly on the needs of an ageing population.

In terms of age-appropriate design, Australia has had disability access standards since the 1970s, but only mandated for public and commercial buildings. Only in 2010 were very limited requirements for access to residential flat/apartment buildings included in the Access to Premises – Building Standards of the Disability Discrimination Act. This includes a level building entrance and access to one floor of sole-occupancy units, but no requirements for dwelling interiors. The former federal Labor government initiated voluntary Liveable Housing Design Guidelines with four levels of provision (silver, gold and platinum), aiming for 100% adoption in new housing by 2020. Sadly, interim goals toward this have not been achieved, due to industry resistance and lack of political support, fueling the argument for mandating at least silver level in the BCA.

Responsibility for financial support/incentives for moving/downsizing is split between federal and state treasuries. To ameliorate the impact of equity release on pension eligibility, the former Labor Government introduced a pilot scheme to quarantine up to $200,000 of equity release from the assets test for older movers/downsizers, which was promptly scrapped by the incoming Liberal/National Government, only to recently establish its own scheme whereby people 65+ can make a non-concessional (post-tax) superannuation contribution up to $300,000 from the proceeds of sale of their
principal place of residence of 10 years or more. State Governments have responsibility for property taxes through collection of stamp duty on the purchase of dwellings. Four State/Territory governments have introduced stamp duty concessions (one short lived) for older Australians to address barriers to downsizing, though there is little evidence of their effectiveness.

COMMUNITIES FOR AN AGEING SOCIETY
Ageing in place is not merely about the home, but also about the community in which the dwelling is located. An important aspect of the ‘place’ of ageing is the local neighbourhood with which older people have many social and emotional ties. It is well established in the gerontological literature that social participation and a familiar, safe and supportive local community is important to the health and well-being of older people.

Community Participation
Our housing and neighbourhood utilisation research analysed community participation patterns and attitudes of participants. High on reported daily-weekly activities were shopping/banking/retail, (95% of respondents), sport/recreation (79%), religious services (68%), visiting family/friends (64%), volunteering (57%) and community/social clubs (56%). Other less frequent monthly-yearly, yet important, activities included medical/health related appointments (92%), theatre/cultural activities (90%), dining out (58%), and educational courses (50%). Our interviews and observations revealed great variability in the quality of the local public realm. Poor provision or design of appropriate public access and spaces inhibited physical activity and social engagement. Barriers identified by our respondents included: absent/infrequent pedestrian crossings; absent, discontinuous, poorly maintained, overgrown, or poorly-lit pedestrian pathways; inadequate provision or poor design of public parks for access and use of older people; lack of seating, shelter and public toilets in public spaces; and excessive walking distances to public transport. Inadequate provision or poor design of the public domain was typically worse in lower-income outer-suburban areas and some regional towns.

Age-friendly Community Policy
In Australia, policy and delivery of community planning and design is primarily a State and Local Government responsibility. However, the Federal Government has at times taken a broad interest from a national perspective. In 2001, the Howard Government’s National Strategy for an Ageing Australia included “safe access to services and facilities through good design of public spaces and the built environment” amongst its actions required for public, private and community infrastructure to support older people. A later report of the Prime Minister’s Science and Innovation Council highlighted the importance of neighbourhood design to the physical and social activity of older people. In 2004, the Department of Health and Ageing (DoHA) inaugurated the Local Government Population Ageing Action Plan in partnership with the Australian Local Government Association (ALGA) which published information and guidelines on age-friendly community planning and design, publicised good practice examples, and developed a toolkit for Local Government. The same year DoHA initiated a National Speakers Series to encourage the engagement of professional associations and other peak bodies in the development of national guidelines for health and well-being. DoHA later funded a collaboration between the Planning Institute of Australia, The National Heart Foundation and ALGA to produce the Healthy Spaces and Places guidelines to encourage active living including for the ageing population.
The importance of neighbourhood design has also come to the attention of other Federal Government agencies. The Australian Productivity Commission in its 2011 report on aged care noted that “Age friendly housing and neighbourhoods can have a positive effect on the health and quality of life of older Australians” and that “a national approach could assist in spreading best practice”\textsuperscript{30}. Their 2015 research paper on Housing Decisions of Older Australians noted that “It is also important for the dwelling to be located close to services and facilities, such as medical clinics and public spaces, to allow residents to continue to participate actively in their community”\textsuperscript{31}. In 2013, the Human Rights Commission, developed an Advisory Note on Streetscape, Public Outdoor Areas, Fixtures and Furniture\textsuperscript{32} complimentary to the provisions of the Access to Premises – Buildings provisions, possibly a first step towards mandatory standards.

All State/Territory Governments have departments responsible for Ageing. Most have strategic and action plans based on consultation with older people emphasising active and healthy ageing, community participation and supportive neighbourhood design. Many have partnerships with peak seniors organisations such as COTA, or the Local Government Association and offer small grants for age-friendly community projects.

**CITIES FOR AN AGEING SOCIETY**

However, the need for an age-friendly built environment extends beyond the home and local neighbourhood to the wider city. Fundamental to an age-friendly city is access to public transport and the commercial, cultural, and recreational opportunities of the city. Access to public transport varies greatly for older people depending on where they live, and how easy it is to negotiate. Our older home owner interviewees identified many barriers associated with public transport including: distance or steep topography to transit nodes; poor provision or quality of service (regularity/reliability); waiting times, queues and crowding; confusing timetables and bus routes; lack of seating and shelter; stair only access to railway stations and busses; and crime and safety concerns at transport nodes. Once again, these problems were more prevalent in suburban areas and regional towns.\textsuperscript{33}

**Transport infrastructure policy**

In Australia, public transport is primarily the responsibility of State Governments, though also funded via Federal Government infrastructure grants. However, accessibility issues also come under the aegis of the Human Rights Commission and the Disability Discrimination Act. Under the Act’s Disability Standards for Accessible Public Transport\textsuperscript{34}, full accessibility is being rolled out over a period of 30 years from 2002 to 2032. Targets for compliance by the end of 2017 are generally 90% (80% for busses).

**Liveability and Social Inclusion policy**

While responsibility for cities lies primarily with state and city governments, the federal government has a role in city policy. The former Labor Government set up a Major Cities Unit, developed a national urban policy and an urban design protocol focused on the productivity, sustainability and liveability of Australia’s 18 major cities. It recognised population ageing as having an important impact on cities and advocated cultivating healthy, cohesive and inclusive communities, without specific reference to age friendly design. The current Liberal-National Government has appointed a Minister for Cities and Digital Transformation, and released a Smart Cities Plan\textsuperscript{35}, the focus being primarily on economic development, digital technology and jobs, and no mention of the ageing population.
Most state governments have developed strategic metropolitan plans for their major cities which focus heavily on densification around a hierarchy of centres and transport nodes, but apart from identifying the need for housing diversity for an ageing population, there is little detail on age-friendly public space or transport. City governments have, however, recognised the older population as an important and rapidly growing group. The City of Sydney the Next Generation: Blueprint for Aged Services and Facilities 2008-2018 strategy focuses on the ageing population including the aim to design, plan and activate the city’s urban environment to meet the needs of older people, and assess its achievements against the WHO Global Age-friendly City criteria. The Melbourne for All People Strategy 2014-17, while taking a more socially inclusive approach does address issues of accessibility, cognitive impairment, safety, life-long learning, intergenerational engagement and consultation in decision making. While 23 Australian cities and municipalities, including the national capital Canberra, have joined the WHO Network of Age Friendly Cities, most are regional cities or individual urban municipalities.

CONNECTING THE DOTS
Despite recognition of the housing, neighbourhood, and urban infrastructure implications of population ageing in Australian Federal and State Government policy documents for 25 years, policy responses have been fragmented, uncoordinated and inconsistent and, hence, achievements have been modest in all three domains. This is partly due to the division of powers relevant to ageing, housing and the built environment between national, state and local government, but also to the siloed nature of government departments, and changing political cycles. As noted by the Productivity Commission with respect to housing options:

“The policies that affect older Australians’ housing decisions are very fragmented, and there is no strategy that recognises the spectrum of choices, and their effects on aged care services. This patchwork of policy makes it difficult for older Australians to transition from one form of housing to another, as their care needs change”.

As a result, while the population is continuing to age, little progress is being made to move towards truly age-friendly housing and built environment. Appropriately designed housing options remain limited and, despite the best efforts of some municipalities and one major city to reach WHO Age Friendly City status, many neighbourhoods and cities in Australia still fall short in supporting an ageing population. What is required is a well-resourced, nationally coordinated, whole-of-government, bi-partisan effort, in collaboration with state and local government to connect the dots between homes, communities and cities for an ageing population.
NOTES

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THE MOOR POOL ESTATE: A VISIONARY EDWARDIAN GARDEN SUBURB FOR BIRMINGHAM

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INTRODUCTION
Tucked away a few miles West of the city centre and a short walk from Harborne High Street is the Moor Pool Estate; one of the country’s most special and least known garden suburbs. Built between 1907 and 1912 the development represents an interesting variation on the themes established by George Cadbury on the nearby Bourneville Estate. Moor Pool, like Bourneville, was the product of the progressive thinking associated with the Liberal Non-Conformist tradition flourishing in Birmingham during the second half of the 19th Century. Many of the key industrialists were keen philanthropists and used their fortunes to transform Birmingham into a place where education, the arts and housing reform could flourish. The Nettlefolds, the “N” in GKN (Guest, Keen and Nettlefold) and the Chamberlains were two such families with a direct involvement in the Moor Pool project.

HARBORNE TENANTS ASSOCIATION
John Sutton Nettlefold (1866-1930) was the first chairman of the Birmingham Housing Committee and commissioned the local architect Fredrick Martin to create proposals for a low-density housing scheme on a 56 acre site centred on the old Moor Pool purchased for £15,000 by Harborne Tenants Ltd.

“It is fortunately becoming more and more recognised every day that open spaces are as necessary to the health of a town, as streets are to its traffic. The provision of allotments, as a counter-attraction to the public house, could also be arranged for, if only these things were thought of beforehand. Under our present system, these boons to the self-respecting working-man and his wife and children are never thought of until it is too late to provide them at a price within the means of the ratepayers or the rent-payers of our large towns.”

John Sutton Nettlefold, Practical Housing, 1908
The Harborne Tenants Association was to be an experimental and pioneering partnership scheme by which the tenants could eventually progress towards ownership. Original rents for the smaller properties were generously low at between 4s.8d and 11s. per week. Frederick Martin’s father William Martin had been the co-founder of the famous Birmingham practice Chamberlain & Martin responsible for such fine buildings as the School of Art (1881) on Margaret Street. William Martin had also been the City’s Public Works architect responsible for at least 40 of the famous “Board Schools”. One of Frederick Martin’s first important commissions after he joined his father’s practice was his terracotta masterpiece known locally as the Telephone Exchange (1896) on Newhall Street (Listed Grade 1).

**MASTER PLAN**

Martin’s master-plan for the Moor Pool Estate was based on a gently curving axis running uphill in a Westerly direction from the Harborne Railway bridge to Lordswood Road (along what became Moor Pool Avenue and Carless Avenue). At the halfway point he proposed a community hall, some shops and the estate offices enclosed within what became “The Circle”. The community hall also included a snooker room and a skittle alley overlooking two tennis courts in the centre of The Circle. Other community amenities were to include a bowling green next to the old Moor Pool and plenty of space for allotments to supplement the gardens of the smaller properties.
Off the main axis smaller roads were given “directional” names such as North Gate and East Pathway. Carless Avenue was named after a small wood that bore the name of an old landowning family and High Brow was the name given to the road that rises up from Carless Avenue to join North Gate. Margaret Grove was named after Nettlefold’s wife Margaret (nee Chamberlain) who cut the first sod for the estate on 26th October 1907.

Between 1907 and 1912 about 500 houses were built with the first completed for an opening ceremony on 24th May 1908 conducted by the Rt. Hon Henry Vivien MP. The last houses to be completed were the larger houses at the West end of the estate at the top of Carless Avenue.

**INCLUSIVITY, MATERIALS AND DIVERSITY**

Nettlefold and Martin’s vision was for an “inclusive” estate for manual workers and skilled artisans living alongside professionals and prosperous members of the business community. The plan was to include a wide range of houses from smaller two-bedroom terraces through to substantial semi-detached houses with five bedrooms. One of the earliest residents (at 92 Carless Avenue) was the renowned “Arts and Crafts” silversmith, Bernard Cuzner (1877-1956) who was head of Metalwork at the Birmingham School of Art from 1910-1942.
Martin’s designs for the actual houses combine some of the features of the Arts and Crafts Movement with those of Port Sunlight and Bourneville. The basic themes of the estate are the regular use of front-facing gables over the main bedrooms and the extensive use of cream painted stucco providing a contrast with the ubiquitous red brick. The “two tone” houses with the stucco upper storeys are particularly attractive. Other effective architectural devices include the imaginative use of brick arches and the decision to use opening window casements based on six-pane side-hinged lights and two-pane top-hinged lights.

![Figure 4. Diversity by design; no two houses were to be the same](image)

Having established an architectural language, Martin managed to generate a very wide variety of houses throughout the estate. Indeed it is very difficult to find any two that are identical. Ingenious variation of plan-form combined with the imaginative and careful positioning of each building is handled very effectively. In accordance with Garden City principles the landscaping of the whole estate is integral with the house designs. All the roads are tree-lined with grass verges and Carless Avenue opens out to include two semi-circled open spaces known as “The Spinney” with the houses set back to form two crescents. The Estate Offices at The Circle became the administrative hub where rents were paid and provided a base for a small direct workforce engaged in routine maintenance.

**LISTED BUILDINGS AND CONSERVATION AREA STATUS**

By the 1960s quite a number of the houses were owned independently and changed hands on the open market. The estate was designated a conservation area in 1970 and the buildings within The Circle were listed along with the particularly attractive gantry-entrance dwellings on Ravenhurst Road opposite the Moor Pool. In 2006 an Article 4 (2) Direction was approved as thirty years of “independent improvements” had led to an erosion character. All elevations visible from the street are covered by the Direction which specifies that Planning Permission is now required for external doors, windows, porches, small extensions, roof alterations (including dormers and roof lights), off street parking areas, access ramps, aerials/satellite dishes, gates, walls, fences and the painting of pebbledash/brickwork. Although it is perhaps too soon to be able to assess the impact of the Direction, it has been welcomed by local residents keen to maintain the special character of the estate.
In recent years the character of the estate had been under considerable threat following the purchase of the amenity spaces by the speculative development company Grainger PLC. However, in 2014 following the formation of the Moor Pool Heritage Trust (MPHT), the community facilities were purchased for £325,000 and the future of the estate is assured.

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INTRODUCTION
Liveable cities must encourage social diversity in urban spaces in order to create a socially sustainable future. While housing is of primary importance for urban living, outdoor spaces, in which social interactions occur, are equally vital and complementary. Therefore, it is required to develop an understanding of inclusive urban spaces. The theoretical approach of the study is trilateral. Firstly, urban parks are asserted as places to observe in order to understand urban living and inclusive urban spaces. Secondly, inclusive urban spaces are conceptualized along with a discussion on the right to the city. Lastly, designers’ and theoreticians’ abstractions on urban living and inclusive urban spaces are discussed. Hence the present study aims to create an understanding of inclusive urban spaces through readings on urban parks by investigating their spatial settings with their inclusionary and exclusionary characteristics for their users. This reading on urban parks also aims to represent a projection of the community living in the neighbourhood where the parks are located.

Urban Parks as Indicators of Urban Living
Urban parks can be conceptualized as lively sections through which urban living can be observed. Jacobs says that rather than having an impact on, parks are substantially affected from their surroundings. Accordingly, types of visitors and activities that take place in parks are strongly related to the location of parks in the urban fabric. In addition, activities that take place in parks are more various than other public spaces where expression of self is restricted to certain extend. According to Williams, parks are places where cultural meanings, ideologies, power relations are expressed. In parks, relationships between visitors and urban space are manifested in events and activities. Therefore, local and non-local visitors’ behaviours and activities together with complementary spatial settings can be interpreted as indicators of urban living in parks. Similarly, an inclusive urban space can be interpreted according to its spatial settings that regulate social interactions and events. Urban parks are dynamic places with changeable environments. Their process of planning and design are overlapped with the process of using and maintaining. Accordingly, spatial settings and social interactions in parks change due to different manipulations that were made by designers and users. In the following chapters, designers’ and citizens’ different conceptions of inclusive urban space are going to be discussed.
Citizen’s Approach to Urban Space and the Right to the City

Urban spaces can be conceptualized as infrastructures of social interactions. Accordingly, inclusive urban spaces can be thought as containers of diverse social interactions, encounters, and gatherings and be conceptualized along with an understanding of the right to the city.

Harvey claims that right to the city is right of citizens to have a say on urbanization process and to shape the city according to their desires⁵. Contradictory or intersecting power and property relations and desires are simultaneously existent in urban spaces. Therefore, the right to the city perpetually manifests itself throughout urban living.⁴ Any intervention to urban space with an intention to draw exclusion line among citizens and citizens’ reactions to the situation can be interpreted as a practice of the right to the city.

According to Lefebvre, the right to the city can solely be possible when urban living is put as an absolute resource among all resources and when urban space is formed according to the needs of the urban living where encounter takes place and use value of space is primary to any other value.⁵ Lefebvre’s statement can be interpreted, as social interactions within an urban space should constitute their own value with their inclusive properties. Inclusive urban spaces should contain contradictions that would stimulate encounters.

Hence the use of inclusive spaces should serve for contradictory needs of urban living. Social needs are conflicting and interconnected at the same time, such as the need for similarity and difference, isolation and encounter, security and opening, certainty and adventure⁶. However, any contradiction is usually excluded from the urban space and consumerism is imposed upon citizens as the appropriate living style. In a unilateral urban space without any contradiction or social interaction, isolation, homogeneity and exclusion become dominant characteristics of the urban space, instead of encounter, diversity and inclusion.

Designer’s Approach to Urban Space and Abstracted Control of Urban Living

Competitive conceptions of citizens and designers on urban living continuously come across each other while the right to the city guides the way for an understanding of inclusive urban space. Architects and planners ambiguously or unintentionally favor control and restriction over urban space while trying to fulfill needs of citizens at the same time. They conceive parks as spaces where citizens can experience nature in a limited space and fulfill their recreational needs effectively. This conception can be interpreted as a result of an idealized and abstracted understanding of modern urban life.

Central Park, which is designed by Olmsted and Vaux in 1857, is regarded as an important example of modern urban parks. Mike Davis explains ‘Olmstedian vision of parks’ as an idealized conception of urban space where different classes and ethnicities would mix under common enjoyments and recreations⁷. Pleasure of gazing at a natural setting and spending leisure time in the extensive space of parks are conceived as inclusive activities which can be enjoyed by all types of visitors.

Additionally, Kosnoski’s description of Olmsted’s urban spaces puts emphasis on diversity. He describes Olmsted’s urban parks as places for experiencing diversity without getting overrun by it.⁸ Diversity can be interpreted as a prerequisite for encounter, hence a prerequisite for the right to the city in an urban space.

Vaux and Olmsted designed the spatial setting for Central Park as inward-looking small spaces that are distributed to a very large plane.⁹ This setting was assumed to be the infrastructure for inclusive social events. However, a borderless and egalitarian space does not always end up being inclusive. Environmental circumstances and citizen’s own conceptions of urban space may overcome what was planned to happen in an urban park. Mike Davis says that even though planned for public use, today’s
urban spaces are rapidly becoming homogenizing and excluding in character. He describes this phenomenon as turning inside out of the city.\textsuperscript{10} Citizens’ own conceptions for public use in urban spaces eventually manifest themselves as the act of drawing boundaries between different groups. Conclusively, urban spaces, which are originally planned to stimulate diversity, end up becoming partitioned in accordance with the specific functions for specific users. Meantime, the conception of urban park as the container of diversity lost its popularity and meaning.

**URBAN LIVING IN ISTANBUL**

Istanbul as a global city is the scene of competitive spatial manipulations, power relations and practice of the right to the city. According to Keyder, migration of urban poor to Istanbul, spatial differentiation of middle class housing and fragmentizing effects of globalization have the most apparent impact on the built environment of Istanbul.\textsuperscript{11} The distribution of housing, workplaces, urban parks and other urban spaces in Istanbul along with the existing historical fabric of the city have constituted a very diverse and complex urban pattern. In Istanbul, parks are usually considered as secondary attraction points and are usually equipped with commercial and sports facilities that are segregated from common area of parks in order to sustain appeal for their visitors. Also, in a majority of non-historical districts of Istanbul, where new parks are constructed, number of shopping malls has outnumbered the urban parks\textsuperscript{12}. The urban parks in Istanbul seem to be incapable of sustaining their popularity when they are compared to more exclusive, consumerist spaces such as shopping malls.

