

Making multicultural places

Central Canal zone, Brussels

Bhavna Thyagarajan

**Master Thesis Report Landscape Architecture, 2017
TU Delft**



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1. PROLOGUE

1.1 Fascination

In a rapidly urbanising and globalizing world, cities are fast becoming hybrid and a complex jumble of differences. Our cities are full of people from different cultures and backgrounds coming together to share an environment. In June 2014 the UN refugee agency reported that the number of refugees and asylum seekers worldwide had risen over 50 million people and was the largest wave of migration seen post world war II. This large influx of people will add on to the already multicultural cities of our world. Our cities will house more people from different cultures, backgrounds and walks of life. Diversity, the heart of multiculturalism, already defines the social fabric of cities around the globe, and most certainly characterizes the populations of Australia, Singapore, India, Brazil, Canada, the United States, UK, South Africa, UAE, Dubai, Indonesia, Switzerland and many other European nations and will for generations to come. These diverse cities though are not always an advantage. Many of these urban cities face large problems of social inequality which then brings with it a barrage of other problems such as increased crime rates, poverty, unemployment and a lot more. In an era of social protests, with movements that are bringing inequality back into the national discussion, it's time to reassess the practices that have perpetuated these problems—and how we fix them. As a landscape architect it fascinated me to approach the problem of inequality in city spaces from a spatial perspective. This graduation project is a social issue and an attempt at understanding how landscape, with its structures and processes, can become a tool to make connections between people and places, movement and urban form, nature and the built fabric.

1.2 Scientific relevance

Landscape research does not consist of only ecological research but also includes social science research, often called human dimension research. The human dimension research deals with the multi-faceted interrelationship between landscape and society or individuals of the society (Hunziker, Buchecker and Hartig, 2007). The necessity to study human needs and their interaction with their environment has become vital because of the role humans play either in the ecological alterations of the landscape or as users of the landscape. Humans play an important part in ecological systems. Initially, it was thought that humans only alter or disrupt the natural system, but, more and more humans have also been recognized as legitimate users of the system, particularly as receivers of material goods such as agricultural products or immaterial goods such as psychological restoration and visual information. Resolving environmental problems with sustainable development is a major focus to mitigate

climate change. Sustainable development, however, involves more than just matters of ecological balance. Humans are the cause of unsustainable development, the victims and hopefully the solution to this problem. Human needs that constitute the social aspect of sustainability remain underrepresented in sustainability research. These needs are important for the success of a landscape design. Especially in a rapidly urbanising and globalizing world where there is a loss of green open space, the few spaces with limited resources must perform better in the future. These spaces must be designed to meet the needs of the growing population while also helping to mitigate the ill effects of climate change. Therefore, the social design of public spaces, made by architects, urban developers, and policy makers (Summer, 1983), becomes more necessary than ever and must be based on scientific knowledge under the compliance of user's needs, desires and behaviour (Jacobs, 1961.) The latest global debates have shown that the role of culture for sustainable urban development is manifold, ranging from promoting inclusive social and economic development, enhancing cities' liveability and evolving identities, to fostering a quality built and natural environment (UNESCO). Designing public spaces that cater to the local community are integral as they create a sense of belonging amongst the people of the community and this urges them to maintain and preserve their neighbourhood and environment. Designing socially successful spaces are as important as designing physically, economically and environmentally sustainable spaces. The social design of a space is crucial for its long-term sustainability and success.

1.3 Societal relevance

As landscape design and research increasingly incorporates a "human dimension" approach we are faced with the complexity of the human behaviour and character. Each human is a biological organism: a person with a unique set of capabilities, experiences, and aspirations; a social being acting within various roles in various groups; and a carrier of culture (Bourassa, 1991). This complexity is ever more visible in cities with a high level of immigrant population. Cultural differences, religious differences influence the way they use and perceive the spaces around them. The spatial structure of these cities has not adapted to the societal changes. For our cities to adapt to the high level of immigrant population it is important for the spatial structure of the city to reflect the changes occurring in the social structure. To design inclusive spaces in cities a method needs to be developed bringing together spatial and social studies.

1.4 Brussels: “The terror capital?”

The ‘Arrival City’ (Saunders, 2010) describes a multicultural European city that creates opportunities and challenges at the same time. (Wood, 2009). Segregated, deprived neighbourhoods are a common outcome of this multiculturalism. European cities have been facing Non-Western multiculturalisation for centuries. Brussels is a fine example of this trend with an extremely diverse population. It is an extremely multicultural city, colourful but troubled. In 2016, newspapers declared that Brussels had transformed from being the European capital to the capital of terrorism (Figure 2). In the centre of this claim was the canal zone of Brussels. The canal zone is a region of Brussels that is occupied mainly by immigrant groups. For decades, the canal zone has been subjected to various spatial and social developments. The spatial structure of this area, as a result, is layered by the different ‘sediments’ that the various accumulation regimes have left behind. Over the years, the canal zone transitioned from ‘the working class’ area during the industrial era to the migrant zone in current contemporary Brussels. During this transition, there was a shift in the economic structure, changing the spatial structure. However, during this transition, the social environment remained unchanged. This resulted in tensions arising between the spatial and social structure of the area. The canal zone is now in a stage where the social structure no longer adapts to the spatial structure.

This thesis, focuses on what lies behind the “shine” of the European capital: The multicultural, mixed but troubled canal zone of Brussels.

Bernardo Secchi, an Italian professor in urbanism stated that “I love Brussels because it is beautiful. It is not like the 19th century Paris or medieval city in Italy. It is the beauty of diversity”

1.5 Research approach

This Graduation project is an attempt to understand how a “human dimension” approach to landscape architecture can become a tool to invent spaces for our future cities and to design spaces of inclusion. A clear research method has been formulated to guide the research process. The starting point for the project is to understand clearly the problems of the research area, framing a relevant and logical problem statement. Research questions and goals are then formulated that must be achieved during the research process.

The second part of the research develops a method to study the spatial and social structure of urban landscapes and concentrates on the human perception of space.

The third part of the research is dedicated to the development of a tool that helps bring the analytical research of the second part to a more design based approach.

The design, the final part of the research is used to understand the implementation of the tools developed in the previous part of the research to a chosen site location.

This report will handle, in a systematic way, each part of the research while working towards developing methods and tools to create more inclusive places in the urban landscape.

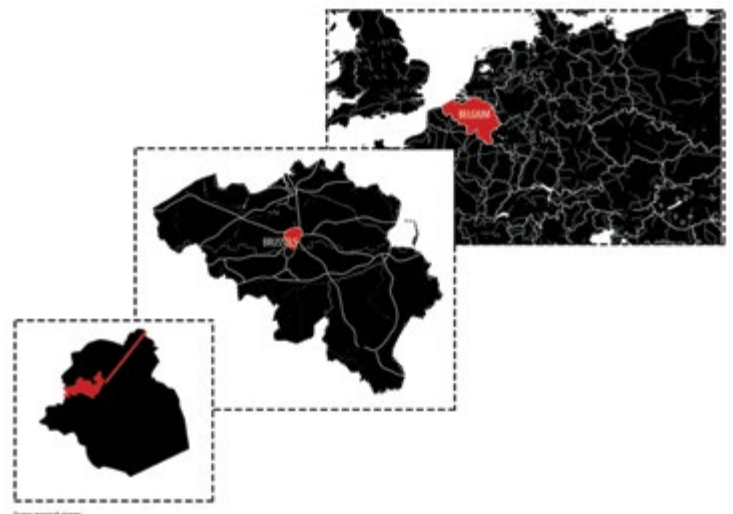


Figure 1 . Map of Brussels, the focus of this thesis
(Source: Mapstack.stamen)



Figure 2 . Newspaper accusations labeling Brussels as the European capital of terrorism
(Source: http://i.telegraph.co.uk/multimedia/archive/03599/UK-front-pages-bru_3599398b.jpg)

2. INTRODUCTION

2.1 Chapter Introduction

The aim of the chapter is to give the research a clear context. This is done by introducing the research location (Brussels), explaining its historic development and by defining the problem statement and the research questions.

2.2 Brussels: The low and the high cities

Brussels emerged first as small settlements along the river valley and grew as two different cities (Figure 3). The working class occupied the low-lying areas, what then used to be closer to the river Senne and the rich occupied the higher areas closer to the Sonian forest. The social and economic development of Brussels has always reflected in the landscape of the city. Brussels during the industrial era was the hub of industrial activity due to its strategic positioning in Western Europe. The blooming industries of this era facilitated a significant amount of international low skilled labour migration (Rea,2013). After the coal crisis in 1970, these industries became secondary to knowledge and administration power of the city. The shrinking of these industries impoverished entire neighbourhoods. The new high profile service areas that cropped up in the city put immense pressures on neighbourhoods that surrounded them, neighbourhoods that were once centres of the industrial era. This left a fragmented and shattered environment. From the 1970s the post-fordist economic shifts and speculative profit-maximising real estate market facilitated a fragmented urban pattern, that also resulted in socio-spatial segregation. This is evident even in the current urban fabric of Brussels – The high city is less dense and has large green spaces. The low city or the canal zone is characterized by high density, lack of green public spaces. (Figure 4 and Figure 5)

The focus of this thesis is on the low city or the canal zone. This zone with its huge immigrant population(Refer 2.4) is the best example of multiculturalism. Moreover, with all the media attention it is receiving, it is an interesting case study for this research project.



Figure 3 . Map depicting the low and high cities of Brussels



Figure 4 . Map depicting the greater density of open spaces in the high city as compared to the low city



Figure 5 . Map depicting the lesser building density in the high city as compared to the low city.

2.3 Historic development of the Brussels Canal zone

The historical development of Brussels shows that each period was represented by a specific socio economic model which also had specific spatial characteristics. (Figure 6)(Corijn, Eric, and Jessica van de Ven, 2013).

The Senne: Origins of Brussels

The valley of the Senne, the river that runs through Brussels from southwest to northeast, is the birthplace of the city. Brussels first emerged here around the 10th century on an island called the Ile Saint-Géry, in the marshy area around the furthest navigable point on the Senne. During this period, water was not only important because the river Senne was a major transportation route but it also provided opportunities for milling. From the 13th century, Brussels was established as an important industrial city. The river was the main source of primary energy, driving the numerous mills that were built along its banks.

The Willebroeck Canal (1551-1561)

Unfortunately, the river Senne had, and still has a remarkably unstable water flow and was difficult to navigate. In the starting of the 15th century, tradesmen pleaded for the construction of a canal. The digging of the canal between Brussels and Willebroeck began in 1551 and was opened ten years later in 1561. This connected Brussels to Antwerp. Many new warehouses, shops, factories, hotels and other buildings were constructed on the new canal's quays.

The Charleroi Canal (1830-1870)

As urban and commercial growth gathered pace, the arrival of raw materials, including coal, became crucial. In 1830 saw the opening of a new canal connecting the industrial basin of Charleroi. The opening of the Charleroi Canal enabled coal to be brought in on a massive scale and underpinned a spectacular industrial, demographic and urban boom in Brussels, which became the country's leading region for industrial employment. The mechanisation of industry led to the appearance of foundries and engineering and metalworking companies. This in turn accelerated the development of the railway network, which had the effect of dividing up the urban landscape.

Brussels as a sea port (1900-1922)

The Brussels harbour started expanding outside the city walls to accommodate for large sea vessels.

The opening of this sea port influenced the city's development. Many large industrial site opened upsites along the canal such as the tours and taxis site which developed as maritime railway ports, connecting rail, road and water networks. The rapid industrialisation facilitated a significant amount of low skilled labour migration

Deindustrialisation

Having been the country's main region for manual labour until the late '60s, Brussels was hit particularly hard by deindustrialisation process that happened from the 70's. All along the line of the Canal, and especially in its central section, deindustrialisation led to the emergence of brownfield sites and the deterioration of the building stock. This phenomenon coupled with the downturn in population as a result of upper and middle class population moving out to the periphery of the city, left the canal zone as that populated by the lower income migrant groups.

The Brussels canal zone started from an important transportation route , functioning as an area for milling, moving to the hub of the industrial era and is currently in the state of decline with industries moving to the out skirts of the city leaving the canal area vacant.

The marshy area



LEGEND

- Forest
- Water
- Marshland
- Factories
- Urban settlements
- Railway line
- Port

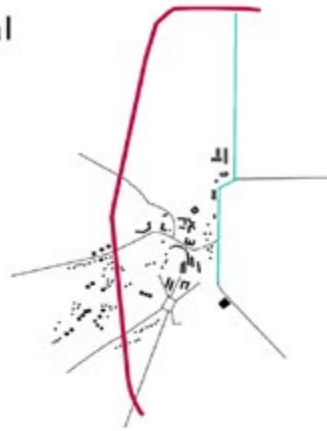
1551

The Willebroek canal



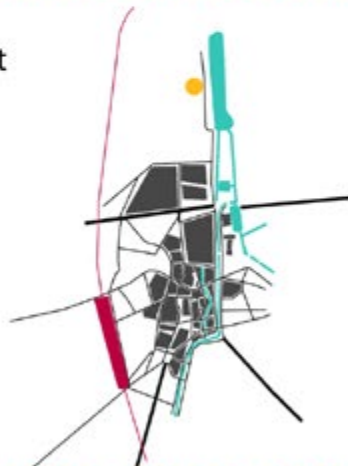
1830

The Charleroi canal



1900

Brussels : Sea port



1922

Figure 6 . Historic development of the Brussels canal zone

2.4 The Brussels canal zone in its current state

The Brussels canal is a 14km stretch waterway and consists of 8 municipalities : City of Brussels, Schaerbeek, Saint-Josse-ten Node, Sint – Jans – Molenbeek, Koekelberg, Anderlecht, Saint Gilles and Vorst. It can be roughly divided into three parts: The port zone, Industrial zone and the Urbanized zone. (Corijn, Eric, and Jessica van de Ven, 2013). The spatial distribution of economic activities (Figure 8) and the diversity of the urban landscape (Figure 7) support the canal zones division into three zones. The Port zone is where port activities take part. This

zone also consists of a variety of light and heavy industries. The industrial complexes, wastelands etc. create a very open landscape.

The urbanized zone is characterized by a very dense urban fabric. The tension between the port activities, housing and industries is clearly visible in this zone. It is a true mosaic of different environments.

In the Industrial zone, one finds additional port activities, though not as abundant as that of the port zone, along with industries dedicated to the petrochemical and construction economy.

As we move further and further away from the center the region slowly transitions from industries to more green open areas.

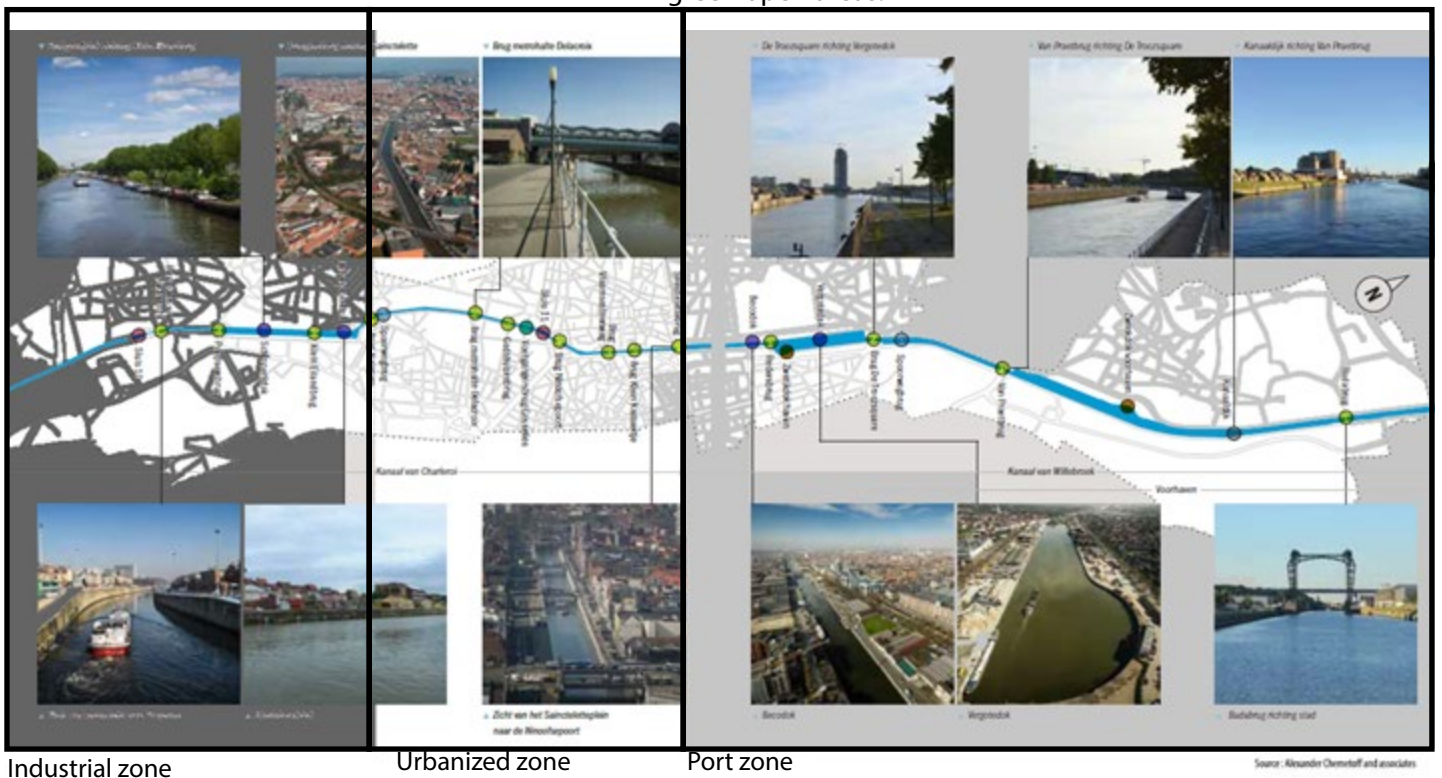


Figure 7 . Spatial diversity of the canal zone
(Source: Alexandre Chemetoff & associates, 2013)

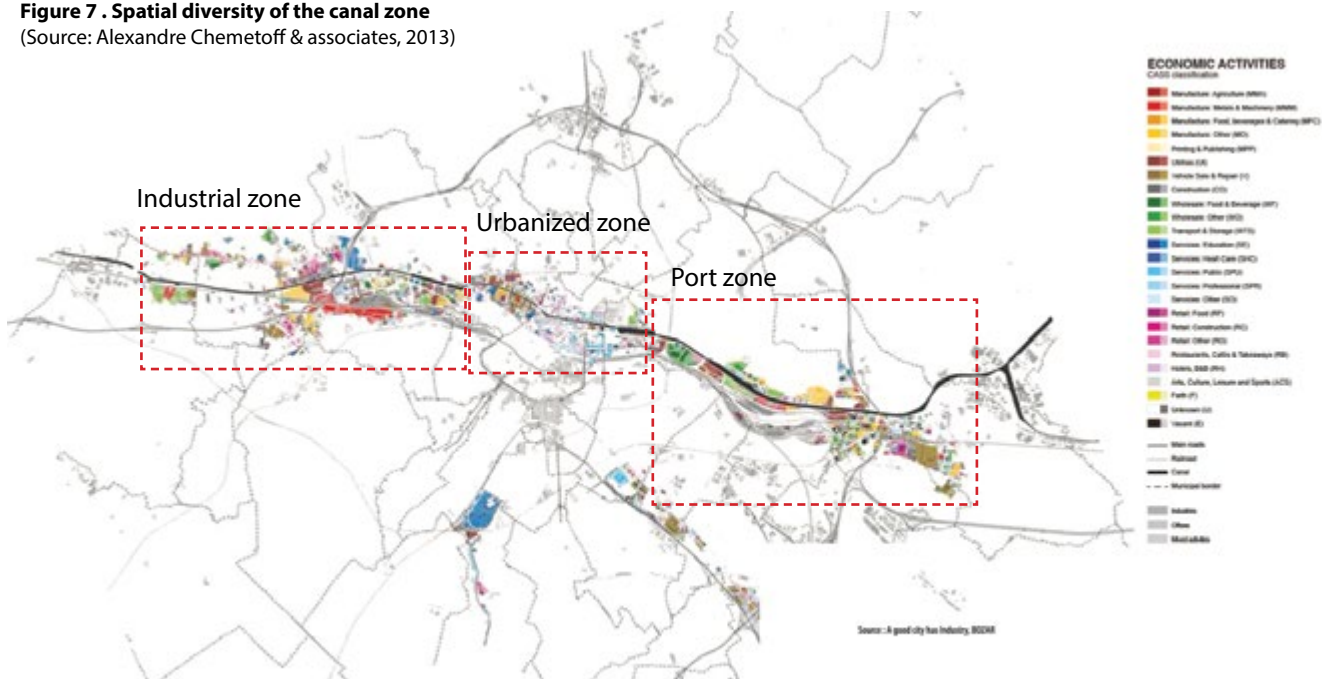


Figure 8 . Distribution of economic activities of the canal zone
(Source: A good city has Industry, Bozar, 2016)

2.5 Case selection: The Urbanized zone

The Urbanized Zone (Figure 10) has a very different character in comparison to the port and industrial zones. The morphology of the urban fabric observed in this zone is much more complex. Successive cycles of socio-economic development such as of industrial Fordism, the rise of the welfare state and post-modern development, involve different types of urban expansion in line with specific societal demands. This results in a rapidly changing functional use of the existing urban fabric (Vermeulen and Corijn, 2013). The resulting spatial outlay presents a highly diverse fabric of highly populated neighbourhoods, a dense network of urban functions such as public and social services, commercial and cultural activities, which is less observed in the port and industrial zones of the canal. Adding to this is the fact that the central canal zone is completely diverse in terms of its inhabitants. The main characteristics of the urbanized zone as observed by Vermeulen and Corijn (2013) are:

- 1) An increasing population: in the urbanized zone, a population growth of ca. 20% was observed between 2001 and 2009 (BISA-IBSA, 2013).

- 2) One third of the total population (33.62 % in

2009) is of foreign nationality: Most of them have a Mediterranean background: the Moroccans are the largest group (ca. 12%)(Figure(9)), followed by the French (ca. 2.5%), (Figure 12) the Italians (2.4%), the Turks (2.1%) and the Spanish (1.5%). The Portuguese, Greek or Congolese (Figure 11) all represent about 1% of the people living in the urbanized zone (Cosmopolis, 2010)

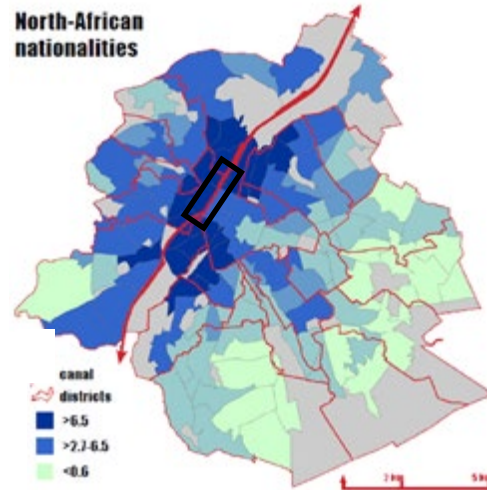


Figure 9 . Demographic build up - North Arican Nationalities
(Source: statistics.brussels)

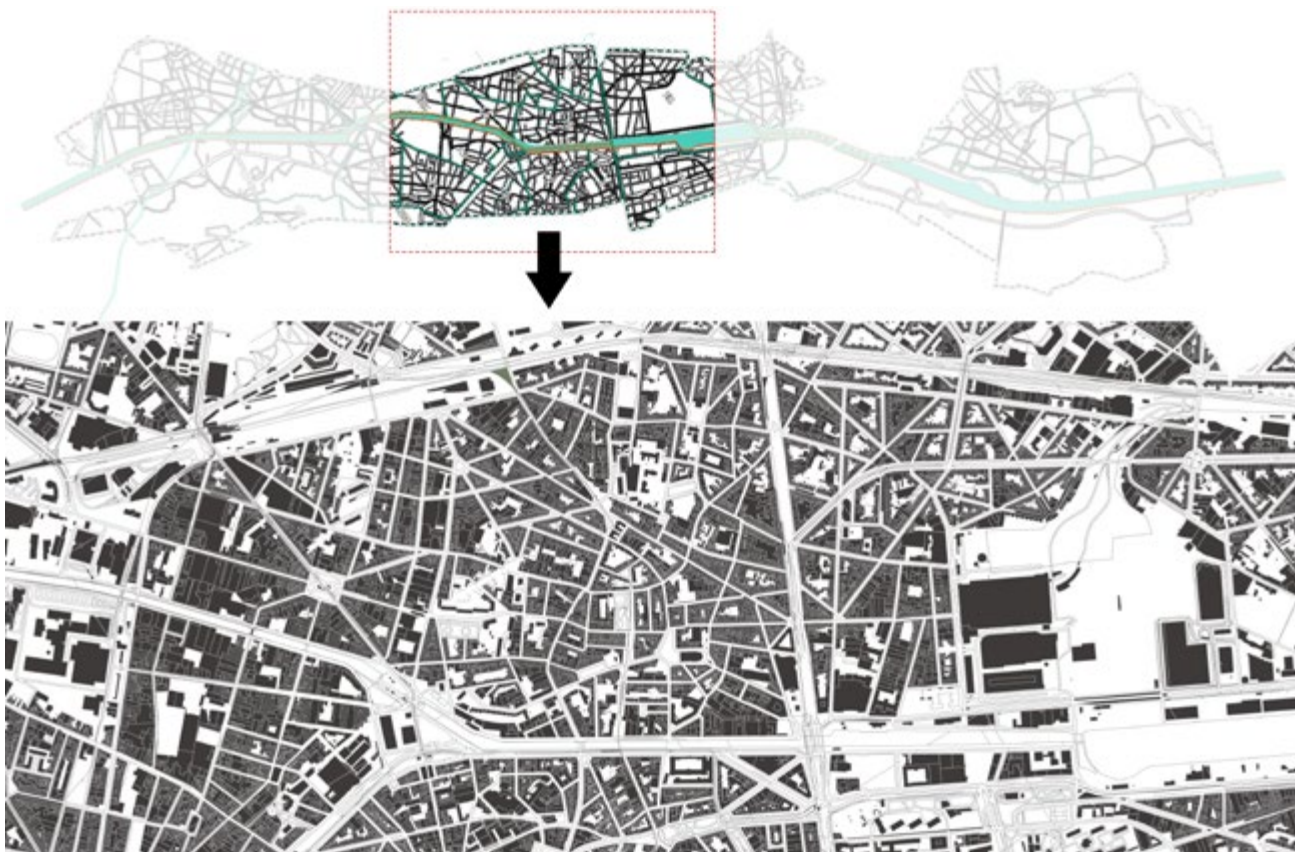


Figure 10 . The urbanized zone as part of the Brussels canal zone.

3) A large share of youngsters and young adults and relatively fewer elderly persons (Figure 13). About one inhabitant in three is under 17 years old, while 20.38% of those living here are between 18 and 29 years old meaning that nearly 40% of the population is under 30.

4) A lack of public space and a low appreciation of the direct environment. Although Brussels is generally considered a green city due to its many parks, the Forêt de Soigne and the Royal Domain, the urbanized zone remarkably lacks public (green) areas. High rates of impermeable surfaces and a lack of public green areas contribute to the generally negative perception that inhabitants have of this area in terms of tidiness, peace, the esthetic appeal of buildings and air pollution.

These characteristics of the urbanized zone make it a perfect case study within the brussels canal zone for this research project.

2.6 Problem Statement - The Ghetto

As introduced in 2.3 after the deindustrialisation in the 70's manufacturing industries became secondary to the knowledge industries. Along with the shrinking of industries, the suburbanisation of the middle class lead to entire neighborhoods facing impoverishment. The urban fabric of the city was further weakened by the linear infrastructure and urban highways that were built to support the knowledge industry. The cities dense urban fabric became highly scattered (Guerin et al, 2007). The urbanized zones varied demographic build up (As seen in 2.5) along with a weakened urban fabric has created boundaries between various areas and little interaction occurs between these seperated areas. Christopher Alexander in his "A pattern language" (1977) Describes three kinds of cities (Figure 14):

1) The hetrogeneous city: People are mixed together, irrespective of their lifestyle or culture. This has the opposite of creating rich spaces. Infact, this has the effect of dampening all forms of variety, arrests all possibilities for differentiation, and encourages conformity. What appears hetrogeneous turns out homogeneous and dull.

2) The ghetto: Ghettos are cities which are homogeneous internally and do not allow a significant variety of lifestyles to arise. People in ghettos are isolated from the rest of society, unable to evolve their way of life and in most cases are intolerate to other ways of life different from theirs.

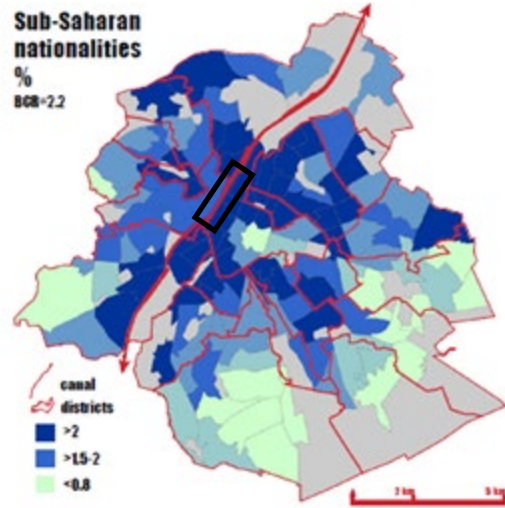


Figure 11 . Demographic build up - Sub Saharan Nationalities (Source: statistics.brussels)

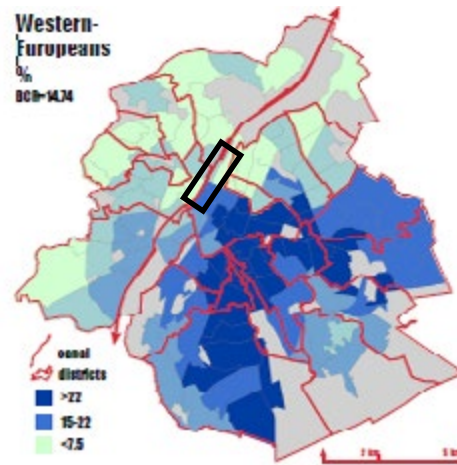


Figure 12 . Demographic build up - Western Europeans (Source: statistics.brussels)



Figure 13 . Youngsters between 12-17 years (Source: statistics.brussels)

3) Mosaic of subcultures: In a city made up of large number of subcultures, each occupying a identifiable place and seperated from other subcultures by a boundary that is porous, new ways of life can develop.

With its fragmented urban fabric it is a concern that Brussels and the Urbanized zone are headed towards becoming ghetto cities, with inward looking communities and with little or no interaction between the various communities.

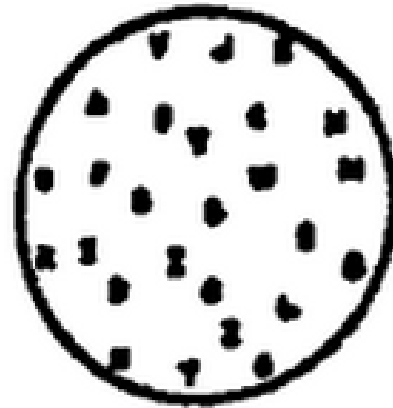
2.7 Objective and Research question

The large amounts of vacant areas left by the deindustrialisation (Refer 2.3) in the urbanized zone creates a huge negative impact on the urban environment as they attract undesirable activities such as illegal dumping, vandalism etc. which creates an impression of neglect. However, these vacant spaces hold tremendous opportunity to downplay the societal challenges elaborated in the previous sections.

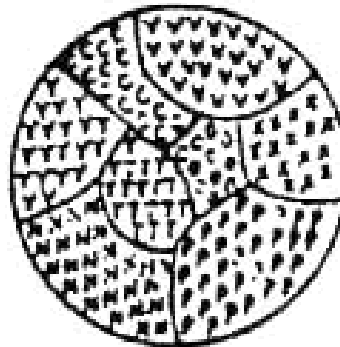
In contrast to all the previously listed disadvantages, the urbanized zone is a unique area. Since the area is highly multicultural, each street and street corner has its own unique features that are typical to the ethnic group using that space. The spatial structure of the zone provides a unique chance to create spaces for integration.

Thereby, the **objective** of the project is to **understand the possibility to create a more diverse social space while preserving the overall identity of each community.**

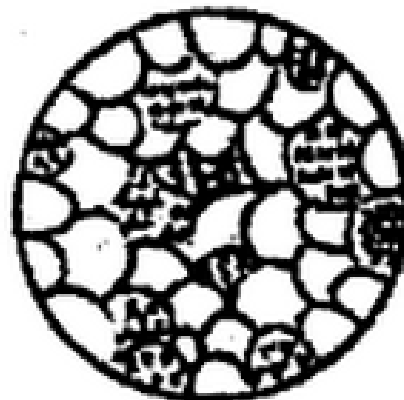
To guide the project towards these goals a **research question** was formulated : **How can spatial design be used as a tool to enhance the spatial and social potentials of the various social groups using the urbanized zone?**



Heterogeneous cities



Ghettos



Mosaic of sub cultures

Figure 14 .Christopher Alexanders patterns for a city
(Source: Alexander, Ishikawa, Silverstein, Jacobson, Fiksdahl-King, and Shlomo (1977)).

3. THEORETICAL FRAMEWORK

3.1 Chapter Introduction

This chapter sets up a theoretical framework for the research process. In the first chapter, we established that various factors influence the way human beings perceive the spaces around them. The first few sections of this chapter (3.1 - 3.3) discuss a few important existing theories on landscape experience. The last section of the chapter elaborates the research methodology developed and describes the various stages involved in this method.

Humans are at once biological as well as social creatures. There are various theories on landscape experience that differ based on biological or social determinants. These theories study the effects that certain qualities of space have on the human perception of the space and can be classified into: Space and Place. In the space mode People experience landscape purely based on physical needs whereas in the place mode cultural norms, values, experiences, meanings etc. play an important role in the perception of landscapes. When individuals or groups become familiar with a particular space and link it with their cultural values, social meanings and personal experiences, it becomes a place for them (Tuan, 1977). In other words, personal, social and cultural processes of appropriation superimpose a layer of meaning on space (Altman and Low, 1992) and thus transform it into place. These theories help in understanding the factors that influence the needs of people both as biological and social creatures and will be useful to understand the behaviour of people based on certain qualities of the space.

3.2 Theories regarding landscape perceived as space

American psychologist James Jerome Gibson in his theory of affordance states that, Affordances, or clues in the environment that indicate possibilities for action, are perceived in a direct, immediate way with no sensory processing. Examples include: buttons for pushing, knobs for turning, handles for pulling, levers for sliding, etc. (Gibson, 1979)

Amos Rapoport (1982) introduces three models to study and understand the potential uses suggested by the characteristics of environments (Figure 16). For him, the models are the semiotic model, the symbolic model and the one based on nonverbal communication. The semiotic model, which is the most common, is based on linguistics: all the kind of languages for instance. The symbolic one needs interpretation of meanings, so it requires some cultural knowledge in matching different codes: for examples, the Greek temples are built in that way because they drew attention to the context of landscape. The model based on nonverbal

communication, based on the socio-contextual aspects of communication – from anthropology, psychology and ethnology – is the most important in the sense that nonverbal communications are the most immediately noted and so “the loudest”. Rapoport continues stating that if environments give cues for behaviour, but not verbally, they must be forms of nonverbal behaviour (Rapoport, 1982).

Rapoport states that there are different features inside the nonverbal communication model:

- Fixed-feature elements are those that are basically fixed and that they change rarely and slowly. The architectural standards, such as walls, ceilings and floors, are fixed feature elements.

- Semifixed-feature elements change very quickly and easily and they include all the types of furniture, curtains, shop windows, advertising signs and urban furniture.

- Nonfixed-feature elements are related to the human occupants of a certain setting and their spatial relations, their body position, facial expressions eye contacts.

The models presented by Rapoport clarify that the space has a great influence on social interaction and that it is possible to understand the influence only through the analysis of the models and of the nonverbal features of environments.

The best-known theories for explaining landscape preference are based on survival needs of pre-historic men that has evolved over the years. The perceptual capabilities and predispositions, which evolved to meet these survival needs are assumed to still function as an “inborn” basis of the human-landscape relationship. In modern human beings, these perceptual capabilities might not function so much as survival needs but are still seen through psychological preference of landscapes.

The “Prospect Refuge Theory” proposed by Appleton is a theory based on primitive human needs for shelter as well as a need to keep a close eye on their surrounding environment. In better words this theory is based on the one of the most primitive human needs of “seeing without being seen”. (Appleton, 1975: 73). In this theory, Appleton argues that we derive a sense of pleasure and safety by occupying landscapes that offer views as well as provide a sense of enclosure.

The prospect Refuge theory draws parallels with the arousal theory, a theory developed by Berlyne that explains why people stay longer in certain settings as compared to other settings. The theory suggests that an increase in pleasure is felt when a person is put in contact with an environment that has a certain degree of uncertainty or novelty about it, but, if the level of uncertainty is increased beyond a point, feelings of anxiety begin to occur (Berlyne, 1951)

	Understanding	Exploration
Immediately apparent	Coherence <i>(the extent to which the scene seems to "hang together")</i>	Complexity <i>(information richness of the scene)</i>
Can be inferred or predicted	Legibility <i>(the predicted navigability of the scene upon further exploration)</i>	Mystery <i>(the promise of the scene offering additional information upon further exploration)</i>

Relationship between factors predicting environmental preference (adapted from Kaplan 1987, 1988)

Figure 15 .Kaplan and Kaplans environmental preference matrix

Another relevant theory is Kaplan and Kaplan's "Preference Matrix"(Figure 15) that suggests that environments that provide increased opportunities for gathering or discovering information allow for improved living conditions and an increased level of safety (Kaplan and Kaplan, 2005).

Theories regarding landscape as space can be used to study the spatial structure of a landscape setting. These theories help us to understand why certain spatial characteristics of public space work better than others. This helps us to understand the relationship between the social and spatial structures of a space.

3.3 Theories regarding landscape based as place

Having discussed theories that explain landscape preference based on innate dispositions we must consider that preferences change based on personal experiences and our preferences evolve during the course of life. In this section we will discuss some theories that explain landscape preference based on peoples relationships to groups, their experiences in a social environment, and the encounters they have in space.

3.3.1 Group Dynamics

Human beings tend to join others in groups mainly because of their shared interests. Group dynamics

are the influential actions, processes, and changes that occur within and between groups. The tendency to join with other groups is perhaps the single most important characteristic of humans, and the process that unfolds within these groups leave an indelible imprint on their members and on society (Forsyth, 2010). A dynamic system is not a static system, but allows changes and exchanges of information, through both verbal and nonverbal communication. At the same time, the influential process of a cultural group defines the conventions, or better to say, the constrains of the group (Norman, 1999). Forsyth described three essential processes to transform an individual into a group member: inclusion, collectivism and identity. Inclusion is the first step and it changes the single individual into an insider of the group. Collectivism starts when group members do not think anymore to what the group provides them, but they think about the good of the group as a whole. The transformation into identity is when components of the group identify their own qualities as the group's qualities.

The process described by Forsyth corresponds to the definition of community given by the two sociologists Warnen and Lund (1941), where the group is nothing else than a community: which is a collection of people sharing certain interests, sentiments, behaviour and objects by the virtue of their membership of a social group. A community, as social group, is dynamic and changing (Anderson, 1960) and it is an integral part of the biological make-up of humankind (Arensberg and Kimball, 1965). It has to be said that a community has at least two different dimensions: Sharing specific interests and defining its own place. Communities are based on proximity and social contact although they can be close in a physical sense and completely distant in social aspects (Brunt, 2001).

This social distance is another way to underline the separation between "us" and "them". Society arranges people in space (with greater or lesser degree of aggregation and segregation) and it arranges the space itself (buildings, boundaries, paths, zones and so on). In this way the society has its own spatial order, which perceptibly underlines the cultural differences between the social groups (Hiller, 1984).

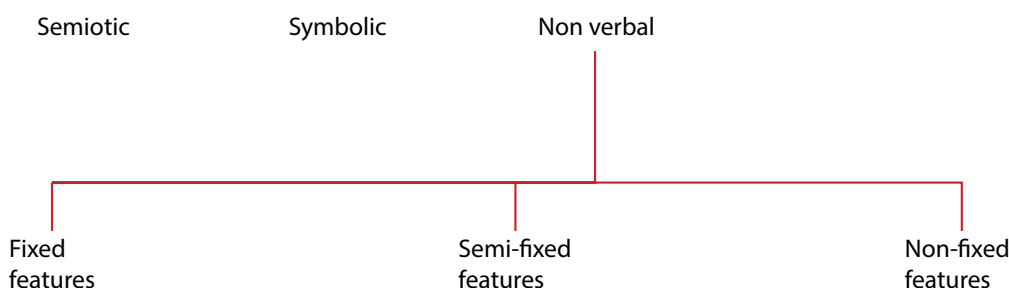


Figure 16 . Amos Rapports three models used to understand the potential uses of environments through their characteristic features

This spatial organisation of the society is an exclusionary process that brings the poorer groups to a situation of exclusion and segregation with the more advantaged groups. Within this process of exclusion space plays a key role and, as described by Bruno De Meulder and Hilde Heynen (2006), it can react in three different “models”. First of all, space can be a “neutral receptor and reflector” where the main aspects are the social relationships between the groups. Secondly, through urban developments and architectural projects space can lead groups to an exclusionary process, so it is an “instrument”. Thirdly, space acts as a “stage on which social processes are played out”.