A general view on distribution of parks shows that historical parks constitute the majority of urban parks in Istanbul. Most of the historical green areas are located in coastal districts that span from Kucukcekmece in the west to Anatolian coasts of Uskudar, Kadikoy and Beykoz in the East\textsuperscript{13}. The non-historical urban parks in Istanbul are located in districts in inner regions of Istanbul; also coastal parks which are planned upon coastal filling ups\textsuperscript{14} are considered among new parks.

**Three Cases of Non-Historical Parks in Istanbul**

The case study investigates three non-historical parks from different districts with similar types of urbanization processes that are based on an unplanned growth due to the migration to Istanbul. Selected sites, Bayrampasa, Zeytinburnu and Bagcilar are among the districts with the densest population in Istanbul.\textsuperscript{15} All sites have a complex urban pattern, which consists of urban parks along with low-rise apartments, “gecekondu” houses, gated community housing and shopping malls.

The parks have large areas and contain different spatial settings that appeal to different visitors. City parks and coastal parks are built in order to appeal people from distant areas; so they have a wider range of visitors. Neighborhood parks on the other hand, have smaller space and visitors from near settlements.

**Partitioned Urban Space of Bayrampasa City Park**

*Bayrampasa City Park* is opened in 2003 with partitioned spatial settings for diverse recreational, commercial, amusement, and sports activities. Small-scaled spatial settings in the park such as playgrounds, outdoor sports implements, walkways, benches, drinking fountains, pergolas are accessible to every visitor. Also, bigger scale spatial settings such as amphitheater, zoo gardens, and fruit gardens are constructed in order to gather different visitors under the program of spectating. Additionally, there are numerous exclusive spaces in the park such as cafes and restaurants that appeal to certain type of users who can afford to spend time in these places.
Several observations to park indicate that designers’ initial conception of urban space is interwoven with demands and conceptions of local municipality. Most of the activities that are held in park are organized by the local municipality such as memorial and award ceremonies\textsuperscript{16}, monument openings\textsuperscript{17}, gatherings\textsuperscript{18} and sports competitions\textsuperscript{19} which usually take place in bigger scale spatial settings of the park.

Additionally, other entrepreneurs who expect an income from use of the park have caused changes on the land of the park. The number of cafes and restaurants in the park are increased with the aim of financial profit. Moreover, a new restaurant is built right under the amphitheater shows that land of the park is continuously redesigned according to demands of different companies that run business in the park. In 2006, the construction\textsuperscript{20} of an amusement park in the urban park is also conceived as an indicator of how citizens’ the right to city is overwhelmed by entrepreneurs’ right to the profit.

As a park mostly visited by locals, the right to city is practiced in leftover places of the park. Visitors picnic on the grass, play in the playgrounds, walk and run on appropriated paths. There are also some visitors prefer to spend time in more consumerist places like cafes and restaurants. Consequently, limited number of outdoor spatial settings seems to give the opportunity to visitors to encounter and establish an egalitarian relationship in the park. However, exclusive spaces like cafes, restaurants, and other privatized sports facilities and their users seem to have priority over other spaces and their users.

**Introverted Urban Space of Dr. Sadik Ahmet Neighborhood Park**

*Dr. Sadik Ahmet Park* is a neighborhood park in Bagcilar. This small-scale urban space is mostly dominated by one café, which is located at the center of the park. Additionally, walkways, benches, sports implements and playgrounds are spatial settings in *Dr. Sadik Ahmet Neighborhood Park* that appeal to every visitor from the neighborhood.

The conceptions of local municipality or any designer are not apparently manifested in the spatial setting of the park. On the other hand, the right to the city is practiced very differently from *Bayrampasa City Park*. Although no visible spatial segregation is designed in the land, visitors use spatial settings of the park according to an invisible segregation.

The local women, elderly and children are observed to be using benches and playgrounds in the park. However, inner space of the cafe was spatially set according to needs of men with water pipes and televisions that are constantly broadcasting the news. Also, the social media shares that are tagged with the park’s location contain mostly photos of male visitors\textsuperscript{21}. The park as an urban space is observed to be more appealing and inclusive to men rather than to women.

The gender based spatial segregation in the park can be interpreted as a manifestation of community living in Bagcilar. In *Dr. Sadik Ahmet Neighborhood Park*, social control rather than spatial control is apparent. Urban space is fragmented under the gender discriminations accepted by the community itself. Although, café with its spatial settings may partly be considered inclusive for Bagcilar, gender based segregation, rather than consumerist relationships, seem to be the cause of the hierarchical relationships and the discrimination between users of the park.

**Isolated Urban Space of Kazlicesme Coastal Park**

*Kazlicesme Coastal Park* is located in Zeytinburnu and placed on a coastal filling up alongside an extensive motorway. The area of the park is 144,070 m\textsuperscript{2}\textsuperscript{22} and bigger than any other park that is selected as case in this study. The area of park has its natural boundaries with Marmara Sea at the one side and the motorway at the other. The land of the park is poorly designed with sparsely installed spatial settings. The park’s extensive space with low-density forestation gives the impression of a
deserted, unidentified space. Nevertheless, there is no sign of spatial segregation or exclusion on the oversized flat surface of the park.

The absence of restaurants, amusement parks or parking lots makes the park unattractive to investors and businessman who prefer to use consumerism as a tool for spatial segregation and exclusion. Accordingly, designers’ and local municipality’s approach to the urban space can be summed as furnishing a stagnant land with minimum involvement and with the lowest cost.

Conversely, in the summer months, Kazlicesme Coastal Park is filled up with visitors. According to a newspaper, the park is preferred as an inner city picnic area and gets full with people making barbecue. The visitors of the park spend time enjoying outdoor activities while using furnishings that they have brought with. They share the sea view, walk, eat and play without any imposed spatial segregation or exclusion. Rather than the effect of spatial settings that are designed by architects, the formation of this inclusive urban space seems to be the result of temporality, atmosphere and place making.

On the other hand, conceptions of different citizen groups on using open space are observed to be in conflict in Kazlicesme Coastal Park. Some visitors were not pleased with the unregulated and uncontrolled spatial use of the park. Furthermore, there was even a petition against barbecuing in coastal areas of Istanbul.

Consequently, two different practices of the right to the city were manifested in converse ways in the park. Although any spatial segregation or exclusion was not imposed upon the park’s visitors, conflicting conceptions of visitors indicate that different cultural concerns of citizens create different conceptions of urban space and therefore different practices of the right to the city.

**CONCLUSION**

Urban living and urban space constantly reshape each other. Therefore, every statement or projection on urban space must firstly rely on urban living. Sociologists’, architects’ and planners’ projections for urban living, which lacks of an understanding of urban reality, are destined to fail. As a result, dynamic strategies for understanding the urban reality are needed and these strategies must be in connection to the context and locality of every urban space.

The three cases of urban parks in Istanbul showed that designers’ approach to urban space is mostly sided with control, exclusion and consumerism. Urban parks with surrounding walls, control points, commercial spaces, parking lots, privatized sports courts, elegant cafes can easily be detected as tactics for exclusion. Hierarchical relationships, which are easier to be controlled, are frequently imposed on users in urban parks as in the example of Bayrampasa City Park.

Conversely, even though a spatial setting such as the café in Dr. Sadik Ahmet Park was expected to be causing segregation around socio-economic status of the visitors; the hierarchical relationship between visitors was caused by a gender-based segregation that was inherent in the local community. In Dr. Sadik Ahmet Neighborhood Park, the boundaries that were drawn by cultural concerns were more dominant than the boundaries that were drawn by spatial settings.

In addition, lack of spatial settings in Kazlicesme Coastal Park was expected to create a deserted and unattractive urban space. However, visitors of the park preferred to bring and establish their own spatial settings for leisure rather than going to consumerist places like restaurants or shopping malls. Notwithstanding, lack of regulation and spatial control over the urban space showed that citizens’ conceptions on using urban space might collide.

Subsequently, spatial restrictions and boundaries may impose upon a regulation on the relationship between users of urban parks. However, spatial restrictions and boundaries are observed to be changing or resolving in time when they are not met with social living.
This study shows that urban parks can both be the places for hierarchical relationships or practice of the right to the city. The hierarchical relationships may be based on exogenous consumerism or may be implicit in the community itself. However, if urban living must be the resource among all other resources that shape the urban space as Lefebvre has stated, these hierarchical relationships must be unfolded and dissolved.

To conclude, theories for urban spaces and the right to the city should not only concentrate on variations of consumerist appeals in urban spaces. The case study on three urban parks in Istanbul points out that locality, context and temporality are important elements for the practice of right to the city. Designs of urban parks that would enable the continuity of social practice in urban living must be encouraged in Istanbul. Similarly, future studies that would advance the conceptions of locality, context and temporality in urban space might lead to a better understanding of the right to the city and inclusive urban spaces.
NOTES

3 David Harvey, Ası Şehirler: Şehir Hakkından Kentsel Devrime Doğru. (İstanbul: Metis Yayınları, 2013), 37.
4 David Harvey, Ası Şehirler: Şehir Hakkından Kentsel Devrime Doğru. (İstanbul: Metis Yayınları, 2013), 33.
9 Geoffrey Alan Jellicoe and Susan Jellicoe, The landscape of man: shaping the environment from prehistory to the present day. (Thames and Hudson, 1995), 281.
14 Mehmet Fatih Döker and Prof. Dr. Suna Doğaner, İstanbul İli Marmara Denizi Kiyi Dolgu Alanların Tespiti ve Bu Alanlarda Arazi Kullanımı, (İstanbul: İstanbul Üniversitesi Sosyal Bilimler Enstitüsü, 2006), 28.
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IS ALL-ELECTRIC AN OPTION? ABOUT RETROFITTING AND GENTRIFICATION OF PRE-WAR TENEMENT APARTMENT BLOCKS IN AMSTERDAM

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INTRODUCTION
Is all-electric or zero-carbon an option in the sustainable exploitation and replacement of inexpensive natural gas use in Dutch pre-war tenement apartment blocks of housing associations? Reducing CO2 emission and the reliance on fossil-fuel-dictatorships for the housing stock is a good ambition. The recently published Aedes Woonagenda 2017-2021 speaks about CO2-neutral housing stock for all housing associations in 2050. However, in a country with cheap natural gas the transition towards zero-carbon exploitation of this housing stock is difficult. This article describes the renovation of eye-catching projects in Amsterdam from the archives of the NRP Gulden Feniks Award. All those projects with an integral approach of characteristic architectonic brickwork, tenants’ preferences, and sustainability led to particular results in the period 1995-2015 in Amsterdam. Finally, we describe recent developments and give an outline of a workable intervention framework to renovate this housing stock to all-electric and then we will come back to the main question.

SUSTAINABILITY AFTER THE RENEWED HOUSING ACT OF 2015
For a number of reasons, transforming to zero-carbon at this housing stock is not an easy task. The impact of the worldwide financial and real estate crisis from 2008 onwards were enormous and the sale of houses stagnated. This was not a good starting point for the funding of projects by Dutch housing associations. Between 1995 and 2015 they financed the building of social houses (30%) by selling off a part of newly built houses (70%). The already developed plans were executed but new plans were not developed in the years after the crisis.
Nevertheless, housing associations agreed in the SER-energieakkoord of 2013 to renovate their existing housing stock to an average Energy Performance Certificate B, then to Certificate A by 2030 and zero-carbon by 2050. On March 1, 2013 the VAT rate on labour costs for the reparation and renovation of houses was reduced from 21% to 6% but on July 1, 2015 that rate was withdrawn. At the same time however, the requirements for sustainability have been further tightened. For new buildings BENG (Almost-Energy-Neutral) is required by January 1, 2021 and new requirements for existing buildings are still being considered.
The change of the Housing Act of July 1, 2015 had a profound influence on the renovation of the housing stock. The reason for the change was that the government wanted to subsidise people in need instead of buildings. Since that change housing associations have only been allowed to develop, build, and rent houses to the target group. Project developers plan, build, and rent or sell other housing categories. Furthermore, housing associations and landlords with more than 10 houses are since charged a fee by the government and tenants who live in social houses with too high an income face considerable rent increases.

Not every housing association directly has the investing capability to renovate their housing stock to EPC B. Deep renovation of pre-war tenement apartment blocks is costly because of the repair of bearing walls and foundations of the blocks in inhabited state. If households have to be moved, each receives a legally established moving fee of €5,910. Furthermore, by Dutch legislation 70% of the tenants in an apartment complex must agree with the proposed renovation plans and the change in rent.

In Amsterdam, with a relatively large social housing stock (ca. 45%) and great shortage on the housing market plus a policy of mixing housing categories, associations have sold their apartments or rented them out expensively. Comparably, in The Hague with much less social housing (ca. 30%) the sale of social housing has been undesirable. For that reason, the tenement apartment blocks have been renovated at a much slower rate.

Another consequence of the renewed Housing Act is that the flow of tenants stagnated. The mutation rate was already very low in attractive residential areas near historic centres. No one wants to leave their home for another with a higher rent to pay based on a newly introduced point system determining the rent level. In this point system the location in the city and the value of the real estate are parameters. But that's not the biggest problem, which is that there are hardly any housing replacements for these people and few affordable dwellings have been added to the housing stock. Because of all this uncertainty, the mutation rate remains low. In panic municipalities, government and housing associations are trying to stimulate people to move with flow plans like ‘Van Groot naar Beter’ in Amsterdam. With a ‘Samenwerkingstafel’ in 2017, the government is collaborating on an agreement with stakeholders about the flow of tenants.4

Since the renewed Housing Act took effect, new houses are only being assigned to tenants with appropriate low incomes. Consequently, tenants with low incomes are gradually being concentrated in neighbourhoods with tenement apartment buildings. Yet segregation is not a good prospect for cities. From the tipping point 2015, there have hardly been any major deep renovations of pre-war tenement apartment blocks by housing associations mentioned in the archives of the NRP. But then what were the successes of renovation in the Golden Period from 1995 to 2015?

**BEAUTY IS SUSTAINABLE: GENTRIFICATION OF NEIGHBOURHOODS 1995-2015**

As part of a wider gentrification policy, pre-war period residential building renovations in diverse neighbourhoods of large Dutch cities began in the last decade of the twentieth century.5 For the housing stock inside the ring road of Amsterdam there was a policy in place to improve and retrofit old one-sided workers’ neighbourhoods for more socio-economic differentiation with residents of various lifestyles living side by side to strengthen the local economy. The city wanted the neighbourhood to maintain its amenities, thus improving the future value of the residential district and buildings,6 despite doubt about this approach.7 After the renovation of the social houses a part was sold and another part was rented outside the social sector. Note that attractive architectural icons were refurbished. The municipality, the Amsterdam Federation of Housing Associations AFWC, the Renter’s Association of Amsterdam HA and other organisations8 made an agreement and framework
between them about this approach. The historic façades on the street-side would be restored but the garden-side, floor plans and in some cases also the private gardens inside the blocks would be completely changed by housing associations and tenant organisations. Gentrification was the result. Between 1995 and 2016 the change of the average selling price of existing houses, the ownership of these houses, and the number of houses that were sold was enormous, especially inside the ring road, the belt of the city with interwar houses.9

![Average sale price houses in Amsterdam and Rotterdam](image1)

*Figure 1. Hochstenbach 2017: 28 Average sale price houses in Amsterdam and Rotterdam*

![Ownership Amsterdam housing stock](image2)

*Figure 2. Hochstenbach 2017: 40 Ownership Amsterdam housing stock*
Another cooperative agreement was made (Samenwerkingsafspraken) for the period 2015-2019 between the municipality, AFWC and HA to allow housing associations to sell a maximum of 2,000 dwellings per year and free another 1,000 for higher sector rentals. Ultimately in 2016, 1,325 were sold to individuals, 112 to investors and 520 rented on the free rental market. In the year 2015 housing associations sold 2,042 homes and 869 went to the free market. Since then the property sale inside the ring road has been sharply tempered. The year 2015 was a turning point.

TABEL 16
Verkoop corporatiewoningen aan particulieren per stadsdeelh

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<tr>
<th></th>
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In the attractive neighbourhoods of Amsterdam charming pre-war tenement apartment blocks were refurbished to EPC B or even A by housing associations. Eye catching and sometimes listed monuments mentioned by the NPR Gulden Feniks were partially rented outside the social category and a number were sold. The plan for renewal of the working-class neighbourhood Spaarndammerbuurt (1914-1920) from 2001 onwards had two objectives: profiling of tourism and the
promotion of a mix of lifestyles and income groups.\textsuperscript{12} In this neighbourhood in 2014, 71\% of the homes were still held in the social rent category. The double block around the Zaandammerplein was one of the first major projects. The ensemble was divided into several residential buildings in sturdy brick rationalism. It was renovated between 2005 and 2010 and included the merging of 100 apartments for social rent. Spaarndammercarre are four blocks on an intersection. The houses all got EPC A. In this case, the courtyards inside the blocks were changed to create storage rooms and a common roof garden was realised. Stairwells were removed and galleries and lifts were added. The double block Zaanhof, also in sturdy brick rationalism with about 256 apartments, was an ensemble of five residential buildings designed by different architects and housing associations. Here only some galleries and lifts were added. In Spaarndammercarre and Zaanhof some apartments were sold, some rented outside the social category and another part remained for social rentals. The most iconic project was Het Schip, a tenement apartment block from 1919 in Amsterdam School Expressionism. An old school in the block was refurbished into a museum about how the working class was living in the interwar period. After the renovations a part of the apartments were rented outside the social housing category.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{Zaandammerplein (picture Archivolt architecten)}
\end{figure}

In the \textit{Bos en Lommer} neighbourhood the renovation of the Koningsvrouwen van Landlust took place between 2007 and 2012. About 134 small apartments were merged into 102 large ones. In the \textit{Indische Buurt} around the Makassarplein many old tenement apartment blocks were refurbished, like the Gorontalo project executed between 2007 and 2014. After its transformation some apartments were rented outside the social housing category.

In a block of characteristic Amsterdam School architecture along the Hoofdweg in \textit{De Baarsjes} neighbourhood, 60 apartments were retrofitted of which 34 were sold thereafter. \textit{Czaar Peterbuurt}-development with 520 apartments and 50 shops is one of the great retrofit projects accomplished by housing associations. It was a neighbourhood with structures from the nineteenth century. Several old houses and other buildings were transformed into large apartments. The renovation started in 2009 and was completed in 2016. Some of the apartments were sold after the transformation of old buildings into a new complex.
INTEGRAL INTERVENTIONS BOX-IN-BOX-RENOVATION

The renovation of pre-war homes according to the NRP shows only one option: an integral box-in-box-renovation. Not only sustainability but several other issues are addressed like fire safety, sound reduction between apartments and redesign of the floor plans. Stakeholders worked closely together according to agreements made. The box-in-box-renovation usually comprised all the apartments on one stairwell in uninhabited state. The attic, usually used for storage, was generally merged with another apartment. Part of the refurbished and merged apartments were sold or became free sector rentals. If one stairwell was finished the next was started until all the tenement apartment blocks were completed. In some cases, private gardens were changed into storage blocks and a community roof garden was added. Other times the stairwell was replaced by a gallery on the garden side with lifts. The inevitable choice for a box-in-box-renovation is due to a number of structural problems:

- outdated floor plans
- high energy demand
- airtightness
- moisture problems
- noisy neighbours
- poor fire safety
- outdated pipes, channels
- shallow balconies
- weak foundations

Inside the ring road housing associations refurbish with a depreciation period of 40 years. With box-in-box-renovation the integral interventions are collectively addressed: thermal and sound insulation, fire safety, floor plan improvements and infrastructure replacements. The construction method is a dry construction one and new pipes and channels are concealed in the new walls. The sustainability goal means low temperature heating so that apartments change from Energy Performance Certificate F-G to B-A. For central heating and tap water a Natural Gas Heating Water Boiler is usually installed. The ventilation system changes from natural to mechanical. Fire and smoke resistance, sound reduction and ventilation of existing apartments are fitted according to building regulations for new housing. A box-in-box means that within existing structures of old bearing walls and wooden floors a new box is
created that reduces noise, fire, smoke, and energy-use demands. The floating floors, suspended ceilings and all walls of the apartment are insulated. Because repairing the bearing walls and foundation and addressing moisture problems are necessary in Amsterdam, usually the wooden ground floor construction is replaced by concrete insulation. The advantage of this box-in-box-renovation is that floor plans can be changed and small apartments merged. According to the NRP archives, RVO database, and guidelines of Eigen Haard, there are priorities among the different interventions.