3.3.2 Encounters in space

Groups gather in social spaces in different combinations of encounters. Encountering is part of the influential process of people and they are “the guiding thread of social interaction and social relationships” (Giddens, 1984). As Giddens said in his book “The Constitution of Space”, encounters are only possible in a “full condition of co-presence” that happens whenever users are close enough to be perceived by others whatever they are doing (Giddens, 1984). The interaction can be non-verbal, but, it is still a way of experiencing the others through non-verbal interactions. Giddens, writes that there are two ways of encounters : Gatherings and social occasions, and these can be either focused or unfocused interactions (Figure 17).

Gatherings are when more than two people are assembled in a ‘strip’ of space time. The physical context is important for all face to face interactions and is incorporated into the interaction. They can be people walking on a pavement, two friends going shopping etc. Gatherings can happen in either closed or open groups (Figure 18). Closed groups are a group of people with fairly impermeable boundaries, and therefore little interaction with outsiders (Figure 19). Open groups are a groups of people with permeable boundaries therefore having few barriers to relations with outsiders (Figure 19). Within groups the interaction is always focused interactions .

Social occasions tend to be more clearly bounded and often involve the use of specific equipment. Many gatherings can take place within a social occasion. A few examples could be a flea market, going to the church on Sunday etc.

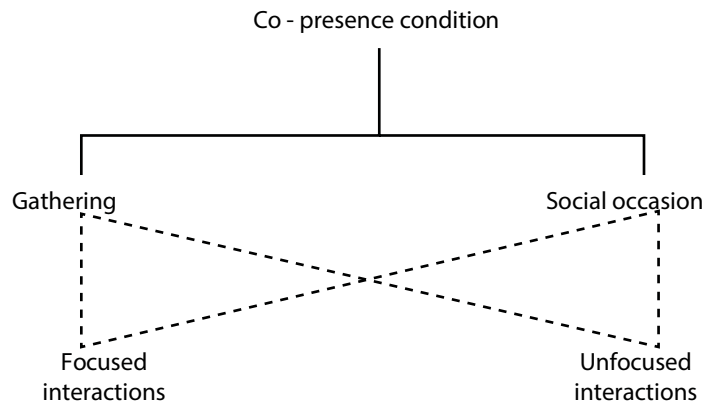


Figure 17 . Giddens ways of encounters

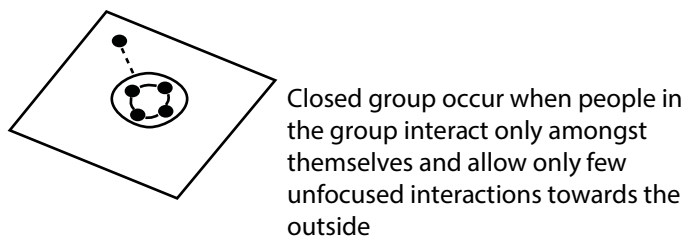
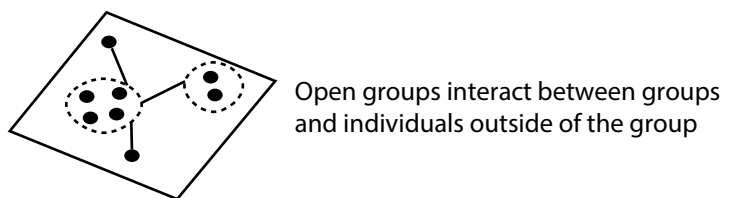
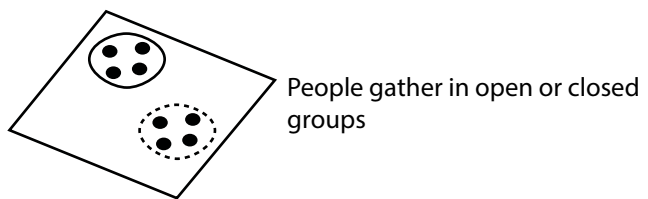
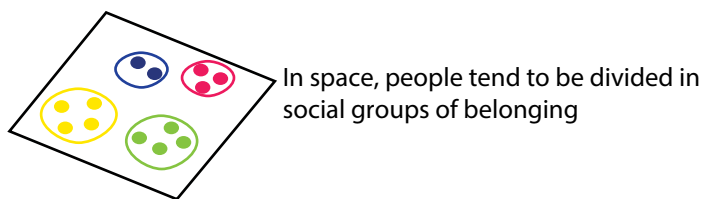


Figure 18. Closed and open groups

The encounter types can further be, familiar or unfamiliar encounters (Figure 20). In a familiar encounter people are generally at ease since they are meeting people they know. Whereas, in an unfamiliar encounter it is the opposite. Since these interactions always occur in a space-time boundary they can either be planned or unplanned encounters.

Encounters can either be planned or unplanned, Familiar or unfamiliar (Figure 20). In Familiar encounters the persons involved are at comfort and in unfamiliar encounters it is the exact opposite. It should be noted that in unplanned, unfamiliar encounters the perception of the other is mostly disinterested but it is still a way of experiencing the other through non fixed features (As elaborated in the theoretical framework section)

The encounter types always occur in space and more precisely in social space. Space itself has a great influence on the social interaction and the social space gains meaning in terms of various form of group identity (Rapoport, 1982). The users understand the meaning of space through a lifelong and complex process that involves explicit and implicit teaching from others and through personal experience (Lofland, 1973). The process of giving meanings to a determinate space is a way of adding a new layer to a space by a precise social group.

In this way a space gains the identifying meaning of the social group and it can be defined a place, which is a space with use and meaning, as explained by Tzonis (1965). Adding to users' places the grade of privacy (Figure 21), it is possible to define and classify the different social places. Thus houses are the most private place with personal meaning. The office and the school courtyard are limited places where only specific users enter the place. A bar or a park where a group of friends gather habitually can be called known places. And a supermarket or a square to which a person or a social group add meaning is a public place.

Within the concept of the difference between a space and a place, meanings are explicitly seen in a space more or less depending on the identity of the group. For examples, groups of immigrants frequently transform the space through layout, space organization, buildings, shops, plants, advertisement and so on. This embodies values and ideals and it influences human behaviours (Rapoport, 1982). They make a space their own place with their own specific features. Therefore the place is also defined a homogeneous area in which people are tied together. In it, there is a clear meaning of space given by the personalisation and by the communitarian human behaviour. On the other hand, spaces that are defined by its high grade of social diversity, have multiple meanings depending on the meaning given to the space by a particular social group that is using the space. These spaces can be classified as hetrogeneous spaces.

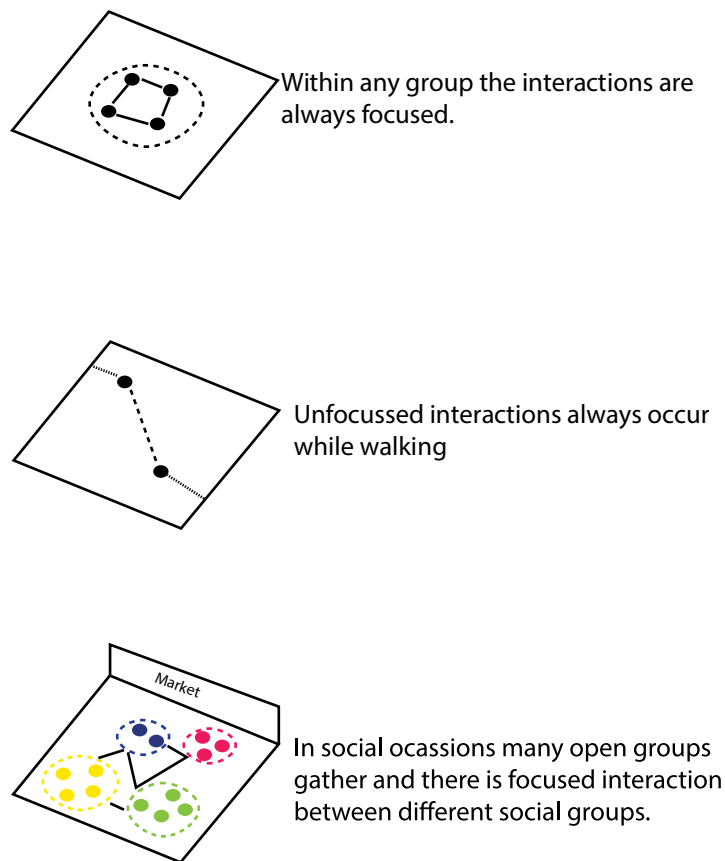


Figure 19. Interactions within and between groups

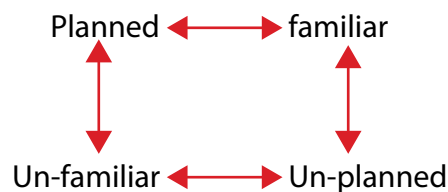


Figure 20. Types of encounters

Private	Home
Limited	School, Office
Known	Bar, Shops, Parks
Public	Squares, Supermarkets

Figure 21. Grades of privacy

3.4 RESEARCH METHODOLOGY

The research method is one that merges social and spatial aspects to understand the potentials and uses of the space (Figure 22). It also studies the influence of space on social interactions and attempts to create a pattern language, which takes cues and hints from Christopher Alexander's "A Pattern Language". The steps used in the methodology work systematically moving from analysis to design. The method involves concepts from anthropology, sociology and ethnography. These concepts were constantly compared and integrated with concepts from urbanism and landscape architecture and an integrated approach was developed. Each section of the research method uses specific relevant theories

The method involves 4 steps: Analysis, Urban Matrix, Pattern Language and Design. Each step of the research method was designed to answer one of the sub research questions which would then help in answering the main research question. This section briefly examines the four different steps used in the method and gives the reader an overview of the purpose of each step in the process.

Analysis

What are the different social and spatial features of the Central Canal Zone?

The main goal of the analysis is to understand the current spatial and social situation of the region. The analysis used three important tools: Mapping, observations and questionnaires. The analysis was conducted in two methods: Field and desk analysis. Importance was given to the field analysis, as observations on the environmental behavior of people was important to the research. This method is intended to "systematically look at physical surroundings (Zeisel, 2006) and to "systematically watch people use their environments: individuals, pairs of people, small groups and large groups" and to understand "how a physical environment supports or interferes with behaviors taking place within it" (Zeisel, 2006). In this section of the research, the analysis is as two separate sections: Landscape as place and Space (Refer 3.2 & 3.3). Conclusions combining the spatial and social factors are made merging the individual social and spatial maps. These conclusions are discussed in the next phase of the method.

Synthesis

How can you relate the social and spatial dimensions?

In this stage the maps and data collected in the previous step are analyzed and conclusions are drawn. In this stage social maps and spatial maps are merged together in order to understand the diversity of the area and to understand how different areas in the region are used. These conclusions help to identify the different commu-

nity areas and the socio-spatial potentials.

The connection

What are the different patterns found in the area that define the area?

Much like in Christopher Alexander's "A pattern language: Towns, buildings, construction (1977) this section identifies and describes a set of "patterns". When all these patterns are put together it forms a language that helps not only professionals, but also ordinary people a way to work with their neighbors and improve their neighborhood. This step provides a link between the urban matrix and the design. The patterns described are in three different scale levels, where the patterns of the larger scale include those of the smaller scales. It is a well-known fact that in urban design there is an inter relationship between various scales. The pattern language is a simplistic method that allows users to understand the inter relationship between these various scales and allows them to combine the different scales together.

Design

How can spatial design be used as a tool to enhance the potentials of the different social groups using the Central Canal zone?

The design is a possible elaboration of the pattern language in a specific area. It is a method used to implement the pattern language developed in the connection phase of the research.

Overview : Research Methodology

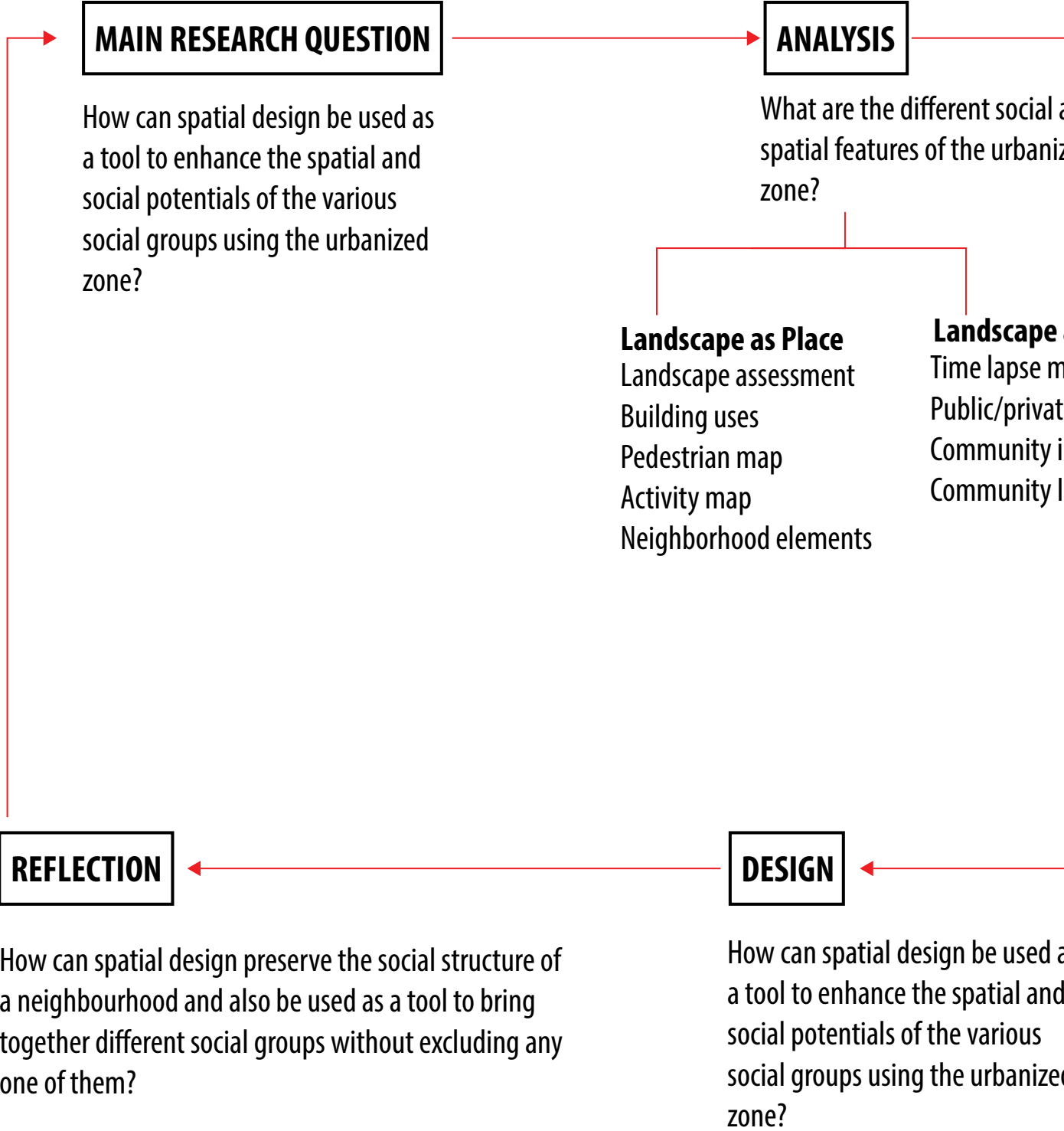


Figure 22. Research methodology

and
zed

as space
ap
e/parochial spaces
interactions
identity

SYNTHESIS

What are the spatial and social potentials of the zone?

Social permeability
Spatial potentials

BRIDGE

What are the different patterns found in the urbanized zone that define this zone?

Urban patterns
Neighborhood patterns
Obiects

4. ANALYSIS

4.1 Chapter Introduction

In this chapter the analysis of the research area is discussed based on two aspects: Landscape as space and landscape as place. The analysis shows clearly the current situation of the spatial and social layers in the research areas. The research consists of desk and field analysis. The desk analysis is useful to have a broader understanding of the area. In the desk analysis base maps were made where information regarding built up area, roads, historic maps, topography etc. were studied. This step was important in establishing the base maps for the field research.

The research focused mainly on mapping public spaces of the area to study the social flows and interactions in the space.

In the process of conducting the field analysis, an observation protocol was created (Figure 23) which helped describe the environment, frequency of people visiting, the kind of people visiting along with mapping activities in the place of observation. For this part of the research it was essential to visit and spend an extended time in the study location observing, representing, mapping and experiencing the activities of the area. The areas were visited at various time periods throughout the week and many observations were made. (Refer Appendix for complete list of all observation protocols). The observation protocol helped gather information for activity mapping, active zones map, mapping focus groups and for the time lapse map.

The analysis landscape as space consists of the following sections: Building use, Landscape character assessment, Pedestrian map, Activity map, Active zones. This step in the analysis helps identify spatial features that have an influence on human perception

The analysis landscape as place consists of the following sections: Publicness map, time lapse maps, Community Interactions and Community Identity. This step in the analysis helps identify the influence of groups and social interactions on human perception.

OBSERVATION PROTOCOL

- Site/ Place of observation:
- Date and time:
- Event/Activity:
- Length of observation

1. Description of physical environment <ul style="list-style-type: none"> - Type of public space (Open, close, semi-public, typical uses) - Surrounding architectural elements - Weather conditions 	
2. Description of social environment <ul style="list-style-type: none"> - Approximate frequency of people - Activities undertaken by people (Walking, eating, sitting, playing etc.) 	
3. Description of activity <ul style="list-style-type: none"> - The atmosphere 	
4. Description of social interactions <ul style="list-style-type: none"> - Communication amongst users - Non verbal interactions 	
5. Personal Reflections (Thoughts emotions)	

Figure 23. Observation protocol

4.2 Landscape based as space

The analysis of landscape based as space allows one to understand the physical characteristics of the urban landscape. In 3.1 it was noted that space has a great influence on social interaction and that it is possible to understand the influence through the analysis of the non verbal features of the environments. In this section we will study these non verbal features of the environment based on two broad topics :

- 1) Fixed feature elements and semi fixed feature elements
- 2) Non fixed feature elements

The fixed and semi fixed feature elements are studied through a landscape character assessment (Refer 4.2.2) as well as a building program map (Refer 4.2.1).

The non fixed feature elements are studied through pedestrian maps (Refer 4.2.6), activity maps (Refer 4.2.4) and the mapping of active zones (Refer 4.2.5).

Conclusions can be drawn by comparing the outcomes of these studies which will give us cues to perception of the environment by people based on their biological needs.

4.2.1 Building program map

In the building program map (Figure 24), the activities or functions of all buildings on the ground floor are represented. The map gives a clear idea of the different zones present in the area (Figure 25). It is clearly visible that the southside of the area is dominantly factories and industries, the center commercial ,the North is dominantly offices and Port activity and a zone between the south and central that is characterized by large vacancies. The zones inside the neighborhood appear as more personalized zones having shops and stores specific to the needs of each social group.



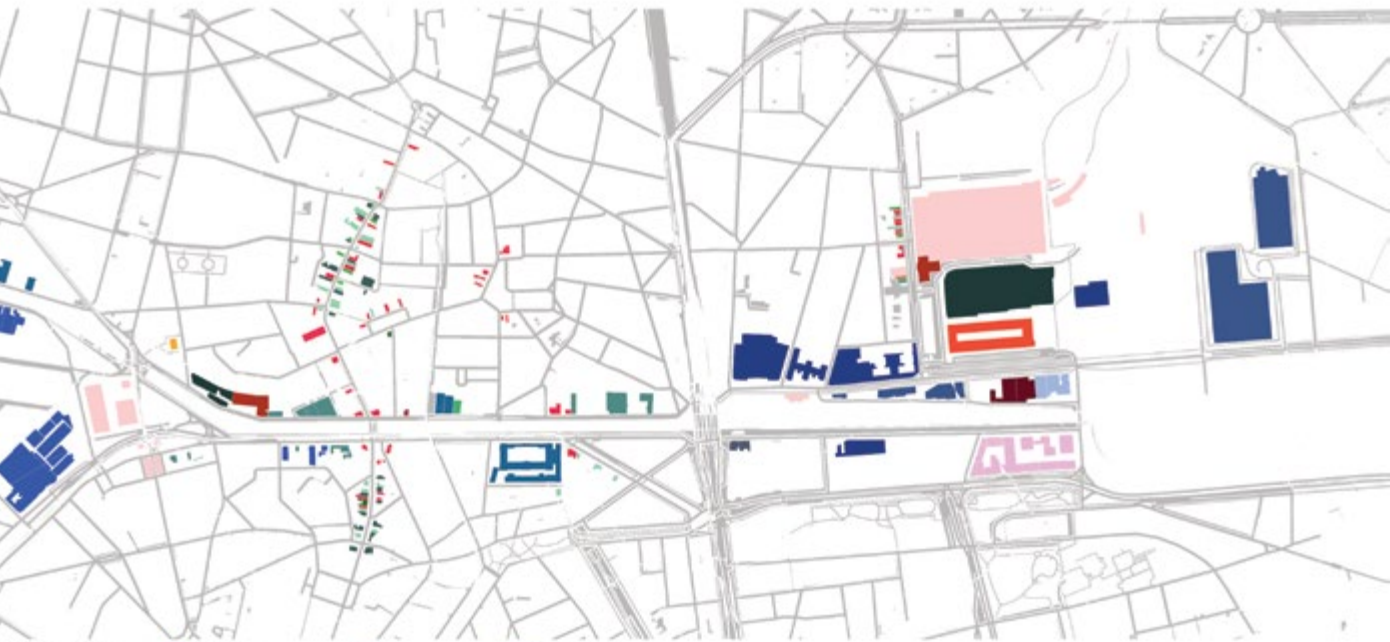
Figure 24. Map representing the ground floor building program



INDUSTRIES
MARKET STREET
 AUTOMOBILE
 RESIDENTIAL

Southern zone

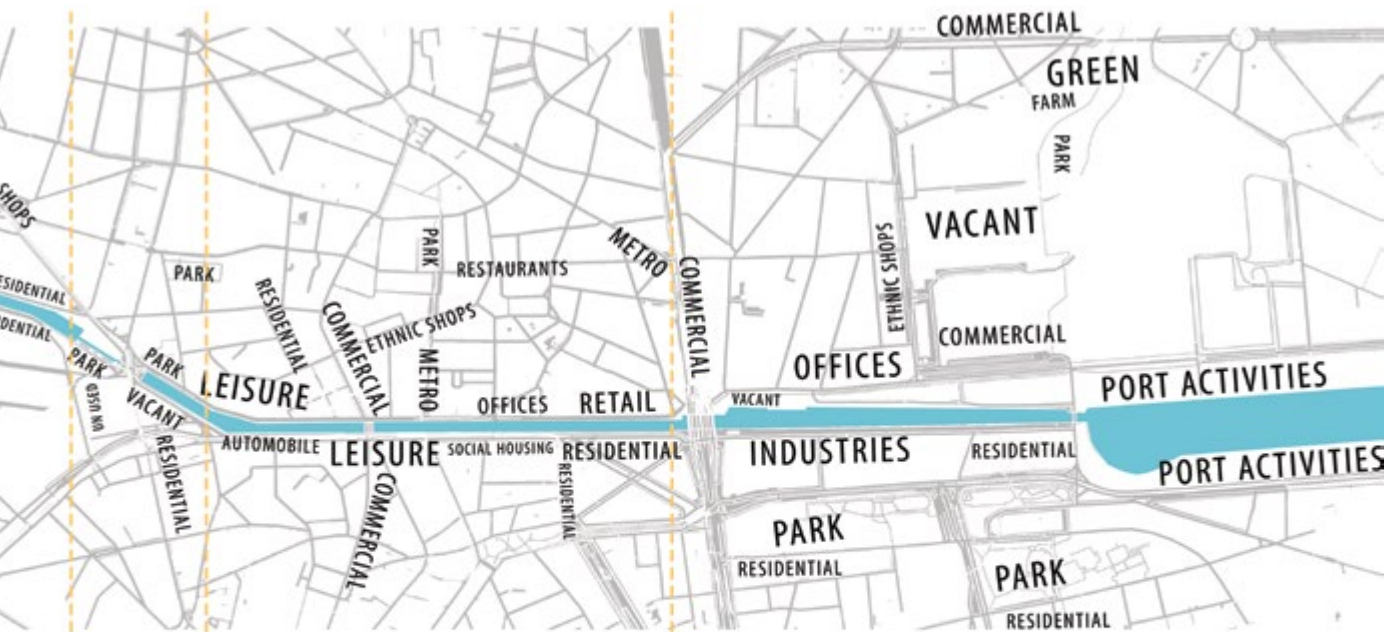
Figure 25. Map showing the four zones based on building functions



- | | | | |
|---------------------|--------------|-------------|----------------------------|
| General supermarket | Beauty Salon | Vacant | Port Activities |
| Market | Pharmacy | Institution | Manufacturing: Automobiles |
| Mail: General | Post office | Art Gallery | Shopping mall |
| Shopping store | Bank | School | Residential |



Building functions.



VACANT
UN USED
PARK

LEISURE
COMMERCIAL
RETAIL

PORT ACTIVITIES
INDUSTRIES
PARK
VACANT
RESIDENTIAL

Transition zone

Central zone

Northern zone



Building functions : Industries (souther zone), Vacant (Transition zone), Leisure(Central zone), Port(Northern zone)

4.2.2 Landscape character assessment

Based on the spatial distribution of economic activities and the variety of urban landscapes, the central canal region can be divided into four zones : Southern, Transition, Central and Northern zone (Figure 26) . Each zone has its own characteristic features. In following section the physical features of the four zones are described in detail.

a) The southern zone: This zone is characterized by open factory landscapes (Figure 27). The edge along the canal is surrounded by blank façade structures and cuts off visual connection. Trees and shrubs are used only as borders. Views are limited and the blank facades facing the canal do not add any level of complexity or mystery to the environment (Kaplan and Kaplan, Refer section 3.1). The enclosed factory spaces also do not provide any opportunities for refuge. The factories are large and expansive and humans walking along this stretch are dwarfed. All activities that happen in this zone are tucked away inside the neighborhood and the immediate surroundings of the canal itself see s minimal activity

b) Transition zone: This is the zone between the southern and central zone (Figure 28). It sees traces of the industrial landscape of the southern zone as well as traces of the urban landscape of the central zone. The zone has many unkempt open lands over grown with shrubs. The unkempt nature of this zone adds to the confusion of the landscape and increases the level of uncertainty of the users (Refer section 3.1). Views are limited and there are a few areas for refuge but these areas do not provide any visual connections as overgrown trees and shrubs cut off the views.

c) Central zone: This zone is characterized by a dense urban fabric with a lack of open space (Figure 29). The buildings along the canal are mixed use and provide visual connectivity to the canal. The mixed-use development also adds novelty to the environment as there is always activity along the facades of these buildings The green in this region is mainly concentrated in small pockets and a few trees lining the edge of the canal (Refer section 3.1). There are many benches along the canal that people can use for refuge. The many cafes that dot the landscape can also be used as areas of refuge while providing good views on to the landscape.

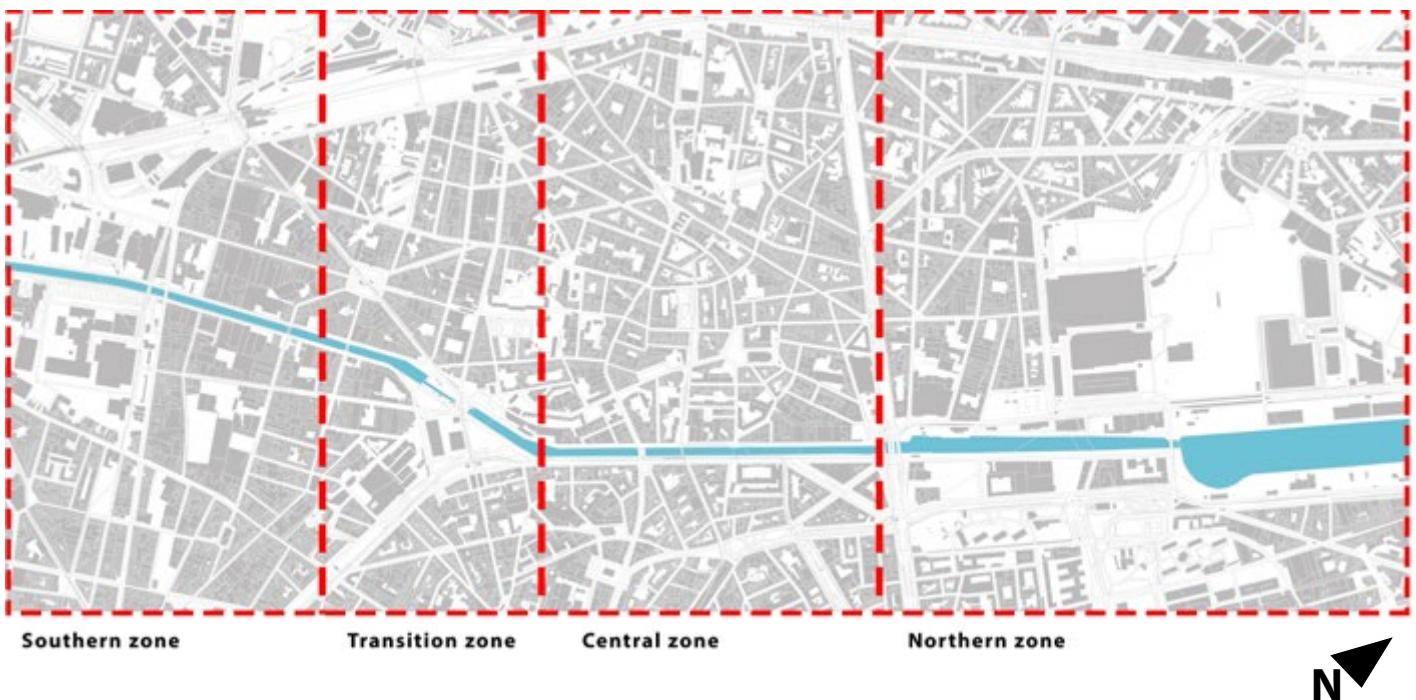


Figure 26. The four zones of the central canal region

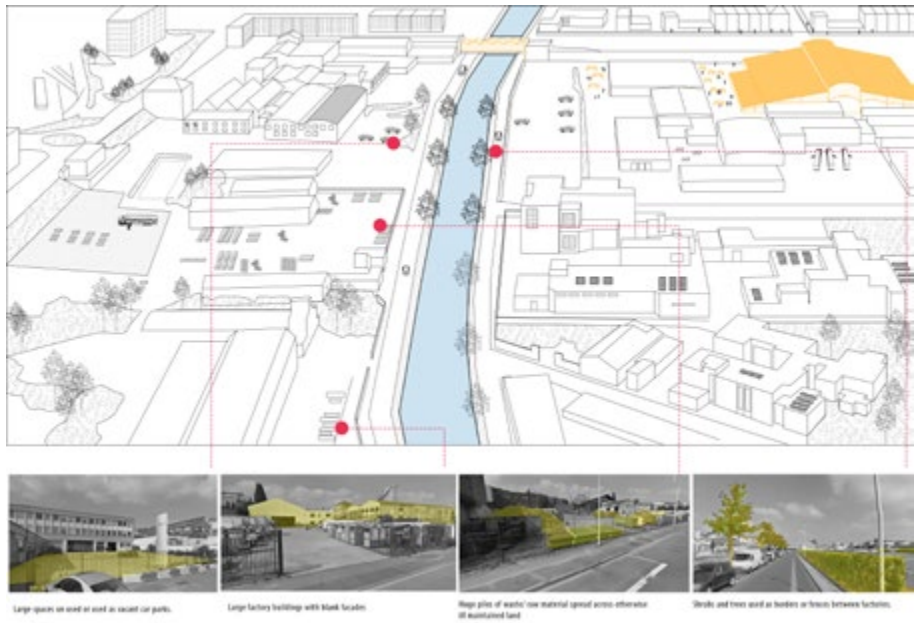


Figure 27. Southern zone characterized by large factory landscapes



Figure 28. Transition zone characterized by many unkempt vacant lands

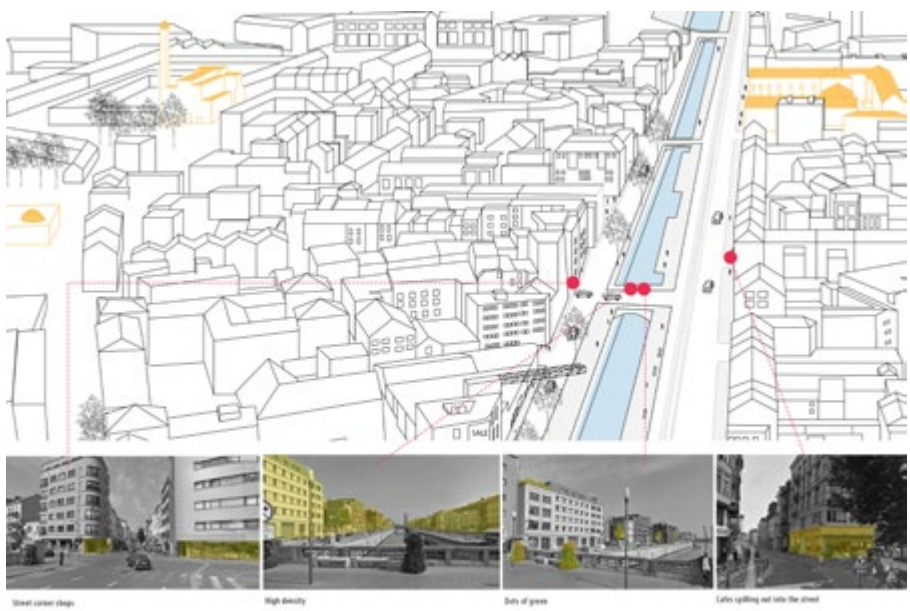


Figure 29. Central zone characterized by a dense urban fabric

d) Northern Zone: This is a complex zone. Large industries, wastelands and large office complexes create a sense of vastness (Figure 30). A few spots along the canal have been appropriated and used to create public spaces while most of the spaces along the canal are left vacant. The area along the banks of the canal provides various opportunities for seating and also provides good views of the surrounding. This area is cut off from the main road and other main pedestrian zones by a line of trees. The zone behind the left canal bank is surrounded by trees and facades that cut off any visual connection to the surrounding landscape.

4.2.3 Nonfixed and semifixed feature elements

From the above study we can clearly list the different types of fixed and non fixed feature elements found in the environment. (Figure 31)

It is clearly visible that the edges along most of the canal area, except for the central zone is cut off by fences, walls, or other rigid elements. Apart from the central zone none of the other zones have semi fixed features such as shop windows, urban furniture etc that could provide refuge or shelter. It is also observed that these rigid edges of the canal do not provide opportunities for physical or visual connection.

On the other hand, moving away from the canal zone and into the neighborhoods it is observed that there are fewer edges and more non fixed elements. Most of the landmarks observed also seem to be within the neighborhoods and away from the canal zone.



Figure 30. Northern zone characterized by a vast landscapes created by

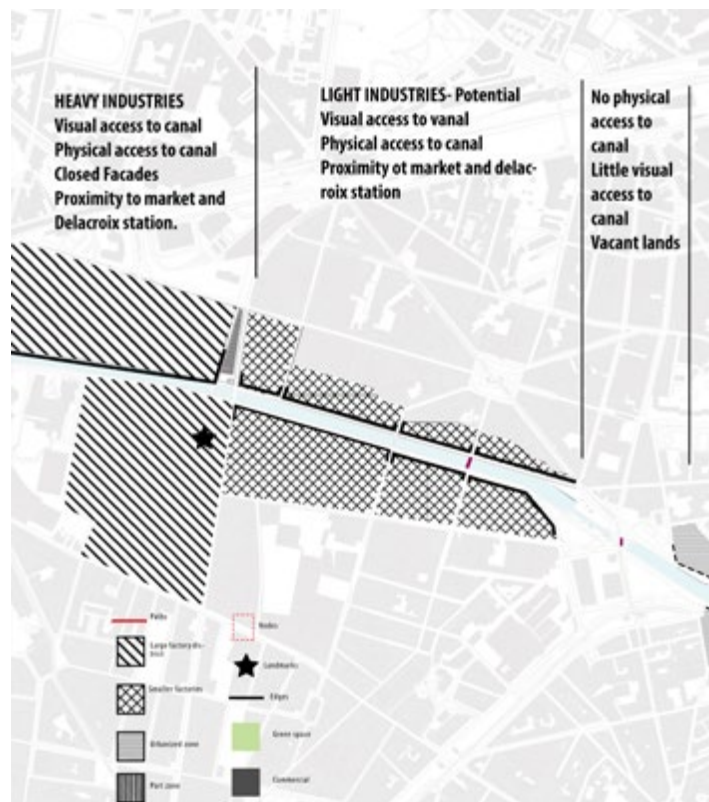


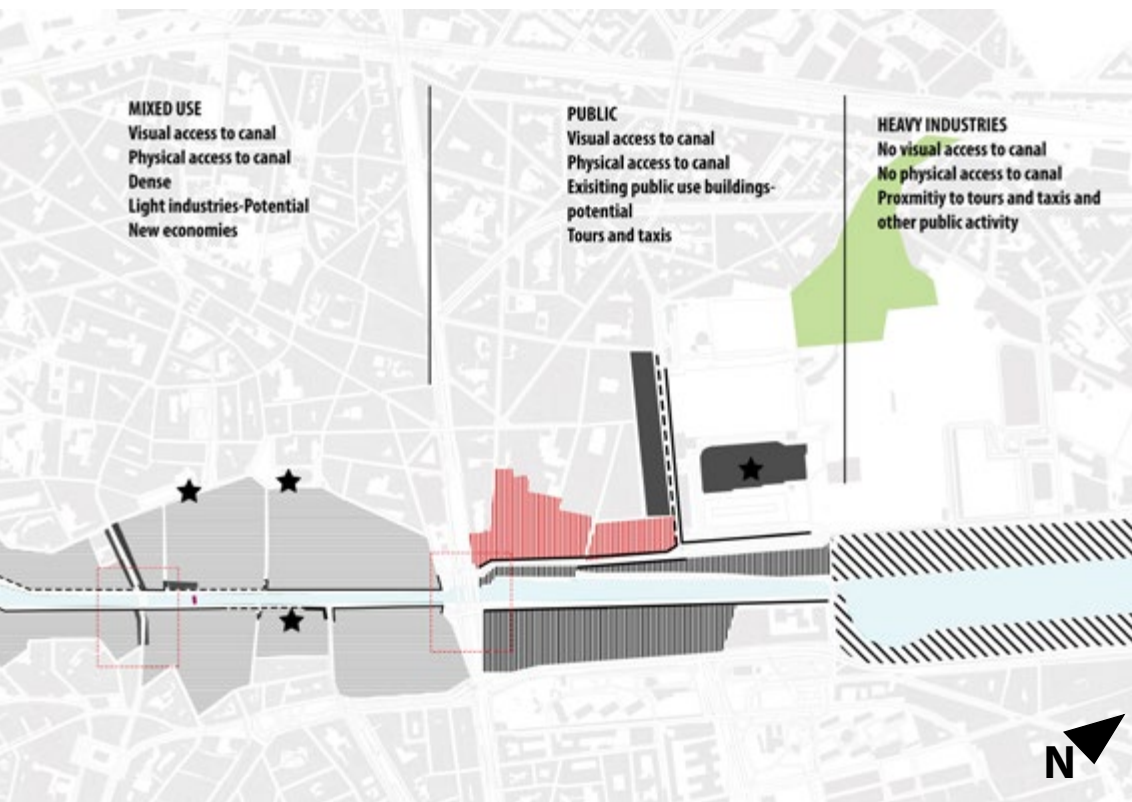
Figure 31. Map depicting the different Non- fixed and Semi- fixed feature elements



Along the canal

Business district right behind the canal zone

the presence of industries, office complexes and the Port.



Elements contributing to environment of each zone

4.2.4 Activity mapping

The functional and physical characteristics of public settings influence the social life of public spaces. Favourable functional and physical characteristics are those that encourage interaction, people's climatic comfort and security, and, those that encourage recreational activity.

The activity mapping tool (Figure 32) is a way at studying the different social activities that happen in an area and is also a way of understanding how people behave in a certain place and to understand the relationship between people and space. Many various spots along the canal were chosen based on various important social activities that happened around it (a school, shops, a church, central park to a community). The activities mapped ranged from walking, eating, Biking, Social activities like markets, theatre etc. As previously mentioned these activities were mapped using the help of the observation protocol and through the simple technique of counting. (Refer appendix)

It was observed that most of the activity happened away from the canal. While the zone around the canal was mainly used as a transportation link.

4.2.5 Active zones

Through mapping the various activities(Refer appendix) a study was made to observe the amount of activity that occurred through the day at each of the chosen sites (Figure 33). The spots with large red dots depict highly active zones where there was mostly a continuous flow of people while those with smaller dots depict places that were less popular and hence less active. On combining this map with that of the activity map and also of the spatial map depicting the spatial distribution of economic activity(Refer previous section Figures 20- 23) we gather information regarding the activities and spatial environment that attracts people to the particular area. It is noted that the areas along the canal do not offer a variety of activities or a spatial environment that supports its use. Whereas, Spaces within the community are more active. The souther zone has one space that sees higher activity closer to the canal. The transition zone does not have any spaces with significant levels of activity. The central zone has a network of active spaces leading to the canal. The Norther zone has one space of higher activity tucked well into the neighborhood.