1. Improve the skin of the building and reduce energy demand. Aim is applying low temperature heating LTH and mechanical ventilation, if possible with demand control ventilation DCV. Renovation of interwar tenement apartment blocks between 1995 and 2015 in Amsterdam usually limit themselves to these two measures, either EPC B or higher. To come to all-electric it is necessary to invest in more interventions. Investments are greater, survey systems and maintenance more complicated. These interventions are:

2. Advanced heating system:
   - Bio or synthetic gas.
   - District or local heat network for waste industrial heat, biomass or geothermal heating.
   - Central or local heat pump with air (ASHP), water (WAHP) or earth (GSHP) as heat source.

   The CV is LTH and domestic tap water heated with a booster with heat pump, a small electric heater is still necessary in winter time.


4. Extra: photovoltaic panels or sun boiler.

Conclusion is that all-electric exploitation is technically possible if one is prepared to invest in additional interventions. The described cases of the NRP show that an EPC A or higher is possible with an Energy-Index between 0,71 and 1,05. So far though, there is no refurbishment of a tenement apartment block from this period to all-electric.

**Figure 7. Czaar Peterbuurt (picture Hooyschuur architects)**

**New realism after 2015**

Nowadays, housing associations in Amsterdam aim for an EI =< 0,4 (EPC A+++)) according to building regulations for new homes. However, in recent years they have only refurbished some small projects aimed at EPC B: out of date renovations without any ambitions. A similar or even worse development took place in Den Haag and Rotterdam. The integral box-in-box-renovation from the period 1995-2015 with the characteristic brickwork facades, user preferences and sustainability within the Amsterdam ring road crystallised into a success formula for a certain period of time. Although the renovations in themselves were successful, there was no regard taken for the original interiors often with beautiful tile work, wood frames, and panel
doors and wall cabinets with stained glass sliding doors. Despite the life span cost of a building, embodied energy was also not taken into account. The integral approach comprising heritage, sustainability and user preferences was already difficult but with the altered Housing Act in 2015 a new realism appeared for simple renovations of small apartments in terms of allocating tenants to the appropriate dwellings. Such new realism only appeared after the change of the Housing Act.

**CONCLUSION**

Is zero carbon an option in the sustainable exploitation and replacement of inexpensive natural gas use in Dutch interwar tenement apartment blocks of housing associations? It seems that the approach between 1995 and 2015 was only possible because of the huge appreciation of real estate in the beautiful historic residential neighbourhoods in Amsterdam, part of which were sold. The complex and expensive renovations were financed by selling apartments. This explains why the interwar apartment blocks in Amsterdam were renovated and not in The Hague where simply no apartments were for sale. All-electric is too expensive for a regular renovation in the social rental sector, especially since these homes are assigned appropriately to people in relation to their income. Furthermore, the decision now taken by housing associations, municipalities and tenant organisations is not to sell apartments in their stock. That’s why the expensive renovations can no longer to be financed. If the objective is an all-electric exploitation of tenement apartment blocks one could draw the conclusion that someone has to pay for the investments. This is the consequence of the changed Housing Act of 2015.
NOTES

6 Amsterdamse Federatie Woningcorporaties AFWC, Met het oog op Amsterdam (Amsterdam: AFWC, 2014).
8 Amsterdamse Federatie Woningcorporaties AFWC, gemeente Amsterdam, and Huurdervereniging Amsterdam HA, Amsterdamse kaderafspraken bij vernieuwing en verbetering. Een procesbeschrijving op basis van het wettelijk kader aangevuld met Amsterdamse adviezen en afspraken (Amsterdam, 2012).
9 Amsterdamse Federatie Woningcorporaties AFWC, gemeente Amsterdam, and Huurdervereniging Amsterdam HA, Amsterdamse kaderafspraken bij vernieuwing & verbetering (Amsterdam, 2015).
10 Gemeente Amsterdam, Buurtaanpak Spaarndammerbuurt (Amsterdam, 2001). Amsterdam, Gebiedsanalyse Westerpark (Amsterdam, 2014).
11 Amsterdamse Federatie Woningcorporaties AFWC, gemeente Amsterdam, and Huurdervereniging Amsterdam HA, Samenwerkingsafspraken Periode juli 2015 t/m december 2019 (Amsterdam, 2015).
12 Gemeente Amsterdam, Samenwerkingsafspraken. Periode juli 2015 t/m december 2019 (Amsterdam, 2015).

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SER. Energieakkoord voor duurzame groei. SER, 2013.
INTRODUCTION
This paper presents the findings from part of a larger research project about the reduction of environmental impact created by producing food within urban areas. The importance of the population’s diet in the composition of their environmental impact is a relevant matter. Currently, this is not widely and fully considered when urban planners and designers, architects and landscape architects attempt to design sustainable buildings or neighbourhoods. An understanding of how people made up their diet seems to be beyond the designers’ scope. On the other hand, several studies in different parts of the world have been suggesting remarkable contributions to sustainability from the production of food inside urban areas\(^1,2\). In order to assess the benefits of community gardens, several initiatives have been investigated in different parts of the world. Following this, three examples, in three different countries, have been selected to compare the potential social contributions from the production of food inside urban areas. Food production in urban areas is defined by Tornaghi (2014) as small-intensive urban farms, food production on housing estates, land sharing, rooftop gardens and beehives, schoolyard greenhouses, restaurant-supported salad gardens, public space food production, guerrilla gardening, allotments, and balcony and windowsill vegetable growing.\(^3\) This paper aims to create a comparison between different approaches and different backgrounds for the production of food in urban areas.

Undeniably, cities have always relied on the production of food inside as well as around their perimeters.\(^4,5,6\) Examples of societies which were dependent on their hinterlands to provide fresh food are plentiful throughout history.\(^7\) The lack of fossil fuel transportation for most of human history made it essential that cities kept their production of food nearby their main urban centres. However, because food is now an international market of importing and exporting, often over large distances, cities have become less dependent on their hinterlands for the production of immediate food resources.\(^8\) Examples of cities still heavily relying on urban food production are however, still abundant, particularly in developing nations. According to the Food and Agriculture Organisation of the United Nations, 800 million people are still directly engaged with urban agriculture.\(^9\) Often this is based on need and survival. Recently there has been a growing movement worldwide to re-introduce food production in urban areas, particularly in developed nations, primarily as an effort to increase the sustainability of cities.\(^10,11,12,13,14,15\) Urban food production is often associated with increased sustainability for at least two main reasons. The first is to produce more food closer to where people...
consume it, thus reducing ‘food miles’ or the distance food has to travel, and with it greenhouse gas emissions associated with that travel. The second is to increase the amount of vegetables and fruit in standard diets for positive nutritional and health outcomes, but also to reduce intake of animal based foods which typically have much higher associated greenhouse gas emissions in their production. This second reason for promoting urban food production as a means to achieve greater sustainability of cities is likely to have a much higher impact in terms of reducing greenhouse gas emissions than a focus on reducing food miles.

This paper presents three cases from three different countries and compares their models of urban agriculture to assess their contribution towards increased resilience, urban liveability, and an enhanced sense of community. The wider research this paper is part of has seen 200 gardens being visited in twenty-one countries. The cases presented in this paper illustrate three very different kinds of urban agriculture and are from São Paulo, Brazil – *Cidade sem Fome*, Havana, Cuba – *Vivero Alamar*, and Wellington, New Zealand, *Innermost Community Garden*.

**CASE STUDIES**

**Case Study One: São Mateus**

*Location:* São Paulo, Brazil  
*Organisation:* NGO Cidade sem Fome  
*Interview conducted:* May 2017  
*Visit undertaken:* June 2017

São Mateus is a district of São Paulo city in Brazil. The Garden was created by the NGO Cidade sem Fome (City without Hunger) and is based on the principles of the NGO’s mission statement. Cidade sem Fome’s mission is to provide financial self-sufficiency for socially vulnerable families through the production of food inside urban areas. The NGO locates potential sites, and then identifies families in the region that are socially vulnerable. People such as single women with large numbers of children, elderly people out of employment, those who have a rural agricultural background, or people without formal education are normally prioritised. The sites used by the NGO are mostly located on privately owned areas. After the site is identified and a legal agreement is reached between the site owner, the NGO, and the chosen families. The families are trained, and the garden is prepared to start producing food. The NGO educates people in agricultural techniques and sales and administration skills. Another part of the NGO actively searches for new supporters and donors.

The São Mateus site is located on a site owned by an energy supply company. The garden occupies the space available under the powerlines. Cidade sem Fome has a long-term contract with the energy supply company, guaranteeing ten years of free rent with the contract renewable for a further ten years after that. The total investment in the area was approximately US$22,000 (2017). The investment includes netting to protect the crops against summer rains (US$9,500), ten rain water containers (US$5,700), a compost system (US$4,300), and seeds (US$2,500). Additional information is shown on table one.

For the site’s owner, the garden is beneficial because formal renting is not possible under the transition lines and the owner is otherwise responsible to keep the land free of rubbish. The garden can be operated under the towers (power lines) and the site is kept tidy by the initiative, and the owner does not have the expense of site maintenance. Production of food from all of the Cidade sem Fome garden sites aim to produce enough food to feed the families involved and to sell the surplus. The São Mateus site is run by five families and their sales provide a living wage to approximately thirty people. The garden provides an income of 2.3 times the average minimum wage of the area. In addition, the families have a substantial reduction in their expenditure on food which, in the area, can
compromise around twenty percent of a typical Brazilian family’s living costs. According to the NGO, the produce from the São Mateus Garden reaches around 1000 families in the region. The produce prices are similar to those found in local supermarket or vegetable markets. The garden directly receives approximately thirty customers a day. The garden produces lettuce, rocket, chard, carrots, beetroot, broccoli, cauliflower, cabbage, aloe, spring onions, parsley, manioc, sweet potato, corn, basil, thyme, banana, passion fruit, pumpkins, and several kinds of medicinal plants and teas. The garden is self-sufficient and is well established and known in the region.

**Case Study Two: Vivero Alamar**

*Location: Havana, Cuba*

*Organisation: Vivero Alamar Cooperative*

*Interview and visit conducted: January 2017*

Vivero Organoponico Alamar was founded in 1997 by five people on an 800m² site in Alamar, a district on the east side of Cuba’s capital, Havana (additional details are provided on table one). The cooperative which runs the garden currently has 150 members. The Vivero (nursery) Alamar is on government land. The production is intended to provide fresh food to the direct vicinity, but the success of the production attracts buyers from other parts of the city and even restaurants that cater both to locals and tourists in Havana. The cooperative’s president, Miguel Angel Salcines Lopez, defines the cooperative model as a private-collective company and says it is an attractive model to Cuban workers. He states that to attract employees, they offer wages slightly higher than those of most unskilled jobs in Cuba. In addition to the wage incentive, the members (workers) work seven hours daily, compared with the normal eight hours for most of the year, and six hours daily during the summer months in other typical jobs. The cooperative also provides educational support for the members of the cooperative. Distribution of the earnings are fortnightly, which maintains a permanent member overview or transparency of the financial performance of the cooperative. The financial model of the cooperative distributes fifty percent of the profit to its members while the remaining fifty percent is reinvested into the Vivero. Originally, the Vivero operated tax free, but government policy changes mean the Vivero now pays five percent of the profit to the government.

The entire production is self-labeled as organic. The Vivero Alamar is self-sufficient in the production of seeds, organic fertilizers and water. Great effort is dedicated to the production of natural fertilizer from the manure of onsite animals, and earthworms’ humus. According to Lopez, the garden has the potential to produce up to 400 tonnes of food per year, but currently to sustain its production, the Vivero is producing 200 tonnes per year. The production is mostly based on vegetables with short harvest times and leaves, such as lettuce and spinach, but the Vivero has a very large range of produce available such as stevia, potato, taro, sugarcane, beetroot and flowers.

**Case Study Three: Mt. Victoria Innermost Garden**

*Location: Wellington, New Zealand*

*Organisation: Innermost Garden Community Trust*

*Interview and visit conducted: January and March 2016*

The Innermost garden was originally created in 2006 in Wellington, New Zealand’s Capital city. It was established to provide opportunities for migrant and refugee women to join the Wellington community. It aimed to promote cultural exchange and develop friendship between different cultures. The space was created to allow women to reconnect with the land, and pass on their skills about sustainable gardening and traditional cultural rituals to younger generations. The original location was in the suburb of Newtown (approximately four km from the current site), but this was not ideal due to
access and resulted in lower participation of migrants, refugees and even locals. When the Innermost Garden moved to its current location in 2008, to publicly owned land by the Wellington City Council that formerly was a bowling club, it had to include the wider community. It became a community garden but still aims to embrace different cultures and promote interchanges between people with different backgrounds. Its organisation is based on a non-hierarchical structure. Only a few management staff appointments are made to keep the initiative running smoothly. The community hall, which was originally the bowling clubhouse, enabled the garden to host events and provides additional income through renting it out for other uses.

The bowling club had used large amounts of heavy fertilizers (possibly DDT) to maintain the greens, meaning the soil had to be cleaned and remediated. The process of cleaning the site took two years and because of the contamination the first crops had to be developed in raised beds. The organisation does not only grow herbs, vegetables, fruit and flowers, but also hosts meetings, organises workshops on gardening (and other topics of interest of the community) and holds evening events such as community dinners.

When the site was visited in March 2016, the production was based on communal plots. However, there were some spaces for individual allotments. According to members from the garden, when people have ownership over some plots, they tend to participate more in the events. As a result, they were planning to increase the number of individual allotment areas, but still maintain communal plots as well. The garden holds two open gardening days a month (first and third Sundays of the month). Part of the produce harvested is distributed to those who worked on those days. As an open garden the participation on the gardening days varies a lot. On some garden days there are no newcomers, and on others up to eighty percent are new people joining in for the first time. According to interviews with some members of the garden, the biggest challenge is ensuring the ongoing participation of the community and maintaining an adequate number of volunteers.

**RESULTS: COMPARING THE CASE STUDIES**

Table 1 shows the results from the case study visits and interviews.

<table>
<thead>
<tr>
<th></th>
<th>Sao Paulo</th>
<th>Havana</th>
<th>Wellington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Area Population</td>
<td>12,038,175.00</td>
<td>2,100,000.00</td>
<td>496,000.00</td>
</tr>
<tr>
<td>Area (ha)</td>
<td>152,753.58</td>
<td>72,800.00</td>
<td>29,000.00</td>
</tr>
<tr>
<td>Density / ha</td>
<td>78.81</td>
<td>28.85</td>
<td>17.10</td>
</tr>
<tr>
<td>Database for Urban Areas</td>
<td>Not existent</td>
<td>Existent, but not available</td>
<td>General data available but lacking in depth</td>
</tr>
</tbody>
</table>
Quality of available data regarding location, production and ownership

Sao Paulo Municipal Authority divides the city into 31 administrative zones. Each zone is responsible for the collection of data related to community gardens, urban farms or for any food production sites. There is no standardisation of data, and no reliable source available for data. Only one administrative zone had data, but did not make it available for this research. Every orgonoponico is catalogued, the production is controlled and the productivity is checked after every season. The data, however, was not made available for this research as it is considered sensitive and is part of the government food security strategy.

All community gardens and urban farms are registered, but there is no centralisation of production data, nor record of number of people involved.

<table>
<thead>
<tr>
<th>Garden studied</th>
<th>Sao Mateus - Sao Paulo</th>
<th>Vivero Alamar - Havana</th>
<th>Innermost - Wellington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year established</td>
<td>2010</td>
<td>1997</td>
<td>2006</td>
</tr>
<tr>
<td>Size of the garden (ha)</td>
<td>0.80</td>
<td>11.40</td>
<td>0.33</td>
</tr>
<tr>
<td>Planting area (ha)</td>
<td>0.75</td>
<td>10.40</td>
<td>0.04</td>
</tr>
<tr>
<td>District / suburb Population</td>
<td>426,794$^{23}$</td>
<td>100,000$^{24}$</td>
<td>5,040$^{25}$</td>
</tr>
<tr>
<td>District Area (ha)</td>
<td>2,430.00$^{26}$</td>
<td>1,500.00$^{27}$</td>
<td>56.60$^{28}$</td>
</tr>
<tr>
<td>Density people / ha</td>
<td>175.64</td>
<td>66.67</td>
<td>89.04</td>
</tr>
<tr>
<td>Population within 400m radius of garden boundaries</td>
<td>1,274</td>
<td>1,386</td>
<td>197</td>
</tr>
<tr>
<td>Food production area per person within 400m radius (m$^2$) – excluding private owned gardens</td>
<td>5.89</td>
<td>75.04</td>
<td>2.03</td>
</tr>
<tr>
<td>Production of food (t/year)</td>
<td>42</td>
<td>200</td>
<td>1 (estimated)</td>
</tr>
<tr>
<td>Amount of food produced per person within</td>
<td>32.96</td>
<td>144.30</td>
<td>3.56</td>
</tr>
</tbody>
</table>
Table 1. Comparison between the three case studies in Brazil, Cuba and New Zealand.

Table one shows remarkable results for those directly linked with the gardens, either as workers or volunteers. The main benefits for those directly involved in the gardens vary, but tend to be: increase in wages of those involved, improvement in the quality of diets, and engagement in different cultures or physical activities. The indirect impacts, being the impact for those that live around the gardens, is harder to measure or establish. As the urban food production models are very different in terms of organisation and goals, the results are equally different.

The New Zealand case study profiles a garden whose participants are less proactive, and because of their current problem of attracting larger numbers of people to become involved, the beneficial effect on the wider community is limited. On the other hand, the community hall and the permanent effort to promote cultural events suggests an underused potential that may develop in the future.

The garden profiled in the Brazilian case lacks cultural events, but the garden is progressively becoming an important player in the community. Interviews with the people who live nearby or work in the garden indicate that the community is progressively using the garden to hold meetings and discussions about organic food and healthy diets more often. The interviews also indicate an increase of vegetable consumption among people because the garden provides a convenient and fresh option for vegetable access to the community.

The Cuban case study garden hosts training events related to agro-business and the large number of members help to disseminate the knowledge acquired from the training promoted by the cooperative to the wider community. Factors such as access, which means that the sale point is on the way home or to work, price, and availability are the most important decision factors to increase the consumption of the food produced. The size of the garden and the larger scale of the cooperative means the produce that is grown reaches a larger proportion of the community directly around it. As the Vivero Alamar is in the central area of the Alamar neighbourhood on one of the main access routes, it is fair to assume that the Vivero Alamar plays an important role in the overall composition of the community’s diet.
There are two main outcomes from the Cuban model assessed. The first outcome is that the people who are part of the cooperative have access to financial benefits that are unavailable to most of Cuban society. Their earnings are higher than the unskilled workers in Cuba. The country is facing an increase of levels of obesity and diabetes. Although data from Cuba is not widely available, according to research published from the National Survey on Risk Factors and Activities that Prevent Non-Transmissible Diseases in Cubans 2011 through the Havana Times, Cubans ate vegetables and fruits on average only 3.2 days a week. In comparison, interviews conducted during the course of this research suggest that people who live around this orgoponico (and others in Havana) tend to consume vegetables and fruits at least once a day.

The Brazilian and Cuban case study gardens sell their produce, and therefore have more tangible results in terms of positively changing people’s diet among their communities, which leads to potential health benefits. The Brazilian case is equally very successful in producing visible and quantifiable changes in the community diet. The higher density situation (in terms of people per km²) and the larger amount of people around makes the garden incapable of providing better results. The research suggests that the problem is not in the format nor management of the garden, but in its size. The initiative from the NGO Cidade sem Fome seems to be very successful and a larger impact on the community would simply depend on a larger garden.

CONCLUSION

The three cases presented each demonstrate benefits for the communities where they are located. In the New Zealand example, the balance between cultural engagement and food production may have affected the capacity of changing the community diet. On the other hand, it has the potential to become a social and cultural hub for the community. In terms of food production and impact on people’s diet, the comparison among the cases indicates that the example from New Zealand has the worst performance of food production per area. The dimensions of the land available should allow the garden to provide a higher impact on the diet of the community. The examples from Brazil and Cuba are currently more capable of promoting changes in their communities’ diets, and to be able to therefore contribute to sustainability. The investigation suggests that a focus on food production, combined with larger sized sites and productivity rates, generates better opportunities to provide fresh plant based food for surrounding communities and/or participants. This therefore has a more substantial impact on the community in terms of human health outcomes but also sustainability in terms of climate change mitigation. People associated with or nearby the Brazilian and Cuban gardens are indeed increasing their consumption of fresh vegetables.

The Brazilian and Cuban gardens aim to produce food and they are very successful in that regard, but the contribution towards increasing the liveability of a city is limited. The New Zealand garden under study has better conditions to create and develop a more livable place, with a stronger sense of community. Despite this, its small scale and lack of community participation undermine its capacity to fully flourish.

In terms of resilience, none of the initiatives are fully effective when considering their entire urban regional settings. Considering the direct vicinity, only the Vivero Alamar may work as an effective tool for increasing resilience. If considered the amount of land for food production, the Vivero Alamar provides up to seventy-five m² of green area per person compared with fifteen m² in the New Zealand study (if it develops its full potential) and only approximately 6 m² for the Brazilian garden (because the high density of the region). In the Brazilian and the New Zealand examples, the initiatives are isolated and cannot be considered as instruments to increase resilience and food security. Instead they must be part of a range of actions to complement their contribution. The Cuban case, as part of a
larger city-wide strategy may be considered a useful example for increasing food security and resilience, however, the full assessment of the effectiveness in terms Vivero Alamar’s capacity to add to Havana’s resilience would require further investigation.
NOTES

3 Ibid I, 551
4 Ladner, Peter. *The Urban Food Revolution - Changing the Way We Feed People*. (Gabriola Island: New Society Publisher, 2011)
8 Ibid. 211
10 Ladner, Peter. *The Urban Food Revolution - Changing the Way We Feed People*. (Gabriola Island: New Society Publisher, 2011)
11 Ibid VI, 69
22 Wellington City Council, Facts and Figures
23 Infocidade, Regioes e Distritos
26 Infocidade, Regioes e Distritos
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BRIDGING THE GENERATION GAP – CONCRETE AND HOUSING ESTATES OF THE LATE-MODERNISM

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INRODUCTION
Political and architectural-urban debates during the last decades reflect the urgent need for changes in housing policies, due to global migration and demographic evolution. Consequently, future habitats will have to be flexible to provide for transformation, whilst allowing an identity within the urban context. At the same time, climate change and increasing consumption of land and ecological resources have an emerging demand for sustainable requirements; not only for new, but also for the ageing mass housing stock, which originated in the 1960s and 1970s.

The interest in buildings of this period has increased from the more informed, professionals, including artists and the youthful generation of the early 21st century, who have grown up with the concrete mass housing design and architectural language from the late 20th century period. These groups have an appreciation and a raised awareness of the qualities of these buildings and their value as a useful resource; against former stigmatisations which have maligned buildings of this period, most significantly, those that are made from concrete and incorporate this material into their aesthetic style.

Considering how perceptions have changed, the interventions for raising the standard of this ageing building stock could be evaluated and developed with a different focus: these buildings are already working, existing structures and have valuable living space with an individual character, and have the potential for a greater lifespan, and they need not be perceived as a burden for municipalities due to their repair and maintenance costs, which can be much less with a careful thought through plan.

The structural stability and signification of the ageing beton brut (raw concrete)\(^1\) has been identified as a key element of the Zeitgeist, as Rayner Banham\(^2\) pointed out, the integrity of the material is a significant limitation in considering the longevity of this building stock. Long term concepts are needed to sustain the building fabric’s character as part of the collective memory over trend-interests\(^3\). Concurrently, investigations of interventions are needed to find specific methods of how to achieve contemporary technological standards; most specifically seeking methods of repair of the building fabric, with solutions for the adaptations of their existing material technology which has its role as signifier for the identity as Erinnerungsraum (Space of memory)\(^4\). Long term concepts of architecture technology for the materialisation are needed to persist over trend-interests and end of structural life span. Within these interventions, methods have to be achieved to provide technological durability and to transmit the specific character of collective memory. Hereby, a special focus should be placed on the architecture technology of beton brut (raw concrete) as key element of the Zeitgeist, as Rayner
Banham pointed out. A special focus should be placed on the conceptual and structural use of raw concrete as operating with encrypted semantic interpretation. To allow for its translation, whilst maintaining its original interpretation within the parameters of any changes to the appearance and fabric.

The less investigated aspect of the buildings interpretation should inform and provide the foundation for opportunities for change, by outlining the significant values of the building language and its elements. Which after thorough investigation can be passed on to future users, with an understanding of these urban living spaces, creating a lively cultural and historically grown, living environment, in contrast to anonymous characterless neighbourhoods.

By analysing the housing estates Terrassenhaussiedlung St. Peter in Graz (Werkbund Graz, 1966) as an example of large scale housing Estates of the 1960s and 1970s, the paper offers a discussion of the significance of the technology of concrete to articulate the spatial structure and qualities in the process of cultural identification. Due to the typological individual material-semantic and spatial structure, they apparently show the co-relation between technology and process of identification and positive appraisal of them. At the same time, by comparing the estate in Graz and the less well known projects in Germany, the significance and reception of specific architectural elements will become more apparent. And finally indicate the elements which are important for understanding and upgrading this kind of housing stock, so it can become the needed living space for future generations.

**St. Peter – built utopia**

The Terrassenhaussiedlung St. Peter represents one exemplary project of this typology; which is not only well-documented since its origin, but also highly valued by its inhabitants and architectural professionals and historians over its lifetime.

First of all, a closer reflection on architectural influences and architecture language of the 1970s is needed to understand the relation between the architectural approach and the used technology. Then the role of applied concrete technology will be outlined which is significant for the estate’s character and appraisal as attractive urban housing.

Figure 1. “Freie Mitte” Terrassenhaussiedlung St. Peter, 2015
**Concept**

In the 1960s critics of the functionalist housing concepts of mass housing and “spacious city” believing it to be “de-humanising”, outlined the need of change in architectural concepts⁹. Architects of this period defined large scale housing estates (*Großwohnlungsplex*⁹) as an alternative. Since then their living quality has gained a positive evaluation by the inhabitants as green urban housing¹¹, regardless of the negative perceptions in public discussions, which have been dominated by stigmatizations of the architectural language with its use of raw concrete.¹²

Due to the character of the Terrassenhaussiedlung St. Peter as a prototype¹³, it can lead the way for the investigation of the significance of raw concrete as signifier for identity and individuality for living space.

The approaches of structuralism in the 1960s and 1970s offered conceptual bases for the design process, fulfilling the intention to propose a “human scale” housing type of high density in order to provide an available alternative to single family houses. Eugen Gross¹⁴ – architect of *Werkgruppe Graz* – confirmed the influence of structuralism on their approach for the estate St. Peter. Combining the upcoming ideas of structuralism; high density housing could be created including a high level of privacy and at the same time, community spirit due to the structuralist concept implementing different layers of infra-structure. The aspects of “methodology structuralism” were applicable in the Terrassenhaussiedlung in Graz, receiving positive feedback for the approach of participation¹⁵ from the inhabitants, despite the immense complication of the planning process. By involving the inhabitants, architects intended to foster the identification of inhabitants with their habitat¹⁶.

Thereby, the “in-between” areas develop, offering spaces for additional community functions. The main communicating area is the “freie Mitte” (free area/centre) of the estate. This space is one of the important element for the identification of the estate: “It is one of those dominant attributes of identification which still remains enforced until today, in the significance of *Siedlung* (estate) as one of the most important housing developments in the European context.”¹⁷

This free area in the centre of the built structure is similar to and has the same significance as the market place in European cities¹⁸, which have developed to allow community interaction.

The importance of this element shows the lack of it in the example of the Terrassenhaus Gironde in Bochum (Germany). Here, the interaction space – once designed as boulevard and plaza – is situated in between the several social housing projects of the master plan. Thus, they differ in their typology and materialization, not defining a common urban space. Today, the situation is even worse which impede the creation of building soft landscaping in between the housing complex, converting this important urban space in a left over.
The example of the *Terrassenhaus Girondele* in Bochum reflects the importance of the materialization as linking element to define and use urban and private spaces. In the German case study, the interaction-space was designed as boulevard, situated in between the several social housing projects of the master plan. But by differing in their materialization, the urban space is not perceived nor defined, which the segregations of each plot is increasing. Therefore, today the ground floor area is an anonymous, not interactive space which degenerates the estates’ quality. The architectural language is the key element to define the link between community and private spaces of the estate, which is the bases for adaptation and usage of those areas, creating a feeling of responsibility and connection by the inhabitants.

**Technology and materiality**

One important aspect of concrete is its rough dominance, moreover in the 1970s when raw concrete was identified with progressive living concepts, innovative technology and “real form” as Brutalism was defending. The technological articulation of the raw concrete is embodying this concept of “arch-form” because the detailing and design of its form in an untreated rough materialization puts attention on the character as load bearing element, making visible the structural elements of the primary and secondary structure of the whole structural system, which indicates the individual unit inside the community of the estate. As apparently unfinished but essential material it is the bases for transformable spaces in between this structure. Due to the fact, that “structure are open systems, taking into account changes of time” as the architect of St. Peter, Eugen Gross, points out.

In the estate of St. Peter, the technological configuration of the raw concrete is representing the idea of “arch-forms” as kind of framework, given to the inhabitants. Projections and recesses guarantee privacy and green spaces for each unit but also for the community areas. The joints of the framework from the recesses and projections underline the definition of identifiable spaces in their entirety. The open staircases in the estate of Graz is structuring the repetition in the facades, providing orientation and permeability. The technology of the material in its rough form reveals the structural and spatial concept to the user, showing the essential character of housing as space of social living, and not a trend led embellished architecture. The architecture offers
the idea of social and ecologically responsible attitude, covering the needs of different settings of society and the desired individuality of life-style within a community, in contrast to the bourgeois' districts.

In Graz, the architects also used raw concrete to outline the green environment along with the "living” of the inhabitants and achieved a kind of monotony of the architecture. Thereby a compact, dense composition is formed by the technological use of the raw concrete, representing the individual but urban living space of today’s western society. This unifying effect of concrete also supports the spirit of a neighbourhood-community24 because it’s dense form as a whole contrasts with the dispersed surrounding buildings. The recent surveys of the research project SONTE25 are reflecting the phenomena in St. Peter till today. These aspects fulfil the intention of creating a counterpoint to the spread out design of single family houses with private gardens, which lack community interaction and urbanity, which indicates the possibility of those estates for a long-term use.

**Ageing**

After forty years, the experimental construction design of the terraced houses of the Late-Modernist period provoked characteristic construction problems in their detailing. Faulty or short-lived sealing of roof top terraces; damages in draining; and cracks in concrete structure or planters; are the most representative and problematic areas of the detail in construction; and at the same time important elements create the raw undecorated appearance of the estate as a whole. The ignorance of the significance of this interrelation between methodological structure and materiality especially led these estates of this material-semantic interpretation into a situation which is seen to be problematic, where they are losing their character as cultural significant Erinnerungsraum and contemporary living concept. The attitude lacks the impetuous of a specific approach, to guarantee the open system for transformation and identification of the existing habitat.

This conflict is present in the Terrassenhaussiedlung, St. Peter in Graz, where the life span of materials, construction problems and the requirement for low energy improvement to fulfil the legal requirements, have forced the cooperative of the estate into specific interventions.

In debates about refurbishment of the housing stock of the 1960s and 1970s, energy driven solutions are favoured, ignoring the loss of resources and their cultural and social qualities. The impact, driven
by a low energy solution only, such as external wall insulation (EWI) onto the face of the ageing concrete, are interventions which are destroying the linking element of the structural and fabric aesthetic, deleting the character, extinguishing those valuable resources, with an over simplified approach.

![Figure 4. Renovated concrete in Terrassenhaussiedlung St. Peter, 2015](image)

In the case of Graz, awareness of inhabitants and architects towards the significance of the appearance and structure for the Terrassenhaussiedlung as cultural heritage and a valued habitat, has caused intense discussion to prove the unsuitable and disproportionate profit on energy saving through standard evaluation, compared to the loss of cultural, social and functional qualities.

As an existing building, a reduction of energy saving requirements is still allowed if no structural intervention are planned.²⁶ The renunciation of outside insulation shows the priorisation and appraisal of the estate’s character in its materialization.

For the cracks in concrete structure, planters and sealing damages, alternative methods could not be applied. Therefore, standard renovation works were used, but with a careful and considered attitude to the renovation concept, for outlining the specific design language which emphasises the volumes more bespoke approaches were needed. For the prefabricated elements, such as planters grey varnish was used for sealing and, in partitions of in situ standard filling was executed. This approach is a sensible approach for the architectural language to remain visible, whilst there is a lack of suitable available reparation alternatives.

Reverting to a standard glazing, where previously there was concrete has lost the tactility of the concrete material depth, losing its unfinished raw character, and it therefore becomes a glossy artificial surface lacking the ability to delineate the space creating property by the qualities of concrete.

Apart from the repair methods and approaches for upgrading to fulfil legal requirements²⁷, the aspect of accepting ageing as a quality such as in Gründerzeit stock can be an interesting point to stress the character of cultural-historical habitat and durability: where the patina is seen “as an alternate kind of architectural aesthetic”²⁸.

Especially for the discussed large scale housing blocks (Großwohnkomplexe) of the Late-Modernist style. Patina can be an important aspect to stress the overall approach; patina has historical growth
over the structure, which can only be produced through age. The architect Eugen Gross is pointing out, an intended character of the housing project is its capacity to absorb the changes of time which includes the admissibility of variations of the original without destroying it, due to the overall and significant language of raw concrete. Patina is intended to foster the sense of belonging, transmitting the community spirit as one parameter for the urban quality of European Cities. Therefore, these estates provide characteristics for future sustainable housing, whilst at the same time it forms links between the past and the future: closing the generation gap.

CONCLUSION

Today, there is a growing appreciation of raw concrete, and its acceptance has changed positively toward its exposed concrete finish. Ungraceful, aged raw concrete, due to faulty maintenance or construction is judged as poor and “dirty.” Therefore, a paradigm-shift in the evaluation of concrete-ageing is needed, which could be achieved by alternative renovation methods, outlining the character of concrete as historical and at the same time a daily used material. By recognizing the potential of the interrelation of terraced house typology and architectural language of the Late-Modernist period, shows the significance of raw concrete as an element for the “moment of identification” which has to be taken into account. Highlighting this aspect; understanding the diversity and quality of the Late-modernist architecture and its language can be deconstructed, supporting professional and other inhabitants to keep these valued living spaces alive for future generations to make use of their housing qualities, which are in demand for sustainable, future housing.

From the discussed aspects of the interrelation between materialization and typology in the example of St. Peter, significant design parameters for the perception and evaluation as attractive living spaces can be named as follows: concrete structural elements and joints; with proportion of voids and massing, along with its simplicity and uniformity of secondary elements. Then the diversity of spaces and their integration as a singular sculptural form in the urban context can be better appreciated; providing attractive individual living space in a diverse community. The elements can guide strategies for upgrading less considered estates, which also have high potential (as it is the case for example of Girondelle); at the same time offering identity of further and new generations for their Erinnerungsraum in the sense of the existing built legacy.

Figure 5. Terrassenhaus Girondelle/ Bochum – 2017
The results would allow a lively cultural and historically grown living environment to remain; in contrast with artificial neighbourhoods without community which have not achieved a historical spirit, which currently rests in these concrete terraced homes.
NOTES

1 The term beton brut was created by Le Corbusier, which means the untreated concrete after the shuttering is removed. The colour can be changed by mixing different cements in the composition. Raw is marked by the formwork which is used; not painted. It can be pre cast or in situ concrete structure either column or beams which are untreated.


3 Meier/ Scheurmann, Die Sprache der Objekte, 269-270.


6 This kind of estate differs from the mass housing concepts and hith rise towers because it is designe as a urban community. In Britain Terraced Housing is a traditional typology, - homogenous in the Georgian period. In this paper it means a specific typo of high-rise block model as multi layered terraces, more often referred to as housing blocks. In other Germany of the 1960s and 1970s it is named as “terraced housing estates” (Terrassenhaussiedlung), defining this approach of housing.

7 The Terrassenhaussiedlung St. Peter is one of the most valued in Austria and reference for urban dense housing concepts for the future; for further information see expositions, press and literature are reflecting this over the years; for example in Graz see websites: (https://derstandard.at/1289608735791/Wohnmodelle-in-Graz; https://hda-graz.at/programm/architektur-als-partitur-werkgruppe-graz-1959-bis-1989)

8 Similar to the project of Camden Council’s housing by Neave Brown, at “Alexandra Road Estate” in London.


10 The definition is described in Karen Beckmann, Urbanität durch Dichte? Geschichte und Gegenwart der Großwohnkomplexe der 1970er Jahre (Bielefeld: transcript Verlag, 2015), 239.


12 Beckmann, Urbanität, 428.


14 Eugen Gross is still living in the estate; he also works as independent architect in Austria. See Eva Guttmann and Gabriele Kaiser (ed.). Werkgruppe Graz 1959 - 1989: architecture at the turn of late modernism (Graz, Zürich: Haus der Architektur/ Park Books, 2013), 304-305.

15 In this concept the changing architectural mind-set of the 1970s is shown, when legal residential communities are favouring the participation in the planning and construction process.

16 Arnulf Lüchinger, Strukturismus in Architektur und Städtebau (Stuttgart: Krämer, 1981), 63-64.


18 Dietrich Hassenpflug, Die europäische Stadt - Mythos und Wirklichkeit (Münster: LIT, 2000), 16.


20 Karen Beckmann, Urbanität durch Dichte?: Geschichte und Gegenwart der Großwohnkomplexe der 1970er Jahre (Bielefeld: transcript Verlag, 2015), 49.


22 Lüchinger, Strukturismus in Architektur, 66.

23 According to the concepts of structuralism to articulate “the building block into smaller units that are humanly comprehensible.” And “aesthetic of numbers” in Arnulf Lüchinger, Strukturalismus in Architektur und Städtebau (Stuttgart: Krämer, 1981), 66

24 See the Interviews of the generation of Halen Children in: Wiesmann-Baquero, Nancy, Die Kinder der Siedlung Halen – Lebenserfahrungen mit Architektur und Städtebau (Bern: Simowa Verlag, 2005), which reflect this dependence between architecture, social attitude and living concept.

The energetic standard of new housing is not applied for existing housing till no structural interventions are planned. But discussions in the group of inhabitants show the controversial of permitted and suggested, due to energy costs and the lobbying of the insulation industry; further information see SONTÉ survey.

In St. Peter/ Graz, concrete-coloured varnish is used for the sealing of damaged prefabricated concrete. Apart from the unnatural perception of the concrete, this method stands for economical and maintenance efficiency, but as restaurateurs like Rochus Michnia are pointing out, this standard method is costly in terms of long time maintenance. Specific and professional renovation and reparation for reinforced concrete are more expensive in the beginning but providing traceable and less intensive and therefore economical maintenances.

Other approaches for reuse and transformation of building of the Late-Modernism are presented for example by Peter Kroos, "Individuell in der Masse," in Auf den zweiten Blick (Berlin: transcript Verlag, 2010) 91-92 und 252-253.


Gross, Strukturalismus, 219.

Dietrich Hassenpflug, Die europäische Stadt - Mythos und Wirklichkeit (Münster: LIT, 2000), 43.

Stephen Cairns and Jane M. Jacobs, Buildings must die: a perverse view of architecture (Cambridge, Mass [u.a.: MIT Press, 2014), 75-76.


Figure 1-5: private archive, Terrassenhaussiedlung St. Peter © by Marisol Vidal Martínez; Girondelle © by the author.

Gross, Strukturalismus, 219.