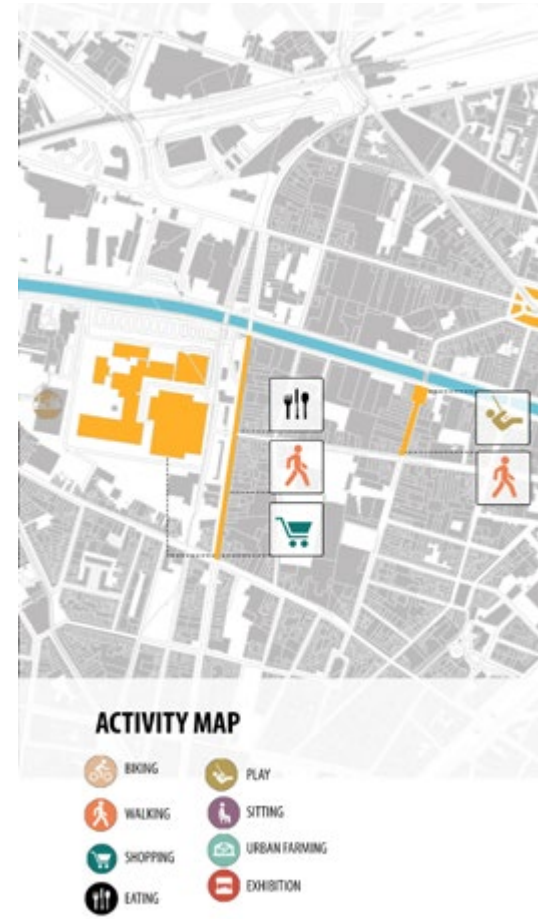


Figure 32. Activity map



Figure 33. Active zones

4.2.6 Pedestrian activity map

Studying the pedestrian activity helps determine the environments that support pedestrian movement.

Through the maps it is clear that the canal zone does not see high pedestrian activity (Figure 34). The central zone is the zone where the pedestrian activity is at a moderate level. While, the other three zones hardly see any activity. This could indicate that apart from the central zone, the other zones do not contain spatial elements that arouse the interest of a pedestrian.

Another important finding is that the zones within the neighborhood are more pedestrian friendly than the zone around the canal. The East - West connections have stronger pedestrian connections than the North - South connections (Along the canal) On overlapping the pedestrian map and active zones (Figure 35), one can note that the active zones are well connected by a pedestrian network. It could be a possibility that the zones that are most active are active because of the presence of a well connected pedestrian network.



Figure 34. Pedestrian map showing the stronger East west



Figure 35. Pedestrian and Active zones maps combined to



Pedestrian map conclusions



...t connection and unconnected North - South link.



...o show that more active places are better connected by pedestrian networks.



4.2.7 Conclusions - Landscape based as space

As a conclusion to the analysis of landscape based as place, the fixed and semi fixed features map and the pedestrian and active zones maps were combined (Figure 36). From this map we can clearly deduce the environmental features that are preferred by people. We observe that the areas along the canal with rigid edges and uninteresting features are places that are less used. Spaces, like those along the central canal zone which have more open edges are active zones. Those areas that have commercial activity are extremely active due to the presence of many non fixed feature elements. Green spaces that offer a relief from the urban setting are also extremely active zones. The places identified as landmarks in the fixed and non fixed features map are also those areas that have been identified as the most active zones.

We can sum up the conclusions in the following points:

- 1) Areas with open or more porous edges are more likely to be places of activity.
- 2) Areas with rigid edges and uninteresting environmental features such as blank facades etc. are likely to be less used.
- 3) Vacant, un used spaces or those spaces that are unkempt are areas that people do no use.
- 4) Green spaces offer a lot of room for various activities to happen
- 5) Landmarks are important places of activity.



Figure 36. Conclusion map showing lesser activities along rigid edges



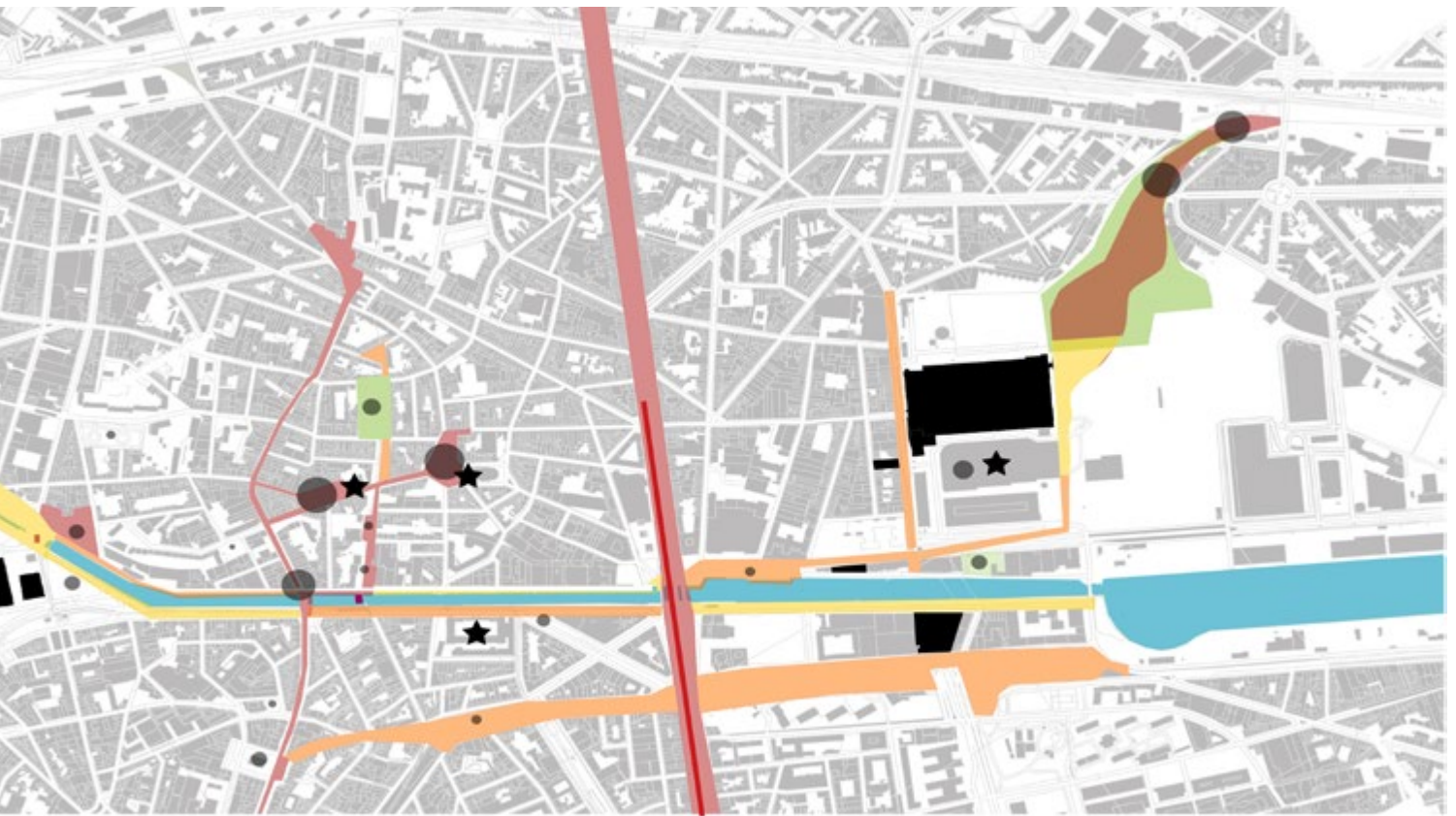
Figure 37. Conclusion map showing less activity around vacant areas,



- Rigid edges
- - - Porous edges



as compared to porous edges



★ Landmarks



active green spaces and landmarks that attract activity.

4.3 Landscape based as place

In section 3.3 we discussed the influence of personal experiences to the relationship of people to their place. It was noted that these personal experiences themselves are a product of a larger context such as group dynamics and social interactions (Refer 3.3.1 and 3.3.2)

In this chapter with the help of time lapse maps, group dynamics and social interactions are closely studied. This study will help us identify the cognitive dimensions of a space that are important to create a sense of belonging amongst people.

In section 3.3.2 it was discussed that groups gather in closed or open groups. Space plays a key role in group dynamics. It can be a neutral receptor and reflector, it can act as an instrument and it can act as a stage on which social processes are played out (Refer section 3.2.1). It must be noted that the intent of these time lapse maps is to gather as much information about group dynamics in the research area as possible.

4.3.1 Time lapse map zoom ins

The time lapse map is an analytical tool that can be used to understand the people-place relationship. To understand better the relationship between people and space and to understand human behaviour, zoom in maps of a few locations were done (Figure 38). It is a way of better understanding how people behave in a chosen

space. The maps show the social dynamics at particular instances of the day so to have a comprehensive view highlighting the the different spaces. A small sample area in each of the four zones of the central canal area was (Figure 38): Abaittoir in the southern zone, Porte De ninove in the Transition zone, Oude molenbeek in the Central zone and Tour and taxi in the Northern zone taken. Each time lapse consists of two maps, one depicting the social dynamics during the weekdays and another for the weekends. It helps to understand how immigrants in the area have transformed the space through layout, space organization buildings, shops etc to suit their needs and give new meanings to the space.

The sample areas in the four zones were chosen based on the previous maps of pedestrian activity, active zones, landscape character assessment and the building uses. The spots were chosen, each of them because of some social important activities present on the site (Active zones, high pedestrian activity, presence of a transportation route, Schools, Identity as the center of a community etc.)

For the convenience of the research three major social groups were chosen : Central Africans, North Africans and Europeans. This part of the research was purely done through observations and counting.

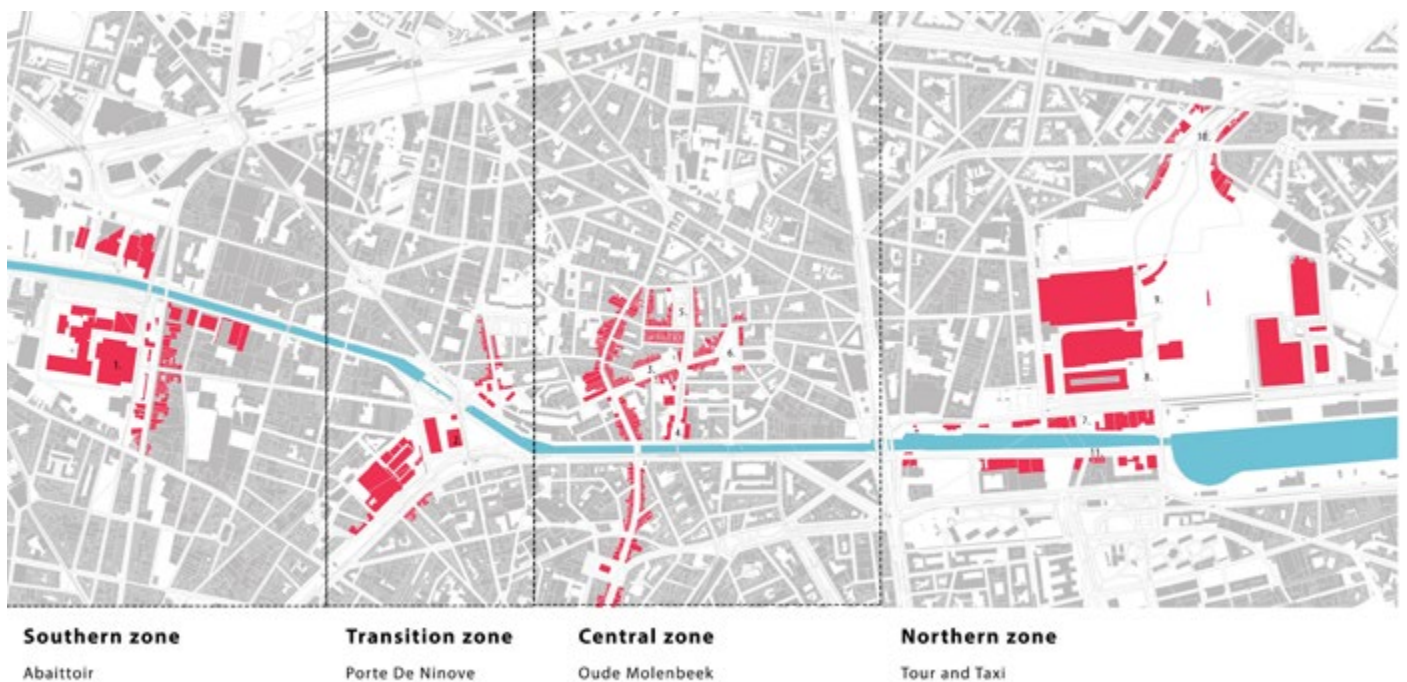


Figure 38. Chosen spaces for time lapse analysis



Abaittor- Southern Zone

The abaittor is a meat manufacturing unit where a market is hosted twice a week. The time lapse maps shown are on weekdays (Figure 42) and weekends (Figure 43). The market was been important in the development of the area around. The area is a very dense urban space with shops on the ground floor. The prevailing social group is that of the central african community. They have imprinted their features specific to their social group and completely personalized the space (Figure 41). The streets elements cater specifically to the central african community such as advertisements, restaurants, hair dressers etc. There are key restaurants and cafes that act as gathering points (Figure 40). Street corners are places where men from the community gather.

Though it is a mainly central african dominated area, during the days of the market a very diverse group of people is found (Figure 39) and these groups come in open groups that interact with other open groups. The market attracts people from all around the city and brings them together. During market days there are plenty of verbal and non-verbal interactions and plenty of planned and unplanned gatherings (Refer 3.3.2). It is more of a social occasion where where many different types of gatherings occur.

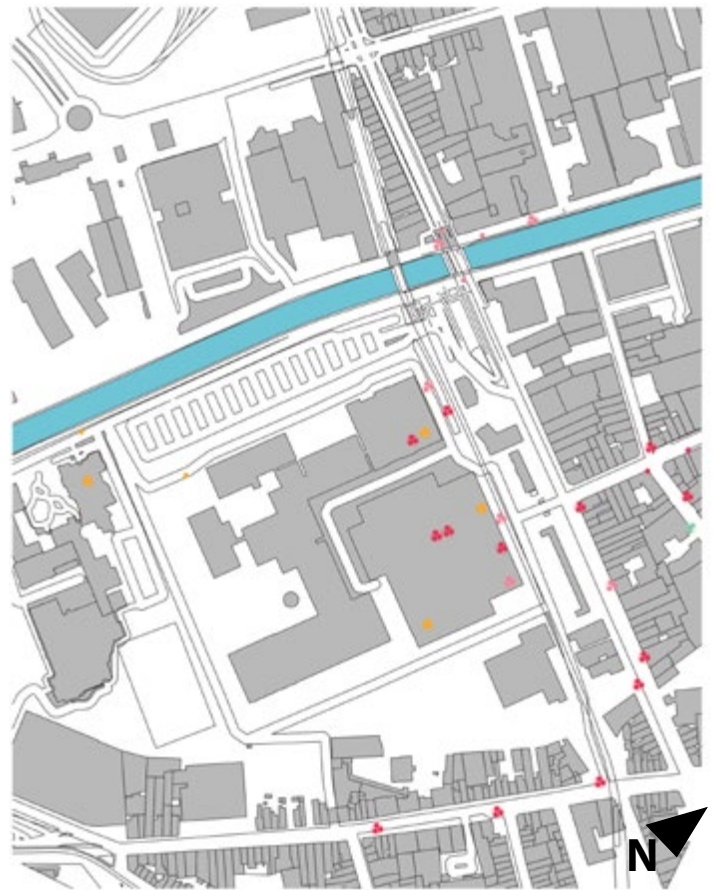


Figure 42. Time lapse map Southern zone (Abaittoir) during weekdays

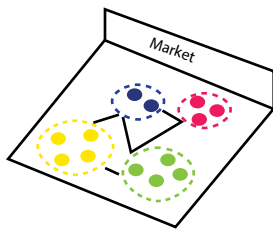


Figure 39. Social groups recognize homogeneous shops as core for their collective life

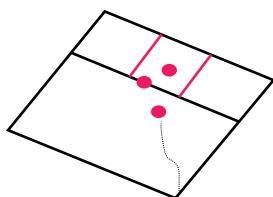


Figure 40. Social groups recognize homogeneous shops as core for their collective life

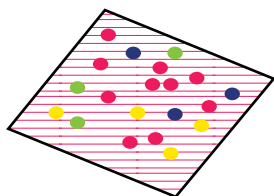


Figure 41. The prevailing social group of an area imprints its own social features into the public space through a personalization process

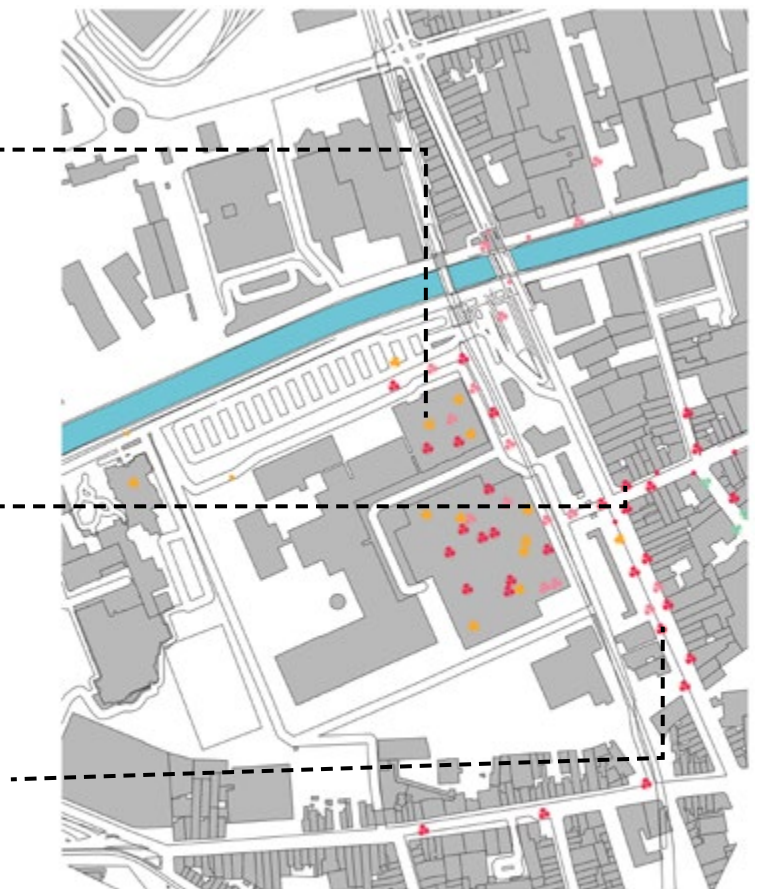


Figure 43. Time lapse map Southern zone (Abaittoir) during weekends

- Central Africans
- Europeans
- North Africans



Port De Ninove- Transition Zone

The Porte De Ninove was one of the city gates to the fortified city of Brussels. In 1930 the canal running through this region was rectified leaving large holes in the urban tissue. Till date this has left many vacant spaces in the landscape and leave the region as a boundary region. It is a region that in between two neighbourhoods with their own different social imprints. In this area it is clearly seen that there are two different social groups occupying spaces opposite each other and do not interact with one another (Figure 45). They have not left traces of their social belonging in this area. The area gives a sense of confusion and people walking through the region feel lost. The two different communities face each other. It is possible to see clearly this distinction from the spatial elements that define both these areas. To the west is the region occupied majorly by the North African community while the eastern zone is occupied majorly by the Central African community.

In the Central African region there are always a closed group of african men standing as "guards to the area" (Figure 45). The shops, advertisements etc are clearly catering to the central African community. (Figure 44)

On entering the North African community you are welcomed by bakeries, cafes, restaurants, shops etc that are specific to the north african community. (Figure 44)

It can be seen that these area is not used by many people in the weekdays (Figure 47) or the weekends (Figure 48).

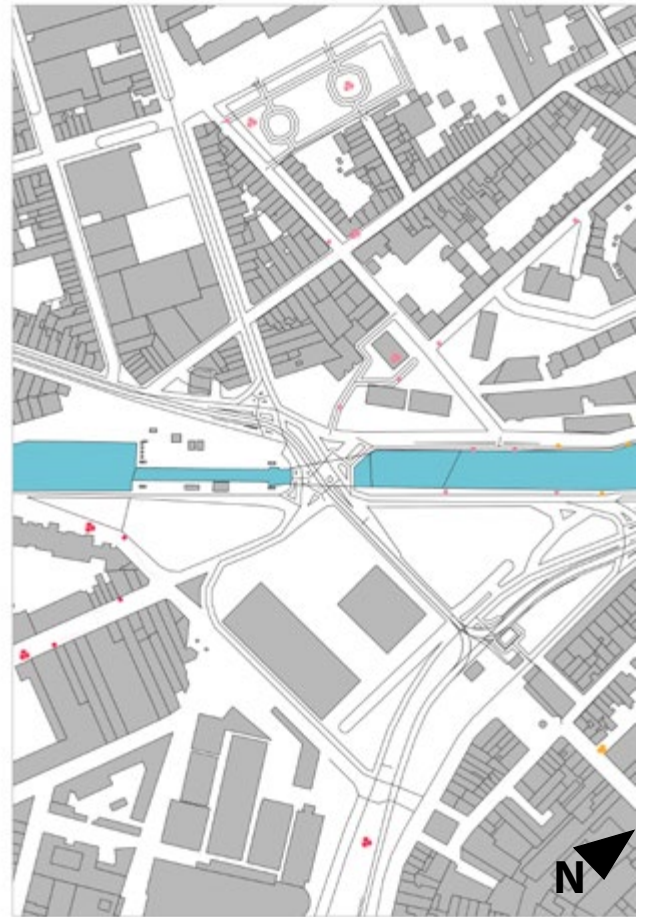


Figure 47. Time lapse map of the transition zone (Porte De Ninove) during weekdays.

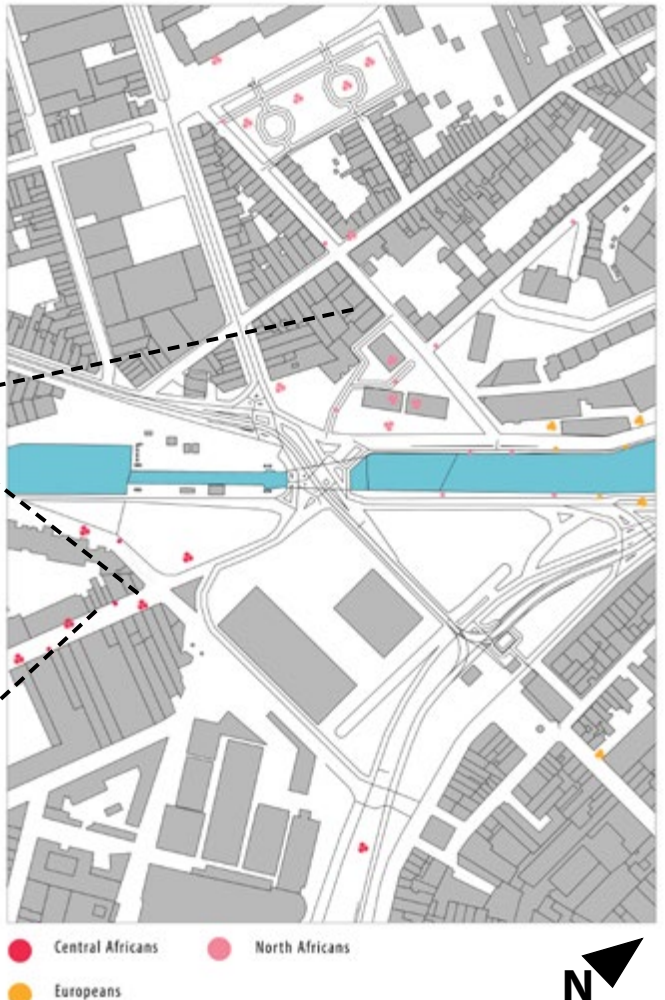


Figure 48. Time lapse map of the Transition zone (Porte De Ninove) during weekends

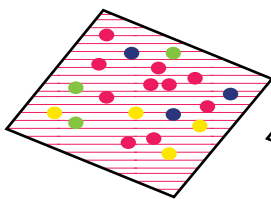


Figure 44. The prevailing social group of an area imprints its own social features into the public space through a personalization process

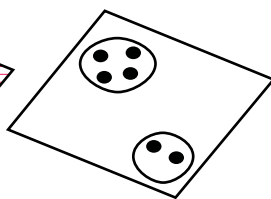


Figure 45. Closed groups tend to be as far away as possible from each other.

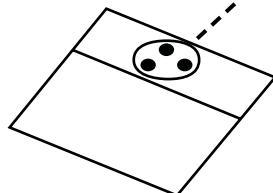


Figure 46. Closed groups that use street corners and sidewalks to gather privatize the space around them (in some cases even the entire street or square)

Oude Molebeek - Central zone

The center of Molenbeek is the most urbanized area of the central canal zone. It is a very active zone during the weekdays (Figure 55) and weekends (Figure 56). The area has many different types of open spaces such as parks/squares etc. Each of these spaces is used differently. Many of the squares in the region are used extensively as they are surrounded by retail or restaurants. During the weekends there is Molenbeek market which is extremely popular and is visited by many North Africans in the region. During this period the area becomes quiet busy and sometimes it becomes hard to navigate through the crowded streets. This region has a clear social imprint and it is clearly dominated by the North African social group (Figure 49). This can be seen by the spatial organisation and the number of ethnic shops that the area has. Ethnic shops are frequented by North Africans in the area and these shops create an identity for the group (Figure 50). Closed groups meet at usual spots such as close to a landmark (such as a specific tree) or they gather outside salons (cafes)(Figure 52). These closed groups personalize the space that they are gathered at by small acts such as moving around the furniture etc (Figure 51). Parks are mainly visited by children and women who accompany their children. It becomes a place where women catch up with each other while their children play. Certain areas of Oude molenbeek are heterogeneous, this is because of the placement of certain elements/ activities that attract people from other social groups (Metro station, bus stops etc.) In these spaces different social groups tend to be divided based on social group of belonging (Figure 54). These spaces are more of walk by zones where the only interactions between groups are non verbal interactions while walking (Figure 53). As one moves closer to the canal, the area becomes less active. Although there are a few traces left by the prevailing social group (corner cafes, retail shops, museums), the area mostly remains as a border for the community.

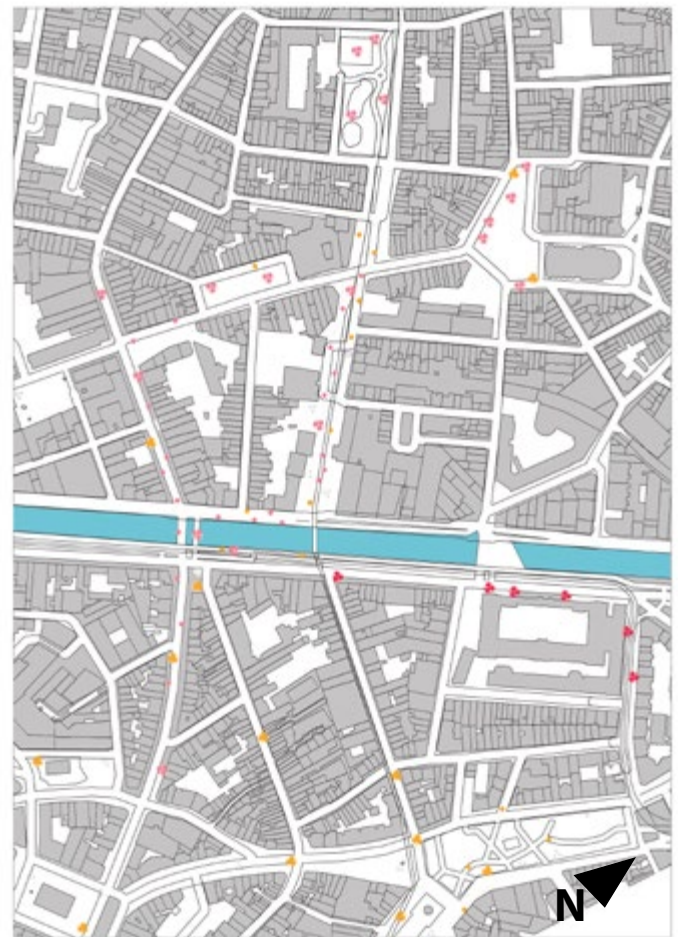


Figure 55. Time lapse map of the central zone (Oude Molenbeek) during weekdays.

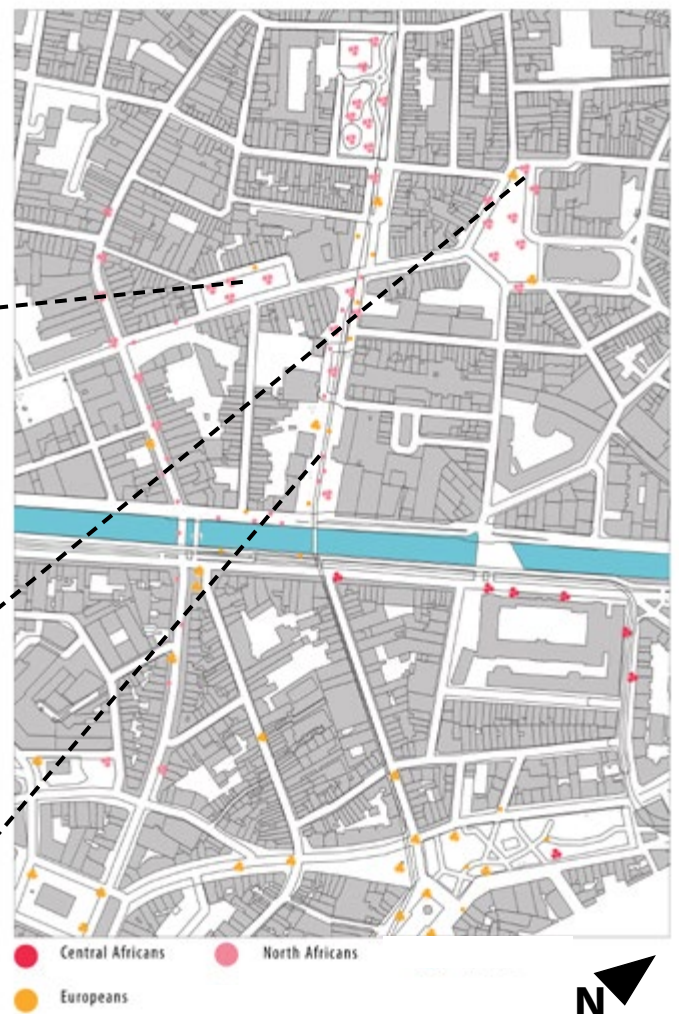


Figure 56. Time lapse map of the central zone (Oude Molenbeek) during weekends.

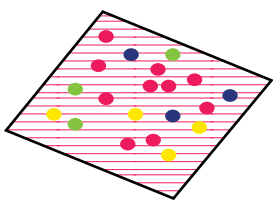


Figure 49. The prevailing social group of an area imprints the public space

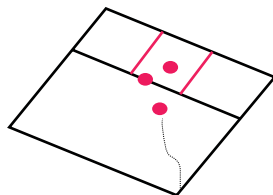


Figure 50. Social groups recognize homogeneous shops as core for their collective life

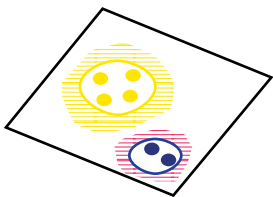


Figure 51. Groups personalize space around them

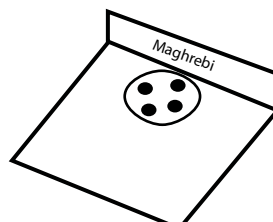


Figure 52. Closed groups gather in a "usual place"

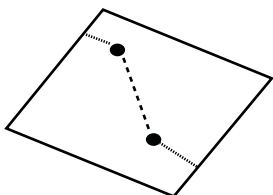


Figure 53. Non verbal interactions



Figure 54. People divided in social groups of belonging

Tours and Taxis - Northern zone

The tour and taxi site which is an area in the northern canal zone is an area that consists of many different places that have different characteristics. The maps show the different activity that happens during the weekdays (Figure 62) and the weekends (Figure 63). The weekends are more active where a large number of people visit the area to relax or to bring their children out to play. During the weekdays the area is mainly used as a walking zone to transition from within the neighbourhood to the main road.

The top most region consisting of the parckfarm site (West) is a very multicultural area with many different social groups occupying the space and appropriating the space (Figure 57). It is nestled between the neighborhood and offices and hence is used by people from the neighborhood but also by people from the neighboring offices. The different groups meet in closed groups of social belonging around recognizable elements (Figure 60). For example many groups gather outside a glass house that is there in this area.

The bottom region of the site is a square in front of a shopping mall. This is a very generic design and has no social elements for various groups to relate to. Hence, even though people pass through the space they do not appropriate the space for their own use and the interactions are mainly through non verbal interactions (Figure 58).

Major portions of the region surrounding the canal is left vacant and only certain spots are being used by youngsters as a skateboarding rink or to just hangout. The canal offers a few "hidden" spots that offer a degree of privacy but still allows for a visual connection to the space around (Figure 61). Many individuals gather in these spots that allows them to be around places with activity while still maintaining a degree of privacy (Figure 59).

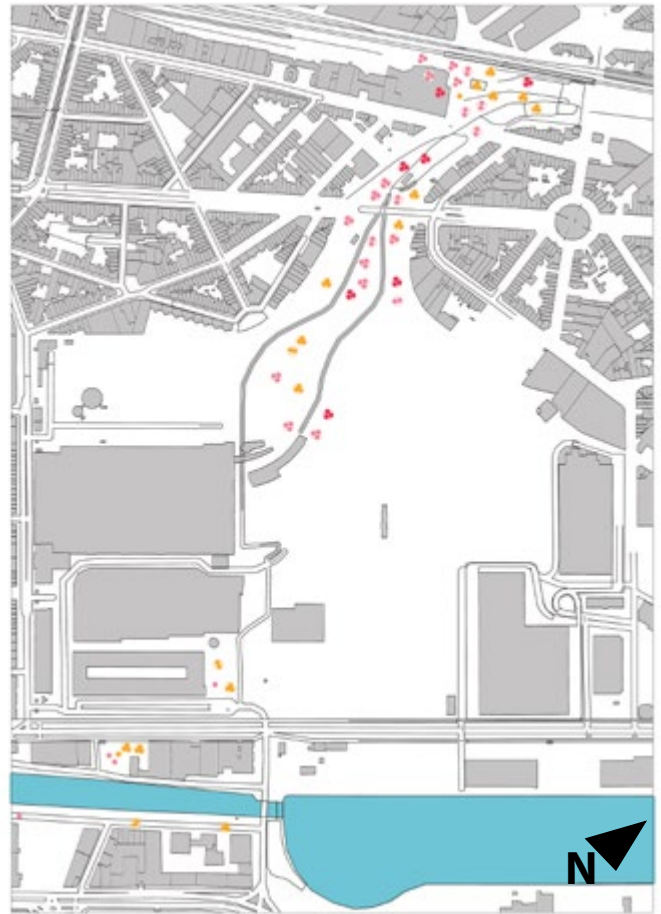


Figure 62. Time lapse map of the northern zone (Tour and taxi) during weekends.

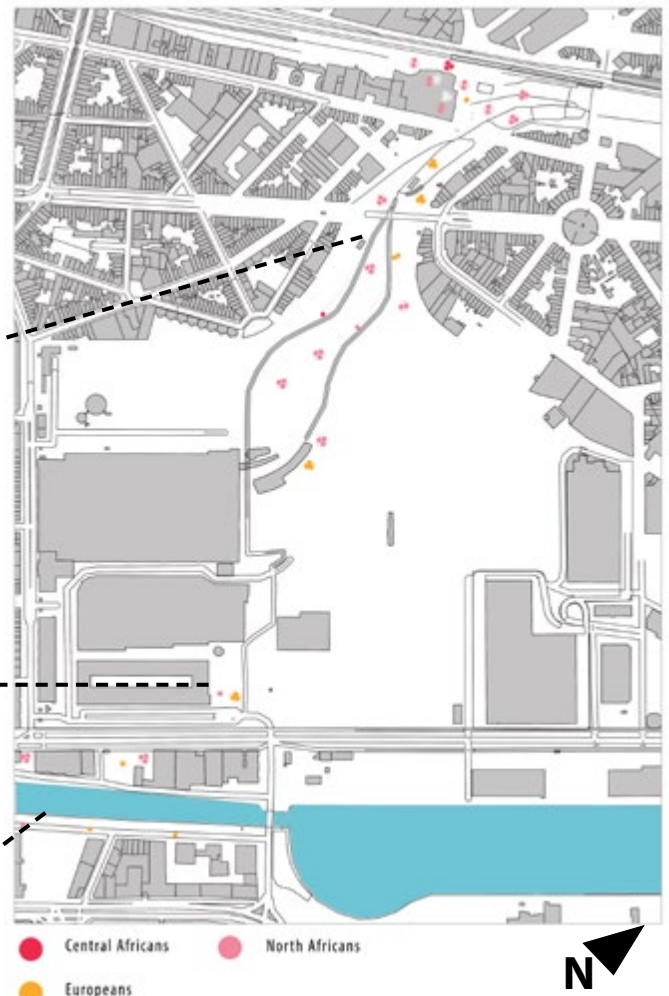


Figure 63. Time lapse map of the Northern zone (Tour and taxi) during weekdays.

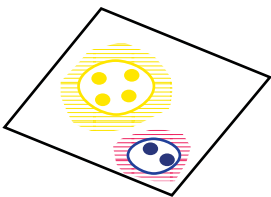


Figure 57. People gathered in groups tend to personalize the space around them.

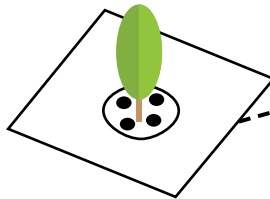


Figure 60. People gather in groups around recognizable spatial elements (Trees, statues, benches etc)

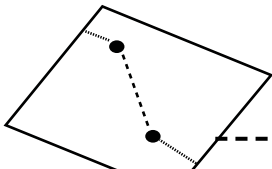


Figure 58. Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.

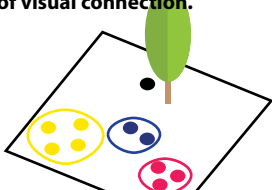


Figure 59. Individuals tend to sit around spaces with a lot of activity while still maintaining a degree of privacy.

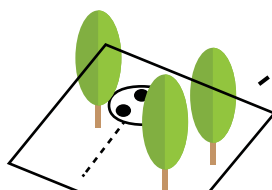


Figure 61. Unfocused interactions always occur while walking

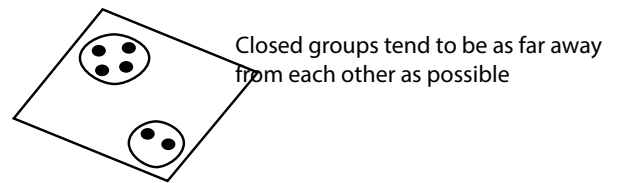
4.3.2 Group dynamics and interactions observed in space

Space has a great influence on the social interaction and the space gains meaning in terms of various forms of group identity (Refer section 3.2.2). Through the time lapse map we were able to study the various group dynamics and interactions that have in space.

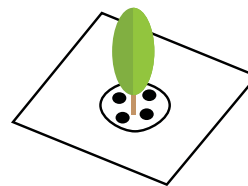
We can summarise the observations made by classifying the various group interactions into two sub categories:

1) Group dynamics and the environment : In this category specific spatial features play an important role in influencing the group dynamics (Figure 65).

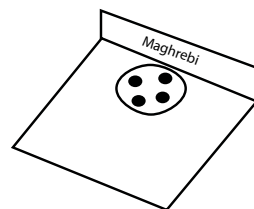
2) Personalization of space: In this category various social groups personalize features in their environment according to their needs (Figure 64).



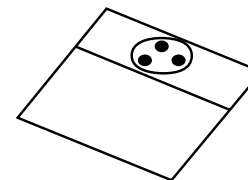
Closed groups tend to be as far away from each other as possible



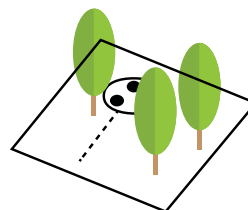
People gather in groups around recognizable spatial elements (Trees, statues, benches etc)



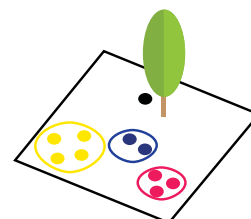
Closed groups gather in a "usual" place



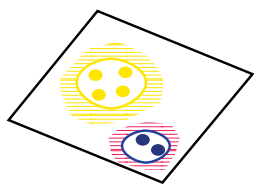
Closed groups that use street corners and sidewalks to gather privatize the space around them (in some cases even the entire street or square)



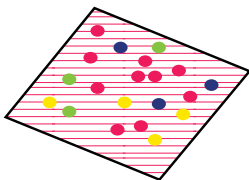
Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.



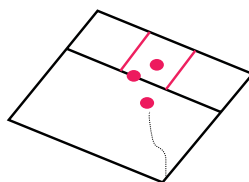
Individuals tend to sit around spaces with a lot of activity while still maintaining a degree of privacy.



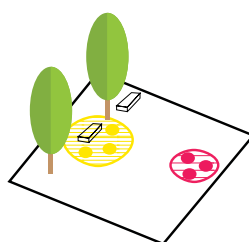
People gathered in groups tend to personalize the space around them.



The prevailing social group of an area imprints its own social features into the public space through a personalization process



Social groups recognize homogeneous shops as core for their collective life



A loose or flexible space allows people to gather and to personalize the space according to their needs

Figure 64. Personalization of space

Figure 65. Group dynamics and the environment

4.3.3 Community identity

Within the concept of the difference between a space and a place, meanings are explicitly seen in place more or less depending on the identity of the group (Refer section 3.2.2) The time lapse maps highlight areas in the research location that are important for each community. It shows us the spaces that are core to each community. In the community interactions map (Figure 66) these spaces are highlighted. Through this map we gather that each community has a community backbone that is the center of their social space. These backbones are where the core of their activity is accumulated. It is extremely important for the survival of these social groups that these spaces are preserved.

4.3.4 Community Interactions

Through the time lapse map we observed that various spaces were used by various different groups. There were certain spaces that were used solely by one group and those that were used by multiple groups. From the time lapse maps we can gather that space can be defined in terms of homogeneous or heterogeneous spaces (Refer 3.3.2). Homogeneous spaces are those spaces that are used and personalized by a single social group. Heterogeneous spaces are those spaces which are defined by their diversity and more than one social group has personalized the space to accommodate their own use and needs. In heterogeneous spaces different social groups coexist and use the space either simultaneously or in different moments of the day and in completely different ways. Apart from these two major types of spaces we also observed walk by spaces, those which are used by many social groups as transit points. In the community interactions map (Figure 67) these spaces are highlighted .



Figure 66. Map depicting places in the research location

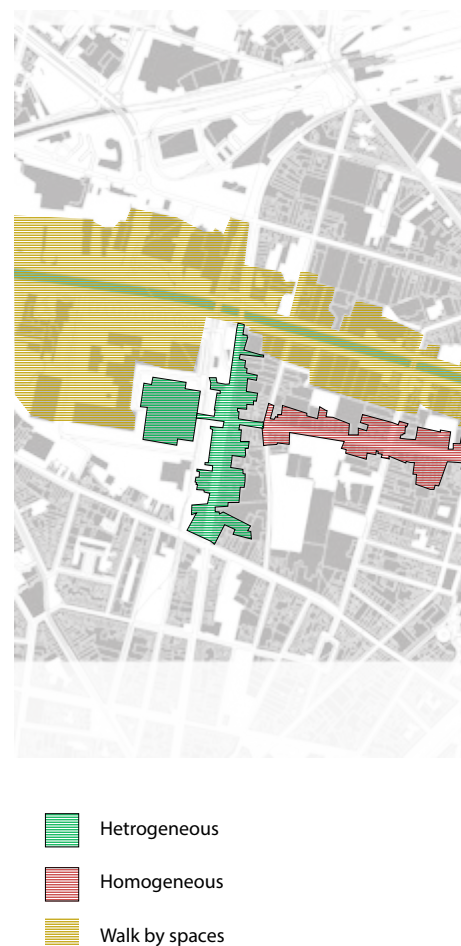
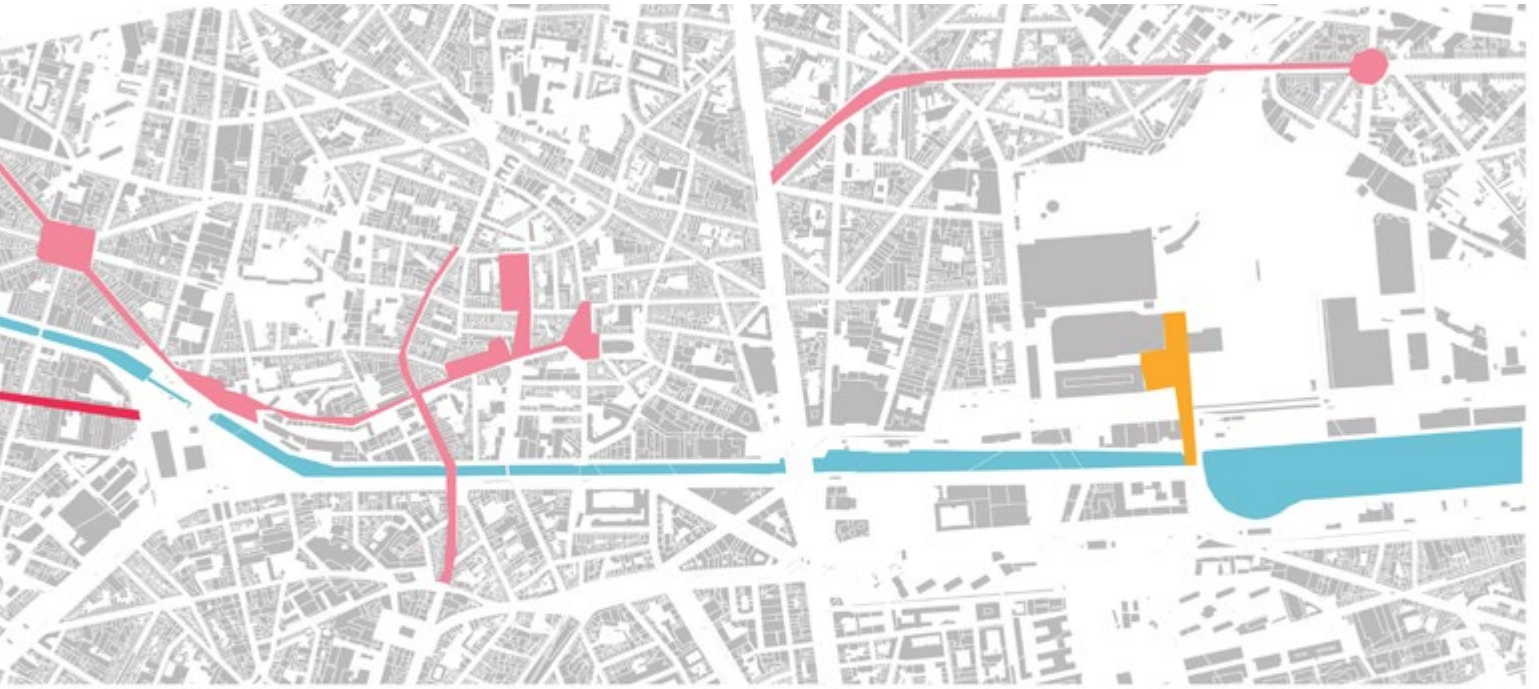
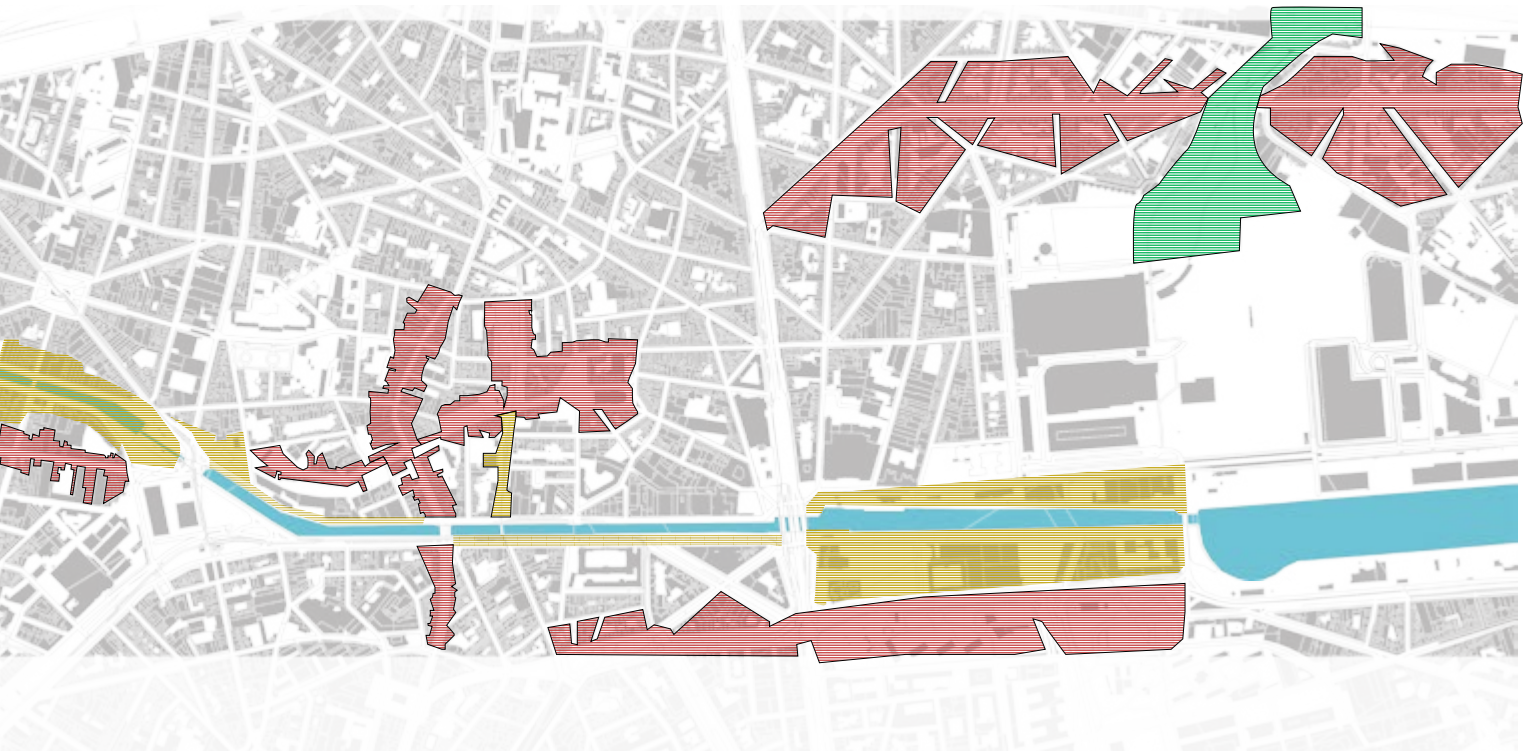


Figure 67. Map depicting three different kinds of spaces



h area that are important for the Identity of each community



of community interactions

4.4 Synthesis

In the previous sections (4.2 and 4.3), the focus was on studying the landscape characteristics from the perspective of two modes: Space and place.

In this section the different analytical maps presented in the previous chapter are processed to bring together many individual aspects of the area and to represent them as one. The maps help identify features of the social environment that could be used as potentials. It is a way of to classify spaces in order to highlight the socio-spatial potentials of the research area. The final purpose of this section is to provide social and spatial insights for designing.

The following maps are elaborated in this section:

- 2) Social permeability (Refer 4.4.1)
- 3) Spatial potetials (Refer 4.4.2)

4.4.1 Social Permeability

A combination of the Community interactions map and the and the landscape based as place conclusion map is the Social permeability map (Figure 68). Permeability or connectivity describes the extent to which urban forms permit (or restrict) movement of people in different directions. Districts allow people to pass through and it absorbs some of the characteristics that the users give to the space. This is what is represented in the permeability map. It represents the flow of people (community interactions map). It represents the spaces that allow people to pass through and those elements that form barriers (landscape based as place conclusion map). Barriers hinder the free movement of people from district to district and hence reduce the permeability of the district.

In the above map, The different elements that form boundaries and are considered as barriers are represented. These elements hinder the free movement of people from district to district and hence reduce the permeability of the district.

To acheive a certain level of social integration it is important for one to be able to move freely from one social space to another without any hinderence.

It is clear from the map that the borders between social groups are rigid borders and do not allow the percolation of people from one neighborhood to the other. There are however certain areas in the research zone that are permeable spaces and allow the free flow of movemet of people through the space.



Figure 68. Map depicting the elements acting as barriers restricting movement.



ings as barriers

able areas

g the movemmnt of people



4.4.2 Spatial potentials

Combining the community interactions map, pedestrian map and the building uses map helps us identify the spatial potentials of the area that we can use as designers to further develop. This map highlights spaces that have the potential to become good social spaces but in their current state this only remains as a potential (Figure 69). For example, places that support commercial activity, have moderate pedestrian activity but still remain as walk by spaces have the potential to become a social attractor i.e a shopping street. Vacancies can also be seen as potentials. Fenced/enclosed spaces such as those adjacent to factories that are not being used can be transformed

This map highlights the following features:

- 1) Vacancies : Places that are unused and vacant.
- 2) Potential attractors: Places that could potentially become commercial backbones of the community
- 3) Enclosed green/spaces: Enclosed open green spaces that are un used or not used to their potential
- 4) Under used spaces: Public spaces that are large but not used to its potentials.

4.5 Chapter conclusions

At this point in the thesis various conclusions on the landscape perception have been made based on landscape as place, landscape as space and a synthesis of the two.

In the place mode we identified key features in the landscape that had an influence on the perception (Refer section 4.2.7)

In the place mode we studied the various group interactions that influence the space and vice versa (Refer section 4.3.2). The community backbone i.e spaces that are core to each community were identified (Refer section 4.3.3). We could also classify the different spaces as homogeneous and heterogeneous based on the social groups that used the space (Refer section 4.3.4).

The synthesis of both these modes helped us identify the various spatial potentials of the area.

The next chapter is dedicated to bringing the research from an analytical approach to a design based approach.

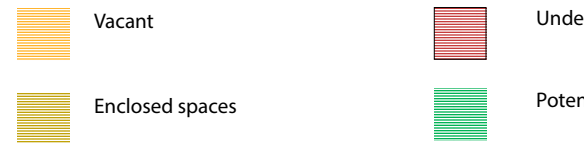
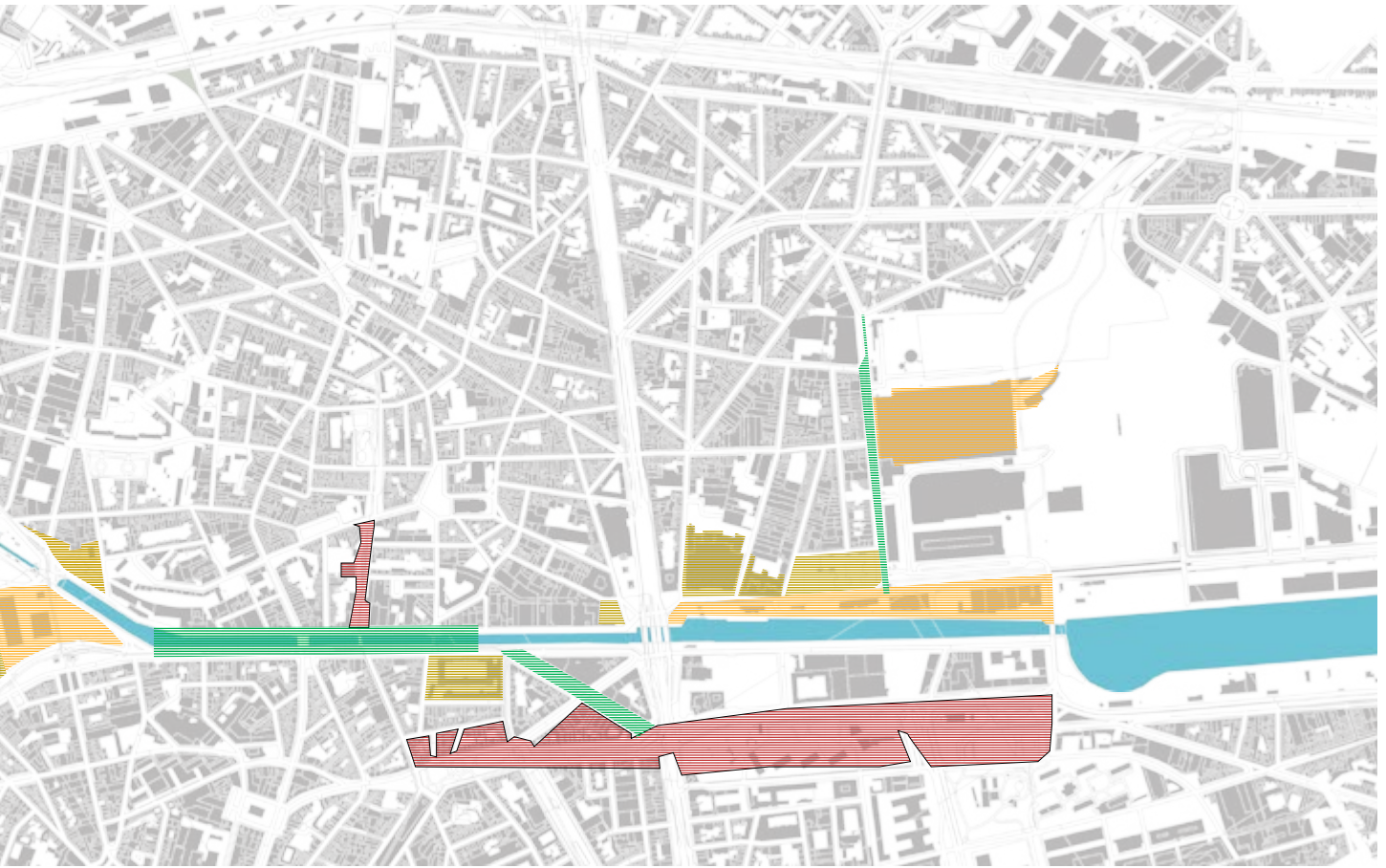


Figure 69. Map showing spaces that have the potential to be utilized



used spaces

potential attractors

needed to create good social places



5. THE CONNECTION

5.1 Chapter Introduction

The Connection, much as the name suggests, connects two different parts. The connection is a step in the design that links the research to the design. This step is included to bring the research from an analytical approach to a design based approach that is based on the conclusions derived from the analysis.

In this chapter The Pattern Language is introduced (Figure 70). A language of patterns must not be confused with a design method (Salingaros, 2000), but it is a tool for professionals, inhabitants and institutions provided by the researchers. The pattern language was first developed by Christopher (1977) exactly as a tool for inhabitants to have a common language to design the space of cities that are shaped by their users. In order to make patterns understandable, Alexander's pattern language always presents a problem and the core of the solution to the problem. Likewise, in this research patterns are identified having positive and negative values and a design hypothesis is developed for these patterns. Patterns are areas that can be identified as having similar activities, social value and those that have a similar socio-spatial order. The patterns include both positive and negative values as the positive values can be highlighted, developed and enhanced, while the negative values are the ones that need to be tackled.

The pattern language also includes a design hypothesis which gives us an idea of the possible design implementation. The pattern language is developed as a tool that could be used by other researchers, professionals or people from the neighborhood to develop the public space in the research area. For this reason, the design hypothesis should not be taken as concrete spatial design solution, but rather methods through which a spatial design can be derived. A pattern language has the structure of a network (Figure 70). When we use the network of a language, we always use it as a sequence, going through the patterns, always moving from the larger to the smaller pattern, always from those that create structures to the ones that embellish those structures and then to those that embellish those embellishments (Christopher, 1977). In this research, The patterns are ordered in three scales:

- 1) The urban patterns are the ones that create structures, and have an effect on the city level, although we discuss only those urban patterns found in the research area.
- 2) Neighborhood patterns are embellishments to these structures and are patterns found on the neighborhood scale. These patterns have a great influence on the users (i.e the inhabitants of the neighborhood)
- 3) Objects are those that embellish the embellishments. They are the smallest patterns discussed. The users have direct contact with these patterns and can influence the function of these patterns.

These patterns provide a way to understand a system that

is complex and highly nested. While the analysis helped identify the different patterns found in the research area, a questionnaire that was handed out to inhabitants of the area along with interviews with researchers who have previously worked on the area were key tools that helped propose the design hypothesis for each pattern.

It is important for a design researcher to understand the needs of the users. The questionnaire was a strong tool that helped with this. The questionnaire was constructed in such a way as to gather information about the neighborhood of the respondent, the immediate canal zone and the other smaller elements of the research area such as the vacant factories etc.

The following section elaborates 5 of the patterns: Community boundaries, Heterogeneous places, Potential attractor, Industrial Ribbon and vacant spaces.

The patterns are elaborated in the following steps:

- 1) A map indicating the locations where this pattern can be found is presented
- 2) A brief text describing the pattern and its current values.
- 3) An illustrated abstract design hypothesis or solution that can be interpreted and adapted in multiple ways based on the designers disposition, users preferences, and local conditions.

PATTERN LANGUAGE

Urban patterns

- 1) Community Identity
- 2) Community boundaries

Neighborhood patterns

- 3) Pedestrian street
- 4) Shopping street
- 5) Activity node
- 6) Heterogeneous places
- 7) Potential attractor
- 8) Walk by places
- 9) Industrial Ribbon

Objects

- 10) Enclosed green
- 11) Under used spaces
- 12) Vacant spaces

Figure 70. Pattern language

5.2 Community boundary

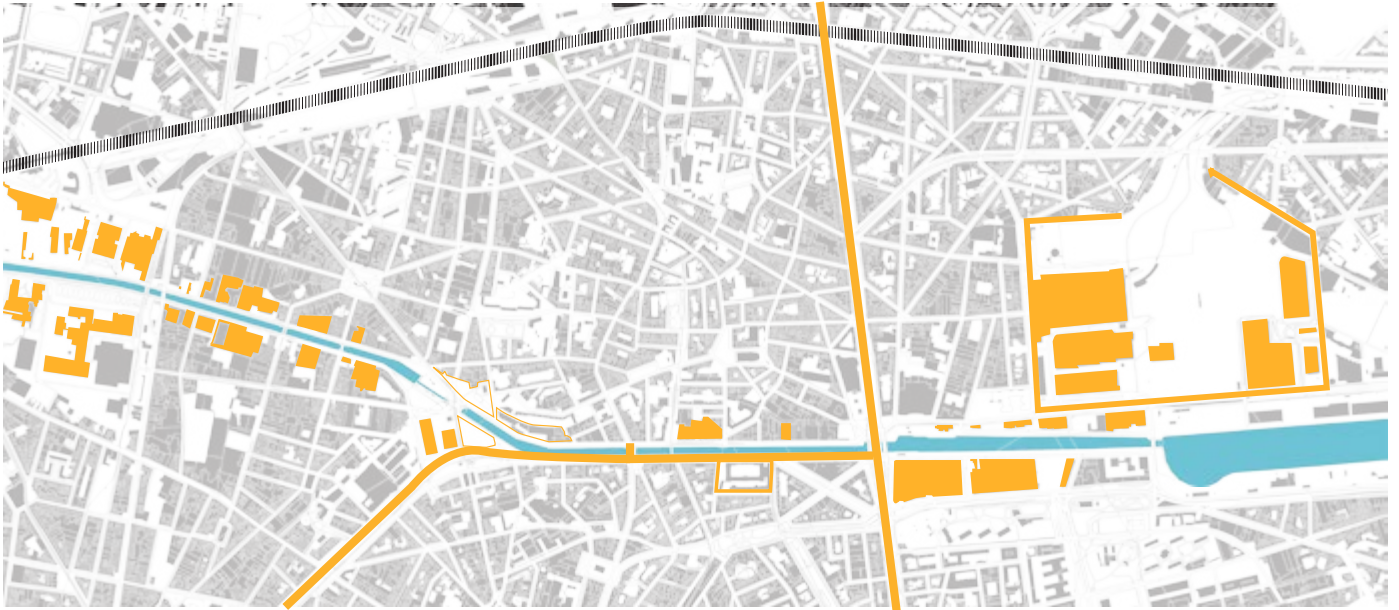


Figure 71. Map depicting elements that form boundaries



5.2.1 Current Value

From the social permeability map (Refer 4.4.1) we gather information regarding the elements that form boundaries between various communities (Figure 71). These boundaries are currently non porous and rigid boundaries (Refer 4.2.1) and this in turn leads to the creation of inward looking communities with little or no interaction between communities.

These boundaries are mostly regions where no social group leaves traces of their social belonging (Refer 4.3.1). As elaborated in the problem statement (Section 2.6) Alexander describes three kinds of cities, the homogeneous city, the Ghetto and the mosaic of cultures. Right now, the research area is headed towards a ghetto. In the current situation these zones allow for minimal interaction.

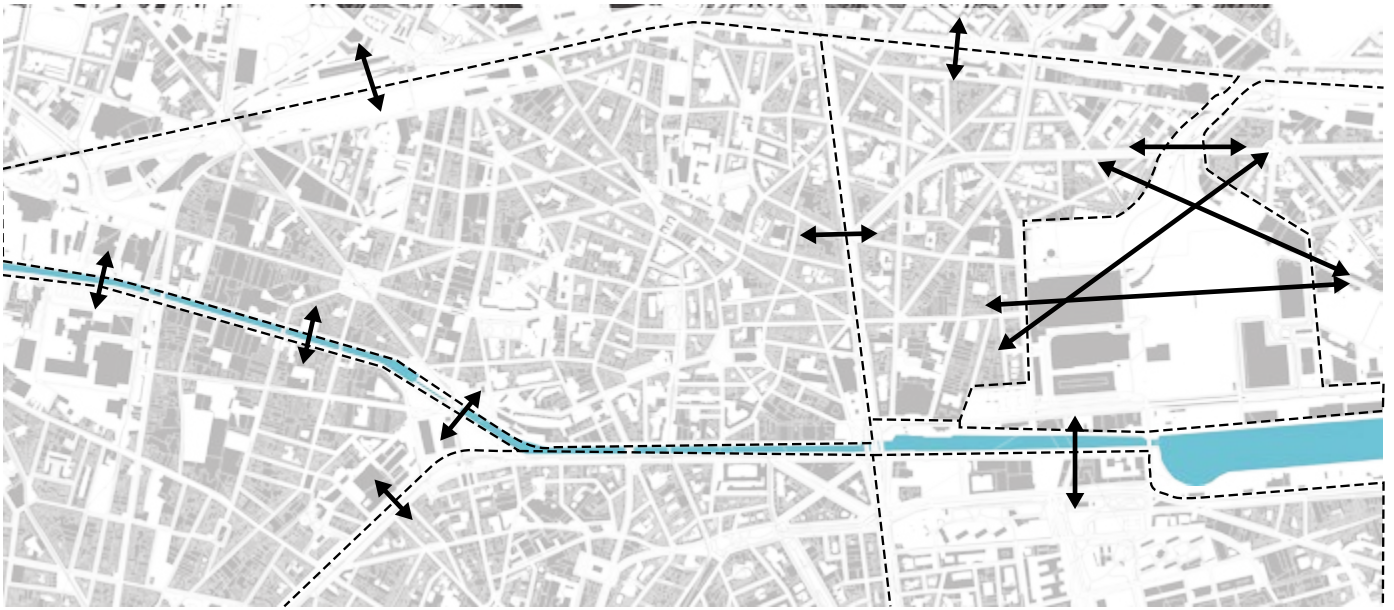


Figure 72. Opening up the rigid boundaries and creating more porous boundaries

		Responses		Percent of Cases
		N	Percent	
COMBINED	Activities Theatre	12	13.0%	37.5%
	Activities Music	13	14.1%	40.6%
	Activites_Other cultural activities	11	12.0%	34.4%
	Activities Gardening	11	12.0%	34.4%
	Activities Play	5	5.4%	15.6%
	Activities Sports	18	19.6%	56.3%
	Activities Food	14	15.2%	43.8%
	Activities Other	8	8.7%	25.0%
Total		92	100.0%	287.5%



Figure 73. Questionnaire data set - What kind of activities do you enjoy participating in? (Refer appendix)

5.2.2 Design hypothesis

According to Alexander the most suitable pattern for cities is the mosaic of subcultures (Refer 2.6). To achieve this pattern the rigid boundaries between the various communities must become more porous. While people still have the option of living within their own communities they can also experience many ways of life different from their own (Christopher, 1977.)

As a design hypothesis, this research suggests to make the boundaries between communities more porous and to include common activities, community spaces and public spaces in these boundary regions (Figure 72). This makes it easy for different communities to mix.

Figure(73) shows the common activities enjoyed by all the different communities. This information was gathered from the Questionnaire and provides us with valuable information as to what these community boundaries could become. (Sport grounds, Food markets, Urban farming sites, Theatres etc.)

5.3 Heterogeneous places



Figure 74. Heterogeneous places

5.3.1 Current value

Heterogeneous spaces are those that are used by different social groups. These spaces could be a pedestrian pathway, metro station, park etc where different social groups come in direct or indirect contact with each other. The space is characterized by high social diversity and pedestrian flows (Refer 4.2).

Figure 74 depicts the regions in the research area where this pattern can be found. The community interactions map highlights these heterogeneous spaces.

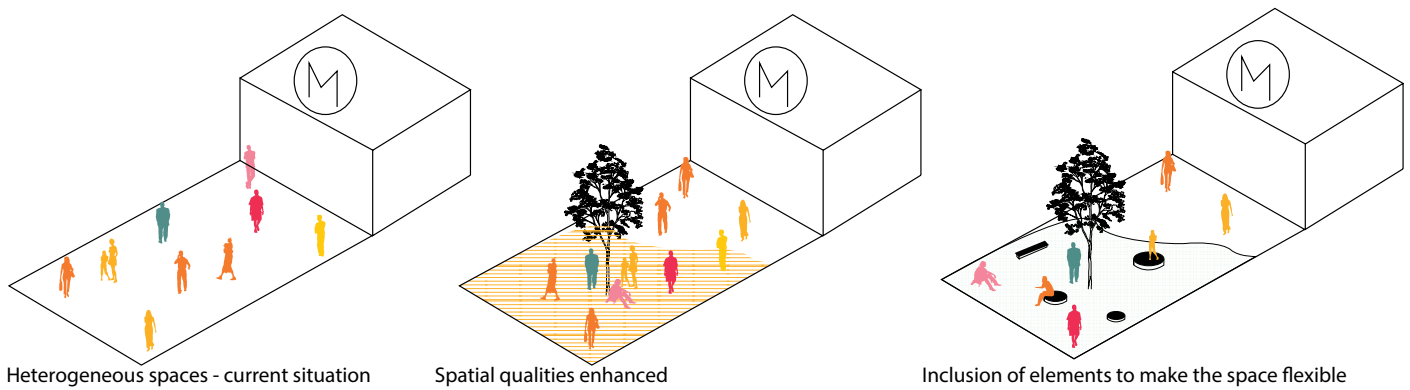


Figure 75. Design hypothesis - spatial qualities enhanced to accommodate different social groups

Features	Feature	Responses		Percent of Cases
		N	Percent	
	Feature_Benches	24	12.9%	75.0%
	Feature_Places To Work	4	2.2%	12.5%
	Feature_Safety	12	6.5%	37.5%
	Feature_Accessibility	12	6.5%	37.5%
	Feature_Child Friendly	12	6.5%	37.5%
	Feature_Handicapped	9	4.8%	28.1%
	Feature_Comfort	8	4.3%	25.0%
	Feature_Cleanliness	15	8.1%	46.9%
	Feature_Nature	27	14.5%	84.4%
	Feature_Play Area	9	4.8%	28.1%
	Feature_Water Elements	15	8.1%	46.9%
	Feature_Quiet Spots	20	10.8%	62.5%
	Feature_Barbecue	14	7.5%	43.8%
	Feature_Other	5	2.7%	15.6%
Total		186	100.0%	581.3%

Figure 76. Questionnaire statistics of features enjoyed by all social groups in public spaces

5.3.2 Design hypothesis

As the space is used by many different social groups having different preferences, the space must be made flexible and loose so as to cater to the needs of the various groups. Different groups should be able to appropriate the space according to their needs. The high diversity of the area should be used as an advantage and the spatial qualities of the area must be enhanced.(Figure 75)

Figure 76 highlights features chosen by users from different social groups as important in public spaces. These features could be added to the homogeneous spaces to help cater to all the different social groups.

Adding flexible features increases the variety of social interactions in the space. A flexible space allows people to gather and personalize the space according to their needs. It also allows for more social occasions to occur which results in increased interactions between social groups.

5.4 Potential attractors

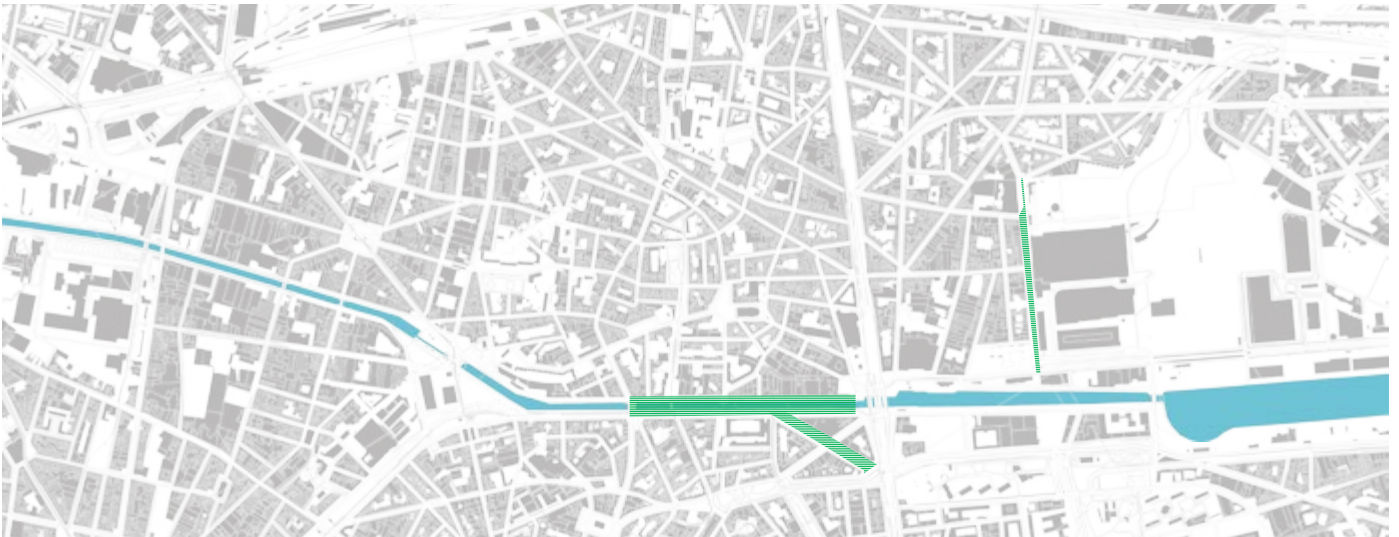


Figure 77. Potential attractors



5.4.1 Current situation

This pattern describes roads that although already have a small amount of commercial activity and are moderately active pedestrian streets, are still areas that are not used to their potential. These kind of roads have many vacancies at the ground floor as remainders of a past prosperous time .

The spatial potential maps highlight these spaces. Figure 77 Depicts the areas that this pattern can be found.

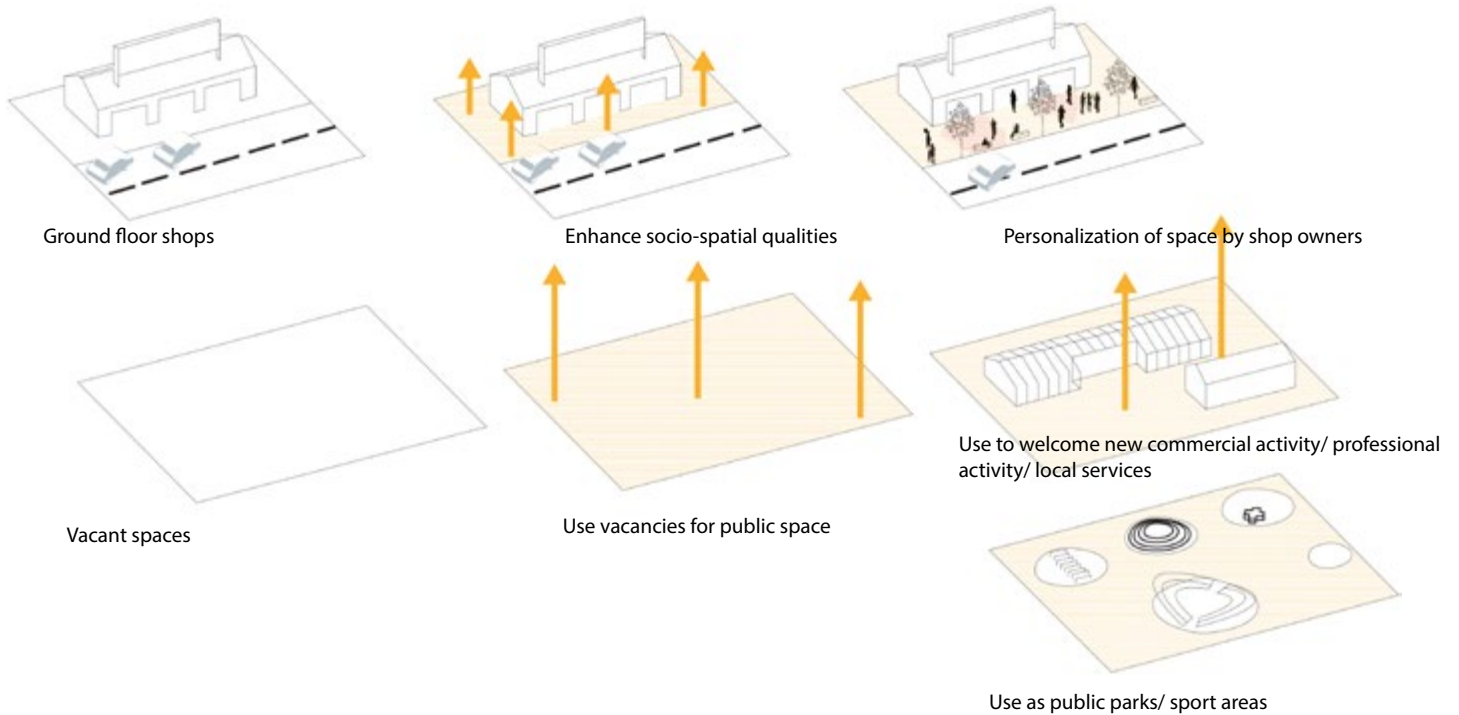


Figure 78. Design hypothesis - spatial qualities enhanced to attract new commercial establishments

5.4.2 Design hypothesis

The design that can be thought for this pattern has to enhance the socio-spatial qualities of the public space in order to attract new private investments. The vacancies can be used for public activities. The design should go with the flow of spontaneous changes of the area letting the individuals/owners to change their own properties. For this reason, the design is an improvement of the public space qualities.

5.5 Walk by spaces

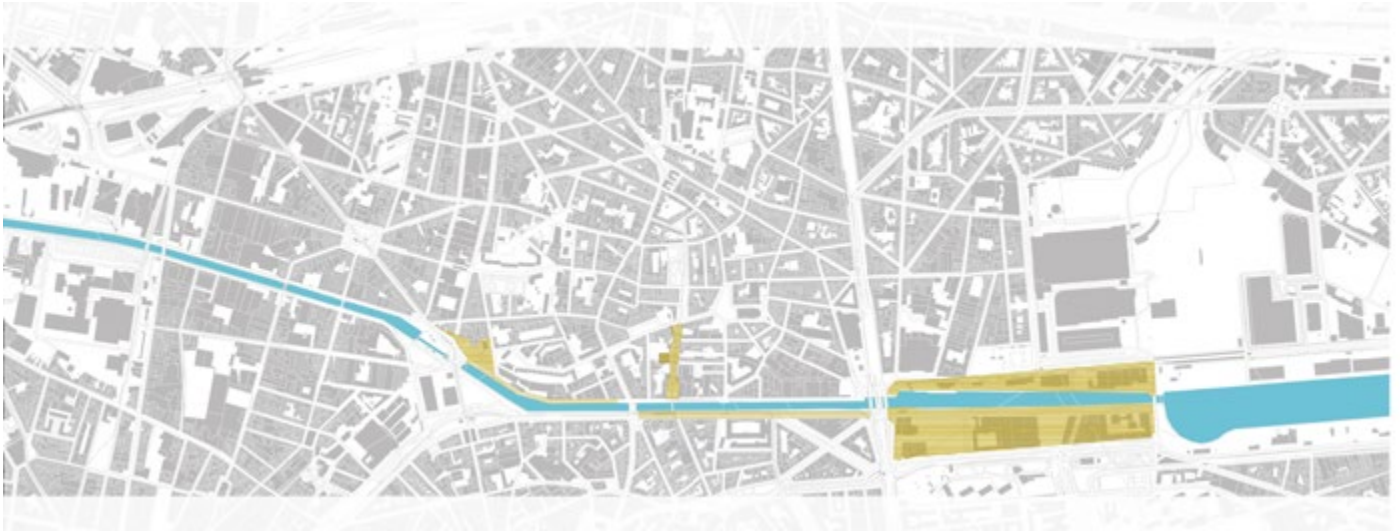
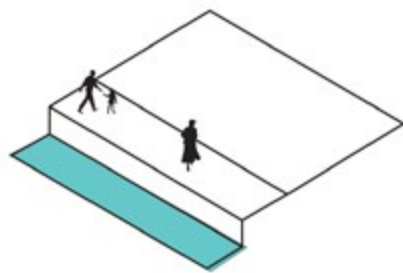


Figure 79. Map depicting areas used only as walk by spaces

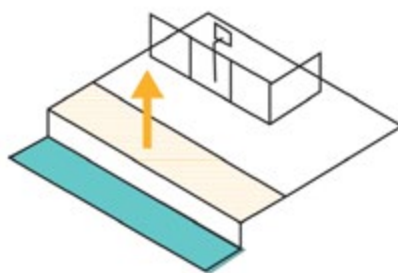
5.5.1 Current situation

This pattern describes spaces that are usually used by people only to cross by. They are generally in close proximity to transport routes such as metro stations, bus stations etc. These spaces are also characterized by a high diversity as many people from different social groups use these spaces to get to their final destination (Bus stops, metro stations, supermarkets etc.). These spaces do not have functions that allow people to stay in it.

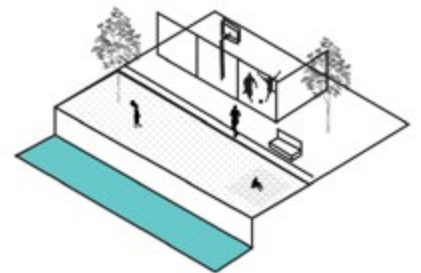
The community interactions map highlights these areas. Figure 79 shows the areas where this pattern can be found.