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PROJECT MANAGEMENT AND SKILLS ENHANCEMENT IN INFORMAL SETTLEMENT UPGRAADING IN DURBAN, SOUTH AFRICA

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INTRODUCTION
In South Africa (SA), around 50% of the population lives in urban centres, where more than 2,700 informal settlements exist. Due to rapid urbanisation and population growth, informal settlements have formed a major challenge of the urban landscape, exacerbating issues related to poverty, inadequate infrastructure, housing and poor living conditions. Reflections on past upgrading efforts in SA suggest that top-down policies have not been successful to date. By contrast, participatory techniques in the design and construction of housing, have been used to enhance community empowerment and a sense of local ownership. However, participation and collaboration can mean various things for informal housing upgrading and often the involvement of local communities is limited to providing feedback in already agreed development decisions from local authorities and construction companies.

This paper explores the concept of ‘self-building’ in the context of community-led upgrading, using experience and lessons learned from two case studies in the Durban metropolitan area, SA. The research seeks to identify critical success factors in managing self-build upgrading projects, discussing the crucial roles of stakeholder management and project governance. It also seeks to understand the balance between formal and informal forms of procurement, uncovering the challenge to acquire ‘the right resources at the right time’, exploring links with local industry and/or construction practice and considering the constraints involved in the process of complying with rigid municipality processes. The findings seek to build capacity for both local communities seeking to improve their quality of life and for local authorities seeking to enhance their upgrading planning programmes, plans and policies.

BACKGROUND CONTEXT
Almost 50% of the South African population lives in urban centres and a quarter of those live in informal settlements.¹ Housing has been a key challenge for the post-apartheid period in SA, with the commitment to provide access to adequate housing for all.² Migration and poverty are major causes of informal settlements, as dwellers cannot afford to build or buy their own houses or to access formal
housing schemes. Misselhorn emphasises that “it is important to analyse why informal settlements exist and what functionality they afford to those who reside in them.” According to 2011 Census, 12% of all households in the Durban metropolitan area (eThekwini) live in informal settlements, with 29% renting their dwellings. eThekwini’s urbanisation has over time incorporated low density urban settlements and adjoining farmlands. This structure has been influenced by an extreme topography; the city centre is fragmented and economic opportunities are spatially segregated from formal housing and residential spaces. Post-Apartheid consequences have therefore led to spatial inequalities, social segregation and various housing typologies. These include high-density residential developments, such as inner-city flats in abandoned buildings, private rental housing schemes in informal settlements and social housing schemes. There are also subsidised houses in urban townships, informal backyard shacks adjacent to formal housing on both public- and privately-owned land, and rural housing dwellings. Some of the negative consequences of spatial fragmentation and low-density include an inefficient public transport system with high transport costs per low-income household, inefficient infrastructure and overall environmental pollution.

**Definitions**

Informal settlements are defined by physical, social and legal characteristics; hence, it becomes difficult to define the term ‘adequate’ housing in the Durban context. Many scholars emphasise the dwelling type (shacks with poor performing building materials), whilst others refer to the issue of land tenure. In SA, a clear departure from the Apartheid terminology included the term ‘slum’ being replaced by ‘informal settlements’. Informal settlements are related mostly to the legal standing of the scheme; namely, settlements that mushroom on vacant land, within and around places of opportunities, without proper planning, building regulations or standard construction methods. Informal settlements have been traditionally considered as ‘urban substandard’ offering housing to the urban poor and referring to the poor living conditions, health risks and environmental hazards. However, Roy suggests a progressive interpretation of informal settlements as spaces of habitation, livelihood, self-organisation and politics. Informal settlements are complex, popular and spontaneous neighbourhoods offering an immediate response to housing and with their location critical for the socio-economic activities of the involved community. This concept moves away from the pathology of informal settlements, envisaging a potential in terms of dynamic places of living.

**Upgrading models**

Physical upgrading of informal settlements takes two general approaches: demolition and relocation or *in-situ* development. Demolition and relocation is the process of moving inhabitants from their settlements to another ‘greenfield’ site. However, a growing body of literature favours *in-situ* upgrading as this involves the formalisation of informal settlements in their original location. One of the main critiques of demolition and relocation is the macro-economic target of the government to meet the physical aspects of housing shortage and infrastructure provision and not the improvement of poor living conditions. This has led to conflicts and significant socio-economic disruption with little regard to displacement, poverty, vulnerability and the impact of these actions on social inclusion. *In-situ* upgrading is the process undertaken to improve the conditions of an informal settlement in its current location through the provision of basic services and secure tenure to people. *In-situ* models can be wide-ranging, from simply dealing with land tenure to incremental housing improvement and/or the provision of site-and-services associated with formal settlements. In SA, the post-apartheid period offered various top-down approaches to low-cost housing provision. Government authorities have been responsible for decision-making on behalf of the local inhabitants.
Top-down models have been criticised as unsustainable in the sense that they continue the legacy of segregation in housing delivery, as they have not engaged directly with low-income communities, and have not understood in depth the social capital required and the nature of the vulnerabilities of the affected populations.\textsuperscript{10}

**COMMUNITY PARTICIPATION**

Community participation can "be thought of as an instrument of empowerment".\textsuperscript{17} There is a growing body of literature which encourages participatory techniques, as a key method to enhance a sense of local ownership within an upgrading project.\textsuperscript{18, 19, 20, 21, 22} Self-reliance is also a relevant term associated with community participation and self-help activities. It refers to communities defining and making their own choices through shared knowledge, skills enhancement and planning activism. However, even though ‘bottom-up’, participatory methods for community upgrading are often discussed theoretically in international development discourses, the tools, methodologies and processes needed to ensure a successful upgrade on the ground have not seen widespread dissemination or uptake, particularly in the Durban metropolitan area.

Self-help housing involves practices in which low-income groups resolve their housing needs mainly through their own resources in terms of labour and finance topping up government subsidies.\textsuperscript{23} Self-help activities are interrelated to community self-reliance and are not new to SA, as since the 1950s incremental, step-by-step, self-building approach on serviced sites was considered the cheapest and most efficient solution to slum upgrading.\textsuperscript{24} Community participation derives from self-help activities and refers to grassroots planning processes where the local populations decide themselves about the future of their own settlement.\textsuperscript{25} In practice, however, community participation often remains “formal, legalised and politicised”.\textsuperscript{26} In informal settlements, key conceptual and practical challenges hinder active community participation. These include lack of social and physical resources, as well as, conflicting interests in individual and community expectations from the involvement in development projects.\textsuperscript{27} Muchadenyika\textsuperscript{28} discusses the problematic relationship between local communities and local authorities and governments, whereby issues of legislation, politics, power and identity play a major role in resource management, distribution and implementation of the upgrading project.

**COMMUNITY-LED UPGRADING IN THE DURBAN METROPOLITAN AREA**

Fieldwork in two case studies was conducted between February 2017 and May 2017 to assess the level of ‘good available practice’ in community-led upgrading of informal settlements in Durban metropolitan area. The case study selection criteria involved community leadership, presence of an active support organisation, community self-organisation practices (e.g. saving groups), good documentation of historical development and upgrading models used in the past. Empirical data was gathered by means of focus group discussions in two case study sites complemented with three additional focus groups with external stakeholders from eThekwini municipality and the construction industry in Durban. The objective was to examine community-led approaches in informal settlement upgrading in Durban and understand the benefits and challenges of inclusive participatory approaches to the project management, the design and construction of the houses.

**Self-build houses in Namibia Stop 8**

The first case study refers to Phase 1 of an informal settlement called Namibia Stop 8 (NS8) based in Inanda, an outskirt of Durban in the KwaZulu-Natal province. Namibia Stop 8 has been a greenfield project, where uTshani Fund, partner of the SA Slum/ Shack Dwellers International (SDI) Alliance
and support organisation provided the finance facilities to the Federation of the Urban and Rural Poor (FEDUP), who led the provision of self-build housing.

At a project preparation stage, the community undertook detailed profiling. Three women-led saving groups established an ‘Urban Poor Fund’ to finance the delivery of housing. The project involved 96 houses using the participatory People’s Housing Process model that is predicated on a community-driven participatory approach. FEDUP construction was slower but this collaborative approach delivered substantially larger (56m²), better-designed and better-sized houses than those constructed under the government-driven Reconstruction and Development Programme (RDP) model (40m²). In terms of building materials and construction techniques the FEDUP houses demonstrate concrete blocks, wooden roof trussing, tiles, plastering inside and out and floor screeding. For example, FEDUP houses have bigger wooden windows, whilst RDP houses had no plastering and required private waterproof paint on walls and doors for rain protection.

![An example of a self-build house (with extensions) in Namibia Stop 8](image)

As a community leader stated “the majority of people continued to live in the houses after the upgrading, while the comparative figures for the municipality houses are about 50%. This is because paying someone to do it is more expensive than doing it yourself”. The construction method entails delivery by community contractors and the establishment of construction management teams (CCMTs), supervised by uTshani Fund and approved professional contractors, who ensured technical support. In terms of procurement, CCMTs and uTshani Fund compared three hardware stores and chose a supplier based on a cost-benefit assessment of quality and cost. This means that communities developed an understanding that state procurement is often expensive and of less quality. However, lessons learned included the lack of wider community trust. Building materials were stolen during the construction process, particularly single units, such as doors and windows. Another key challenge was the issue of access to the main road and lack of spatial integration. Households developed a culture of fencing their yards due to the lack of pathways, thus hindering community development. In terms of construction, technical support would enable a better redesign of the roof and therefore save resources (e.g. timber) that could be used elsewhere. The community emphasised the need for training or hiring skilled workers for future upgrading projects. Lastly, it was noted that the Youth was not engaged in group savings post project completion. This inevitably meant that the knowledge and skills that CCMTs developed was lost.
**Project management in Piesang River**

Piesang River is a historic informal settlement, similar to Ns8, which pioneered strong elements of community leadership and negotiation with the SA government around housing delivery. In particular, uTshani Fund enabled FEDUP to support housing construction through a process of pre-financing (bridging finance) by making a loan to assist ‘sweat equity’ (time and labour) allowing beneficiaries to repay the loan at a later stage. Thereafter, the community undertook the actual construction of the houses.

A Steering Committee was established dividing semi-skilled inhabitants into seven groups of four to ten members, each according to their specific skills; namely:

- technical (design and construction): bricklaying, foundation, plumbing.
- management: supporting labour, finance (book keeping), quantity surveying and costing; and
- social facilitation: mobilisation, negotiation and communication around a ‘shared’ vision.

![Figure 2. The upgrading process in Piesang River](image)

Piesang River demonstrates also women in project management and the construction of the houses. FEDUP brought skilled builders on-site for assistance and on-site training to the individual groups. This facilitated formal skills transferring to the community. In contrast to NS8, FEDUP members engaged in training youth groups and managed to pass on the culture of savings to the next generation.

In terms of the construction method and selection of building materials, houses are quite similar to NS8. FEDUP community leaders commented that criteria for the procurement strategy included quality, durability, cost (affordability), and safety. Piesang River features also double storey buildings even though their construction was not successful. A community member mentioned that accepting customs and culture in the upgrading process is key. “People prefer to live in their own houses and the double storey construction caused issues with older and disabled people.” Another challenge was the need of additional reinforcing metal to support the structure, which increased total costs in addition to a suspended concrete floor.

**A new approach to informal settlement upgrading**

Current estimates in eThekwini municipality indicate that there are about 327,615 households in 476 informal settlements, without any clear plans for upgrading or signs of a participatory process. An innovative participatory action planning approach is proposed by the Housing Development Agency and has been endorsed during the focus group discussions with external stakeholders. This is because full upgrading with services and subsidised housing is not a viable option for SA in general, and Durban metropolitan area, in particular. This approach also underpins that the challenge to upgarding
is not just housing but a manifestation of structural social change and political endurance. In this context, key principles of the new approach to informal settlement upgrading involve 30:

- **city wide**: inclusive of all the informal settlements;
- **incremental**: with a range of different improvement as opposed to the traditional housing delivery;
- **in-situ**: considering relocation as a last resort;
- **partnership-based**: instead of purely state-service oriented);
- **participatory and more community driven**: collaborative informal settlement action, co-management to develop acceptable solutions;
- **programmatic and area-based**: instead of project delivery focused;
- **context related**: differentiated, situationally responsive (as opposed to the ‘one-size-fits-all’); and
- **statutory and regulatory flexible**: working with and not against informality.

**CONCLUSION**

eThekwini municipality has currently ambitious targets to achieve due an increasing backlog on housing delivery. Focus group participants claimed that there are currently about 535 informal settlements, which translate to 25% of population in the KwaZulu-Natal province. Most informal settlements are upgradeable and are already part of the urban form. The government perspective on informal settlement demographics and policy suggests that conventional upgrading (i.e. state funded housing with a full package of services) with tenure security and formal town planning is an unviable solution due to: the increasing backlog; cost; complex land schemes; higher density; and long-time scales. This is why an incremental, city-wide, partnership-based participatory upgrading approach is proposed with lessons learned from communities that have undertaken (even partially) aspects of community-led upgrading.

Both Namibia Stop 8 and Piesang River pioneered strong elements of community leadership due to a set of participatory methods embedded in project preparation and project implementation. These include: community profiling and enumerations, saving groups, community-driven project management, ‘sweat equity’ (time and labour) of beneficiaries. The above processes created a legacy for the local people in terms of income generation, skills upgrade, and sense of ownership since the early planning stages. A key success factor has to do with skills enhancement and ‘learning by doing’. Continuous improvement enabled community organisations (e.g. FEDUP) to ensure less costs and better quality in the construction of the houses.

Finally, it is important to note that the level of a successful upgrading project is measured differently between local authorities and communities. For eThekwini municipality, it refers mainly to successful delivery of infrastructure and services. Empirical data from the two communities, instead, reveal that a successful project is about full ownership of the upgrading, social cohesion, livelihood development and tenure security (ultimately by obtaining the title deeds). This means that upgrading is not just housing delivery but consideration and development of social fabric, such as access to job opportunities, health facilities, schools, and public transport. eThekwini municipality has practiced limited community led approaches and currently acts as a housing developer. It is therefore essential to build capacity and invest in further training in both communities and local authorities by understanding the minimum preconditions that unlock community participation in an upgrading project.
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HOME OUTSIDE THE BOUNDARIES: THE EXPERIENCE OF TRANSITION SPACE IN RESIDENTIAL ENVIRONMENTS

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INTRODUCTION
This paper addresses the sociological and psychological dimensions implied in residents' perception of transition space between integrated into their experience of transition the inside and the outside of dwelling places. The aim here is to revisit the meaning of transition space following the reductionist tradition of modern architecture. In this context, transition space is acknowledged as the spatial structure integrated within the experience of residential environments. This paper adopts Serfaty's assumption that the dwelling place is a whole made of sub-divisions (such as the kitchen, the living room, and the bedroom), and expands upon this by incorporating transition spaces within the wider urban premise of the residential environment; i.e. the dwelling approach, front, and back entrances. Transition space from this point of view represents an element within the whole structure of the residential environment.

A phenomenological lens is utilized to examine the intangible interrelationship between the spatial domain of transition and the experience of transition between the inside and the outside. In this respect, transition space encompasses both psychological and sociological dimensions governing individual experiences taking into account the effect of territorial limits or boundaries. Also examined ontological issues and epistemological positions raised in reference to former investigations on transition spaces with an emphasis on the contribution of the phenomenological approach in investigating transition spaces as a whole structure of interrelated experiences within the spatial domain. The structural nature of transition spaces is discussed in relation to the complexity of residential environments; its inner structure of spaces within which activities occur. The paper also highlights universal dimensions of the individuals’ experiences in relationship to the experience of transition in addition to variable psychological and socio-logical dimensions experienced within.

The Meaning of Transition Space
The literature acknowledges the spatial realm of transition spaces as outdoor spaces represented in spaces surrounding the dwelling unit, and indoor spaces represented in entrances halls of dwelling units. Transition spaces in this context are based upon residents' perception of the experience of transition. Highlighting experiential dimensions underlying these perceptions, hence, represents a cornerstone in the process of understanding the structure of meaning within transition spaces.

In the outdoor realm, socio-psychological dimensions are discussed in relevance to two aspects influencing residents' experiences; visual exposure, and the nature of judicial boundaries. Visual
exposure of the outdoor realm highlights different modes of communication between residents and the surrounding community. On the socio-psychological level, non-verbal communication is emphasized through connotations for the dialectic of identity and communality in different cultural contexts, with focus on an empirical application within the context of American dwelling units. Similarly, Barbara et al. reveal the influence of visual exposure of the door of the dwelling place on the expression of residents’ openness and intention for communication with the community. Likewise, the door of the English house is indicated to represent a sign for residents’ social status.

On the other hand, judicial boundaries influence the perception of the meaning of transition spaces within the outdoor realm of the dwelling place. According to Lawrence, The difference in meanings underlying residents’ perception of the outdoor realm surrounding their dwelling places, was evident among residents who shared foreyards with neighbors when compared to those who had private ones. This example highlights that transition spaces do not merely represent a spatial realm in its absolute form but suggests that habitation and sharing of space have an effect upon the perception of transition space. Furthermore, it indicates contextual and territorial dimensions influencing residents’ experiences.

In contrast, the indoor domain of the transition experience is associated with the process of setting personal norms prior to the experience of the inside of the dwelling space. Consequently, indoor transition spaces play a role in the process of regulating the shift between social interaction with outsiders on one hand, and the contrasting state of control of privacy and the development of a sense of autonomy - emphasized by Dovey and Altman - on the other. Likewise, Lawrence et al. interpreted residents' perception for entrance halls of their dwelling places as means for regulating their privacy and exposure of their intimate spaces to visitors. Nevertheless, the experience of the indoor realm encompasses cultural dimensions governing residents’ perception of the contrast between their experience of the outside and the inside of the dwelling place. From an experiential perspective, these cultural connotations are acknowledged through their integration within the experience rather than the shared notions of their socio-cultural meanings.

It is noticeable that outdoor and indoor realms were addressed as separate entities. However, acknowledging transition space through their integration in residents' experiences of the journey between the outside and the inside of their dwelling places implies taking into consideration the notion of transition spaces as a structure. Form this viewpoint, it is likely to highlight the role of visual exposure in the relationship between both realms. In spite of the interrelation of activities performed during the journey between the inside and the outside of the dwelling places, the nature of the spatial interrelation between the outdoor and the indoor realms incorporated within individuals’ experiences, are seen to be addressed in isolation rather than combined. Thereby, a whole picture of the transition experience would not be fully envisioned.

On the level of epistemological positions in investigating transition spaces, there is a consensus on integrating sociological and psychological dimensions when investigating transition spaces. An integrative perspective has been discussed by Gurney on the theoretical level through the emphasis of relating individual perception with the collective acknowledgment of the surrounding context of residential environments. This point of view is further advocated by Somerville. However, incompatibility between the subjective account of individuals' experiences and the objective acknowledgment of sociological and contextual dimensions, remains an unresolved theoretical issue. Investigating transition spaces in this respect has a particular reflection upon this discourse due to their socio-psychological structure. From an experiential point of view, it is postulated that it is inevitable to reveal the experience of transition between the inside and the outside of the dwelling place without taking into account the contextual forces of place (i.e. political, sociological,
economical, etc.\textsuperscript{18}) in the outside and the inside realms of the dwelling place.

By means of a phenomenological approach, residents' perceptions of their experiences of transition, incorporates their subjective perception of the surrounding contextual forces within both the outside and the inside realms. However, the subjectivity of individuals' perception represents a limitation when attempting to draw generalized interpretations. Alternatively, Depres\textsuperscript{19} and Somerville\textsuperscript{20} discussed a 'hetero-phenomenological' approach for eliciting subjective phenomenological accounts with respect to objective contextual dimensions. Accordingly, in spite of the theoretical limitations of a phenomenological approach implied in revealing a subjective account of transition spaces, this approach represents the first step in building a collective notion of the space integrated within the experience of transition.

**Transition spaces and Complexity in Progressive Residential Environments**

Complexity in the built environment is addressed in opposition to simplicity and reductionism of modern architecture\textsuperscript{21, 22}. According to Van Eyck, complexity is associated with the coherence of the spatial structure of the built environment as one whole\textsuperscript{23}. He explained the experience of contradictions through the concept of twin phenomena in which the outside and the inside of the built environment are upheld together forming a coherent structure rather than experienced in isolation from one another\textsuperscript{24}. In this context, transition spaces play an essential role in upholding the wholeness of the experience of residential environments.