Walk by spaces in their current state



Develop edges of these spaces



Introduce new activity to allow people to stay

Figure 80. Design hypothesis - add elements that allow people to stay

5.5.2 Design hypothesis

The design for this pattern has to allow people to stay in the space and use it for more purposes than walking route. The spatial structure of the space should be changed so as to give the possibility for different activities to bring meaning to the space. New facilities should be added and the edges of these spaces should be defined to make people stay in the space. (Figure 80)

5.6 Industrial Ribbon

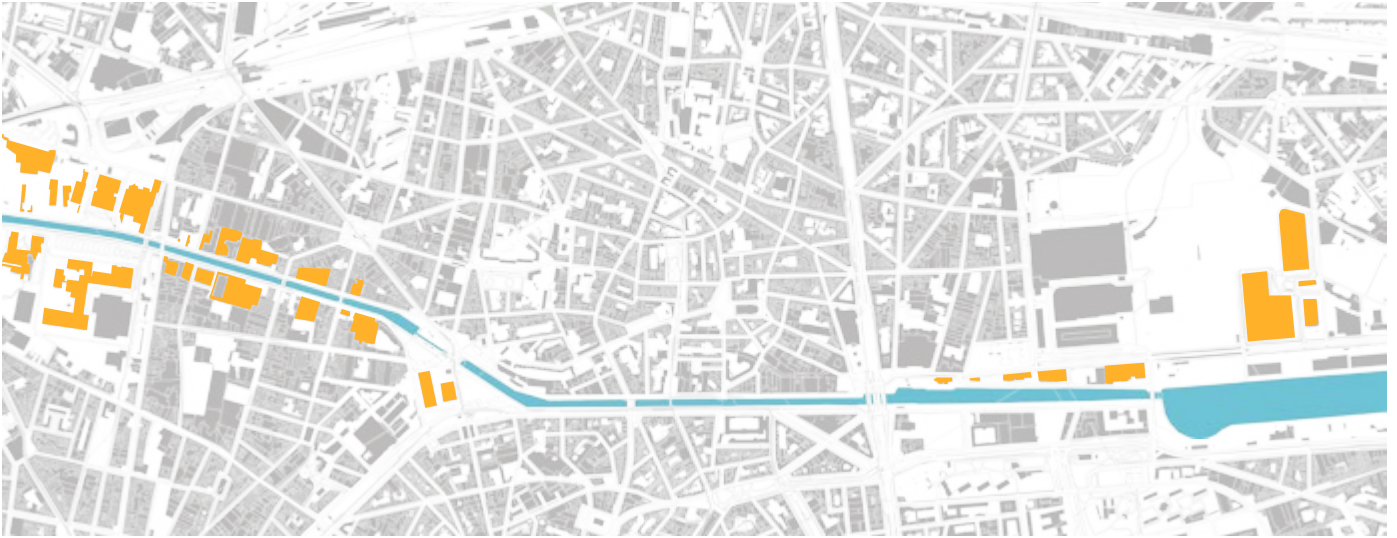


Figure 81. Map depicting the Industrial ribbon pattern areas

5.6.1 Current value

This pattern describes a chain of industries that are usually found between two communities as a boundary between the two communities. These industries occupy more space than required having a lot of vacant land that is used as a dumping site. It is also noted that the blank facades of these industries and their rigid edges do not provide favourable environments to the surrounding communities.

Figure 81 highlights all the industries that are part of the industrial ribbon pattern.

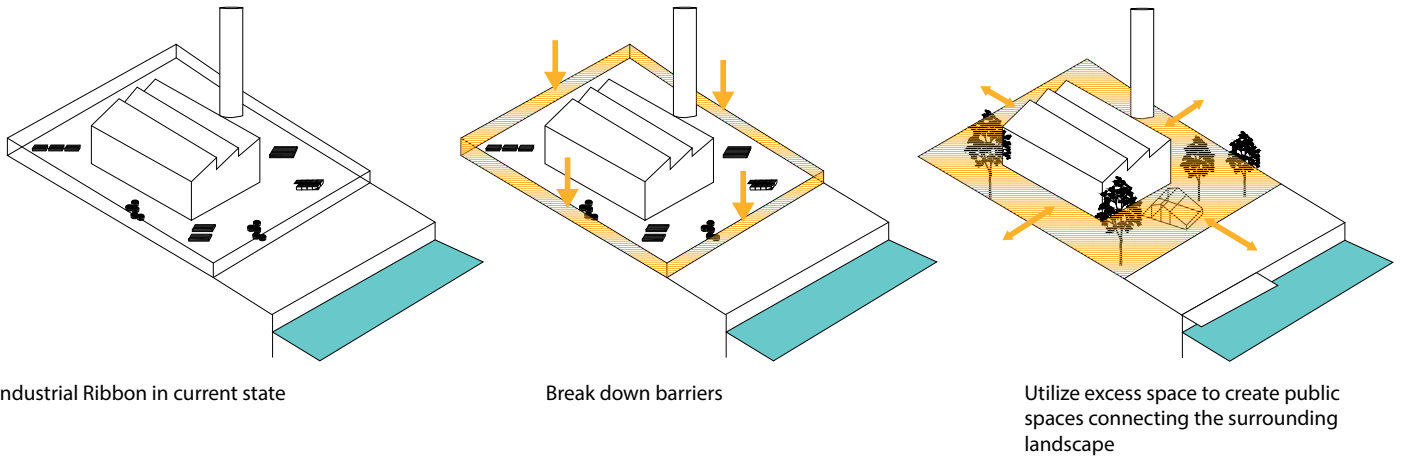


Figure 82. Design hypothesis - Open up the excess space around the factories

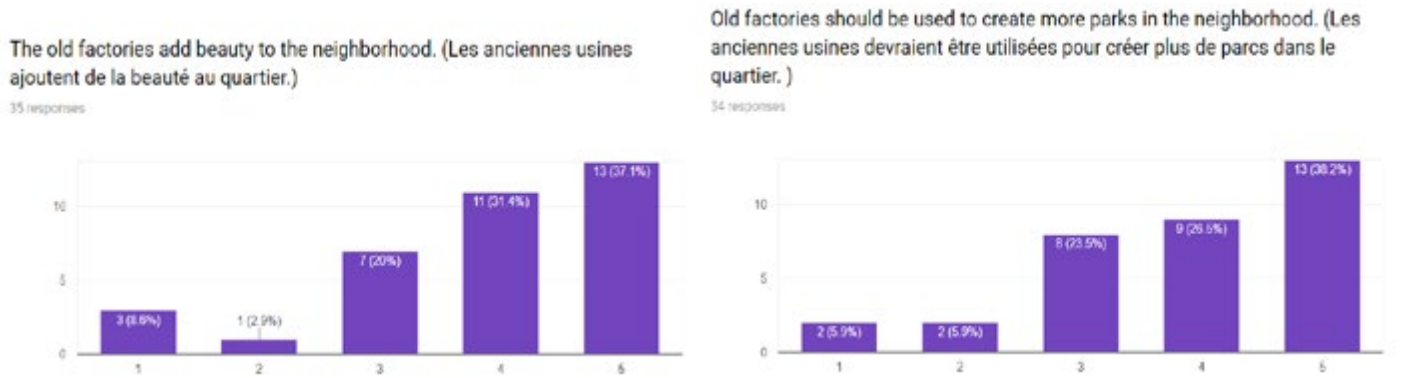


Figure 83. Questionnaire statistics - Factory landscapes

5.6.2 Design hypothesis

As excess space of the factory is not put to good use, the design hypothesis suggests to use this excess space to create places where people from nearby communities can benefit. By improving the spaces around these factories the environmental features are improved and the spaces around become more visually and physically connected. (Figure 82)

As figure 83 suggests, the people of the neighborhood agree that the old factories add beauty to the neighborhood. They also think that creating public spaces/ parks etc around these factories is a good idea.

By introducing these changes social interactions between communities is enhanced. There are more options for indirect and direct interactions between various groups.

5.7 Vacant spaces



Figure 84. Map showing the various vacant spaces



5.7.1 Current value

Vacant spaces are those spaces that are not being used for any kind of activity. As the central canal zone is moving to a post industrial era, many factories shut down and left vacancies in the urban fabric. These vacancies are generally large spaces. These spaces lack the relationship between users and the environment.

The spatial potential maps indicates the location of this pattern in the research area. Figure 84 shows up the vacant spaces found in the area

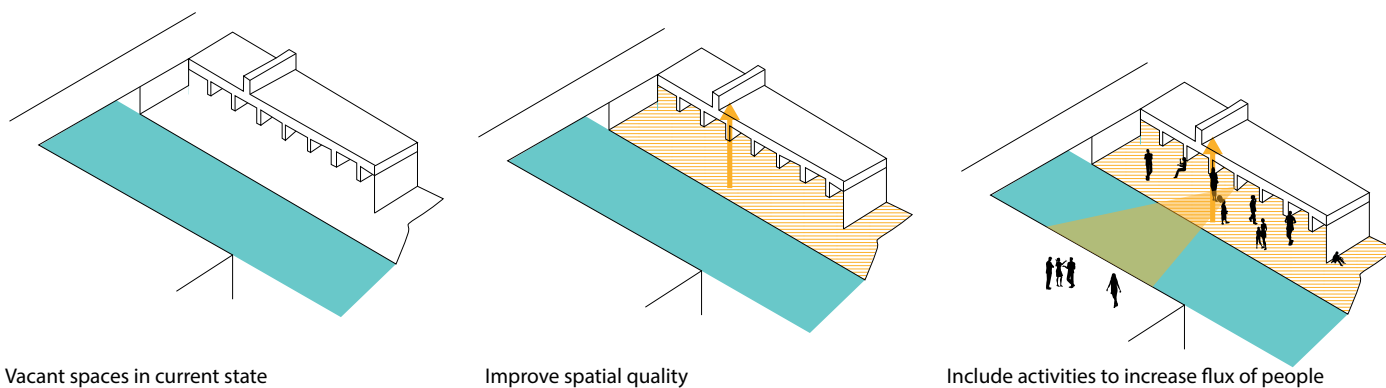


Figure 85. Design hypothesis - assign activities that increase flux of people

I think my neighborhood needs more parks/squares and places to relax/hangout/play. (Je pense que mon quartier a besoin de plus de parcs / places et de lieux de détente / hangout / play.)

35 responses

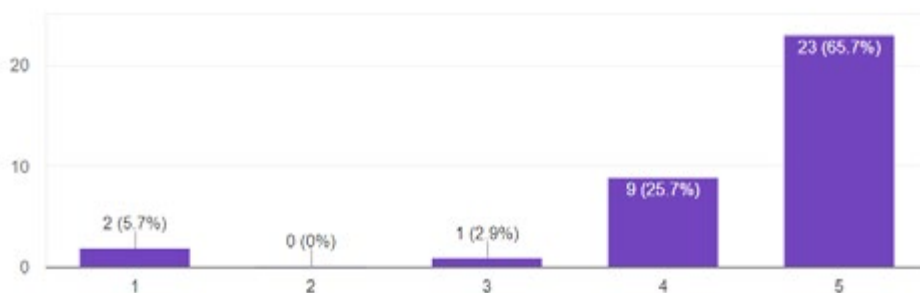


Figure 86. Questionnaire statistics

5.7.2 Design hypothesis

Assign the area with activities that will increase the flux of people (Figure 85). Connect these spaces to the socio economic process of the district that it is present in. Vacant spaces can become places of social interaction between different social groups through social occasion.

As figure 86 suggests, the people of the neighborhood think that their neighborhoods lack public spaces/ parks. The vacant spaces in the neighborhood can be used to create more public spaces for the neighborhood.

5.8 Underused space

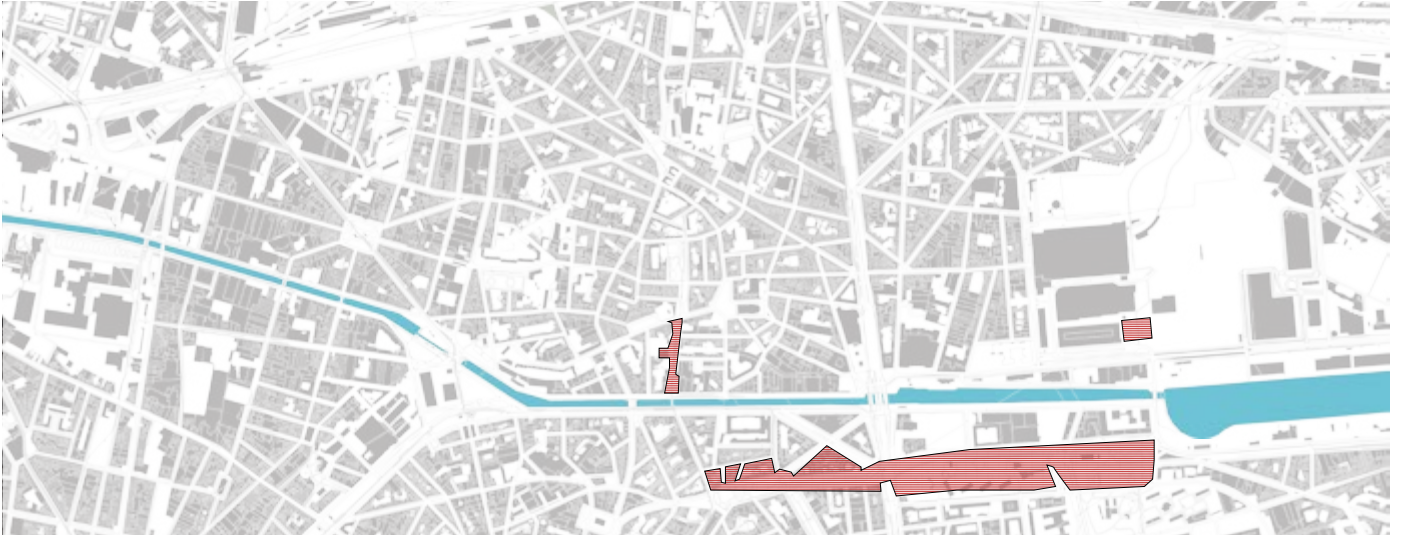


Figure 87. Map locating the underused spaces pattern



5.8.1 Current value

An underused space is that which is not used by too many people compared to the large amount of space that is available. After the construction of the underground metro, the urban fabric changed leaving large underused spaces. A period of rapid construction followed which further left large underused spaces in the urban fabric. These spaces are generally very large and host only a few functions and activities. Due to its vastness and scattered activities, there is no relationship between users and the environment. These spaces are different from vacant spaces as they are being partially used, and are not completely unused spaces.

Figure 87 indicates the location of these patterns in the research area and this information can be derived through the spatial potential maps (Refer 4.4.2).

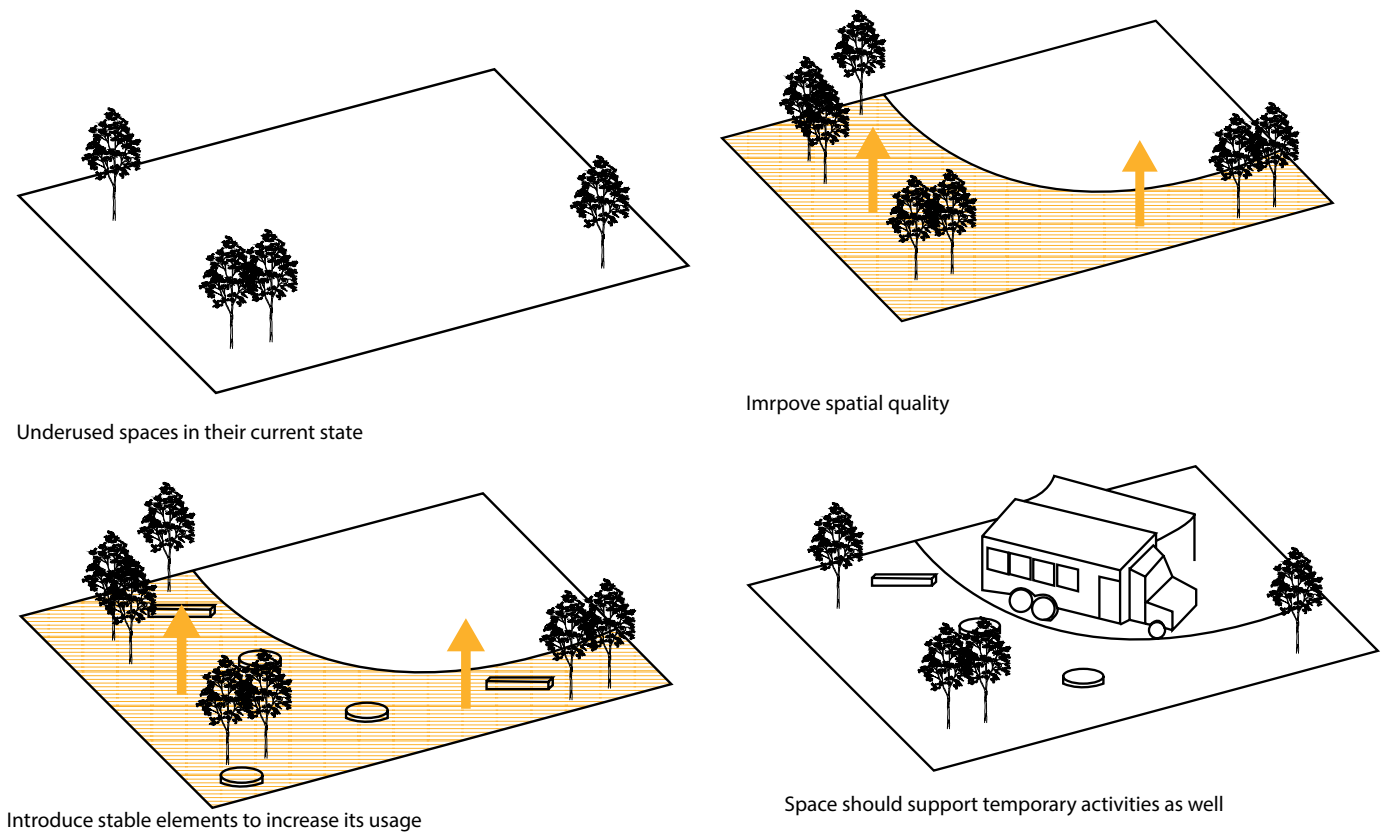


Figure 88. Design hypothesis - Rethink the space to accommodate temporary and stable activities

5.8.2 Design hypothesis

These areas need to be completely rethought to increase its usage. Its large space provides ample area to accommodate multiple stable and temporary activities. Elements to attract more number of people should be thought of . The large spaces should be brought down to a more human scale so as to bring a level of coherence to the space that will attract more people to use the space. The space should be designed to support stable activities but should also be designed to support temporary activities. (Figure 88)

5.9 Chapter conclusions

From this chapter the following conclusions can be made:

1. The research area can be classified into many different patterns
2. Each pattern is dealing with problems specific to it.
3. A design strategy for each pattern must be made seperately so as to respond to the conditions of that specific pattern.
4. The design hypothesis of each pattern provides a guideline for a spatial design solution.

This chapter suggests that by implementing a spatial design solution based on the design hypothesis for each pattern, more inclusive social spaces can be designed. Chapter 6 aims to elaborate the usage of the pattern language in a spatial design solution.

6. DESIGN

6.1 Introduction

Up until now patterns have been addressed detached from their real application on the site area. As already mentioned, the pattern language is a tool for all the actors involved in the design process. The design implementation of this research project is a vision that helps the reader understand how the patterns from the previous chapter can be used in practice. It explains the role of each pattern and also aims to portray how the design hypothesis of each of these patterns can be implemented. The design also shows how the patterns can be combined together to form one masterplan. It is important to understand that the next phase explained is only one of the multiple possibilities for the implementation of the pattern language, as it can be interpreted and used in many different ways. This section aims to highlight the influence the patterns have in the city dynamics.

The site chosen for the design implementation is the tour and taxi site in the northern zone (Figure 89). This area has been chosen as it combines six different patterns. It is also an area that is used by different social groups but with little or no social interaction. Apart from its social diversity, we know from the landscape character assessment (Refer 4.2.2) that it is spatially diverse supporting activities such as offices, commercial, residential, port activities etc. It is also a zone that has a lot of vacancies that can be used as potentials. This means that it would be the perfect choice of site to answer the main research question o: *"How can spatial design be used as a tool to enhance the potentials of the different groups using the central canal zone?"*, While utilizing the pattern languages from the previous chapter.

The design roots in the idea that spatial design can

change the social dynamics of the groups and users and can influence their interactions (p.6, Sennett, R. 2006).

The chosen site elaborates six patterns from the three different scales (Urban patterns, Neighborhood patterns and Objects).

Urban patterns

1) Community Boundary (Figure 90)

Neighborhood patterns

2) Heterogeneous spaces (Figure 91)

3) Potential attractors (Figure 92)

4) Walk by spaces (Figure 93)

Objects

5) Vacant spaces (Figure 94)

6) Underused spaces (Figure 95)



Figure 89. Choice of site



Figure 90. Community boundary

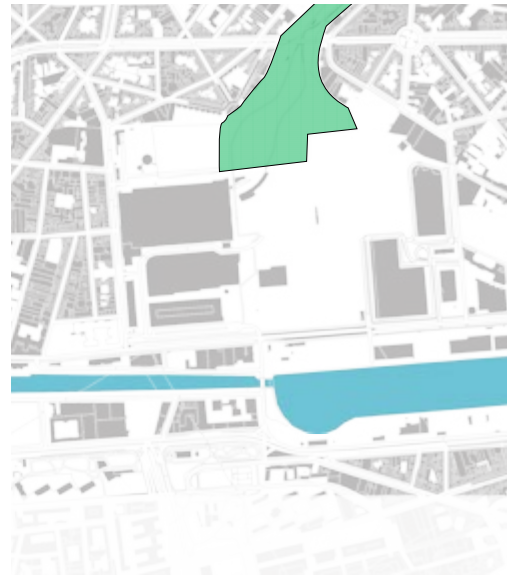


Figure 91. Heterogeneous spaces



Figure 92. Potential Attractor

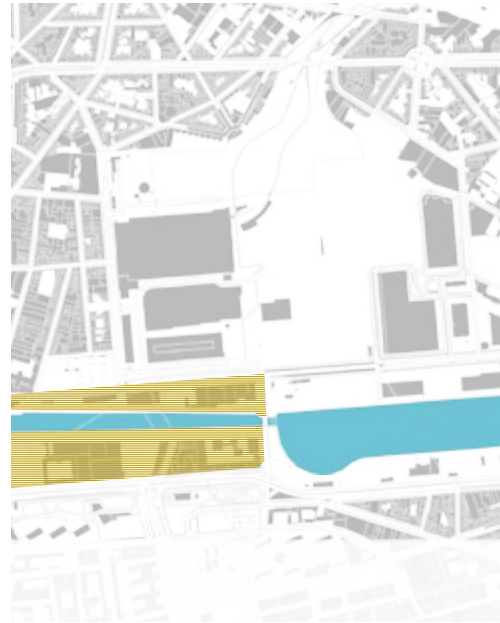


Figure 93. Walk by spaces



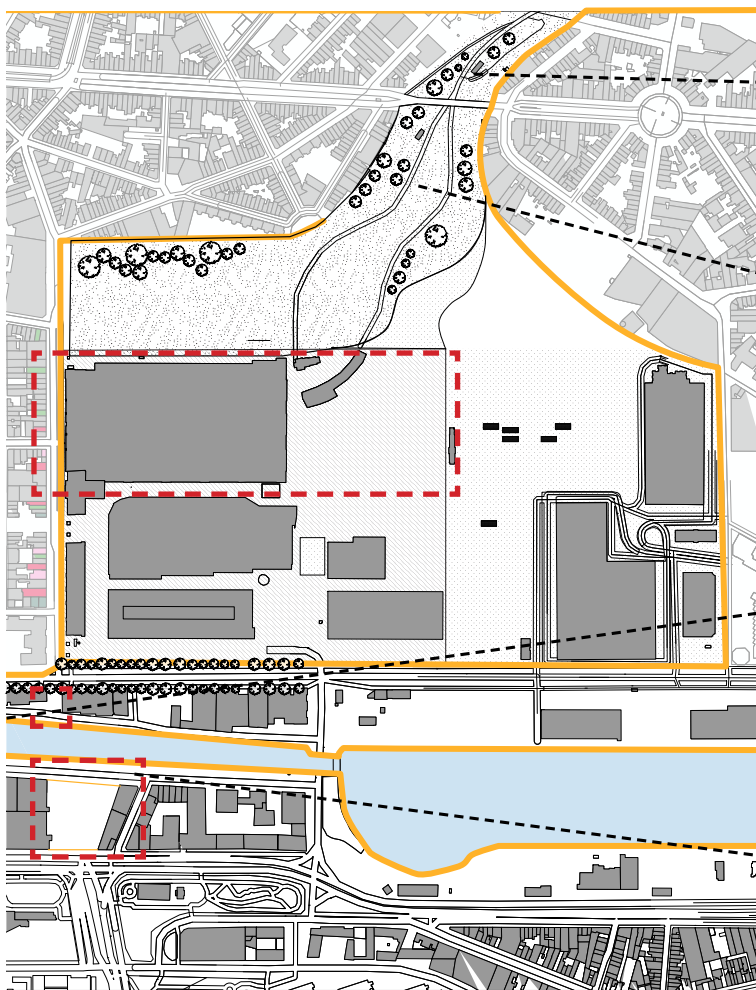
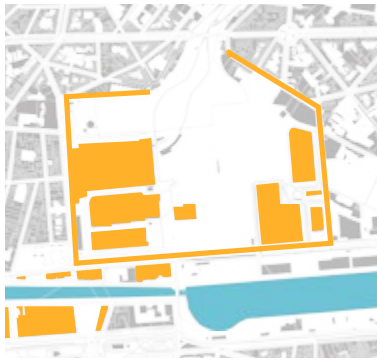
Figure 94. Vacant spaces



Figure 95. Underused spaces

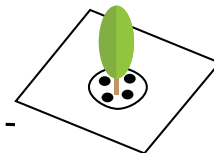


6.2 Tour and taxi as a community boundary



 Vacancies

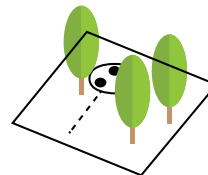
Figure 96. Existing value - tour and taxi



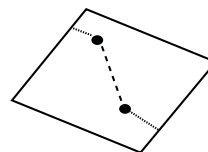
People gather in groups around recognizable spatial elements (Trees, statues, benches etc)



In space, people tend to be divided in social groups of belonging.



Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.



Unfocused interaction while walking



Figure 97. Existing group dynamics and interactions

6.2.1 Current situation - Tour and Taxi

The tour and taxi site can clearly be seen from figure 96 is part of the community boundaries pattern. The buildings and elements present in this area create a boundary between different communities (Figure 97). These boundaries separate the area into unconnected parts. The area is surrounded by factories on the North

and East and a large enclosed commercial unit on the south (Refer 4.2.1) which form rigid and non porous edges creating little or no opportunities for interaction. The Group dynamics and interactions for the area are known through the time lapse maps (Section 3.2.1). It is noted that only a few spaces support group interactions. Moreover, the vacancies in the area create voids that do not support any kind of interaction. (Figure 97)

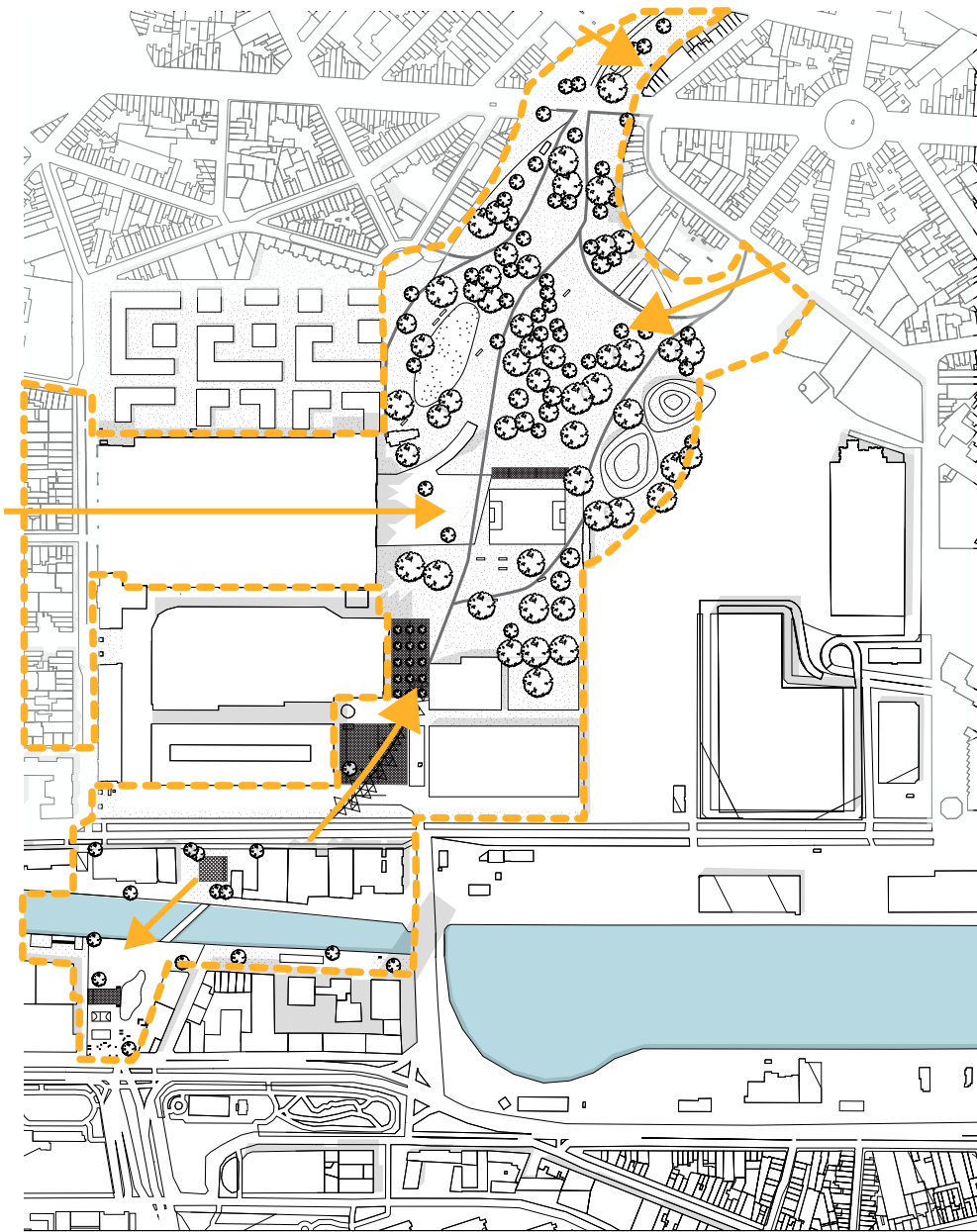


Figure 98. Map depicting porous boundaries and areas of access

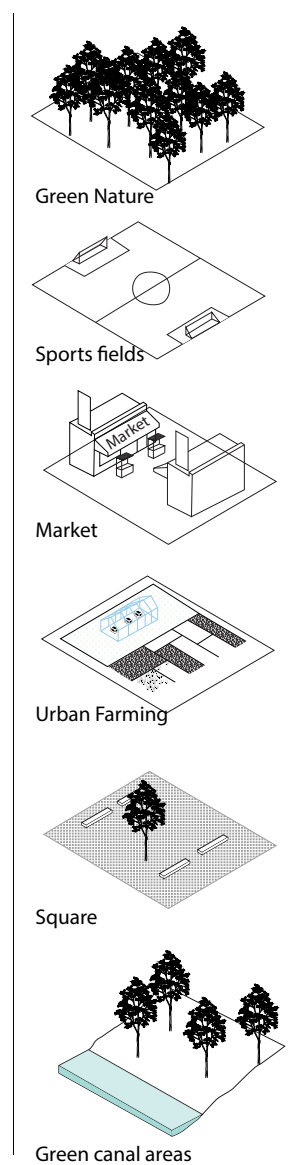


Figure 99. Activities included based on questionnaire

6.2.2 Design hypothesis - Tour and Taxi

The design hypothesis of the community boundaries pattern suggests that the existing rigid boundaries should be made more porous to include more common activity between neighborhoods. The design proposal takes advantage of the many vacancies and creates new public spaces between the communities, thus opening up the space creating more porous boundaries and increasing the social interactions (Figure 98). Opening up the boundaries creates many different kinds of spaces that support a variety of interactions (Figure 102). Com-

mon activities such as a market, sports fields, urban farming, areas of nature etc are introduced to the space based on results from the questionnaire (Figure 99). Therefore, this creates a series of places of activity that are well connected by a pedestrian network increasing the flow of people (Figure 101). The series of places move from a more natural area to a more urban area with each place reflecting this transition (Figure 100). The creation of more common space hosting common activities breaks the barriers allowing people to freely move within and between spaces, interacting not only within their group but also between groups.

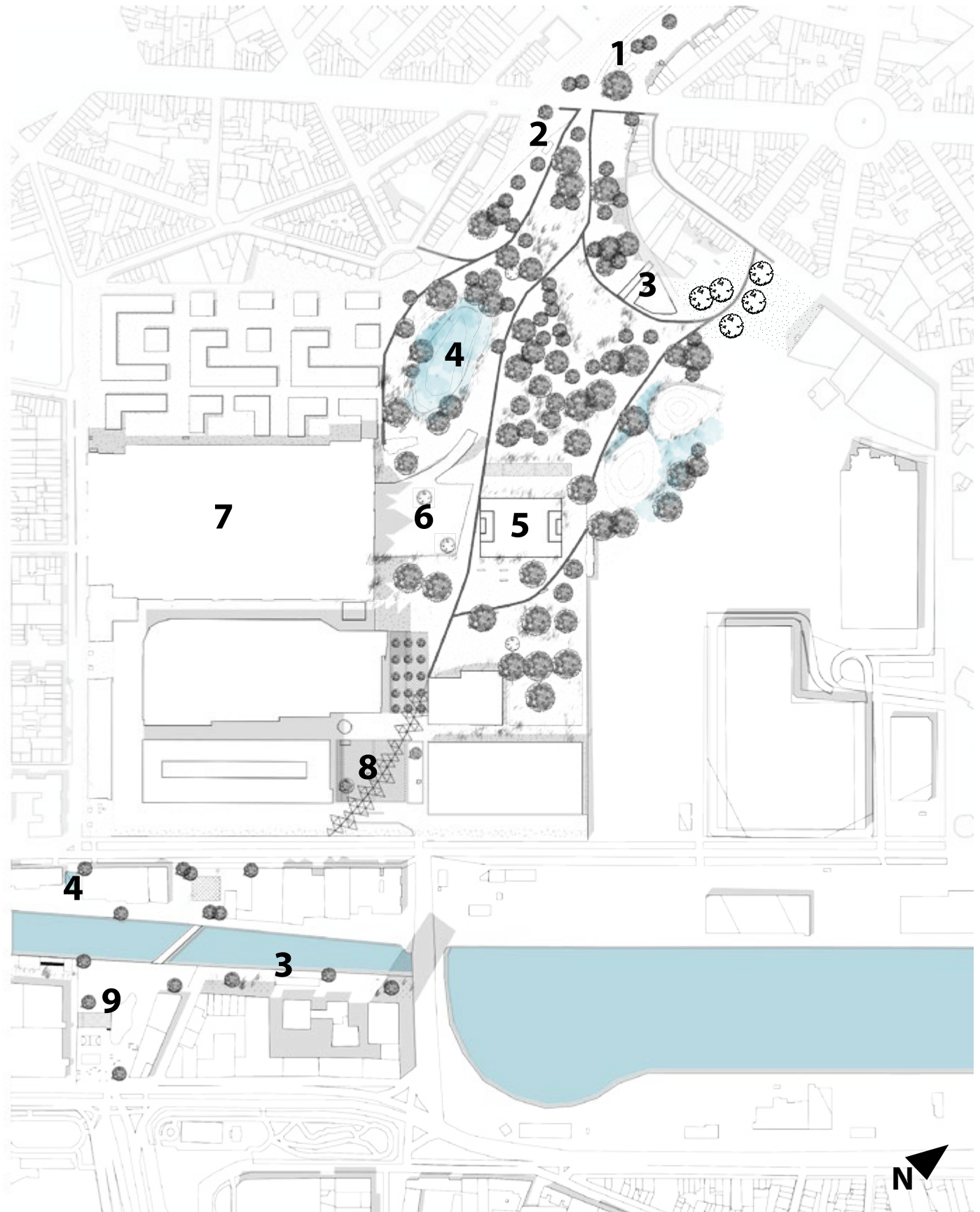


Figure 100. Masterplan showing activities at different public spaces moving from a more natural area to a more urban area

- | | | |
|------------------|--------------------|----------------------------|
| 1. Natural areas | 4. Water reservoir | 7. Market |
| 2. Amphitheatre | 5. Football field | 8. Public square |
| 3. Play area | 6. Urban Farming | 9. Beach volleyball courts |

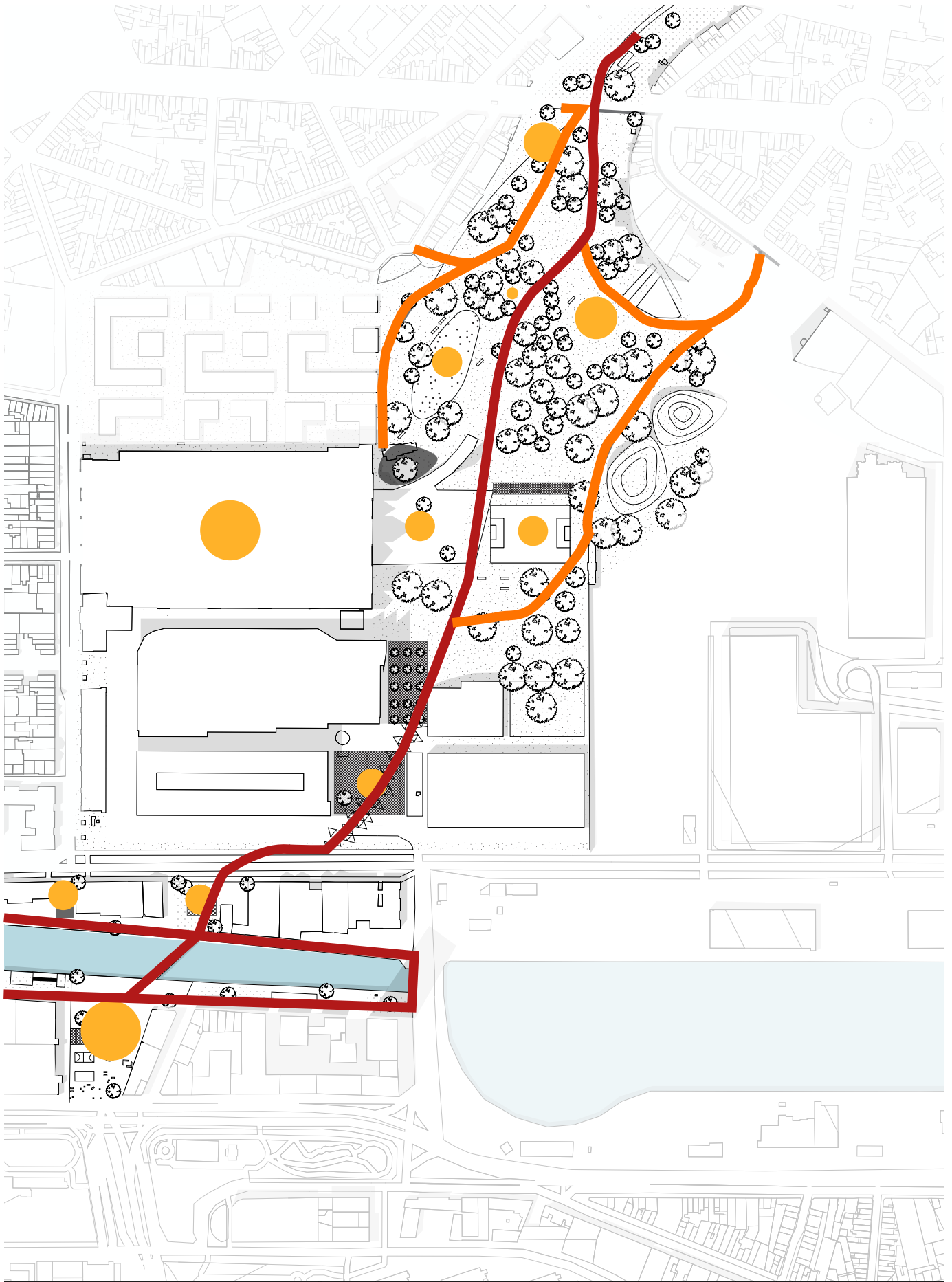
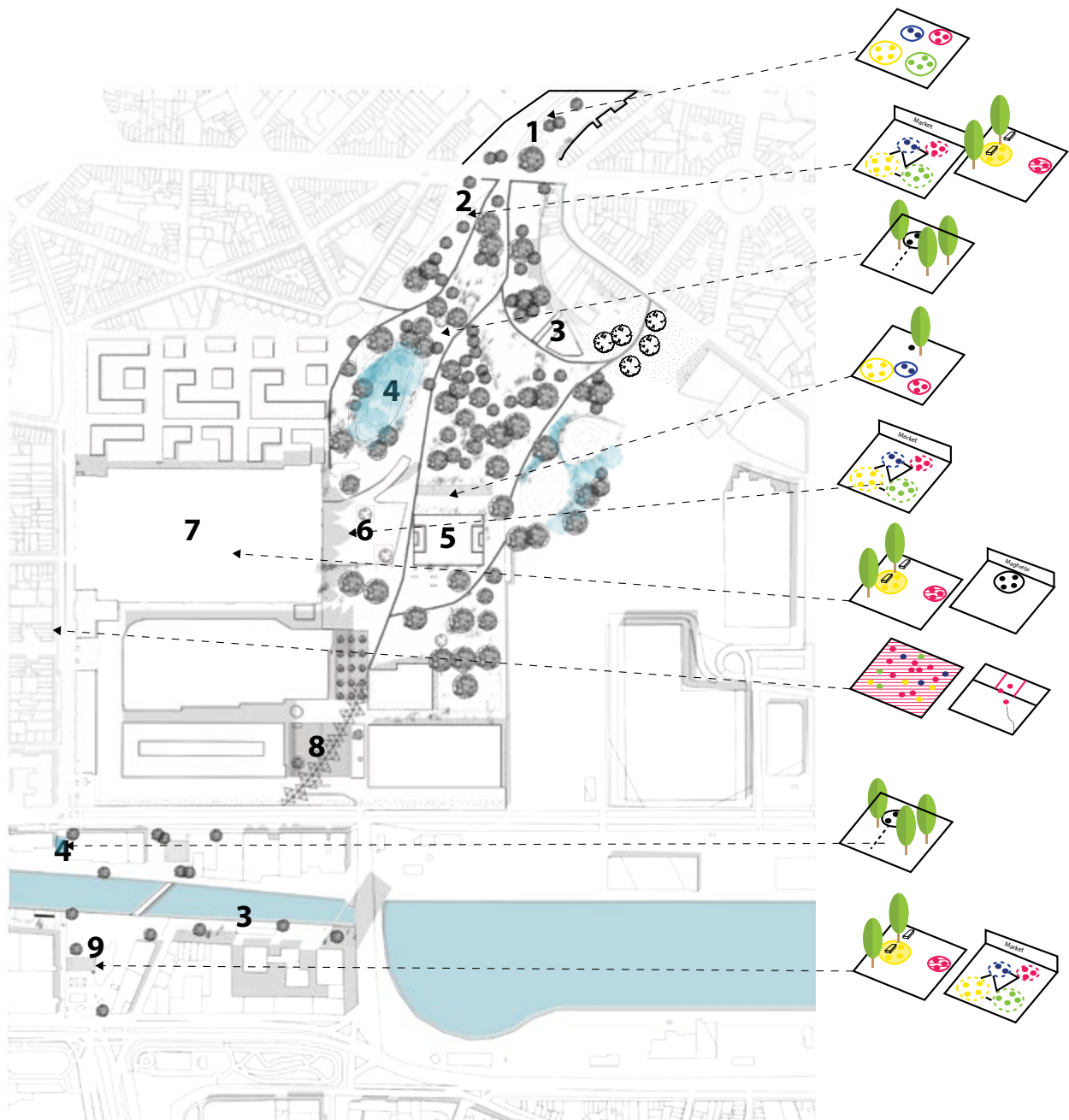




Figure 101. Masterplan showing Active zones and pedestrian connectivity



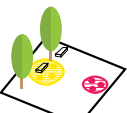


- 


In space, people tend to be divided in social groups of belonging




In social occasions many open groups gather and there is focused interaction between different social groups.

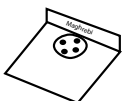


A loose or flexible space allows people to gather and to personalize the space according to their needs

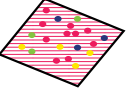


Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.
- 

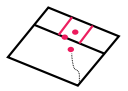
Individuals tend to sit around spaces with a lot of activity while still maintaining a degree of privacy.



Closed groups gather in a "usual" place



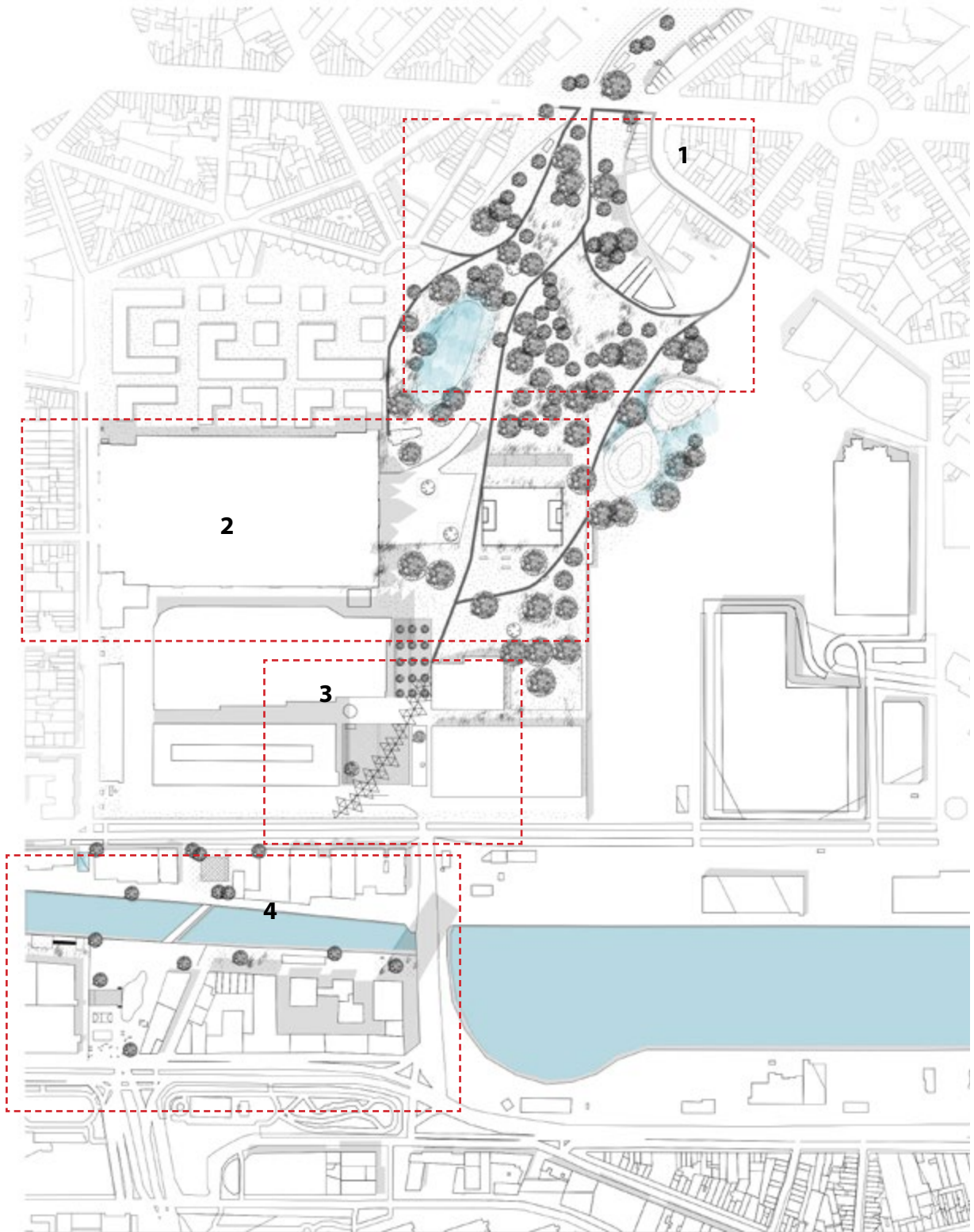
The prevailing social group of an area imprints its own social features into the public space through a personalization



Social groups recognize homogeneous shops as core for their collective life



Figure 102. Masterplan depicting the different types of interactions



- 1. The nature area
- 2. Commercial street
- 3. Entrance square
- 4. Waterfront



Figure 103. Masterplan depicting the different types of interactions

Based on the activities proposed and based on the existing patterns the design proposal can be divided into four different places: The nature area, Commercial street, Entrance square and the waterfront (Figure 103).

In the following sections each of these different places is elaborated, describing the existing patterns and elaborating the design proposal.

6.3 The Nature area

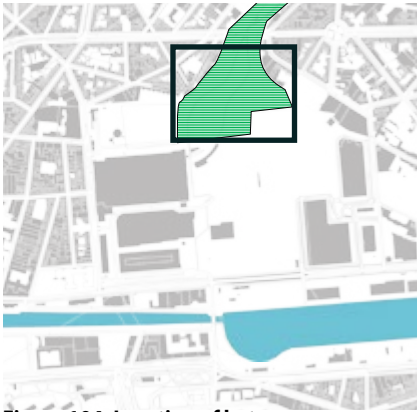


Figure 104. Location of heterogeneous spaces in tour and taxi

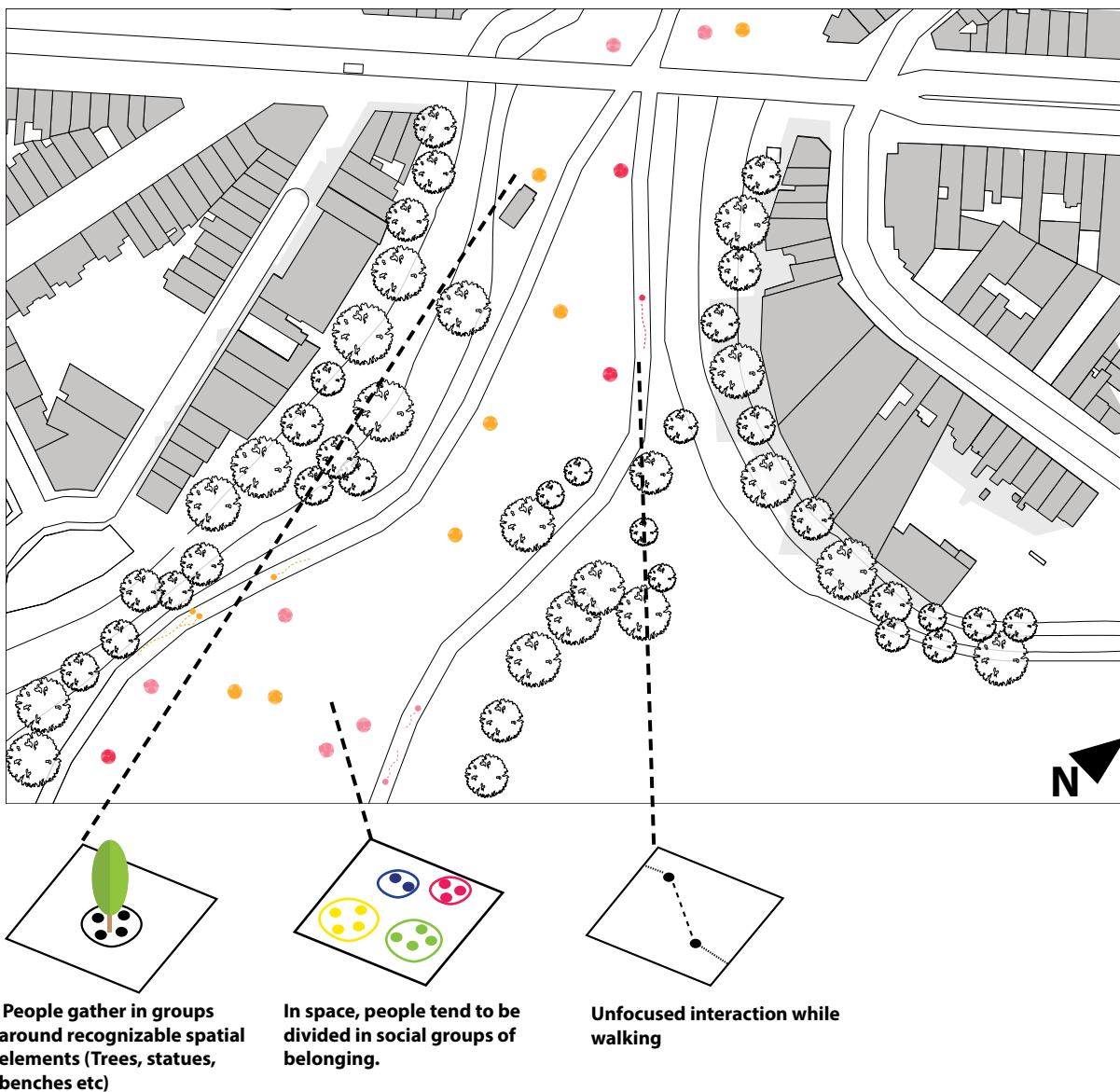


Figure 105. Map depicting existing situation and social interactions

6.3.1 Current situation

The Nature area in its current state is part of the homogeneous places pattern (Figure 104) and is a relatively active zone that is used by many different groups. The space is characterized by high social diversity and pedestrian flows. It is however seen that in space

people tend to be divided in closed groups of social belonging with few interactions between groups (Figure 105). Although the space is used by many different social groups, it does not cater to the different preferences of the groups. The site in its current condition is a large open green area with few opportunities for groups to personalize the space around them.



- Trees - nature areas
- Areas of activity (Open areas)
- ➔ Accessibility



Figure 106. Map of proposed design showing areas of activity within areas of green.

6.3.2 Design hypothesis - Nature area

The design hypothesis for the heterogeneous places pattern suggest to create flexible and loose spaces catering to all the different people using the space. For this purpose, the high diversity of the region is used as an advantage and many small places within the larger green spaces are created. These many different places create a flexible environment where people from different social groups can use different spaces and personalize it according to their needs. Apart from this, the flexibility of the design also helps increase the variety of social interactions, allowing more social occasions to occur resulting in increased social interactions between different social groups (Figure 98). The idea behind the

design is to create areas of activity inbetween areas of nature(Figure 106). The areas of activity have been designed to include features such as benches, play areas, water elements, quiet spots etc. as derived from the results of the questionnaire. Each of these areas of activity have been designed to accommodate different kinds of interactions (Figure 107). In the following pages the detail design of four of the identified spaces in the design will be elaborated (Figure 108):

- 1) The stepped seating area
- 2) The play area
- 3) The water reservoir
- 4) The quiet spots

The design of each of these places is made to support different activities and different types of interactions. The elements used in each space reflect this idea.

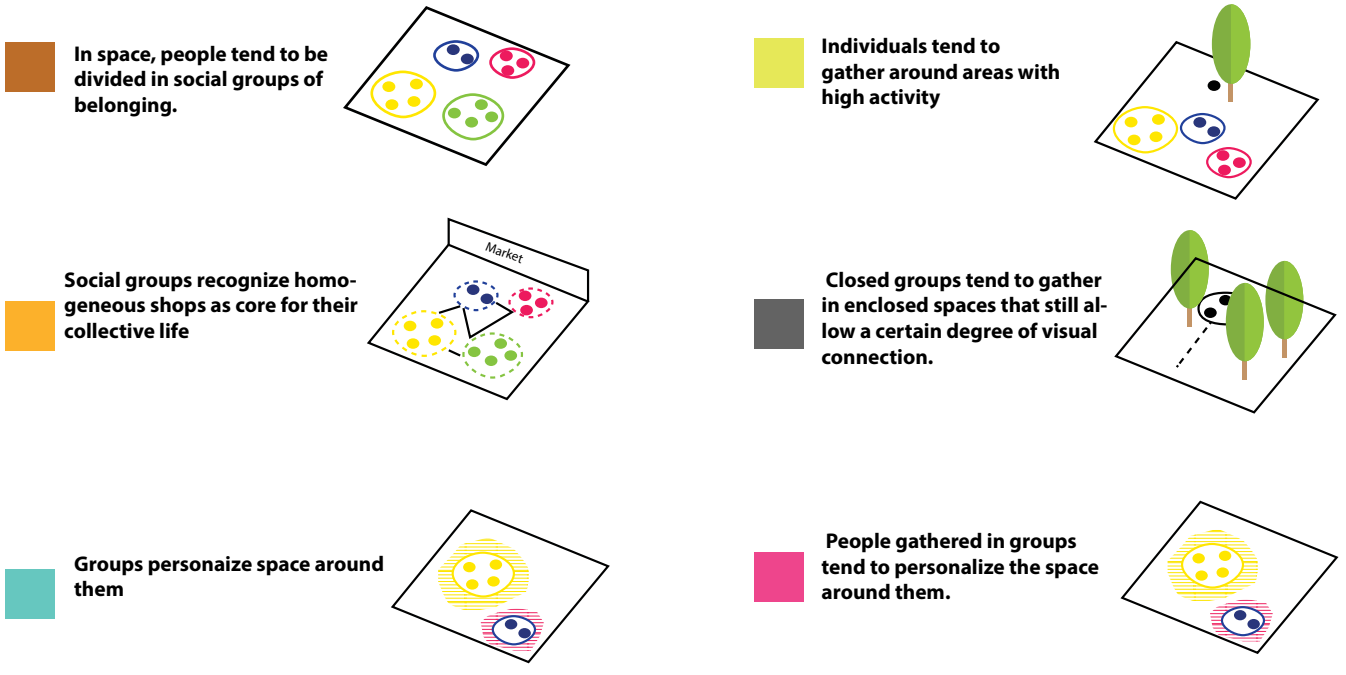
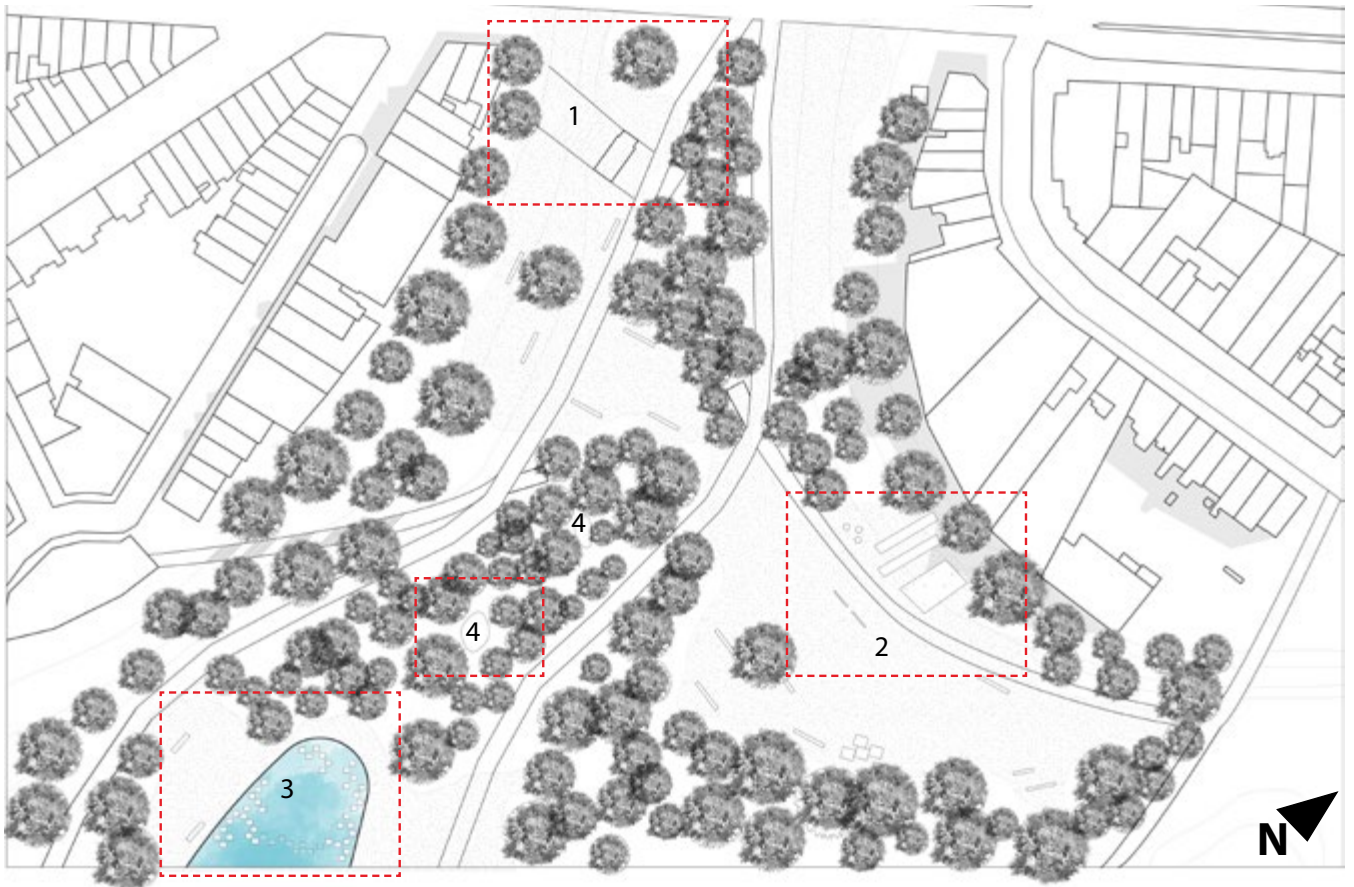


Figure 107. Map depicting the variety of social interactions that the each place supports



- 1. Stepped seating
- 2. Play area
- 3. Water reservoir
- 4. Sunken platforms

Figure 108. Map depicting functions of each of the smaller places created.



1. Semi-enclosed wooden platform
2. Main pathway
3. wooden planks attached to building
4. Existing building
5. Wooden steps
6. Line of populus nigra trees maintaining privacy of houses
7. Houses
8. Ginkgo Biloba tree acting as landmark



Figure 109. Map showing detail plan of the stepped seating area

The stepped seating

The stepped seating area is designed to accommodate different social occasions. It is designed as a flexible space that each social group can give a different meaning to. The existing slope of the area is taken as an advantage and wooden steps are introduced along this slope leading up to an existing brick ruin building (Figure 109). This building becomes a landmark that people can identify with. The steps become flexible and can be used on normal days for groups to gather and talk and for children to play (Figure 110), but, it can also function as a stage for music/theatre events (Figure 111). In such social occasions the wooden steps become seating and the existing building forms the backdrop to the stage. A thin strip of lighting under each wooden step illuminates the area during the night time. (Figure 112)

To the other side of the building, the wooden platform continues to form a raised platform on either side of the main pathway (Figure 109). Wooden planks attached to the building that step up to the roof of the structure

form flexible elements that can be used as steps, seating, tables etc. and forms the perfect setting for smaller groups to gather (Figure 111). Permeable concrete tiles line the main pathway creating small gaps that support the growth of grasses. (Figure 111)

The semi enclosed wooden platform (Figure 109) to the other side of the main pathway is partially enclosed by green and provides a quiet setting for individuals to contemplate amidst the tree cover, while still providing a certain degree of visual connection to the other areas of activity.

The trees to the top of the wooden stairs are populus nigra trees that act as a wall helping maintaining the privacy of the houses behind.

The tree to the side of the ruin building is a Ginkgo Biloba, which with its unique shape and its striking yellow leaves in autumn it reinforces the area as a landmark. (Figure 109)

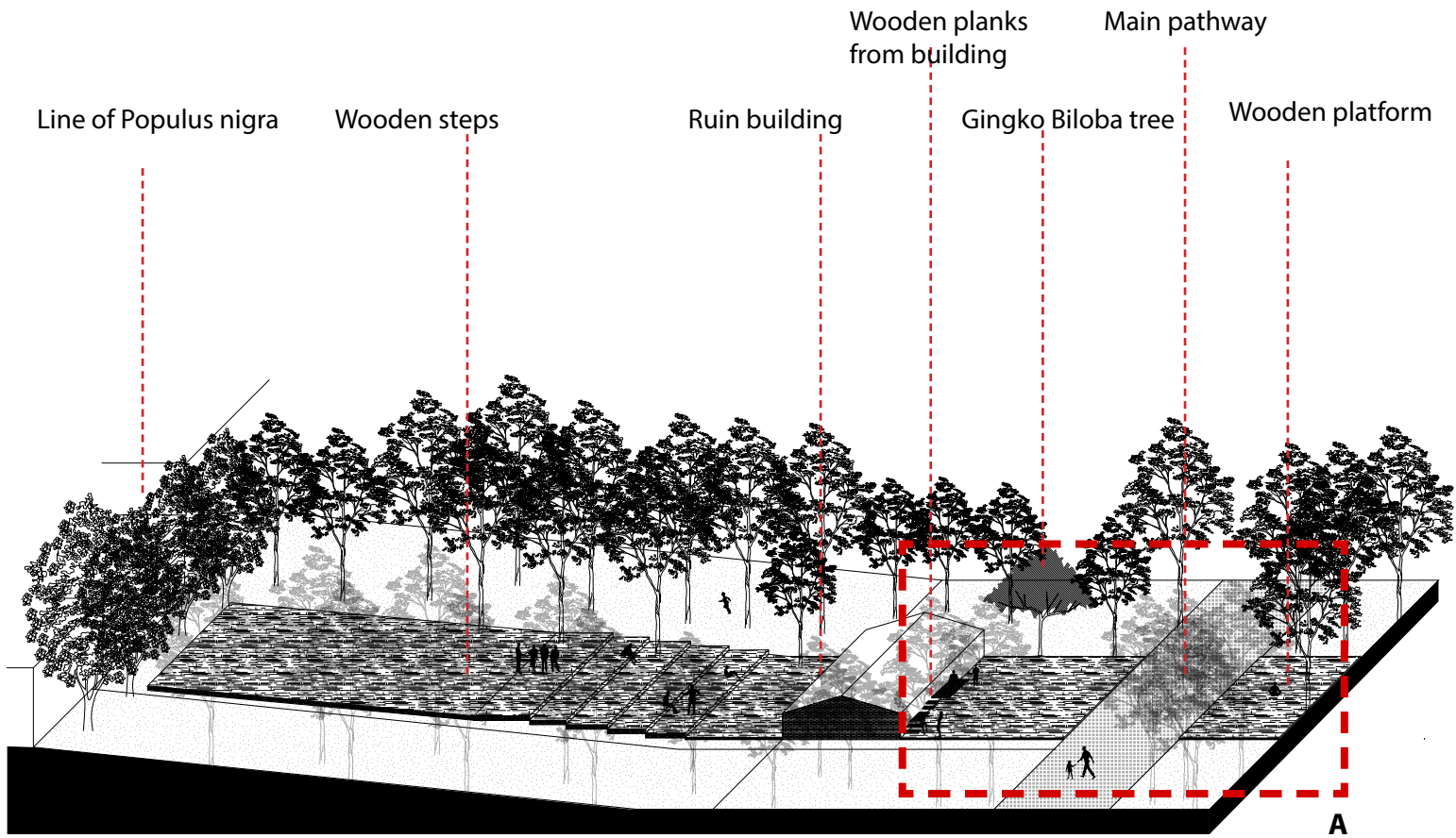


Figure 110. Section of the area showing activity during normal days

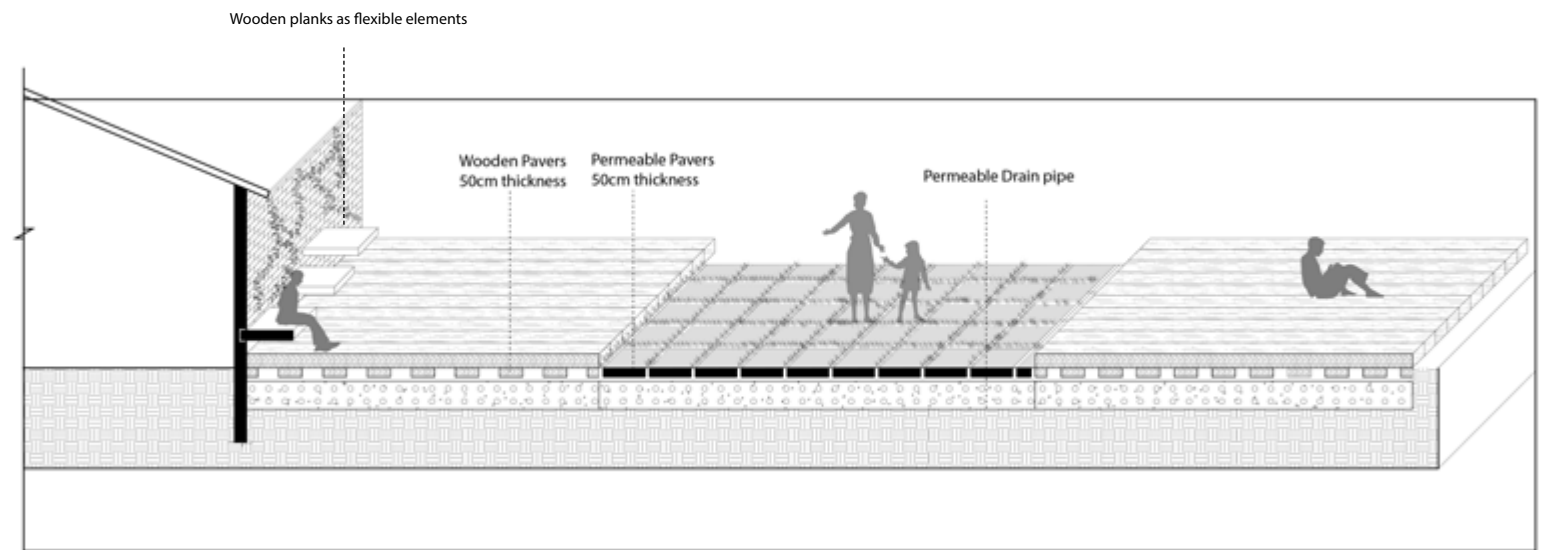


Figure 111. Detail A showing paving detail and wooden plank detail

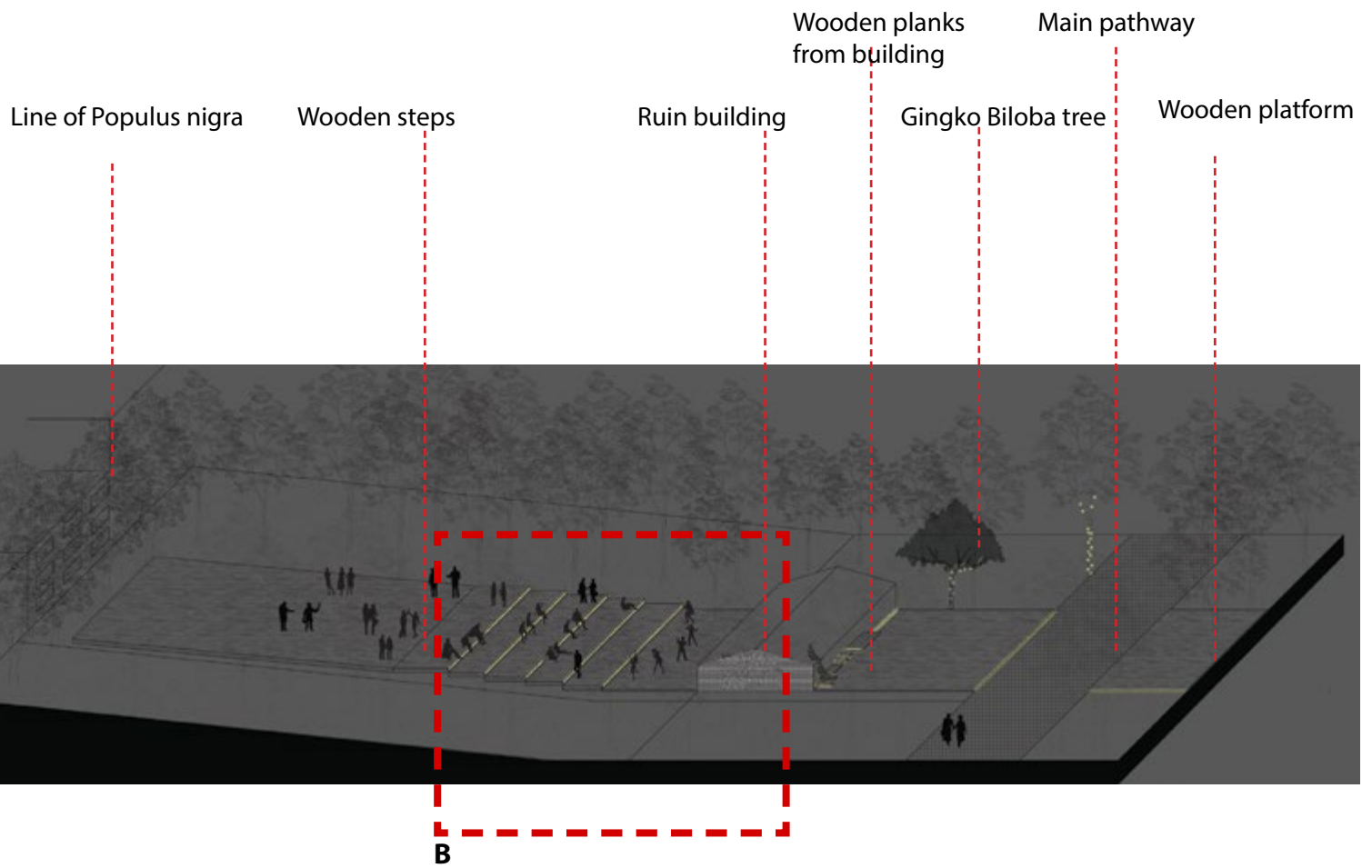


Figure 112. Section of the area showing activity during social occasions such as concerts, theatres etc.

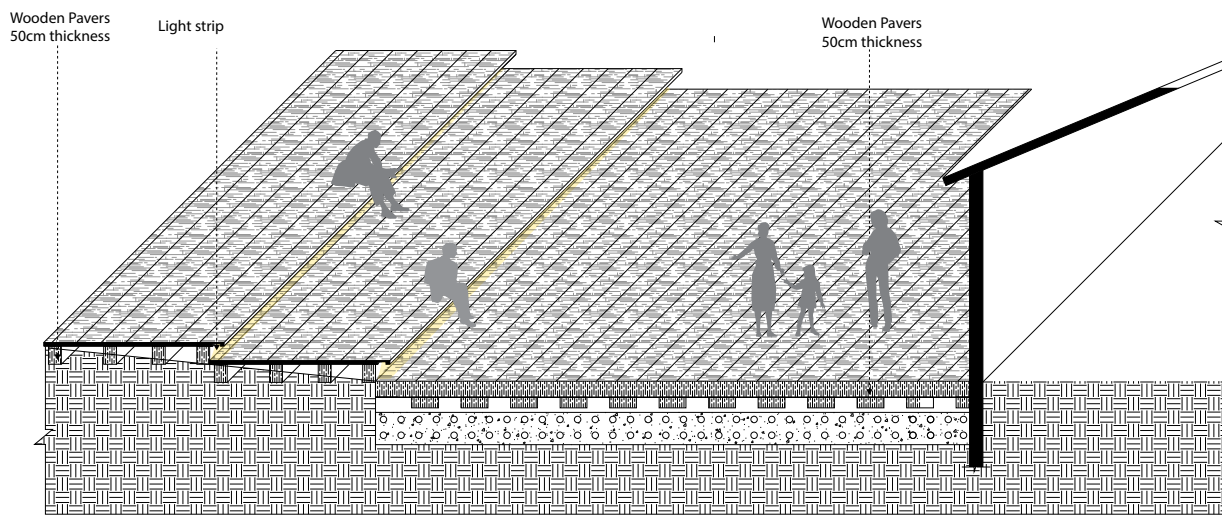


Figure 113. Detail of wooden steps showing inset lighting strips



- 1.Line of populus nigra trees maintaining privacy of houses
- 2.Trampoline
- 3.Slides
- 4.Wooden path

- 5. Swings
- 6.Quercus Robur tree for climbing
- 7. Wooden benches
- 8. Movable boxes to stack up and play



Figure 114. Map showing detail plan of the play area

The Play Area

The design of the play area utilises the existing slope to create interesting play elements for children. Slides, trampolines with nets and swings are introduced (Figure 114) . The play equipment is designed in a bright yellow colour contrasting to the green around the area. The play area is bounded by a wooden pathway on one end and a row of populus nigra trees on the other end (Figure 115). The populus Nigra trees as in the case of the stepped seating area are used to maintain privacy of

the houses behind. Benches from wood (Figure 116) are placed enclosing the area where parents while watching over their children can share stories and interact with fellow parents. The play area is placed in a clearing in the dense plantation of trees and is designed to have ample place for children to run around. A Quercus Robur tree or the English Oak is placed in the middle of the play area (Figure 115). With its low and sturdy branches it provides the perfect opportunity for children to climb, touch and feel the tree.

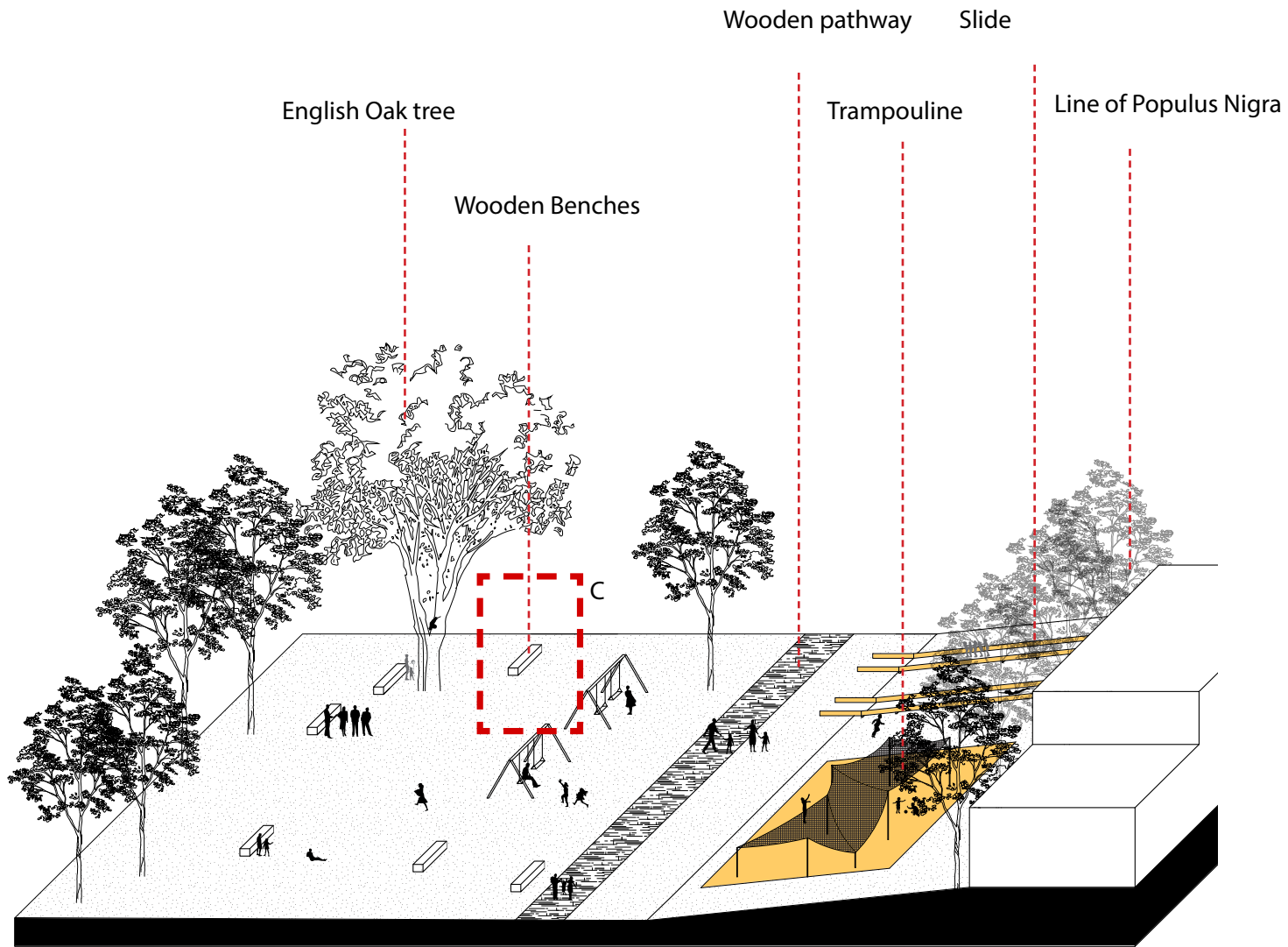


Figure 115. Detail showing play area with benches, slides, trampoulin and climbing tree

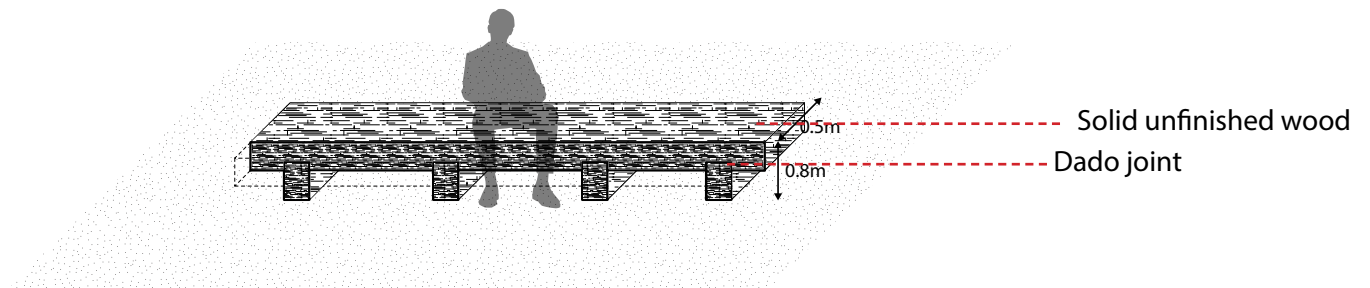


Figure 116. Detail C of wooden bench



- 1. *Alnus Glutinosa* trees
- 2. Main pathway
- 3. *Asclepias incarnata*

- 4. Bulrush
- 5. Concrete blocks as stepping stone
- 6. Small clearing surrounded by trees



Figure 117. Map showing detail plan of the water reservoir

The Water Reservoir

The design of the water reservoir area utilizes the slope of the area that allows for water to collect naturally. A water reservoir is constructed that collects rain water during the rainy seasons and acts like a pond (Figure 117). This provides for ample play opportunities and creates a unique environment.

The pond area is designed to have many small concrete blocks that act as stepping stones when the pond is full (Figure 118). In the dry season they become seats and a

play area for kids. (Figure 119)

This region is planted with species that thrive in moist conditions. The planting follows a gradient, with the *alnus glutinosa* trees at the top of the slope, the *Asclepias incarnata* in the higher part of the wet area and the bulrush plant in the moist areas. (Figure 118)

The *Asclepias incarnata* is a flowering plant and explodes with color between the months of June and August adding vibrant colours to the area during this period.