From such perspective, it is worth relating the quality of complexity with the timely discourse of flexibility in the development of progressive residential environments. Flexibility has been associated with variations and changes in the way individuals’ experience their dwelling places. Correspondingly, taking into consideration flexibility in creating the spatial structure discussed by Till and Schneider\textsuperscript{25}, provides an opportunity for residents to manipulate the spatial structure within their dwelling places in relevance to personal and socio-cultural needs. It is noticeable that the development of the concept of flexibility of residential environments focused on the flexibility of the inside of the dwelling places\textsuperscript{26}. However, achieving flexibility in shaping transition spaces, in particular, has not been the centre of attention.

In reference to Lawrence’s\textsuperscript{27} urge for the collaboration between architects and planners for integrating human dimensions (implying socio-cultural and psychological dimensions) within transition spaces, taking the aspect of flexibility into consideration involves residents in shaping the nature of coherence between the dwelling units and the surrounding residential environments. From this point, it is essential to revisit proposed models for achieving flexibility\textsuperscript{28} in reference to the nature of residents’ experience of transition spaces.

**Polarities in the Experience of Transition**

Polarities are dominating pillars of man’s experiences. According to Tuan, human beings tend to construct their experiences according to polar oppositions. In the context of the experience of residential environments, the opposition between inside and the outside of the place of dwelling represent a prominent aspect\textsuperscript{29}. This contrast is associated with sets of oppositions revealed on each of the socio-cultural and psychological levels\textsuperscript{30, 31}

Drawing upon Schultz’s\textsuperscript{32} the explanation for the phenomena of the interface between experiences, spaces integrated into experience of transition represent the spatial zone where the interface between the psychological and socio-cultural fields of the experience of the outside public space and inside-ness of the dwelling place occurs. Nevertheless, individuals’ perception for the journey between the inside and the outside of dwelling places imply their way in constructing the meaning of interface
between both contrasting experiences. Discussions for the interface between the inside and the outside on the level of built environments highlighted the multivalence of this interface. In such regards, Van Eyck proposed the interface between opposing experiences by creating the experience of the inside-ness of architectural spaces within urban spaces ‘in between’ built forms. Likewise, Venturi discussed the interface between the inside and the outside of the built environment on the level of the relationship between architectural form and the urban space on one level. In addition, he discussed the interface on the level of the details of the outer skin. Similarly, in the domain of residential environments, Jurgenhake investigated the concept of layering in regulating the interface between the public space and privacy of the home.

Multivalent forms of the interface illuminate the fact that the journey between the inside and the outside of the dwelling place, represents one facet of the interface between the architectural space and the urban space. However, it is important to highlight the experiential differences between the nature of transition space and that of ‘in-between’ urban spaces proposed by Van Eyck. The former is dominated by the relationship between an intention and a goal directing residents’ activities during the journey between the inside and the outside of their dwelling places. On the other hand, the latter is envisioned by Van Eyck as a field for the experience of social interaction within the outside realm.

The Inner structure of transition spaces

While the experience of transition represents an element within the structure of the experience of residential environments, on one hand, the experience of transition enfolds an inner structure that constructs this experience. Alexander et al. demonstrated an example for deliberate analysis for Inner subdivisions associated with the events of approaching and departing the dwelling place. For example, the experience of arriving at the dwelling place is associated with anticipation for the experience of the inside-ness of the dwelling place. This experience is assimilated in routine activities such as shelter from the weather while finding keys and sheltering prams and bikes at the porch or visual contact with people inside through a window. Following that, conventional actions taking place at the entrance hall such as eliminating formality of their appearance connotes a process of regulation for meanings governing the contrasting experience of the inside and that of the outside. Nevertheless, the difference between individuals' intentions and goals on arriving and leaving the dwelling place implies differences in the nature and the structure of performed activities that take place in both events.

The interrelationship between these routine activities form the coherent structure for the experience of transition. In spite of socio-cultural connotations of these activities discussed in this section, demonstrations for these activities as a coherent whole in the literature, did not incorporate socio-cultural variations influencing the form of their structure.

The experience of Transition

Towards exploring human dimensions of transition space, a phenomenological perspective contributes to understanding transition space as lived space rather than absolute space. Martine defined absolute spaces as the space identified through measured physical and geometrical characteristics. Similarly, Lefebvre provided a definition for absolute space as space acknowledged through its physical characteristics prior the process of socialization of space. In contrast, lived space is a product of the experience of a state of the interrelation between man and place. From such viewpoint, body-space experience as a salient aspect of the experience of transition space may have an impact on revealing experiential dimensions of transition space. During the routine
journey between the place of dwelling and the outside world, individuals’ perceive their relationship between body and space in relevance to three archetypical structures. First, the position of the body within space in relevance to the oppositions between front/back, right / left and up and down. Second, individuals’ perception of motor activities performed during the experience of transition such as walking sitting etc. Finally, the perception of body position in relevance to the cosmological structure of the world around horizontal and vertical axes representing axes of life and metaphysical dimensions respectively.

Moreover, experiences are not limited to universal dimensions of the experience of body and place. Individuals’ perception of their experiences represent a state of the interrelation between self, body and place. In contrast to universal experiential dimensions, individuals’ perception of the experience of transition between the outside and the inside of the dwelling place, represents subjective psychological and socio-cultural dimensions.

Exploring the nature of space integrated within transition experience draws attention towards residents’ iterative process of appropriation. Transactions between the self and space may allow understanding of the way characteristics of the spatial structure influence transition experiences. These characteristics include architectural elements such as stairs, ramps, porches, and fences, in addition to the spatial configuration integrated into the transition between the public realm and the interior spaces, and spatial enclosures whether spaces are outdoor or indoor spaces. In addition, the process of appropriation highlighted the difference between experience of transition space in relevance to its location within the dwelling unit (front and back entrances). The process of appropriation is a significant aspect of the experience of residential environments. The notion of residents’ intention for making their dwelling place a home is acknowledged when appropriations represent residents' appropriation for meanings of their experiences.

Architects and Planners role in Shaping Transition Spaces in Residential Environments

From this respect, the quality of complexity in residential environments appeared in an inconsistent form. Although Lawrence addressed contrast of interpretations for residents' perception for entrance halls with the neglect of transition spaces within residential environments in the present time, situations of acute housing shortage also indicated inconsistency in integrating transition spaces within dwelling models emerging during these situations. For example, in the UK in spite of the importance of entrance spaces within the structure of the house, housing shortage accompanied industrial revolution was associated with the disappearance of transition spaces within some housing models.

These situations bring forth the inquiry about contextual forces influencing architects’ and planners’ decisions in integrating transition spaces –and accordingly complexity- in dwelling models. In addition, housing models with a direct spatial relationship between street and living spaces draw attention towards the way residents appropriate their dwelling places for integrating multivalent psychological and socio-cultural dimensions of their journey between the inside and the outside realms.

CONCLUSION

Salient ontological and epistemological dimensions and gaps in addressing transition spaces in the literature are highlighted. Important features of experiential dimensions of transition spaces are also discussed. On the ontological level, the separation between the inside and the outside realms of the experience of
transition is noticeable. Accordingly, there is a gap in addressing transition spaces through their integration within the journey between the inside and the outside of the dwelling place. In addition, socio-psychological dimensions were commonly explored within residents’ experiences of both realms. Nevertheless, these dimensions were rarely related to contextual forces.

Furthermore, discussion of transition spaces as a whole structure of interrelated activities draws attention towards the need for revealing sociological and psychological dimensions governing these structures.

On the epistemological level of investigation, investigating transition spaces highlighted the importance of understanding individuals' experiences in relation to their surrounding contextual forces. In such regards, a phenomenological approach makes it possible to reveal interrelation of residents' experience of transition spaces in relationship to their perception of the contrasting experiences of the outside and the inside of the dwelling place. However, the subjectivity of the phenomenological approach is a limitation in providing a generalized understanding of the nature of transition spaces.

A phenomenological lens utilized in investigating transition spaces contribute to the understanding of the experience of transition space by highlighting their structural nature. On one level, it addresses the structural nature of transition spaces through their position within the wholeness of residential environments. On the other level, it reveals the inner structure implied within transition spaces themselves. A phenomenological approach provides the opportunity for revisiting universal structures for the relationship between body and space within the context of the experience of transition between the inside and the outside of the dwelling place.

Furthermore, revisiting the concept of complexity in relation to the nature of transition spaces highlighted the role of transition spaces in upholding wholeness of the experience of residential environments. Finally, revealing experiential dimensions reflects upon the architects and planners’ approach in developing progressive residential environments by introducing models for flexibility which are suitable for the nature of transition spaces.

In reference to the inconsistency of architects and planners approach incorporating transition spaces into residential environments, further investigations are needed in order to reveal forces and reasons underlying their approaches in dealing with transition spaces.

In general, envisioning transition spaces in their structural form comes in line assumption proposed in the paper that considers transition spaces as a subdivision within residential environments. Accordingly, drawing upon calls for integrating human dimensions in the development of residential environments in order to enhance residents emotional bonding with the places where they live reflects upon the need for new directions in envisioning transition spaces as lived spaces rather than their notion in their absolute physical form.
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FUTURE BOOM STREET, PRETORIA SOUTH AFRICA: THE SPACE BETWEEN THE TEMPORAL AND THE PERMANENT

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INTRODUCTION
The paper is based on a case study of Boom Street in the capital city of Pretoria, South Africa. It is presented from the perspective of an African city in the Global South. Running on an East-West axis in the inner city of Pretoria, Boom Street connects the historical Marabastad in the west with the bottom slopes of Meintjeskop in the east. The connection signifies a physical and metaphysical link between the haves and have-nots of South Africa.
Marabastad was first surveyed in 1888 as a temporary settlement for migrant non-white workers, while Meintjeskop is the site on which the Union Buildings of South Africa were carefully placed in 1910 by a white minority government. Today, this important historical axis has almost disappeared in the urban fabric and predominant motor ways.
The current street activities along Boom Street represent the unique coming together of different cultural identities. Existing and migrant communities are inhabiting the street on both a permanent and temporary basis. The result is a complex conglomeration of communities at the juxtaposition of different grains of urban fabric.
The notions of contracts and connections stand central to the cultural history of Marabastad, and these concepts are touched upon in this paper. Marabastad was originally established as one of the non-white labour camps of Pretoria. Between the 1940’s and 1970’s, the inhabitants of Marabastad were forcibly relocated to single-race townships further away from the city centre. These forced removals were the result of Apartheid laws like the Group Areas Act. In Marabastad some of the built artefacts, dating back to this period, have remained intact. Today, a new wave of black formal and informal entrepreneurs, together with some old Indian businesses, trade actively on Boom Street.
The urban fabric of Boom Street varies from the west to east. In the western part of Boom Street, the historical Marabastad is characterised by the finer grains of late 19th and early 20th Century. Towards the inner city, the character changes from a typical single storey covered walkway to medium scale light industrial buildings, shopping malls and modernist housing blocks. In the surrounding precinct there are abandoned modernist housing skyscrapers that are due for demolition, while new formal housing projects are under construction. It is this tension and space between the temporal and permanent home that forms the basis of this study.
The paper reflects on the explorations of Master’s degree architecture students investigating this area in an attempt to development new housing prototypes suitable to the context. Key conceptual lessons
arise. The notions of urbanity, suburbia and the rural are given equal importance in the housing interventions. In contrast with this co-existence, disaggregation is used as a tool to develop prototypes and functional elements are reduced to its essence. Other strategies include sub-division, sub-letting and open-to-sky-spaces.¹

The need for inner city housing coupled with unemployment suggest a combination of fast and slow delivery with a balanced approach to modularity and craft. Historically significant buildings provide memory and palimpsest, while larger industrial buildings are adapted and reused to explore habitation.

**SPATIAL OPPORTUNITIES BETWEEN THE TEMPORAL AND PERMANENT**

Blurred boundaries is a recurring theme that allows diversity of people and class.² It distorts sharp edges and physical separation, while crossing the divides of living. In South Africa, housing for the poor and housing for the rich are located in disparate parts of the city. People lead parallel lives with intersections only occurring in the workplace. Real opportunities for integration and healing reside in the spaces between the temporality and permanence of living. Housing is defined as a Constitutional right in South Africa, but home represents an “appropriated space” for many.³ Attempts to restore a sense of dignity, belonging and humanity give rise to various spatial opportunities.⁴ This results in the poetics of dwelling being explored.⁵

**PRETORIA, A CITY OF THE GLOBAL SOUTH**

Established in 1855, Pretoria is currently the third largest metropolitan city in the world based on area, while housing less than 3 million inhabitants.⁶ It was originally laid out using a rectilinear grid– as illustrated in Figure 1. This grid accommodated a centrally placed church square and acknowledged the sun’s path and openings in surrounding mountain ranges, resulting in a *genius loci*.⁷

![Figure 1. The original town of Pretoria drawn by AF du Toit in 1859 with Boom Street as the northern edge (Allen, 1979).](image)

The Roman *urbs quadrata* as a town planning approach found its way to Pretoria, with the town quartered by the intersecting cross of the *kardo* and *decumanus*.⁸ To a large extent, this principle was duplicated in the subsequent development of Pretoria– as illustrated in Figure 2.
THE REAL WORLD PROBLEM IN BOOM STREET
Marabastad was first surveyed in 1888 as a temporary settlement for migrant black workers.10 Originally, Marabastad operated as a site of racial inclusion, even though its inhabitants were predominantly non-white. Boom Street connected Marabastad with the white establishment in the east. During the colonial era, as well as during the Apartheid - and post-Apartheid times, Boom Street functioned as a place of vibrant trade and intense cultural exchange. Although the enforcement of segregationist laws and policies have destroyed the original sense of community, some built artefacts remained intact. For example, the Empire Theatre shown in Figure 3 is still preserved despite a lack of maintenance.

During the last century, no security of tenure was offered to residents of Boom Street and the land is still owned by the authorities.11 Currently, many properties still form part of an incomplete land restitution process and people continue to live here on a temporary basis. Since the first South African democratic elections in 1994, Boom Street remained a contested place. Today it is a place that is characterised by eviction, dereliction, decay, uncertainty and vulnerability. Figure 4 depicts the current day users of Boom Street. In 2002, Tayob described the situation of Marabastad as a place in a “state of siege”.12 Fifteen years later, the anticipated re-integration of Boom Street into the urban fabric of Pretoria did not materialise.
IMAGINING A LIVEABLE FUTURE

According to Doshi the use of verandahs, staircases, open spaces, balconies etc. are important aspects to understand communities. With cities being transformed by capitalist symbols, the use of public open space; courtyards, terraces, thresholds etc. are often compromised. The result is a separated and divided community with limited chances of meeting and sharing.

In an attempt to address this real world problem, the postgraduate staff and students of the School of Architecture at the Tshwane University of Technology in Pretoria questioned Boom Street as an urban laboratory. This research project was conducted by Master’s degree students specialising in architectural design. The students had to develop an appropriate architectural response to the unexpressed need of habitation of the marginalised urban dweller of Boom Street. With housing and urbanity being central components of the design question, the students started by building a contextual model of the street – as illustrated in Figure 5.

Figure 4. The intersection of Boom Street and Jerusalem Street with the Ismaili Mosque in the background (http://www.aglimpseintomarabastad.co.za/revisited01.htm)

Figure 5. Student contextual model of Boom Street.
CONTEXTUAL RESPONSES: WEST, CENTRAL AND EAST BOOM STREET
The most enduring aspect of the western part of Boom Street is the cadastral grid layout [15m x 15m]. The development of the single to two storey buildings with its verandahs in the area are illustrated in Figure 6.

![Fine grain of Marabastad at the western end of Boom Street.](image)

Figure 6. Fine grain of Marabastad at the western end of Boom Street.

The central area of Boom Street is characterised by monolithic, large-footprint buildings with drosscapes in-between as illustrated in Figure 7. This area is in close proximity to the busy commuter railway station Belle Ombre.

![Large scale buildings with open drosscapes along the central part of Boom Street.](image)

Figure 7. Large scale buildings with open drosscapes along the central part of Boom Street.

Seven broad concepts emerged from the students’ work, namely:
- Urbanity, suburbia and the rural confluence
- Disaggregation, subletting, sub-division and open-to-sky-spaces
- Nature as urban healer
- Balancing modularity and craft to produce fast and slow housing
- History, memory and palimpsest
- Adaptive reuse
- Diverse prototypes

Urbanity, suburbia and the rural confluence
The existing suburban housing along the eastern part of Boom Street resulted in new infill. The result is higher densities, variation of housing types and ways of living. Historic buildings are juxtaposed with new built forms, with communal backyards used as a productive landscape. The rural in the urban, as a way of living, uses livestock farming and agriculture as an intrinsic way of creating community. Communal cooking, eating, working and living are further explored as illustrated in Figure 8.
Disaggregation, sub-letting, sub-division and open-to-sky-spaces

Charles Correa advocated for the disaggregation of the built form with volumes becoming the functional and spatial components. Some of the projects used a similar approach with in-between spaces becoming flexible and adaptable. The breaking up of component living spaces encouraged greater contact between occupants. A deliberate attempt was made to embrace temporality, resulting in loosely defined spaces that allow for the gradual transition between different functions. Economic realities require the pursuit of low-key building interventions. The informal settlement and backyard shack was used as precedent to produce overlapping spaces that accommodate subletting – as illustrated in Figure 9.

Mass housing is often equated to the monolith, focusing on floor area, number of people and monetary value. This approach does not emphasise human value, often separating people and spaces. Housing in the Global South require possibility and opportunity and different scales could be used as a solution – as illustrated in Figure 10. To achieve this community engagement should ideally
form part of the planning stages with specific focus on a sense of community, identity, pride, self-expression and dignity.°

![Image](image1.png)

**Figure 10.** The housing monolith interpreted using different scales.

**Nature as urban healer: Water, animals and food production**

The main entrance to the National Zoological Gardens of South Africa is from Boom Street. This presents an opportunity to create a nebulous edge between human and nature. The conventional idea of home was extended to include animal shelter because animals are part of the city. A range of warehouse structures, suburban housing and a shopping mall are neighbours to the Zoo – as illustrated in Figure 11.

![Image](image2.png)

**Figure 11.** Malls, zoo and suburban houses depict the eastern end of Boom Street.

**Fast and slow housing: balancing modularity and craft; housing as process and product**

The current backlog of state housing in South Africa warrants an urgent response. Together with the rapid urbanisation in sub-Saharan Africa housing delivery targets are constantly underestimated. This need requires alternative delivery approaches, i.e. factory-made solutions with minimum construction time that is both replicable and modular. However, this approach results in new challenges of displacement and demolition, also fast housing provides fewer employment opportunities. Slow growth has evolutionary benefits, including a sense of permanence and security. It offers stability, with progress taking place in a sustainable and meaningful manner. It provides opportunity to develop the handmade using craft and human skill while stimulating local economies. A number of projects investigated the balance of possibilities. Proposals included modularity and repetition of building elements to address the immediate housing need with complementary self-made flexible parts that could be adapted over time– as illustrated in Figure 12.
History, memory and palimpsest as generator for permanence
Flanking Boom Street on either side are a number of buildings that have been built over various political periods of the country’s history. Many buildings of Marabastad are considered frugal and unostentatious, representing the slow growth of the city. The Islamic mosque and Hindu temple of Marabastad are legally protected buildings.

The existing industrial and commercial buildings along Boom Street could accommodate a new layer of housing with the interventions using both fast and slow delivery methods – as illustrated in Figures 13 and 14.

Figure 12. Modular container units with adaptable infill.

Figure 13. A sectional exploration of superimposing new programmes onto the existing urban fabric.
Adaptive reuse of industrial buildings

During the investigation of the existing warehouses, students juxtaposed the terms “warehouse” with “where house” in an attempt to explore ideas of living and working in close proximity. Further explorations included “otherwhere,” as a deliberate approach to disrupt conventional ways of space making.\(^{17}\)

The result is distinctive housing prototypes based on the uniqueness of the existing warehouses. Open semi private/public spaces were interspersed with private dwellings in cubes that are set on their apexes – as illustrated in Figures 15. The resulting spaces produce unique internal volumes, achieving place-specific identities. Adaptive reuse of existing buildings does not only contribute positively to sustainability and the reduction of lifecycle costs, but assists in creating individual prototypes for living.
CONCLUSION
In South Africa, the concept of housing is a highly contested territory. The student projects explore spaces between temporality and permanence of living. Within the city of Pretoria, the notion of contrast remains evident to this day. In the Global South, profound spatial separation exists in the housing landscape. This contrast manifests in various ways, but perhaps most evidently in distinctions between the haves and the have-nots. This problem exists worldwide and it is compounded by refugees and asylum seekers fleeing areas of conflict and crisis. There is no panacea that can solve the problems of Boom Street. It remains a contested space in Pretoria that is characterised by eviction, dereliction, decay, uncertainty and vulnerability. However, Boom Street as urban laboratory offers a number of lessons which could be applied almost everywhere.