Alnus Glutinosa
Moist Soil tree

Bulrush
Rich nutrient
moist soil plant

Asclepias incarnata
Moist soil flowering
plant

Concrete blocks used as
stepping stones

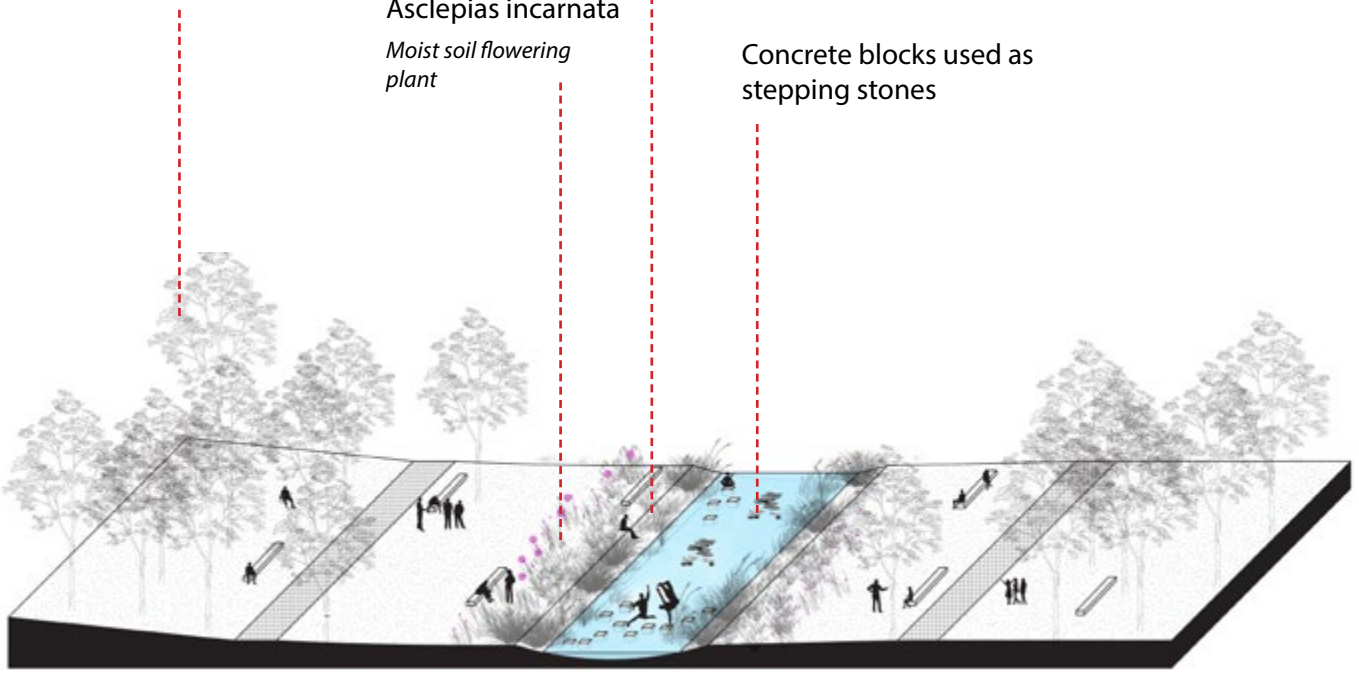


Figure 118. Section showing pond during rainy season

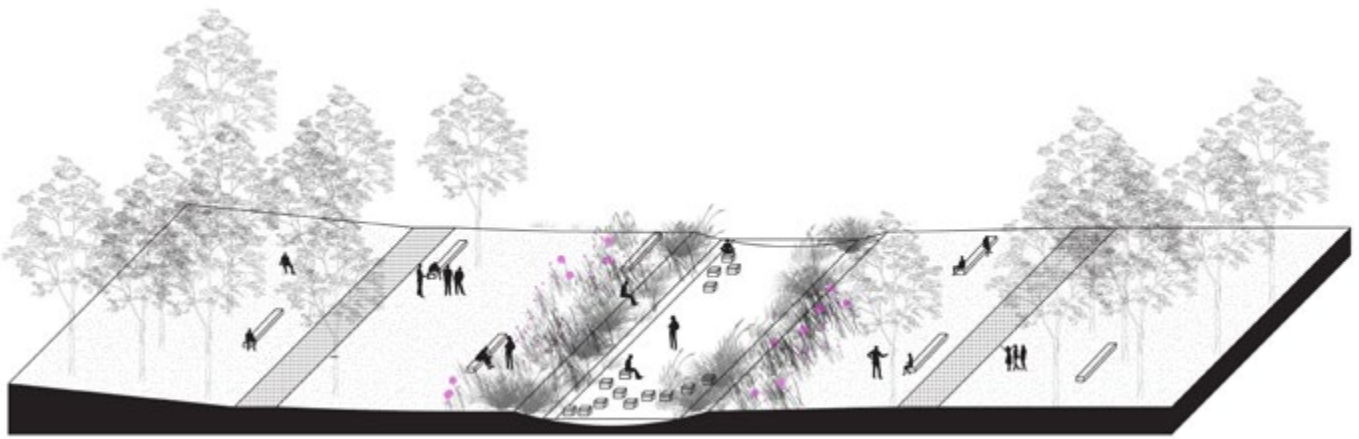
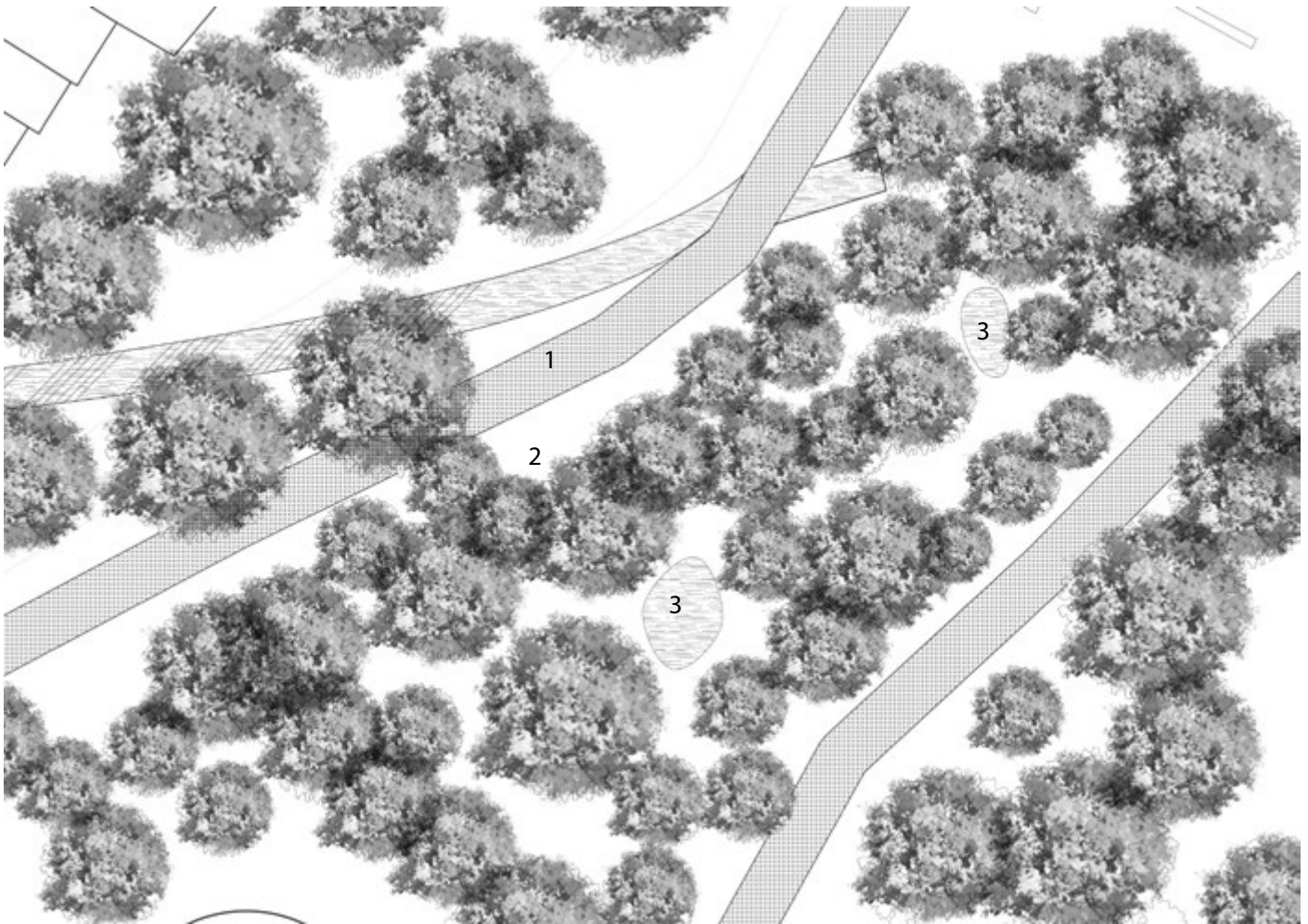


Figure 119. Section showing pond during dry seasons



- 1. Main pathway
- 2. Thicket of trees
- 3. Sunken wooden platform



Figure 120. Map showing detail plan of the sunken platforms

Sunken Platforms

In an area vibrant with activity, the sunken platforms aim to create quieter spots for people to unwind and relax away from the activity (Figure 120). The spots are chosen inside thickly planted tree covered areas. There are no pathways that lead to these spots but are rather found by surprise on exploring the tree covered areas. The absence of a formal path truly keeps these spots a secret, creating places of quiet. The depression formed due to the existing slope of the area is utilised to place

wooden sunken platforms. These sunken platforms are below the ground level and create an atmosphere of being within and inside nature (Figure 121) . These sunken platforms create the most direct connection between users and nature. The structure is supported by wooden beams anchored and held to the ground by clamps. over this beam structure the wooden platform is placed. (Figure 122)

As the density of trees increases over the years a more number of these sunken platforms can be introduced.

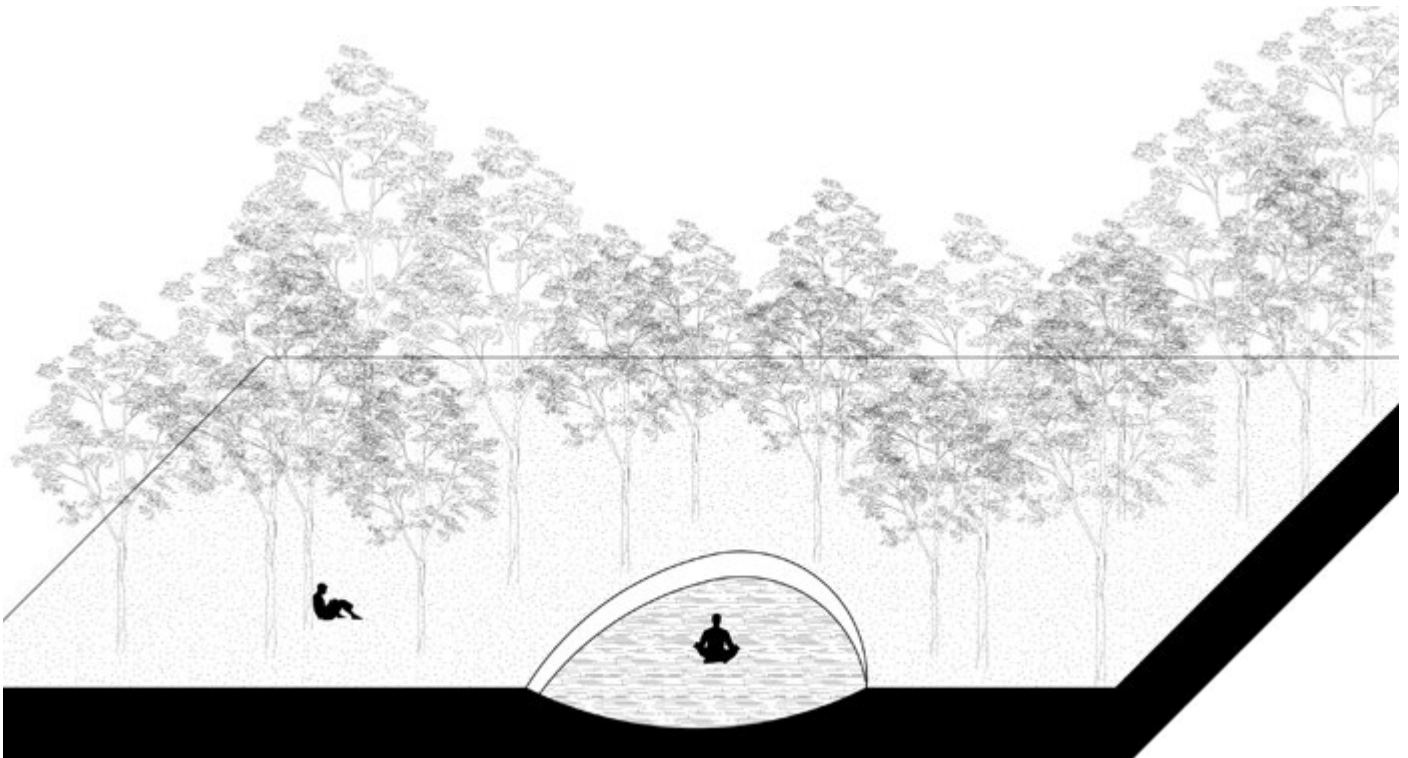


Figure 121. Section of sunken platform in the midst of thick growth of trees

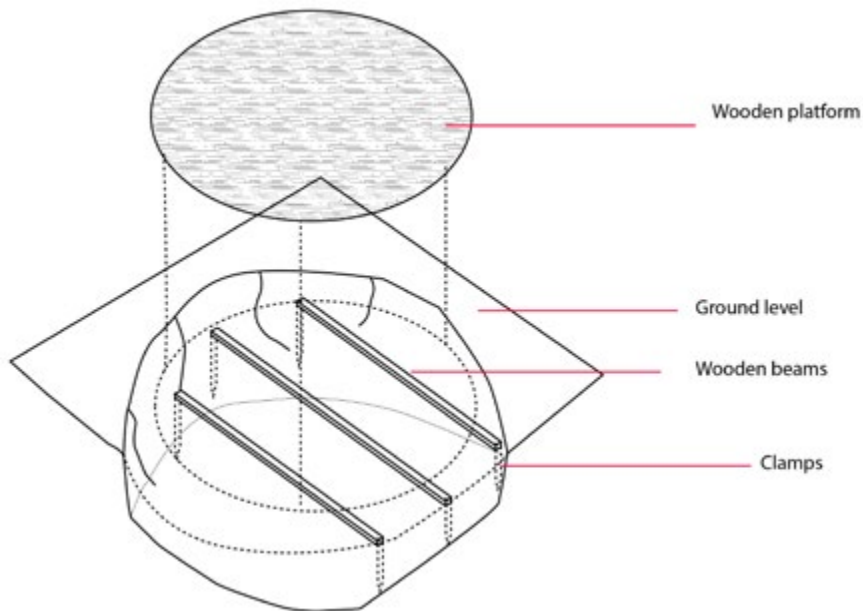


Figure 122. Construction detail of sunken platform

6.4 Commercial street

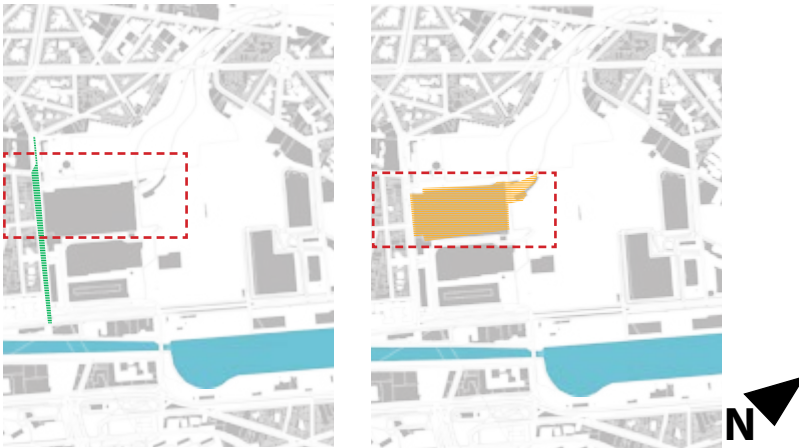


Figure 123. The potential attractor pattern and the vacant space patterns that are found in the area

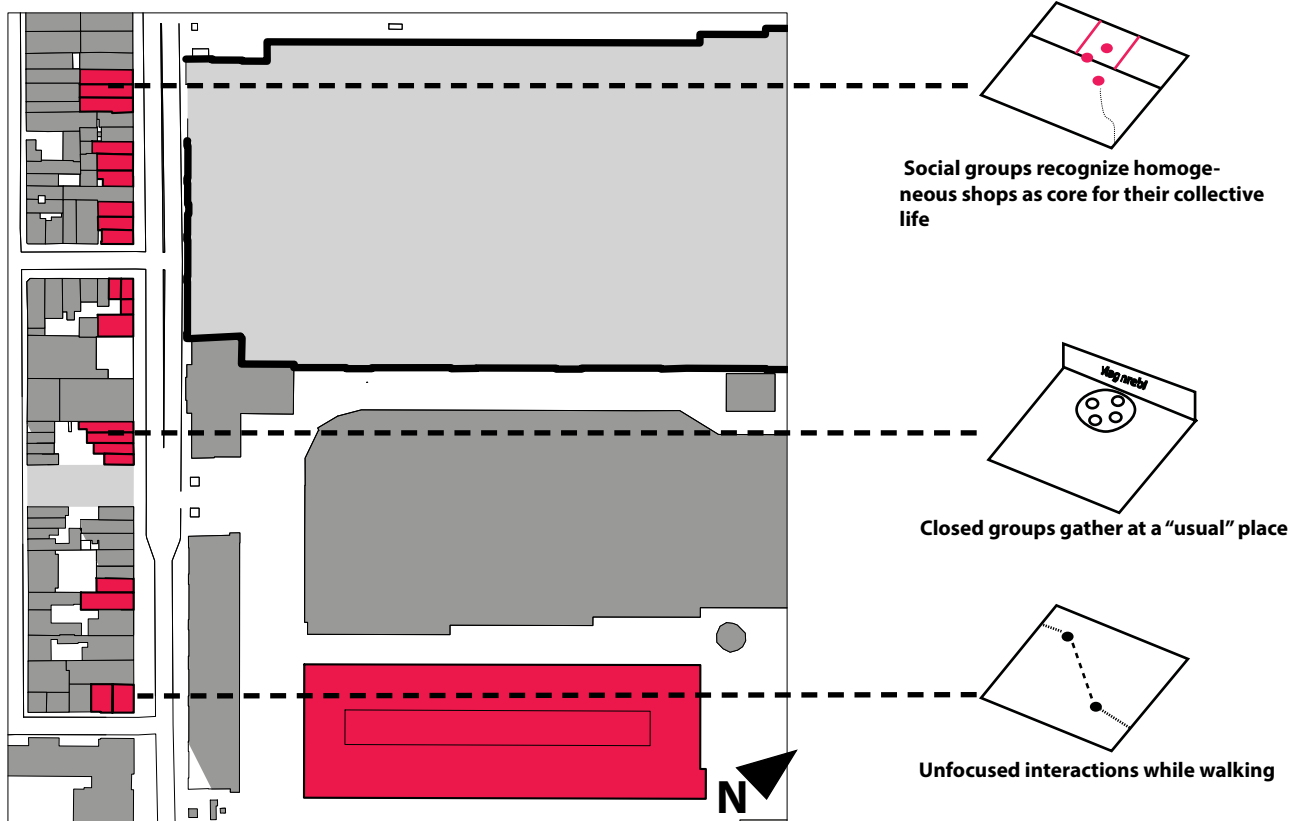


Figure 124. Map depicting current situation with the social interactions that the space supports

6.4.1 Current situation

The next part of the design is the commercial street. It is an area between the more natural area the more urban area of the design. The commercial street area in its current state is part of two patterns: The potential attractors pattern and the vacant space pattern (Figure 123). Although the area is characterized by moderate amounts of commercial and pedestrian activity, it is still

not being used to its full potential (Figure 124). The North African group being the prevalent group in the area have personalized the space and included shops based on their needs. Although this area has some amount of commercial activity, it is also characterized by some very large vacant spaces. These vacancies create voids that do not support any kind of social interaction. (Figure 124)



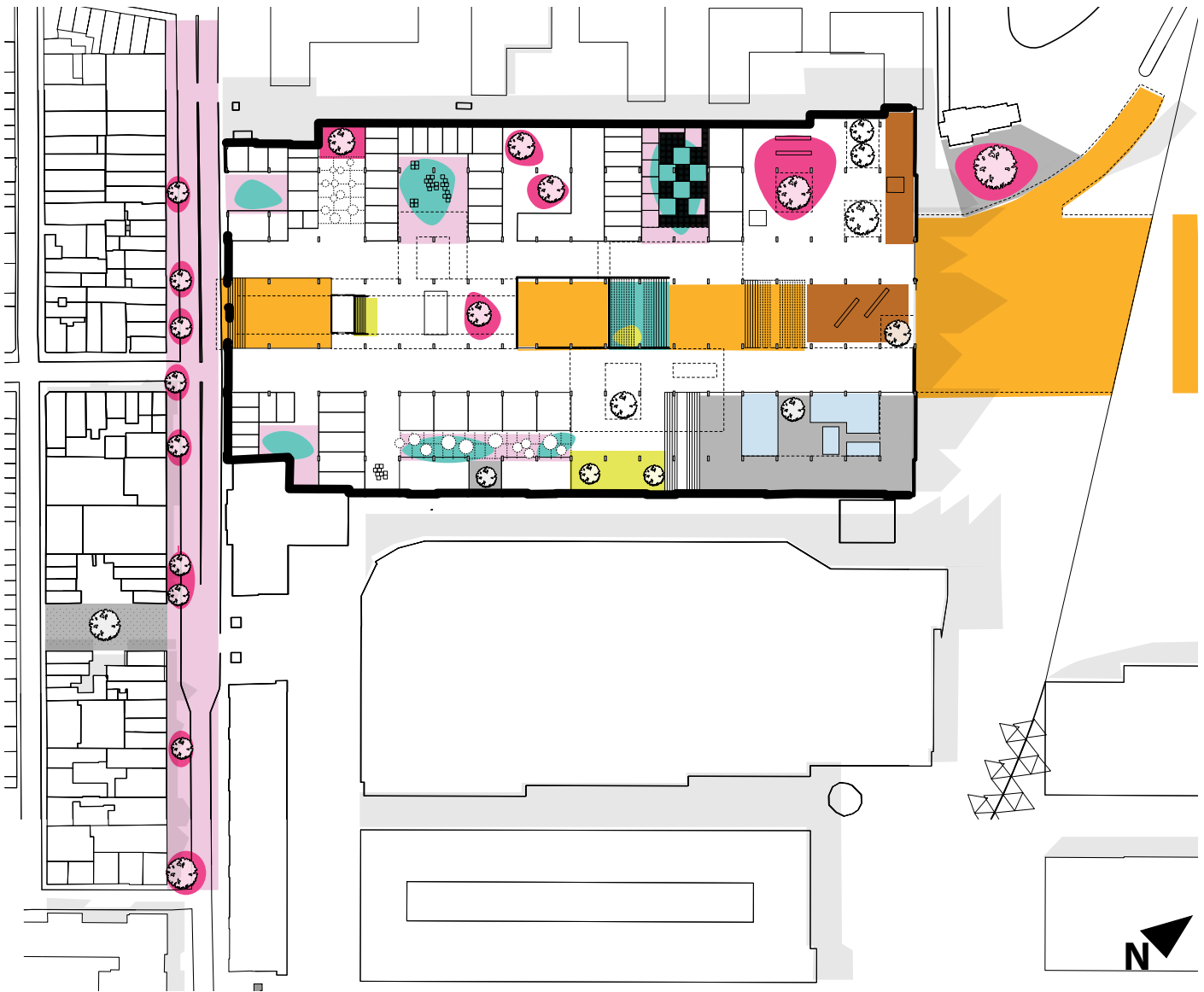
Figure 125. Map of proposed design with major pedestrian connections to increase the flux of people

6.4.2 Design hypothesis - Commercial street

Since the area is part of the Potential attractors pattern and the vacant space pattern, the design aims to enhance the spatial qualities of the public space in order to attract new private investments. The vacancies are utilised to bring in new commercial activity and to increase the flow of people. (Figure 125)

The design of the potential attractor street (Figure 127) is intentionally left minimal in order for the shop owners/ individuals to change their own properties. Trees with benches are introduced outside shops to act as recognizable spatial elements around which groups using the shops can gather (Figure 126). The vacancy in

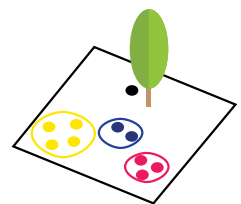
the area is utilized to create a food market (Figure 127), which also functions as a community passage. The food market is designed to welcome new commercial and professional activity into the area. The food market is designed as a public building supporting many public activities that can be used by the communities in the neighborhood. The idea behind the design is to increase the flux of people using the space so as to truly make it a place where people can meet, greet and interact with one another (Figure 126). In the following sections the design for the potential attractor street and the food market are briefly described.



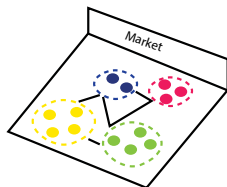
In space, people tend to be divided in social groups of belonging.



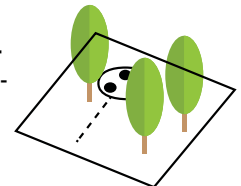
Individuals tend to gather around areas with high activity



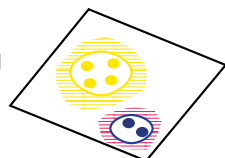
Social groups recognize homogeneous shops as core for their collective life



Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.



Groups personalize space around them



People gathered in groups tend to personalize the space around them.

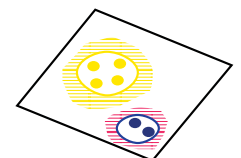
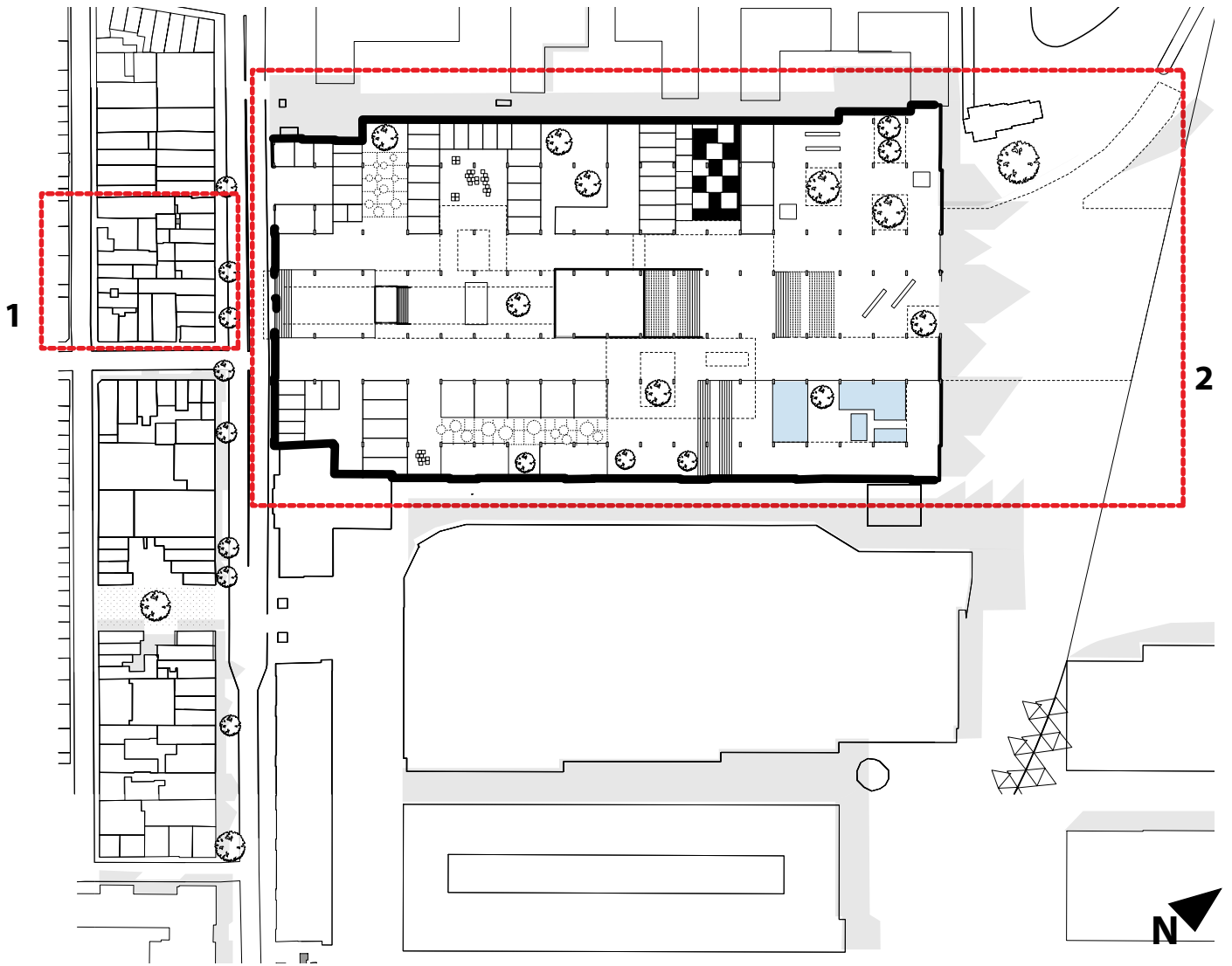


Figure 126. Map depicting the variety of social interactions that each place supports



- 1. Potential attractor street
- 2. Food Market

Figure 127. Map indicating the potential attractor street and the food market

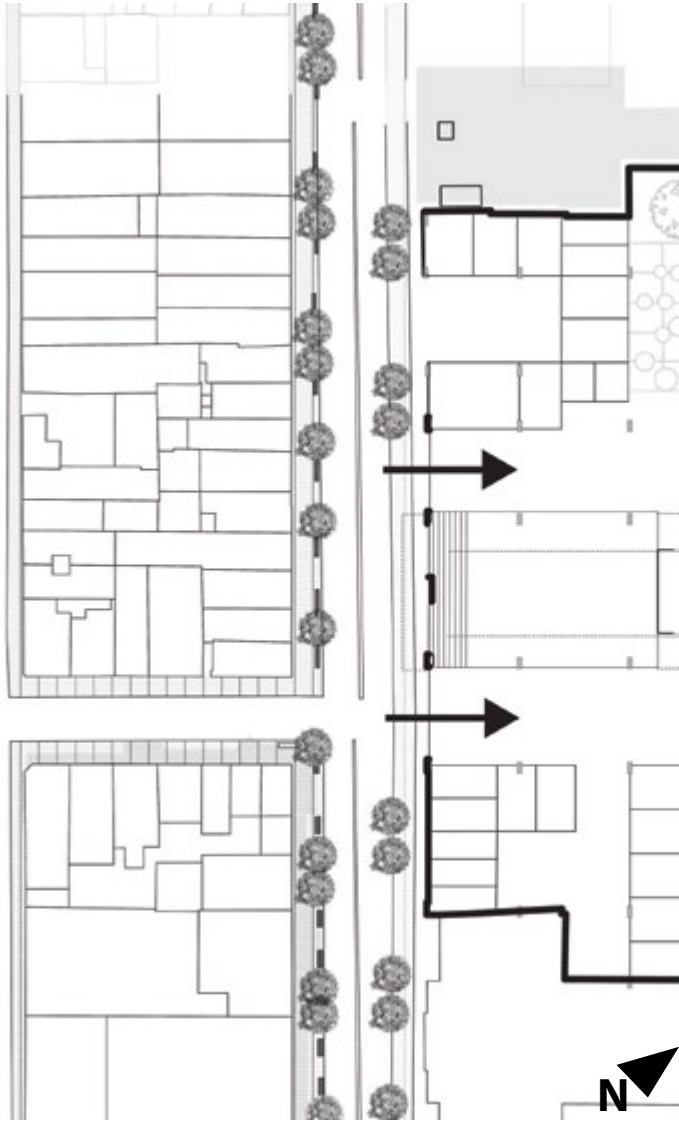


Figure 128. Plan of potential attractor street

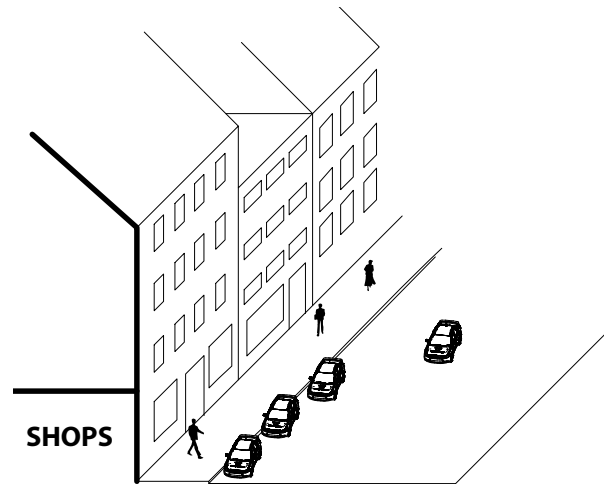


Figure 129. Section of existing potential attractor street having uninteresting spatial quality.

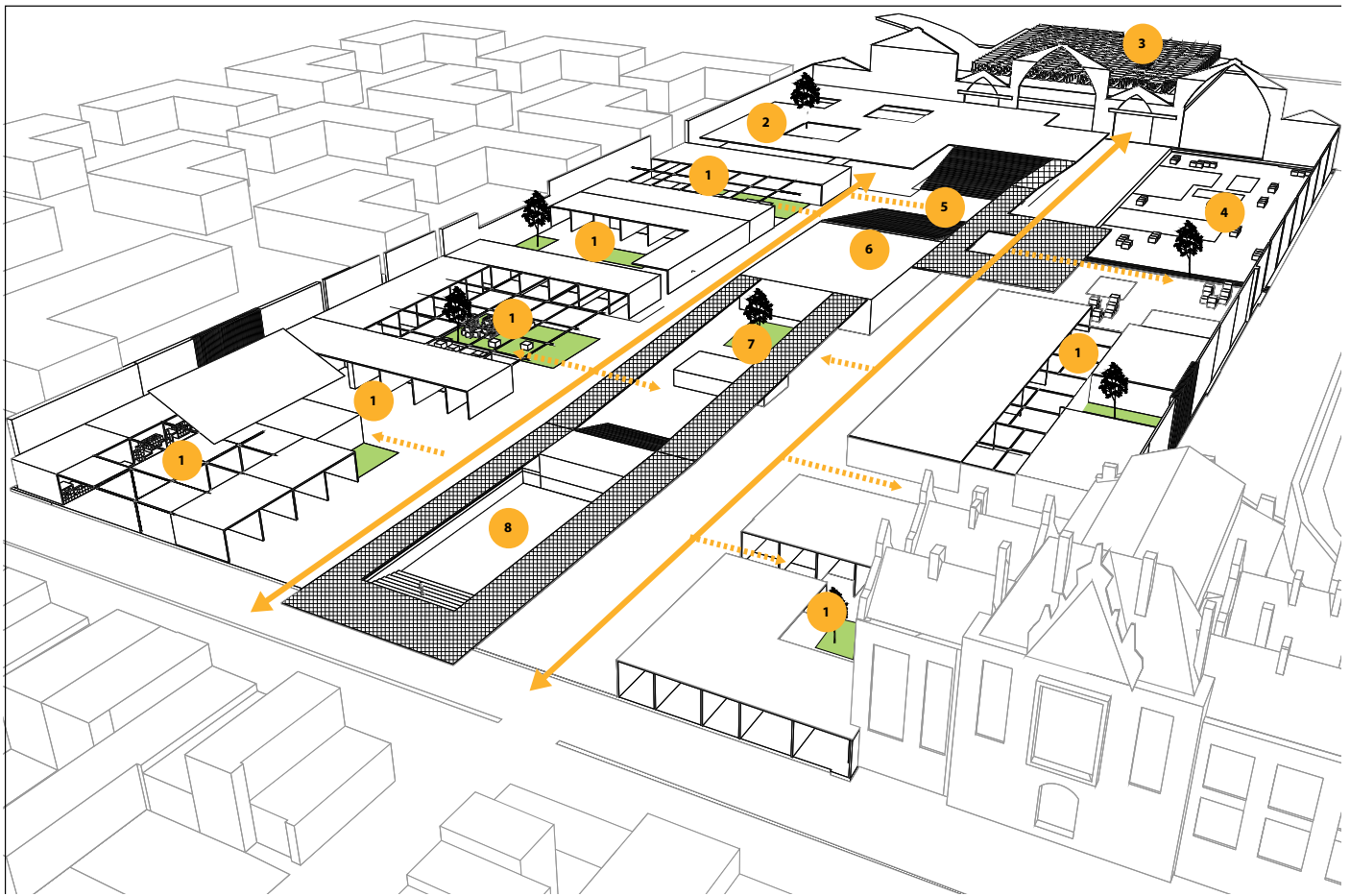


Figure 130. Section of proposed potential attractor street showing trees and benches as recognizable elements and shop owner personalization

6.4.3 Potential attractor street

The street is designed to enhance the pedestrian experience by improving the spatial qualities of the street. In the current condition, pedestrian activity is not given priority (Figure 129). The side walk is widened to accommodate benches and trees that act as elements around which groups frequenting the shops on the

street can gather (Figure 128). The design is intentionally left minimalistic allowing for shop owners to personalize their own shop fronts (Figure 130). This creates an interesting street for pedestrians and therefore improves the pedestrian activity. By improving the spatial qualities of the street, it also becomes more attractive for new commercial activity to open up. This creates a vibrant commercial street.



- | | | |
|---------------------------------|---------------------------|-----------------------------|
| 1. Shop courtyards | 4. Sunken plaza | 7. Play area |
| 2. Indoor cafe | 5. Indoor stepped seating | 8. Sunken community theatre |
| 3. Multipurpose semi open space | 6. Workshop area | |

Figure 131. Drawing shows the two major axes and the different courtyards to either side of them

6.4.4 Food Market

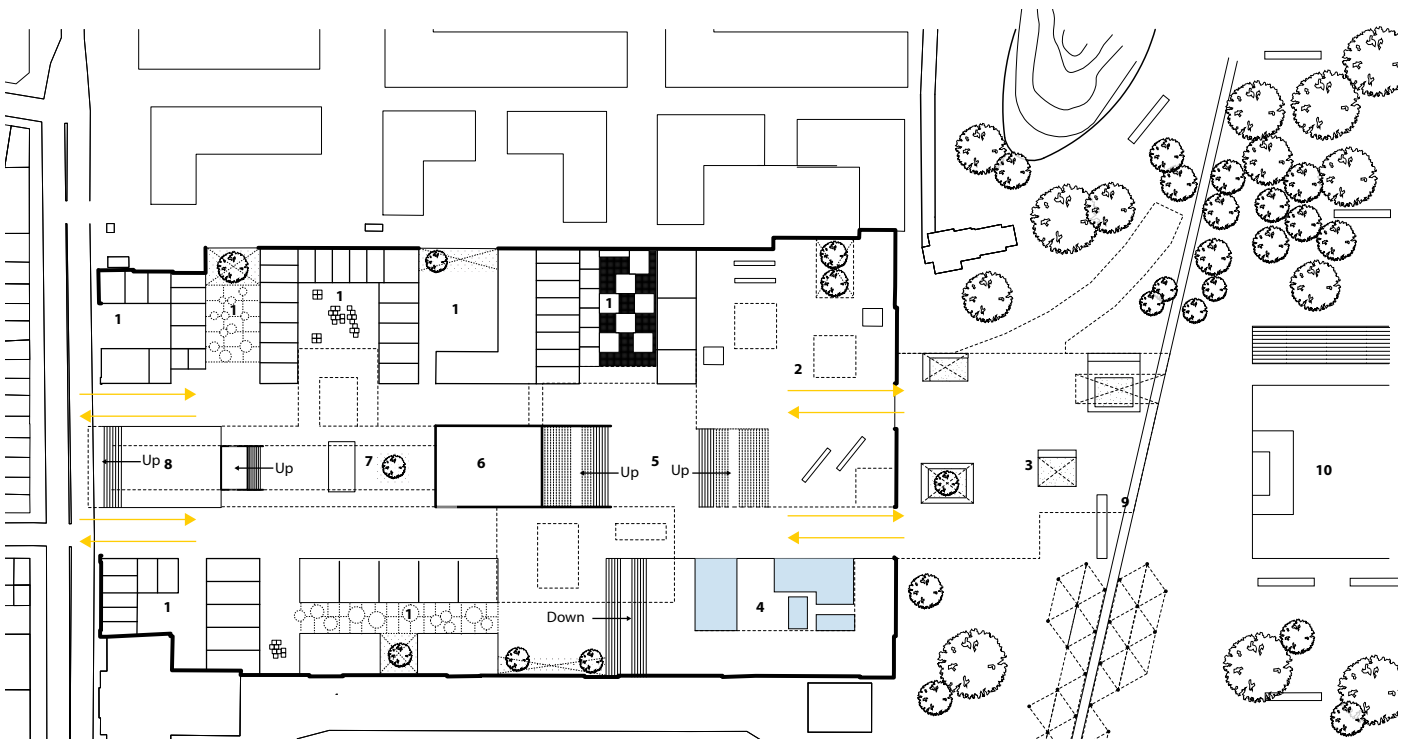
The food market as mentioned earlier is designed to welcome new commercial activity into the area. The market is designed to have two major axis acting as streets leading through a variety of different spaces (Figure 131). Introducing “streets” connecting the main commercial backbone to the neighborhoods would increase the flux of people while it also becomes a place for social interaction.

The space is designed to have the two axes leading off to various courtyards around which are clusters of shops (Figure 132). The central spine, between the two main axes is designed with spaces such as a sunken plaza (Figure 132) that support many social occasions where people from different groups, neighborhoods

and communities can gather. The food market apart from being a market also become a community passage.