The densification and infilling of suburban fabric and the inclusion of aspects of rural living could enhance city-living. The disaggregation of built form and land provides more opportunity for more people. Nature should be explored as an essential aspect of liveability within the city. Animals, water and food production will contribute towards a resilient and sustainable future. Modularity and the repetition of building elements allow for fast housing delivery, while making the most of economies of scale. Complementary self-made and crafted flexible parts should be introduced at the same time.

Buildings from bygone eras have a richness and these can be repurposed without destruction to bring new meaning to Boom Street. They provide markers and a sense of permanence within the dynamic character of the street. The adaptive reuse of existing buildings does not only contribute positively to sustainability and the reduction of lifecycle costs, but it assists in creating individual, distinctive prototypes for living. It is important to include a variety of housing typologies.

In conclusion, the morphology, built form, building typology and language should provide an enabling environment to facilitate spatial opportunities for social wellbeing. Dwelling is a foothold to the urban world. It is a threshold to a better life and a stepping stone for advancement and prosperity. The biggest challenge of Boom Street - or any other highly contested space for that matter - is making it a place to be.
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INTRODUCTION
Nowadays the characteristic and prevailing process of urbanization in Mexican cities is the gated community. It refers to the physical space protected by walls and fences from city disturbance, access control, and private vigilance. This kind of neighborhoods tends to spread throughout Mexico without restrictions, but the ones established by the real estate market.

The urbanization process seen mainly in newer cities –the ones highly developed after 1992 due to the privatization of agricultural land- has serious weaknesses. First, an accelerated population growth promoted by a lack of opportunities in the rural areas creating a series of irregular settlements in the city outskirts without any sort of urban organization. Second, a fast economic development process within this new city paradigm where governments claimed the creation of new jobs without taking into consideration the creation of new and good infrastructure and urban equipment. Finally, the governments have to design and implement urban policies that are feasible in this context.

These difficulties have facilitated social and spatial polarization. Inequalities were accentuated in the creation of poor neighborhoods where public services, equipment and infrastructure are scarce, increasing insecurity. On the other hand, privileged neighborhoods, the ones without any lacking service, become insecure, as the poor neighborhoods start to spread throughout the city. Within this scenario is that gated communities became the easiest and fastest solution mainly to fulfill a satisfaction of security and the provision of better services.

Communities of all kinds started to privatize public urban spaces, from streets to parks and even entire neighborhoods. These perception of security within the citizens has created, in the majority of the cases, an increment in conflicts within the area and the whole city. These enclosed neighborhoods, often called gated communities, are hard to define them as actual “communities” since the social bounds within them are often weak. The fact that people live within the same walls do not necessarily consider themselves part of that neighborhood precisely because of the constant fear of insecurity among them. These communities are often giving the back to the actual problems happening in the city, increasing a sense of resentment in nearby “open neighborhoods” that are often represented by
the wider poorer society. This is seen particularly in new developed enclosed settlements that are mainly established in the periphery, nearby irregular settlements, where land is usually cheaper. Several authors have tried to explain the phenomenon of enclosed urbanization, particularly in Latin America. For instance Cabrales (2002) and Janoska (2002) agree that the origin of enclosed communities is in the United States and from there, due to globalization, have arrived to Latin America in recent years as a symbol of better lifestyle and further as security zones. Borsdorf (2003) on the other hand, identifies a strong tradition in spatial segregation in Latin-American cities, observing this tradition in the typologies of housing and religious monasteries of Spanish origin. Borsdorf also indicates the existence of enclosed communities back in the 19th century, often developed by foreign industrial companies, and in the early 20th century when the development of country clubs in cities such as Buenos Aires and Mexico was present.

The truth is that although these early experiences of enclosed communities are seen in the Latin American urban context, the contemporary phenomenon has an expansive character with similar formulations as the ones seen in the United States in terms of self-government, privatization of the public space, the pretention of create community, but overall, due to this perception of defending the neighborhood from outsiders and the insecurity they generate. Borsdorf and Hidalgo (2005) identify the formation of a new sense of city design with the proliferation of enclosed neighborhoods where it appears to dominate the anti-urbanism represented by urban inaccessibility, the exaltation of exclusivity and social prestige, scarce interrelationship among social groups, patronizing exclusion over inclusion, under-exploding the infrastructure and equipment of the urban fabric.

We see, therefore, that gated communities are not only a matter of social conflicts: the urban collocations of these settlements and the lack of connections to the outside brings to the dependency on the car, creating problems in terms of traffic, pollution and social cohesion. Moreover, the organization of these settlements creates problems in terms of territorial consumption and conflict of interest among the relationship within the public services providers such as the police department.

As gated communities become an aspirational value for citizens within the city, not only rich neighborhoods were able to live enclosed. In recent years, even social housing has provided the option of living in an enclosed neighborhood, generating a series of problems that go from lack of services in the interior of the community, as neighbors have to pay extra for them —because gated communities become private, therefore government declines the right to provide the service in the interior of the neighborhood.

In this context, this paper wants to discuss the relation between the increasing tendency of living in gated communities, the perception neighbors have about gated communities compared to open traditional neighborhoods, and the negotiating power some gated communities have in front of local governments in terms of public service provisions.

HYPOTHESIS

With this research we want to analyze how the need of perceiving a better level of security and wellness brings to an increasing number of people to be inclined to pay extra-taxes to have more services in these gated communities where the services of the governments do not necessarily arrive. Within this phenomenon, managers of gated communities have in their hands a negotiation power in relation with the government because it does not have to provide services, as it is a private property, resulting in a benefit for the government, even if the citizens living in the gated community pay for them through taxes. This negotiation power brings to negative effects in the city, leaving the gated communities free to appropriate of parts of the cities, such as the streets and parks, bringing to problems in terms of social resentments, traffic and eco-friendship.
METHODOLOGY

We divided our methodology in two main steps, first a questionnaire that reflects the perception of neighbors regarding public services and urban space, and second a literature review of planning and construction codes of the city with particular interest in the development of enclosed neighborhoods. First, a survey was conducted in early 2017 to four different types of communities within the city of León. The communities were divided in High residential; Upper middle class; Middle class; and Lower middle class. These communities are divided in classes according to the census data provided by the Mexican National Institute of Geography and Statistics (INEGI) and corroborated by the Municipal Neighborhood Association. We then separated the communities in gated and not gated. The questionnaire was divided, basically, in three sections: (i) mapping the sense of community; (ii) the interaction of the community with the public space, enlightening the forces that disturb the experience of the citizens; (iii) and the perception of the services offered by the government and the municipality involvement in the management of the neighborhood.

The questionnaire sampled more than 200 citizens representing the four different areas asking to fill a digital questionnaire provided by Google forms. To reach the best sample of citizens, the research group used the data base of the Municipal Neighborhood Association, which is a non-profit association willing to collaborate in our investigation.

The second moment of the research regards to the analysis of planning and construction codes, with particular interest in the development of private communities, also called “fraccionamientos”. We did an exhaustive review of all codes and planning rules that are applicable to date in León municipality related to gated community development.

RESULTS ABOUT PERCEPTION

Results presented on figure 1 show how gated communities become more popular as social class evolves and wealth increases. The increasing perception of wellbeing proliferates so that realtors and developers sell gated neighborhoods for different wealth groups, so that from the middle class range, one is able to afford to live in a gated community despite its location, however location is usually better for wealthier groups. A second least popular option that has been increasing throughout the years is the closing of streets to become sort of clusters in neighborhoods that originally were developed as open grid. This has proliferated in central areas of the city where vandalism and insecurity perception has increased.

![Figure 1. Questionnaire results showing how gated communities are more common as social class evolves and wealth increases.](image-url)
Results about perception of Municipality care decreases as neighbors acknowledge they have to pay an extra fee to fulfill those services that municipality does not offer inside the community, so that only 24.1% of residents of gated communities consider that the municipality takes care of their neighborhood while 42.2% of residents of non-gated communities perceive that municipality cares for their neighborhood. We also asked about their perception about general neighborhood maintenance, and it is seen that is better perceived in gated communities than in not gated communities, mainly as a result for the extra fee collected (Fig. 2). It is interesting though that 40% of the inhabitants of gated communities perceive that there is low or no maintenance or simply they do not know whether the community receives some maintenance treatment. We did not find a trend of response that could be correlated to a particular wealth group living in a gated community, as the responses were similar despite the social group.

However, when we asked the neighbors whether they would be willing to pay an extra fee from their taxes for services normally provided by the municipality the answer was mainly a negative one, where 70% of the responses, in spite of being in gated or not gated communities, would not be willing to pay extra for the services normally provided by the municipality. This is an interesting fact taking into account that all gated communities have an extra maintenance fee that covers most of the services normally provided by municipality such as trash removal and security—but in many others it also covers water wells or septic tanks—and other services that municipality would not fulfill despite these citizens pay for their taxes.

Finally, we asked about security perception, where people argued to live more secure in high residential areas than in low middle class areas, despite being in gated or non-gated communities (Fig. 3), however it is seen that all high residential residents live in gated communities (Fig 1) considering therefore that gated communities are perceived more secure and with higher wellbeing than non-gated ones. However, in a separate research (Charles, et al. 2017) we found that enclosed communities foment a lack a mobility in other ways different than automobile, decreasing wellbeing and compromising security.
We found that residents of gated communities are not aware that they are paying more for the services provided than if they were living in traditional neighborhoods within the city. The perception of security and wealth sold by gated communities has more weight than the fact that it is more expensive to live there, but most residents obviate the fact.

**RESULTS ON THE ANALYSIS OF CODES AND REGULATIONS**

One of the main findings when looking for the different codes and regulations gated communities should comply with was the fact that the Municipality gives power to the developer and eventually to the neighbors to manage public spaces that are owned by the city. Although the municipality owns these spaces, the neighbors are responsible of paying for all the maintenance and other services provided within the enclosed community as seen in the Urban Development Code, art. 256 (Desarrollo Urbano, 2010). The developer gives a sell-pitch of owning a space that supposed to be private but in reality these spaces will remain property of the city. Therefore, taxation is doubled as neighbors still pay for the services that municipality is supposed to provide, but in the end neighbors are paying to provide for these services, supposedly because they are owners of these spaces, which is not true. This finding is interesting as it plays as a conflict of interest, where municipality allows and encourages gated communities because they represent a benefit to them, as they still receive taxes specifically for the provision of public services but in the end it is the neighborhood association who will pay extra for those services. However, according to the president of the Municipal Neighborhood Association (Lozano, 2017), many gated communities agreed with some institutions for public services, particularly regarding security enforcement, to have some benefits outside the realm of the institution. For instance, some high residential gated communities offer exclusive reach for police in case of an emergency through direct access to the police communication radio frequency (Lozano, 2017).

Regarding privatization of neighborhoods, we found that enclosed communities are illegal as determined by the urban code (art. 157) (Desarrollo Urbano, 2010) and the Federal Constitution (art. 11, 14 and 16) (DOF, 1917), as these refer a violation of free transit among National territory. This means that asking for registration or personal identification before entering to the gated community is
against the law, although this is common practice in every single one of them. This, again, results in a relationship of power where people living inside the gated community perceives not only a more secure environment but also, a position of power over the rest of the citizens; it becomes a privilege to live and to be accepted inside the gated community.

Public spaces within these enclosed neighborhoods are conformed in their majority for huge green areas and pedestrian walks which are for private use only. The municipality accepts that these are public spaces, but they remain permissive to the exclusivity of these areas that hardly will be allowed to public use. Furthermore, the privatization of these green spaces are often in cities where large public spaces for recreation and entertainment are scarce, contributing not only to city fragmentation but also to urban social segregation, a process that refers basically to the normalization of social inequality.

If Municipality knows all these facts, why is therefore continuing to provide permits for gated communities and private streets? We argue that as the Municipality prefer to allow these abuse because they are not responsible of providing the services and maintenance in wider areas of the territory they perform. Moreover, they still receive payment in form of taxes to provide these services –money that is used supposedly for other purposes.

**CONCLUSION**

Socioeconomic polarization in Mexican cities is evident. In this context gated communities become an option for middle and high social classes to express exclusivity and social prestige. Social segregation shown in rising walls and surveillance check points establishes material forms to social distances. Gated communities constitute a security and tranquility paradise inside the precariousness that exists overall the city.

In this context, we found that people are willing to pay extra to their taxes to pay for perception of security and wellbeing. People do not perceive the true costs of living in gated communities related to lack of mobility connection, expensive services (not strictly related with security) and average longer distances to basic urban equipment (school, supermarkets, etc.) and neither perceive the health consequences of living in these kind of neighborhoods, related to a larger laps of time spent in the car, lacking of pedestrian mobility. Furthermore, neighbors of gated communities are not aware that Municipality owns their “private” spaces, such as security cabins, parks, streets, whose maintenance is provided by the neighbors. The privatization of streets becomes illegal as determined by the urban code, as it refers a violation of free transit among the national territory.

It is important, therefore, to take into account the fact that a connected city is a living city. If every sector of the city managed to become a community, problems of security, infrastructure and mobility would be reduced. The perception of insecurity and the need to privatize spaces proliferate, regardless the social strata of the communities chosen for the study. If, on the other hand, we can agree on neighborhood committees, where we work in favor of public space, we believe that inhabitants would have more certainty of what happens in their community, they would re-appropriate the city.

That is why our duty is to make known the negative effects of the type of city we are building and leaving to future generations. We must promote the appropriation of public space through clear and assertive strategies, beginning with education and citizen participation.
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INTRODUCTION

A significant number of existing dwellings do not meet the differing and changing needs of their occupants, specifically older people and those with disabilities. The New Zealand Standard 4121:2001 - Design for access and mobility: buildings and associated facilities was developed in 2001, but provision of access or facilities for disabled people in residential buildings is not mandatory in the Building Act and Building Code. Given the projected number of older people in New Zealand, perhaps more attention should be given to the provision of dwellings which can accommodate the requirements of the ageing population.

Most design standards including Lifetime Homes (LTH) from the UK and Universal Design (UD) principles from the USA are for new build developments. Although applicable to existing houses their incorporation into these could be a major challenge. In order to optimise the lifetime housing supply in New Zealand, Saville-Smith, and James suggest that “a clear, consistent and single framework of standards” is required for both new builds and existing houses that deal with liveability and visitability. As a result these principles are examined for their application to existing New Zealand houses.

CASE STUDY SELECTION

Two New Zealand housing types were investigated for this paper (early 20th century villas and 1940-60s single storey state houses). Villas are generally planned with a central corridor with rooms to each side. Typical villas have bay windows and verandas facing the street, hip roofs and timber cladding, and are usually single storey. Apart from state housing built for older people typical family houses have varied layouts, with as many rooms as possible receiving some sun. Most state houses were “fairly small, with a roof pitch of about 30°, and small casement windows”.

DESIGN CONSIDERATIONS

According to De Jonge et al. home modification for the 65+ age group means changing the houses to “…make tasks easier, reduce accidents and support independence”. In the UK this has recently led to applying Lifetime Homes standards to new “general-needs homes”. Likewise, in Australia the limited number of new universally-designed dwellings has led to a shortage of appropriate housing for the ageing population and McNamara et al. indicate retrofitting will be the main way to incorporate universal design principles into existing dwellings. The situation is the same in New Zealand. To
support ageing in place, Davey suggests using inclusive or universal design standards and “assistive and smart technology”, although these should not be seen as substitutes for social support and social interaction.12

In an investigation of infill development for older Australians using a collaborative design process, Baldwin et al.13 found universal and accessible design was important for the elderly. Additionally, Sutherland and Tarbatt14 investigated the design attributes of mainstream housing which had attracted downsizers, finding one of the main reasons for their interest in it was the application of lifetime home standards.

Statistics New Zealand15 suggest an increasing demand for communal dwellings is driven by the ageing population. Communal residential buildings such as co-housing can be attractive to older people as they can provide assistance and companionship. Evidence from the UK DWELL project indicates sharing outdoor spaces is acceptable particularly where they provide shared activities such as a barbecue.16 In Australia, Judd et al.17 found that unlike other movers, older people who downsized are more likely to move into a form of multi-unit housing than a separate house.

Using the New Zealand Lifemark 3-star standards three designs were produced for a villa and smaller state house with different degrees of shared space, ranging from conversion to two smaller units (schemes B and C, Figure 1), to having some shared spaces such as a guest bedroom (scheme D, Figure 2), to private en-suite bedsitting rooms and all living spaces shared (schemes E and F, Figure 3).

![Diagram of schemes B and C](image-url)

**Figure 45.** Left: Scheme B, villa; Right: scheme C, state house: separate units with shared hall/entrance
The designs are for people wanting to downsize who are able to maintain their lifestyle independently or with a low level of assistance. The aim is to see what is possible when converting existing houses.

**EXISTING HOUSING DESIGN GUIDANCE AND STANDARDS**

Design standards have been developed to promote the access in the built environment for those with disabilities. Some countries have legislation to ensure all buildings address access for everyone, such as Part M of the building regulations in the UK, and the Disabilities Act 1990 in the USA. Other
countries like New Zealand and Australia have standards such as NZS4121 in New Zealand and AS1428 in Australia, which deal with minimum requirements for access and facilities for disabled people. Imrie\(^{18}\) highlights the relationship between the development and implementation of technical standards and accessible and usable domestic environments.

Although mandatory minimum requirements are widely acknowledged as enhancing the quality of life for everyone, including the elderly and those with disabilities, a number of supplementary private design standards have been developed to address universal access that go beyond current regulations. Apart from the UK Lifetime Homes and Universal Design in the US, these private standards including Inclusive Design in Canada, Liveable House in Australia and Lifemark Homes in New Zealand support the concept of “designing for all”.\(^{19}\) For the purpose of this paper, UK Lifetime Homes (LTH) and Universal Design (UD) standards were compared with NZ Lifemark home (LM) standards to select the most appropriate for incorporation into the case study designs.

**Lifetime Homes (LTH)**

Lifetime Homes (LTH) was developed in the late 1980s by Habinteg and the Helen Hamlyn Foundation in the UK whilst working on the design of housing for older people.\(^{20}\) These standards were then set up there by the Joseph Rowntree Foundation (JRF) during the 1990s\(^ {21} \) and revised in July 2010. LTH standards include set of specifications which “maximise utility, independence and quality of life, while not comprising other design issues such as aesthetics or cost effectiveness”\(^ {22}\). According to Carroll et al., a Lifetime Home is a house which meets the changing needs of its occupants over their life-span, so that they can age in place should they experience age-related disabilities.\(^ {23}\) The LTH standards were developed for general-needs housing, aiming to meet the changing needs of a diverse range of potential occupants. This means while some principles can be incorporated at the design stage, the house can later be simply and reasonably cost-effectively adapted to include the other principles.\(^ {24}\)

Lifetime Homes standards consist of 16 design criteria emerging from the five main principles of inclusivity, accessibility, adaptability, sustainability and good value.\(^ {25}\) However, LTH and open plan building principles have limited applications since they can only be incorporated into new build dwellings so Barlow and Venables suggest refurbishment with electronically enhanced assistive technologies could target a larger number of consumers as this would be applicable to existing dwellings.\(^ {26}\)

**Universal Design (UD)**

Universal Design is defined as “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design”.\(^ {27}\) A group of architects, engineers, product designers and environmental design researchers developed the seven principles of UD. Unlike LTH, UD is generally focused on designing for everyone regardless of their ability, age and body performance. In addition to “design for all”, Imrie suggests UD is also a response to the problems encountered by people with disabilities in poorly designed environments,\(^ {28}\) as to avoid the social exclusion of disabled people, UD attempts to address their needs through basic design concepts.\(^ {29,30}\) This is possible through making environments usable by a broad spectrum of users thus drawing attention away from users’ functional limitations and impairments.\(^ {31}\) This aligns with Sanford’s\(^ {32}\) description of UD as “…everyday design with specialised design built in”. UD is thus different from other standards because it considers the widely varying needs and ages of all users rather than being for older people or those with disabilities.
New Zealand standards
NZS4121:2001-Design for access and mobility: buildings and associated facilities
Standards New Zealand developed NZS4121:2001-Design for access and mobility: buildings and associated facilities to set out the accessibility requirements for non-residential buildings. The standard is not mandatory for dwellings. In the Building Act 1991 adherence to NZS4121 is a means of complying with the Building Code. The standard deals with “requirements for the design of buildings, facilities within buildings, driveways, carparks, passages and any associated landscaping and accessways for use by people with disabilities as required by the Building Act 1991 and the Local Government Act 1974”\(^\text{33}\). It applies to refurbishment of existing non-residential buildings and where design compliance with the Building Code is considered impossible, it offers a number of design solutions for common problems, while advising these are not applicable to new buildings.\(^\text{34}\)

It seems standards and regulations for non-domestic environments might create problems if applied to these. Quinn et al. studied the Australian non-residential standard AS1428.1-2001-Design for access and mobility.\(^\text{35}\) These guidelines were developed to be used by a large number of consumers in public buildings, so consider assistive devices, specifically wheelchairs, used out of the house. The specifications for these are significantly different from those usually used at home.\(^\text{36}\) The latter are normally smaller and more manoeuvrable\(^\text{37}\).

New Zealand Building Code
A number of standards to meet the requirements of people with disabilities are set out in the clauses of the NZ Building Code.\(^\text{38}\) Although the Building Code is only for non-residential buildings it is still not a complete source for access requirements and for full information it is necessary to refer to NZS4121.

Lifemark Design Standards (LM)
In 2012 the New Zealand organization Lifetime Design Ltd. produced their Lifemark Design Standards, followed by a second version in 2016. The aim was to assist an ageing population meet their changing needs in more suitable houses, although they claim a ‘lifemark house’ is beneficial for occupants and visitors of every age and ability.\(^\text{39}\) Design standards are set out for typical New Zealand residential buildings including apartments. Usability, adaptability, accessibility, safety and lifetime value are the five Lifemark Design principles.\(^\text{40}\) Lifemark Design provides a star rating and points system within which every ‘lifemark’ home has to meet the requirements specified in one of three categories, including a 3-star lifemark home being fully adaptable in the future at minimal cost and a 5-star lifemark being fully accessible.\(^\text{41}\) A 3-star home is achieved when minimum requirements are met and some additional points are accumulated. Further points can then be earned to achieve a 4 or 5-star level. The highest 5-star rating is achieved if all respective requirements are met and operational at the time of construction. The additional points accumulated therefore illustrate the level of performance.\(^\text{42}\) For instance, a wheelchair user should aim for a 5-star lifemark home to meet their access requirements. Lifemark provides the opportunity for occupants to select the most appropriate standards within the three categories for their current and future needs and financial situation.

Lifetime Design Limited state the Lifemark principles are “more useful or best practice criteria” than the minimum requirements of NZBC.\(^\text{43}\) However, the minimum requirements in Lifemark specifications comply with those of NZBC.
RELEVANCE OF STANDARDS TO THE PRESENT STUDY

The aim of investigating the various design standards was to select the most appropriate for this research. The large number of design standards and disparities in associated details makes such selection difficult. For instance, the recommended clear opening width for doors in Lifemark design is 810mm and 760mm in NZS4121.

Given the Lifemark standards were specifically developed for residential buildings in New Zealand and are stricter than NZS4121, these will probably best serve this research although meeting these could be a challenge in practice. In order to compare New Zealand’s “best practice criteria” as claimed by Lifetime Design Limited, to the most internationally accepted accessibility standards, a table was set up to compare the aspects of the current version of UK Lifetime Home (2010 revised), Universal Design (2006 revised) and New Zealand Lifemark design standards (2016 revised). Six aspects were defined for this table: 1. accessing the dwellings, 2. getting around, 3. habitable rooms, 4. sanitary facilities, 5. dwelling facilities and storage, 6. fittings and fixtures. Each area has subcategories in which the respective standard is presented. Some outcomes of this comparison are discussed below.

DISCUSSION

The characteristics and sizes of villas and state houses provide opportunities for various design solutions for ageing in place. This variety includes various degrees of sharing, number of occupants, ways furniture can be accommodated within the proposed designs, living arrangements, and the extent to which Lifemark standards could be incorporated. Below are discussed a number of different outcomes from incorporating LM standards into the chosen existing houses.

Communal spaces

Figure 4 illustrates communal spaces in the proposals for a state house and villa. The larger villa offers larger shared spaces (57m²) of living room, kitchen, combined dining space and study/sitting area, with various spaces for sitting and dining. This proposal also provides a large extra room which can be used as a guest room or for other activities. The smaller state house still provides 39m² of shared space, comprising living room, combined kitchen and dining space and separate study/sitting area which could be a guest room.

Figure 48. Left: state house (scheme F); Right: villa (scheme E), schemes with shared living spaces
Bedrooms: size and furniture

LTH specifies a clear turning circle of 1500mm diameter and 800mm clear space around one side and the foot of the bed, in schemes B and C, the number and size of proposed bedrooms determine what can be achieved. In scheme C the original house was converted into a one-bedroom (13.1m² bedroom) and a studio unit (5.4m² bed space). The latter does not contain a clear turning circle of 1500mm diameter whereas the former has 800mm clear space around both sides of the bed (Figure 5).

![Figure 49. Bedrooms in conversion of state house into a one-bedroom (right) and studio units (left)](image)

In the scheme for conversion of a state house into two one-bedroom units, it was impossible to achieve a clear turning circle of 1500mm diameter and 800mm clear space around both sides of the bed (Figure 6).

![Figure 50. Bedrooms in conversion of a state house into two one-bedroom units with 8.4m² bedroom (left) and 7.8m² (right)](image)

The villa (figure 7) offers larger bedrooms that can accommodate wider variety of activities, such as an armchair for reading and a study desk and meet Lifemark standards.
Villa schemes with shared spaces

Only the villa allows conversion into two units with some shared spaces, such as a guest room and extra sitting area or study and office (Figure 8).

Bathroom and laundry

Bathroom is an important space when incorporating lifetime standards. Having a wetroom means a larger shower area and allows 800mm clear transfer space beside and in front of the toilet (according to LM having only one side or in front of the toilet is mandatory). The disparity in the size of the two house types leads to wetrooms of 5.3m² and 4.3m² in villa and state house respectively. In addition, a utility cupboard of only 0.8m² (Figure 9) in the state house may not be acceptable for some people, while the villa has a 2.9m² laundry in the same type of conversion.
Figure 53. Landry and bathroom/wetroom dimensions for conversion to separate units - villa (left) and state house (right)

**Shared corridor/entrance and laundry/utility cupboard: dimensions and features**

Figure 10 shows the shared corridor/entrance and laundry/utility cupboard in both state house and villa. The size of the original circulation space in both houses make incorporation of lifetime standards possible without major changes but there is no adequate space for a separate laundry in the state house.

Figure 54. Schemes with shared living spaces: state house (left) and villa (right)

**CONCLUSION**

Because this research is concerned with existing dwellings the LM 3-star standard has been used as the starting point in the designs to see if it is possible to achieve these when converting existing houses. In places LM-3star, this has been supplemented with aspects from UD and LTH, particularly for the design of sanitary spaces.

The larger villas offer a range of design solutions including separate and shared living. Although the preferences and requirements of potential occupants should be considered in retrofitting existing houses regarding the various degree of sharing and incorporation of design standards, the villa simply offers people more choices in finding the most appropriate living scenario that meets the needs of its occupants: some people might need a live-in carer and some prefer an extra guest room.

The different size and plan characteristics of villas and state houses provide opportunities for various design solutions for ageing in place, although the units from conversion of state houses are small (and hence easy to heat and maintain) but might be unacceptable to some people.
Converting houses into smaller units that are easier to heat and meet Lifemark Home standards seems like a good idea and is possible but feedback on these from the client group is required. The next step is evaluation of these design solutions by an expert panel and through an on-line survey and focus groups with those aged 55+. This work is still in progress and one purpose behind the focus groups is to talk through the designs and gain greater understanding of what housing people want and can afford that will allow them to age in place with a good quality of life.

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INTRODUCTION
To save the precious culture heritage and dispense the urban and rural of unbalanced development, the best approach is to make village more livable by motivating its vitality and keep its sustainability. This work concerns itself by investigating what Jingjinji area seriously suffering? How can we do to make the village still look as it did originally but more energetic? This paper explores the reasons from the views of space、ecology and ethic as the main power to drive the evolution of traditional dwellings. Four important strategies highlighted in throw off the unbalanced of regional development and thus initiated spontaneous but unnecessary population flow from rural to city. The study seeks to make traditional villages around city even more attractive to people in the city.

Space
There are 215 million people in Beijing of china and the population density is 1311 people per square kilometer. The City Disease problem is shown in unordered development of city space、heavy traffic jam、serious environmental pollution in air、water and soil. On the contrary, Heibei Province is average of 355 people per square kilometer. Villages are empty and ruined, adults either man or woman, although they are parents, prefer to look for opportunity to work to Beijing or Tianjin. So, the government has focused more emphasis on peasants、towns or urban-rural integration. Associated with which there are some policies have been issued in recent three years. With the traditional villages were dying off at the speed of 100 per day, the ministry of construction together with the ministry of culture and the ministry of finance published the Chinese Traditional Villages Protection List to save the precious culture heritage. Based on the protection list, traditional village can be subdivided into five areas and one of them is Jingjinji area. The existing traditional villages in Jingjinji have the characteristics of north china village features and now most of them have to face the outstanding problems with the acceleration of urbanization.

We know Beijing, Tianjin and Hebei province, or Jingjinji for short, closed associated with each other due primarily to the historical and geographical reasons. During the past decades, Jingjinji played an important role in urban and rural development of china, but at the same time suffered seriously
environmental pollutions, imbalance of regional development and thus initiated spontaneous but unnecessary population flow from rural to city. The traditional villages around city are empty and ruined and even the unplanned regeneration makes the attraction of villages gone.

This paper aims to explore how to reserve both the physical and mental heritage of the traditional village and identify what makes one rural more attractive and more livable. The paper addressed three main questions: (1) What relationships between nationality, blood and social structure evolve in the formation of the village? (2) How has the cultural theories been used to siting and generating villages and what effect? (3) How could these factors be improved in the context of natural environment imperatively to create more livable villages? It builds on one series of policies The National New Pattern Urbanization Planning (2014-2020), Beijing-tianjin-hebei cooperation development planning (2015), The Chinese traditional village in 20th century, which issued by government and expanded three primary studies undertaken separately by the authors (Binbin Hu, 2015; Deyin Luo, 2014; Nanxi Wang, 2014) who using comparative research approaches to build traditional villages pedigree and urgently call for protecting village by legislation.

**Existing problems**

China is on the knife-edge of Urbanization which faced on contradiction problems that must be solved below.

(1) A large number of rural immigrations found it is hard to blend into urban society which results in low level in urbanization. Meanwhile, the problems of left-behind children, women and elderly underlined the risks and hidden trouble in economic and social developments followed by the immigration of man who work from rural to city.

(2) The phenomenon of land urbanization is rather faster than population urbanization which results in low density of population in built-up areas. On the contrary, some cities pursue to take too much space than people’s actual need as the unused space just like large squares or new industrial zones usually occupied oversized space which could be put to better use.

(3) China has done a little badly in protecting historical and cultural heritage. In the past, the government didn’t recognize that it is disadvantage to build one city to follow the same pattern with others.

All the existing problems mentioned above can be achieved by analyzing the physical layout of rural areas, primarily focus on how land use varies throughout the rural and what affects the forming of features and attraction of the rural?

**Research goal**

The aim is to reduce the motivation meaningless within people to balance the urban and rural development. We should take effective means successfully by providing chances for employment to farmers except only for farming so as to guarantee the sustainability of rural development. Before, we put eyes on the city, now we need turn focus on village. If we find out the uses to govern the “Urban Disease” more reasons why people leave their homes and attract them back homes, then the problems will be solved.

This paper is structured as follows. First, there is a review literature on researching points in nearly 100 years. Second, the paper examines the extent of how natural environment, cultural characteristics and social customs act on the formation of space, including the mechanism that lies behind space form of villages. Finally, it compares how Lingshui village of Mentougou district is more livable and more attractive in Beijing.
Reviews
Questions about the traditional villages rebuilding and protection are not particularly new. There is a lengthy body of theoretical and empirical research examining connections between blood, nationality, social structure and life style, much of which has originated from the 1920’s (e.g. Xiaotong Fei 1996; Yaohua Lin 2000). These works generally research based on a case study of Kaixuangong Village in Jiangsu province and of Yixu family village in Fujian province which manifested that social function, lineage and family are the ethical functions in maintaining villages. And these reflected as a form of “the etiquette order” and “the elder rule” in the daily lives of villagers. The research in the second stage originated in 1980’s, which tends to put focus on the connections between village social system, ideology and village form rather than on the regional community. This match brings a balance to the relationships between regional politics, law, folk and village life. (e.g. Zongzhi Huang 1992). Research in the third stage started at the beginning of 21 century with the rural change became the hot topic in china. As the leaders, Jicai Feng and Binbin Hu promoted that it is necessary to take the two key relationships between traditional and modern, protection and update into account in the way of researching village. They strongly advocated protecting traditional village involved in village spatial distribution lineage, landscape, policy, legislation and the other detailed fields, in which legislation and policy can play an important role.

The research on Jingjinji traditional villages expands to the comparing spacial form of villages of Hebei province (Jianqiang Wang, 2015), which promotes planning strategies included village protection planning and land layout planning and then summarizes an universal designing strategy and special designing strategy based on object differences taking the South Wang village of Ci county for example. Through the comparing Liang village of Shanxi province with Yingtan village of Hebei province (Jiezhang, Songnan Wu 2010), the authors put forward quantitative research methods which can be used to control the relative factors cover siting, axis, scale and horizon.

The formation of space and natural environment
There are getting nearly 90% mountains in the rural of Jingjinji area with many rivers and lush vegetation. So the villages present a linear layout along the mountains, rivers or vegetation. The famous West-Beijing Ancient Road is linked many villages, by which there formed closely economic exchanges between villages in the past.
(1) The climate characteristics:
Jingjinji was located in the north of china with a warm temperate continental monsoon climate, characterized by significant winds, four seasons.
(2) Mountain-water topography:
Take the Mentougou district as an example; there are getting nearly 98.4% mountains with the high terrain of northwest, southeast low. Yongding River is one of the Mother Rivers where ancient mankind culture once originated.
(3) Natural resource and Architectural material:
In order to save the resources, the most special point is to get materials on the spot from which get local rock, woods and limestone, and match their surroundings so well they seem to have grown up organically from the soil. During the process of building, the village tells us that materials have infinite possibilities; these possibilities manifest themselves in changing shapes by deforming or processing. There are abundant natural resources involving in construction, as described next.
First, the most common material is wood in rural area of Jingjinji, in which pine, cedar are used to building their houses not only for local peasants but also for city people. In generally, mulberry will not be used to construct the house because of the pronunciation of taboo in china. That is to say, mulberry in Chinese sound “sang” which is the same sound with the “sang” that means someone is dead in Chinese culture. At the same time, willow is often used to construct buildings with lower grades also.

Secondly, people say Jingjinji is an area that full of black and white while black is coal and white is lime. The coal mining in Jingjinji has started since liao and jin dynasty, at the same time the production of coal supplied the whole capital during the ming and qing dynasty. Lime, can also be called bluestone, which made up primarily of calcium carbonate. Lime is common building materials in the ancient which has two colors, one is blue that made from natural and the other is white that made on fire.

**The formation of space and cultural characteristics**

The concentration and dispersion of the population are the intrinsic motivation in the rising and falling, developing and changing of one village. The concentration of population is mainly because of the characteristics of homogeneous existing in population. This phenomenon often occurs in where the village is produced by the concentration of people who owned the same blood and the same value. And just due to the concentration, some special regional culture within the regions come into being which becomes an inevitable result that regional culture can influence the physical space form.

With the change of the times, many resident live in the buildings which inherited from their ancestors, they are closely linked with the building, soil and village and even strongly interlinked with identity of themselves.

In general, the emotion, knowledge, technology and the building capacity in responding the land and climate effectively to obtain resource are passing down from generation to generation. Housing is built on embodying the value and pursuit with its integrity and reliability. The culture and material of mountain villages in western Beijing were just passing down from generation to generation to maintain a harmonious and order landscape.

That is to say, humans are gregarious lot from which social structure came into being. Social structure is formed based on family and ethic relationships which is the fundamental feature of traditional farming community in china. It contains family structure, blood relation and social class. And the thought of reproduction is the most simple and basic concept in Chinese traditional thoughts which at the same time makes the communities remain stable and lack of change.

We know, the northern dwelling especially the quadrangle dwellings is the typical building system in china. The quadrangle dwellings originated from the Western Zhou Dynasty, which had a rudiment in Yuan Dynasty and became mature gradually in Ming and Qing Dynasty. As an external manifestation in culture, it does not only have strong regional building feature, but also reflect some relationships between living habits, culture feature and the difference between south and north. This now becomes an important research for how to analyze the culture inside the traditional northern dwellings and protect their features completely.

The three reasons are the main power to drive the evolution of traditional dwellings which manifest in changing of requirement and driving of culture. This paper explores the reasons from space, ecology and ethic below Just as Lingshui village for example.
Space
The space form is court yard which is surrounded by four directions dwellings called Quadrangle dwellings. The convergence of Chinese simple introversion idea and private thoughts gives us a space that is closed to outside and open to inside. This kind of space is taken shape in Yuan dynasty because of the lifestyle in Yuan dynasty changed from “migration” to “settlement”. There are 5 counts for the lingshui village which is really rare in mountains (Fig.1).

Ecology
In order to provide shelter against the wind and rain at the beginning of construction, people are launching an appeal to make their dwellings match the natural environment. This ecological opinion has played a very important role in the space evolution of quadrangle dwellings. For example, in Beijing it is very dry in summer and is windy and dusty in spring and autumn. The winter prevail northwest wind. So as to avoid the blow of northwest wind, the typical quadrangle dwellings have windows and doors facing the south of the main house and no windows and doors in the north wall. The main house is higher than other wing-rooms in order to enjoy the sunshine of winter and southeast wind of summer. In order to separate the indoors and outdoors and get shelter from the wind and snow, the corridor is set up outside the wing-room.

For the sake of saving the resource and improve construction efficiency, the most direct and effective way is to get materials such as local rock, local woods and limestone on the spot eventually as to match their surroundings well just make them look like growing up organically from the soil. The most common material is wood in rural area of Jingjinji, in which pine and cedar are used to building their houses not only for local peasants but also for city people.
Ethic

Traditional dwellings keep the essence of Chinese traditional culture, especially the imperial power effect at building quadrangle dwellings. It embodies in grade recognition and central axis idea; the geometric law and ecological rule and so on. They are the Confucianism culture supplements.

The picture shows the measurement plan of Liu maoheng Juren house of Lingshui village. From the picture, we can see “central axis” and “central emphasis “are basic principles of the layout. The center of the main house is family temple, and the left and right rooms of that temple are rooms for the elders. The wing-rooms are for the youngers, in which the east of wing-room is for the eldest son and the west is for the second son. The last row house is for daughters or servant girls. The first row of house lies opposite to the main houses, in the center of where is the room for reception guests. Private school is in the east of reception room, while servant boy’s room is in the west. The far west room is toilet (Fig.2).

![Figure. 2. Juren house of Lingshui village](image)

**Strategies**

In all, in order to protect production and lifestyle so as to keep the static and dynamic vitality of villages, we should launch an appear to develop tourist industry or new industry especially must be in line with local characteristics and market preference in rural area.

Secondly, it should be done equal to city and rural to take two-way movement in urbanization, which means that urbanization need to take some measures to promote Urban-Rural Integration.

Thirdly, to achieve the sustainable development goal, we need to obey the planning strictly to advance greatly in planning and construction scientifically.

Finally, we need put forward protection strategy on account of consolidate the agricultural basis. The government realized the premise of urbanization is the development of agriculture after experiencing
the movement of enclosure in primary stage of urbanization, when exploited earth of the peasant, destroyed production capability and even compounded the social contradictions.
NOTES

1 The National New Pattern Urbanization Planning (2014-2020)
2 Beijing-tianjin-hebei cooperation development planning (2015)
5 Wang Nanxi. Vernacular architecture and landscape research of villages in Mentougou area of the West Mountains of Beijing. D. Beijing Forestry University. 2014

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