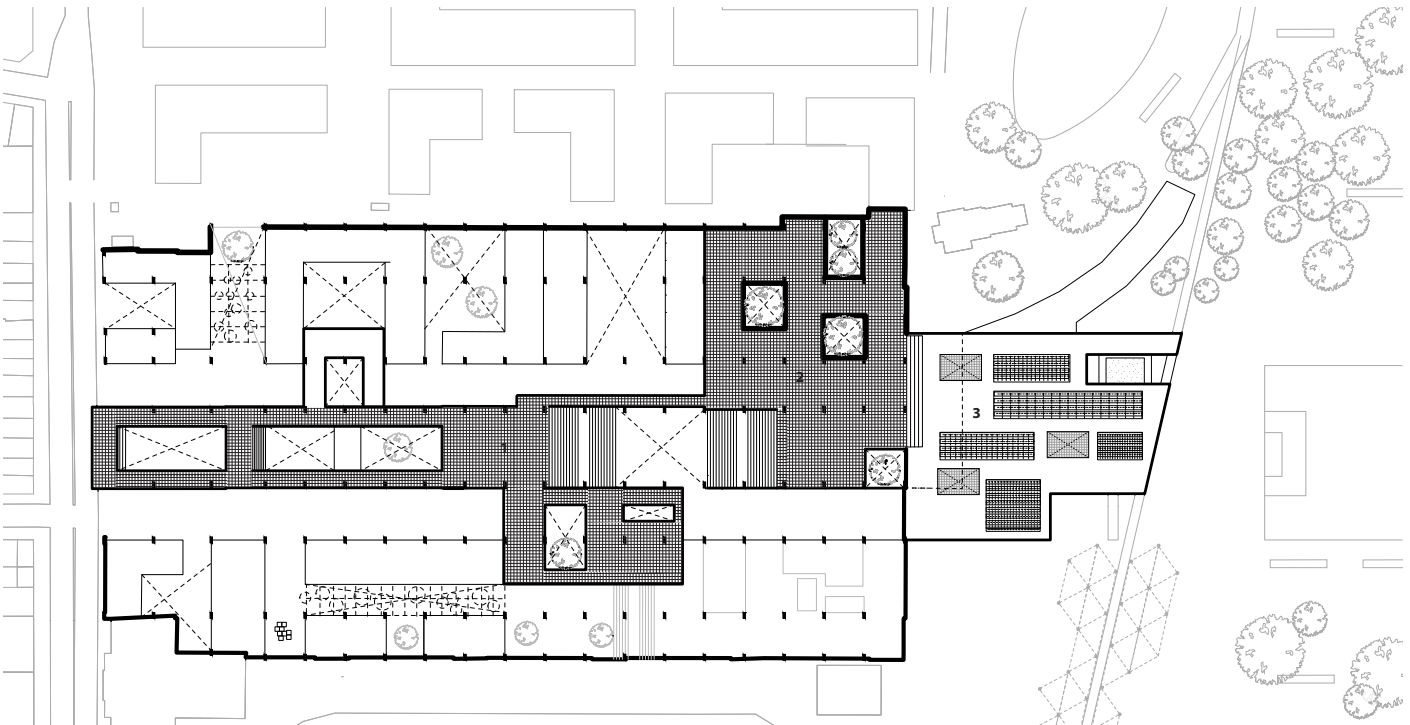
On the first floor of the food market is a community garden, where people from around the neighborhood can take a patch of land and grow their own plants and crops (Figure 133). This floor also has a walkway where the views and sights of the busy courts of the ground floor can be silently observed.

The community garden creates a large overhang on the ground floor (Figure 132) which can host many different social occasions. The following sections will elaborate the design of the community garden and the sunken plaza



- 1. Shop courtyards
- 2. Indoor cafe
- 3. Multipurpose semi open space
- 4. Sunken plaza
- 5. Indoor stepped seating
- 6. Workshop area
- 7. Play area
- 8. Sunken community theatre
- 9. Main pathway
- 10. Football ground

Figure 132. Ground floor plan of the food market



- 1. Raised Walkway
- 2. Indoor small garden and storage
- 3. Community garden

Figure 133. First floor plan of the food market

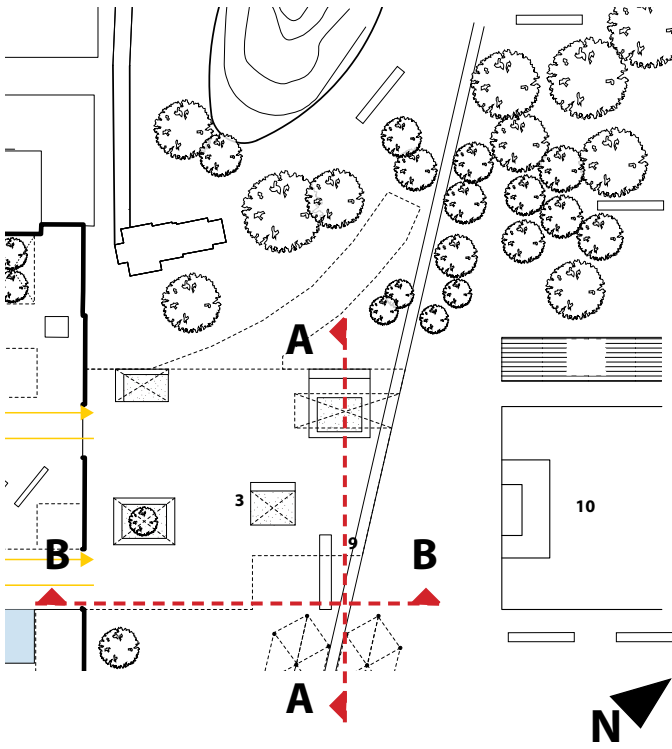


Figure 134. The Multipurpose semi open space

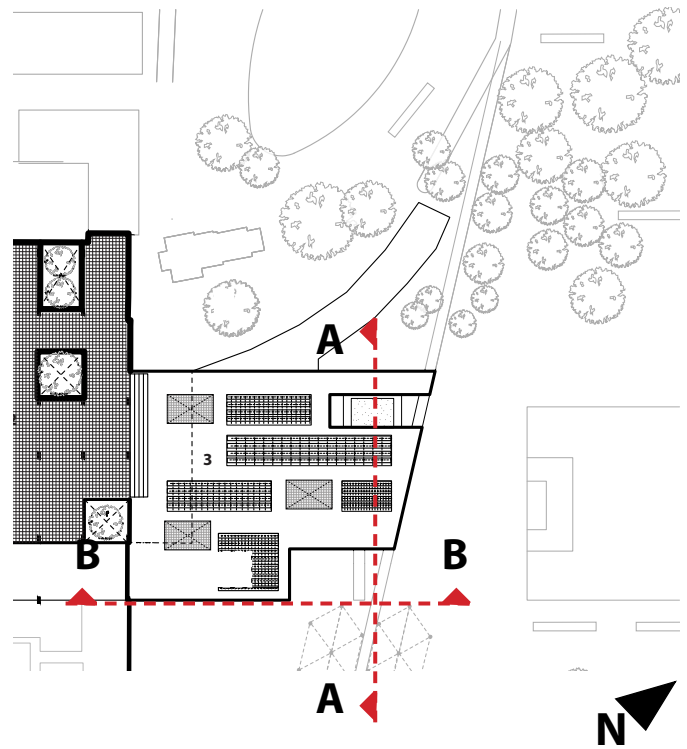


Figure 135. The community garden

The community garden and the multipurpose semi open place

On the rear side of the food market away from the hustle of the commercial street a roof top community garden is proposed (Figure 135). The garden is placed on the first floor and is mainly accessed by people from the surrounding neighborhood. This area is designed to support both plants and humans, with a capability of supporting different activities responding to different circumstances. The dimension of 1.5m, the proper distance for farming, creates a grid structure along which many plots of land are created varying in size. Users can adopt a small parcel of land and can grow their own crops personalizing their plots with flags, scarecrows, or other elements (Figure 136). Movable poles are introduced to each plot of land that have a multifunctional role, they can be used to hold up a transparent membrane that protects the

plants from heavy rain or they could also function as supports for creeper plants (Figure 137). Inbetween the farming plots a few skylight openings are designed to allow ample sunshine to enter the space below. The community farming area creates a space where people from different social groups from around the area can come together and farm together. The urban farming site creates a large overhang that projects out of the building. This creates a semi open public space on the ground floor that provides opportunities for various activities to occur (Figure 134). On weekends this area can be used to host a farmers market where people growing crops in the community garden can sell and exchange their produce (Figure 139). On normal days, this area provides multiple seating opportunities and large covered space where groups can meet (Figure 138). The large overhang provides ample shelter and this area can still be used during the rainy season.

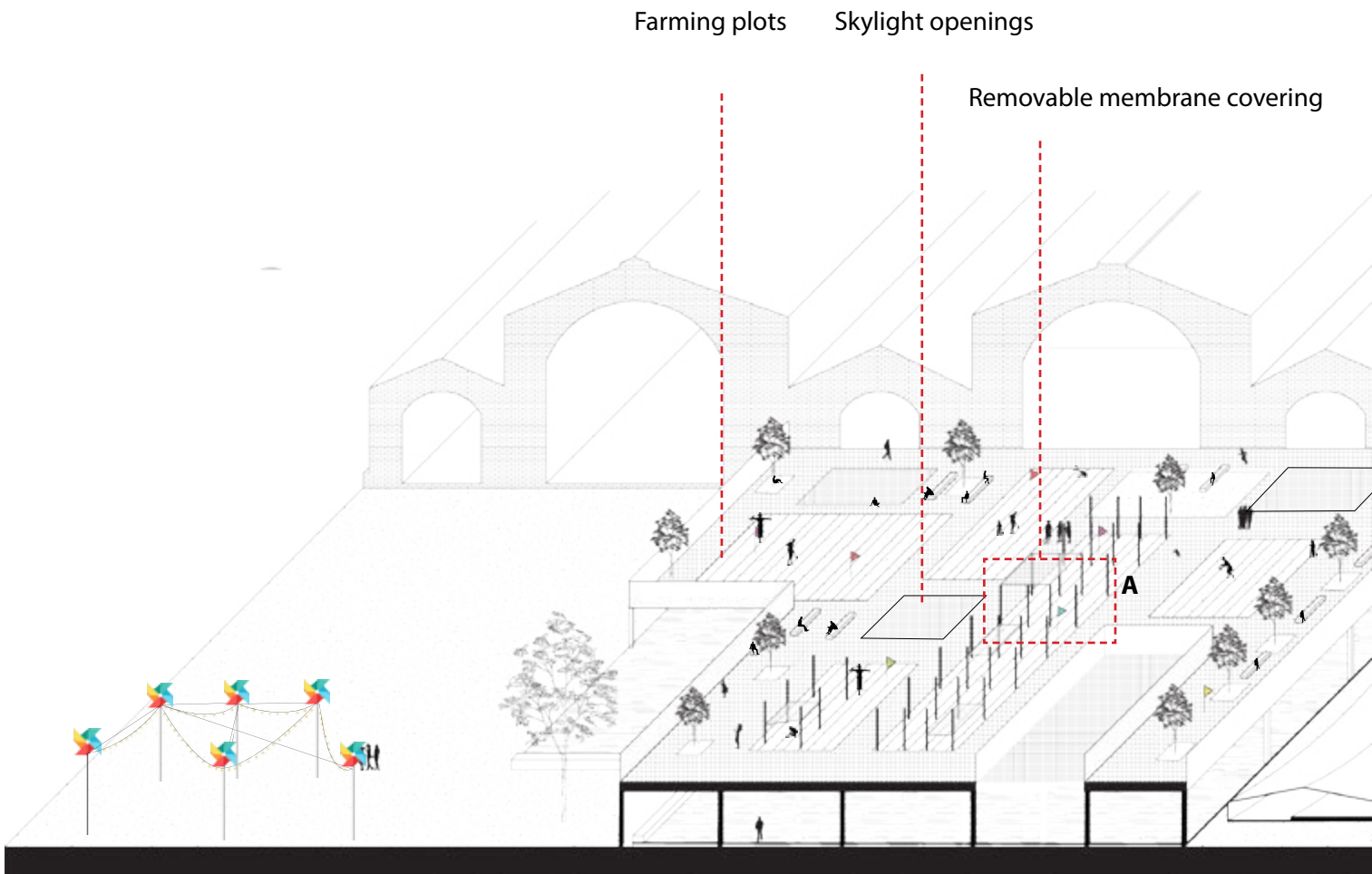


Figure 136. Section A-A showing the community garden with the various farming plots

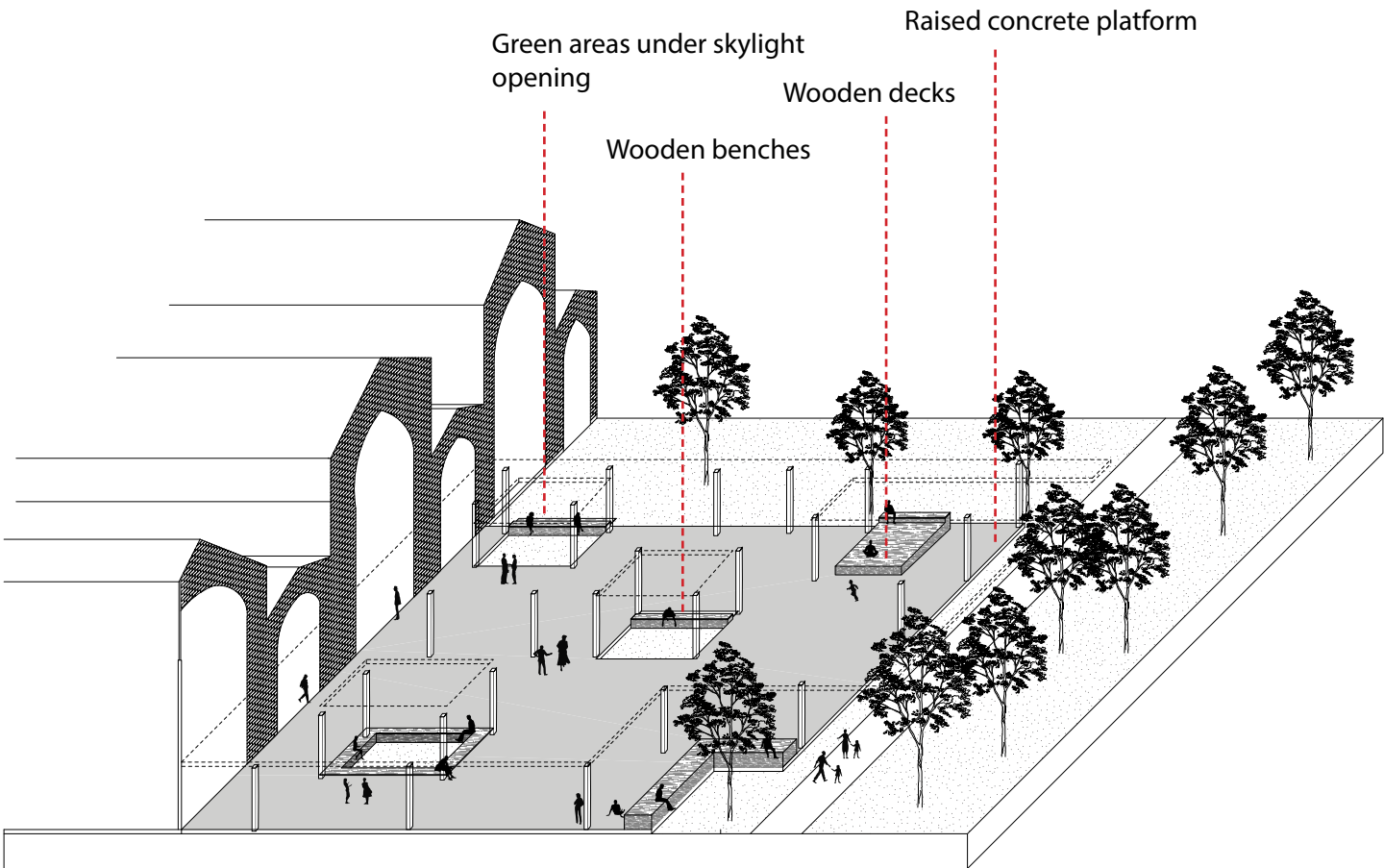


Figure 138. Section B-B showing the Semi open public space during normal days

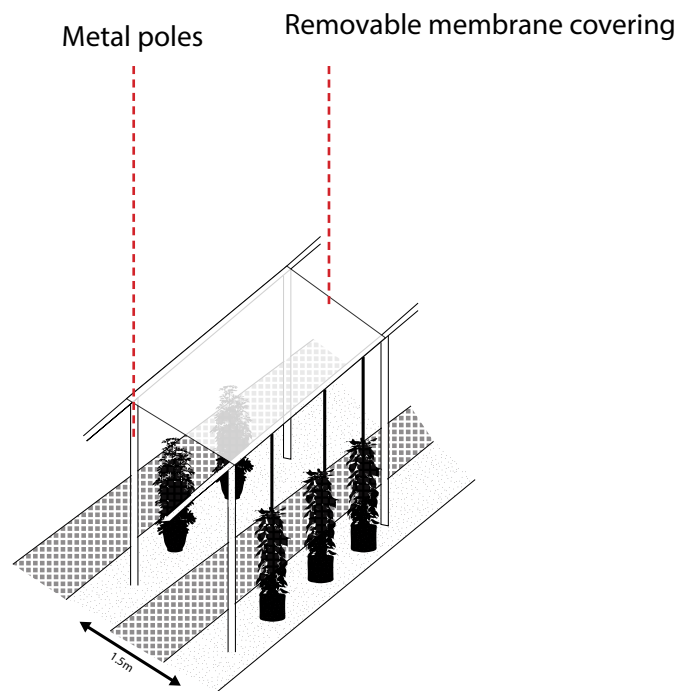
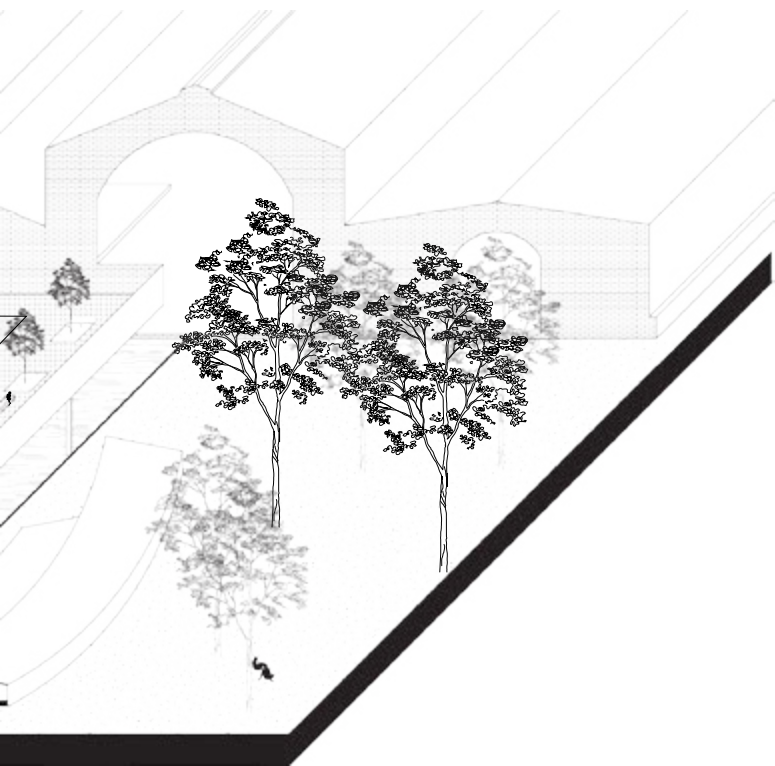


Figure 137. Detail A of the movable membrane covering

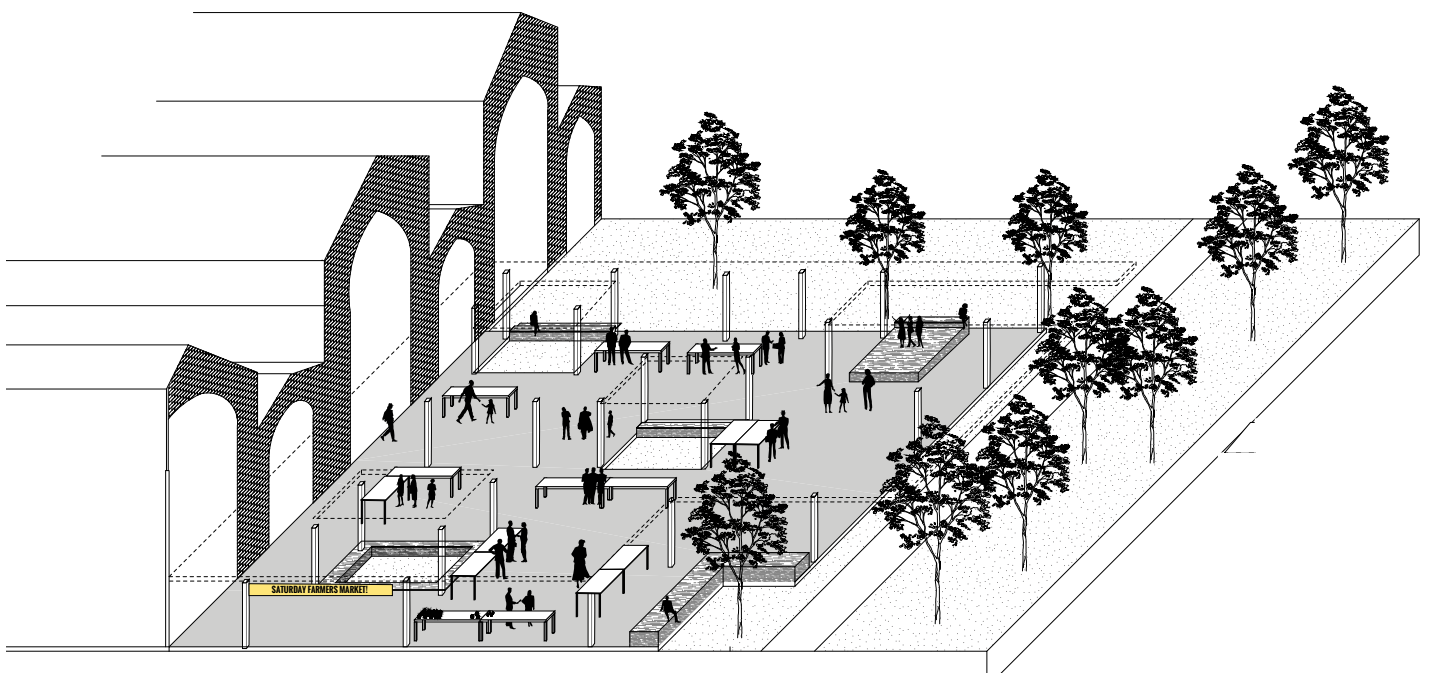


Figure 139. Section B-B showing the Semi open public space during Farmers market days

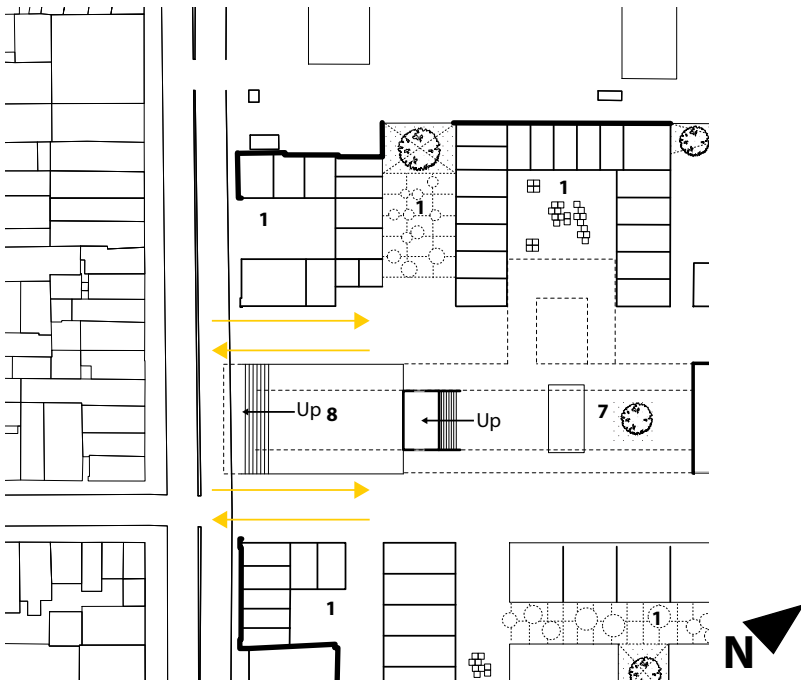


Figure 140. The sunken plaza towards the potential street side

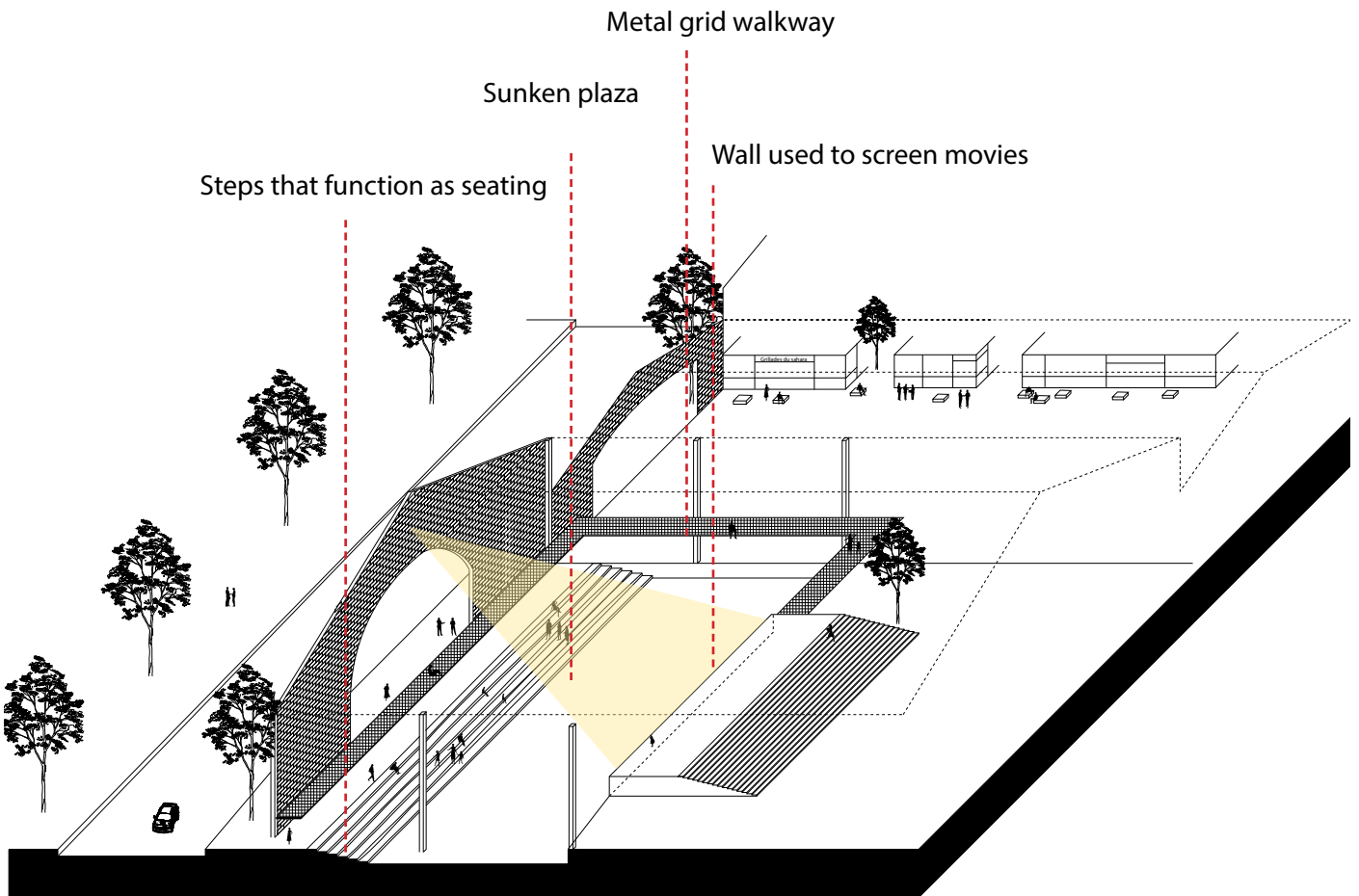


Figure 141. Sunken plaza functioning as a community movie screening area.

Sunken plaza

The sunken plaza, situated to the side of the potential attractors street (Figure 140) is designed as a community theatre (Figure 141). Every week movies from different cultures, in different languages can be screened, bringing the community together. The steps that lead to

this sunken plaza act as seating. A metal grid walkway runs around the sunken plaza. This can also be used by people to sit or stand and watch the movie being screened from the first floor. On normal days, the plaza functions as a public space where people using the shops of the potential attractor street can relax after shopping or people working in nearby offices can sit and chat while they take their lunch breaks.

6.5 Entrance square

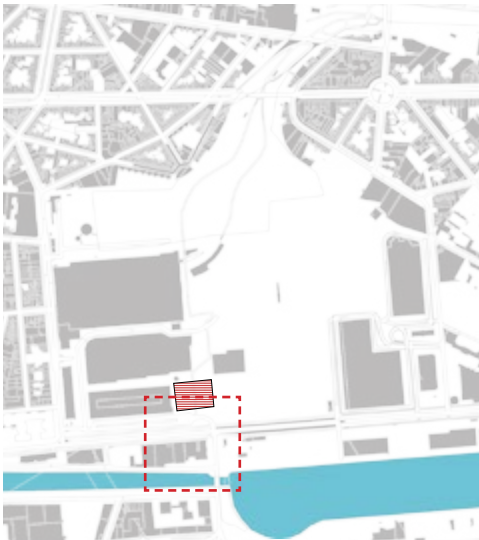


Figure 142. The entrance plaza as part of the Underused spaces pattern

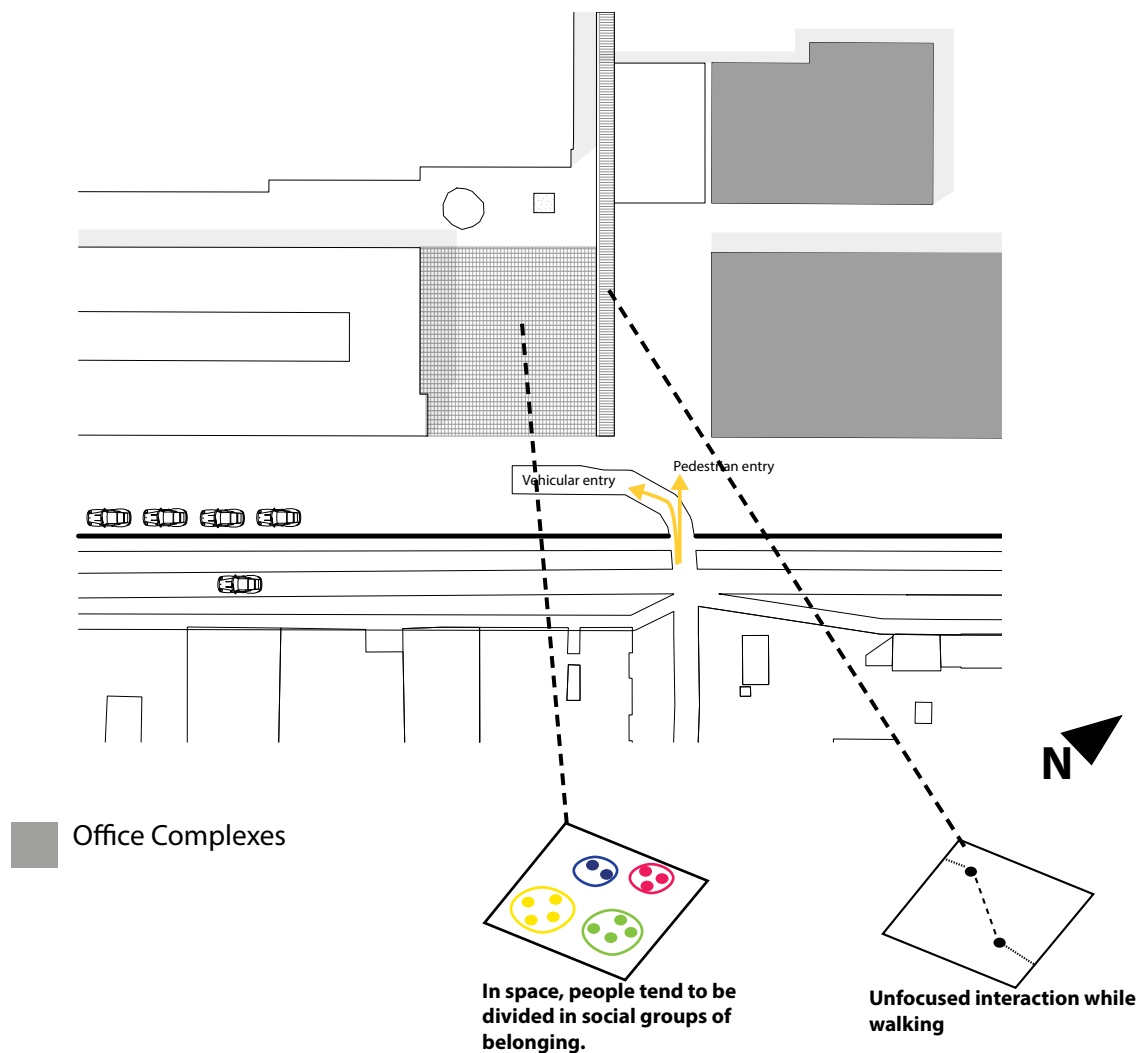


Figure 143. The current condition of the entrance plaza with minimum social interactions

6.5.1 Current situation

The Entrance square in its current state is part of the underused spaces pattern (Figure 142). The area is characterized by a large space that is not used to its potential. It is surrounded by offices on one side and commercial units on the other. The square is cut off from

the main road and has only one access point for both pedestrian and vehicular traffic (Figure 143).

The spatial design of the area does not support the possibility of different social interactions. Although the square is surrounded by buildings with different functions, the square itself is not used frequently as there is no connection between the space and its users.

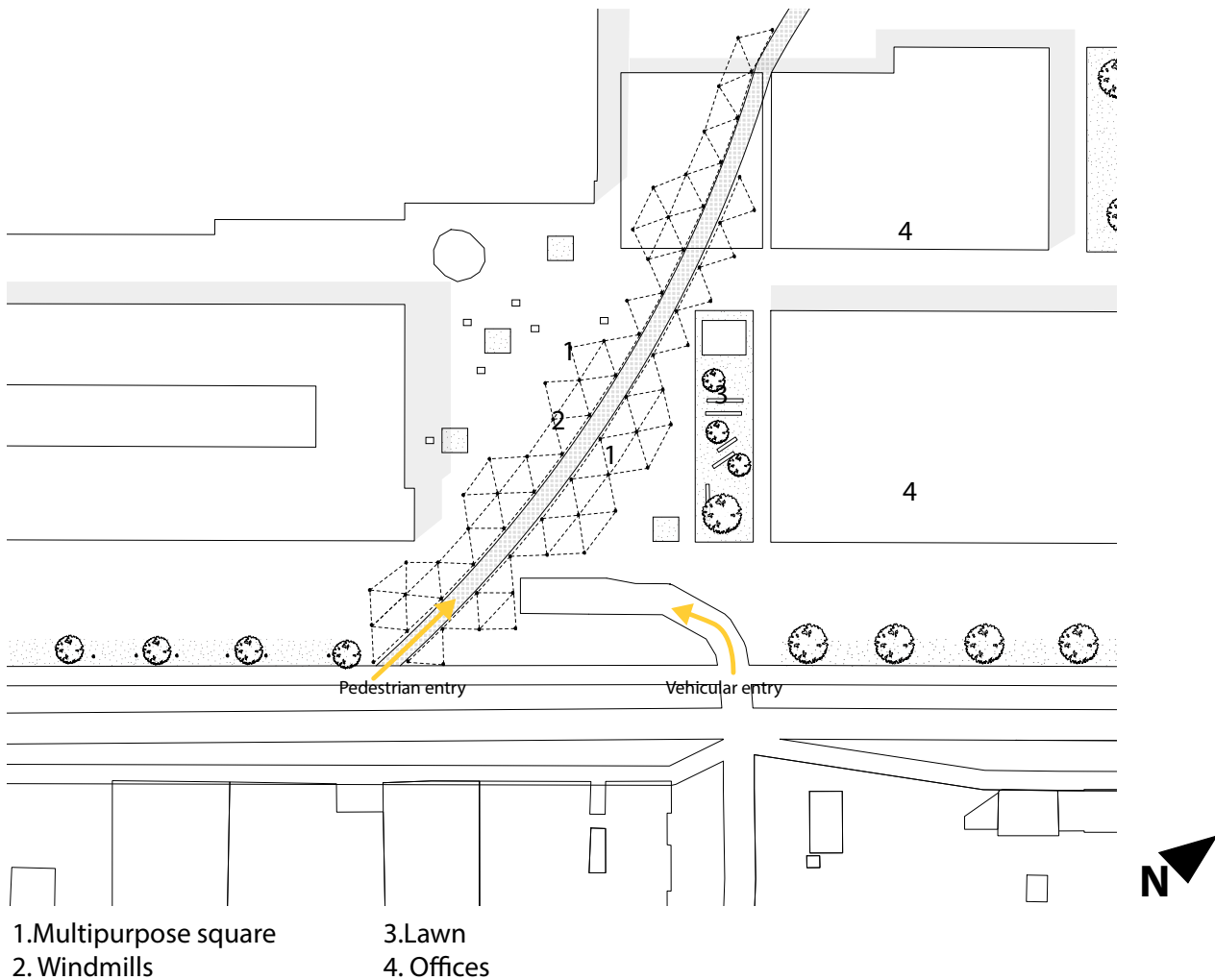


Figure 144. The entrance square designed to accommodate multiple activities and possibilities

6.5.2 Design Hypothesis

As part of the underused spaces pattern, the design of this space must accommodate multiple stable and temporary activities. To accommodate this, the Entrance square is designed as an open framework which has the capability to accommodate multiple activities and possibilities (Figure 144). It is designed to easily transform to accommodate various activities that the users from the buildings around the square partake in. It is composed of two parts - the plaza and the lawn (Figure 144). The plaza is designed to be a large space that can host a variety of community events as well as events of the offices and commercial units around. A pathway cuts across the plaza connecting the main road to the food market and neighborhoods on the inside, providing a new pedestrian connection separate from

the vehicular entry. The signature Molenbeek windmills (Figure 146) are used to emphasize the pathway and are also used as an element that different social groups can relate to (Figure 147). The unique lighting attached to the windmills creates a well lit environment during the night time (Figure 148). The lawn creates a forecourt to the office complexes and creates a space where people from the office can gather during breaks and after work hours (Figure 145). The bright colourful movable furniture that is used invites users to make the space their own (Figure 145). The addition of the pathway and lawn describes smaller spaces that are perfectly sized for different types of gatherings, this brings the plaza to a more human scale (Figure 147). The windmills and the movable furniture additionally helps to establish a connection between users and the space itself. (Figure 148)

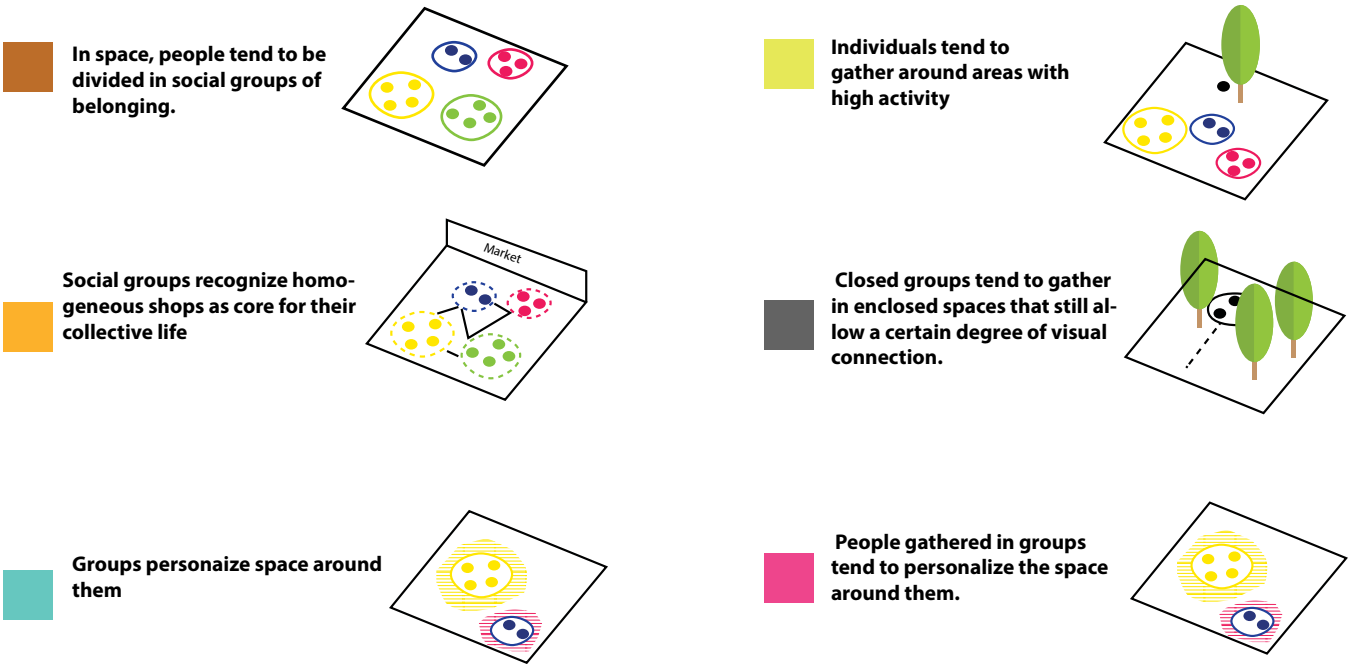
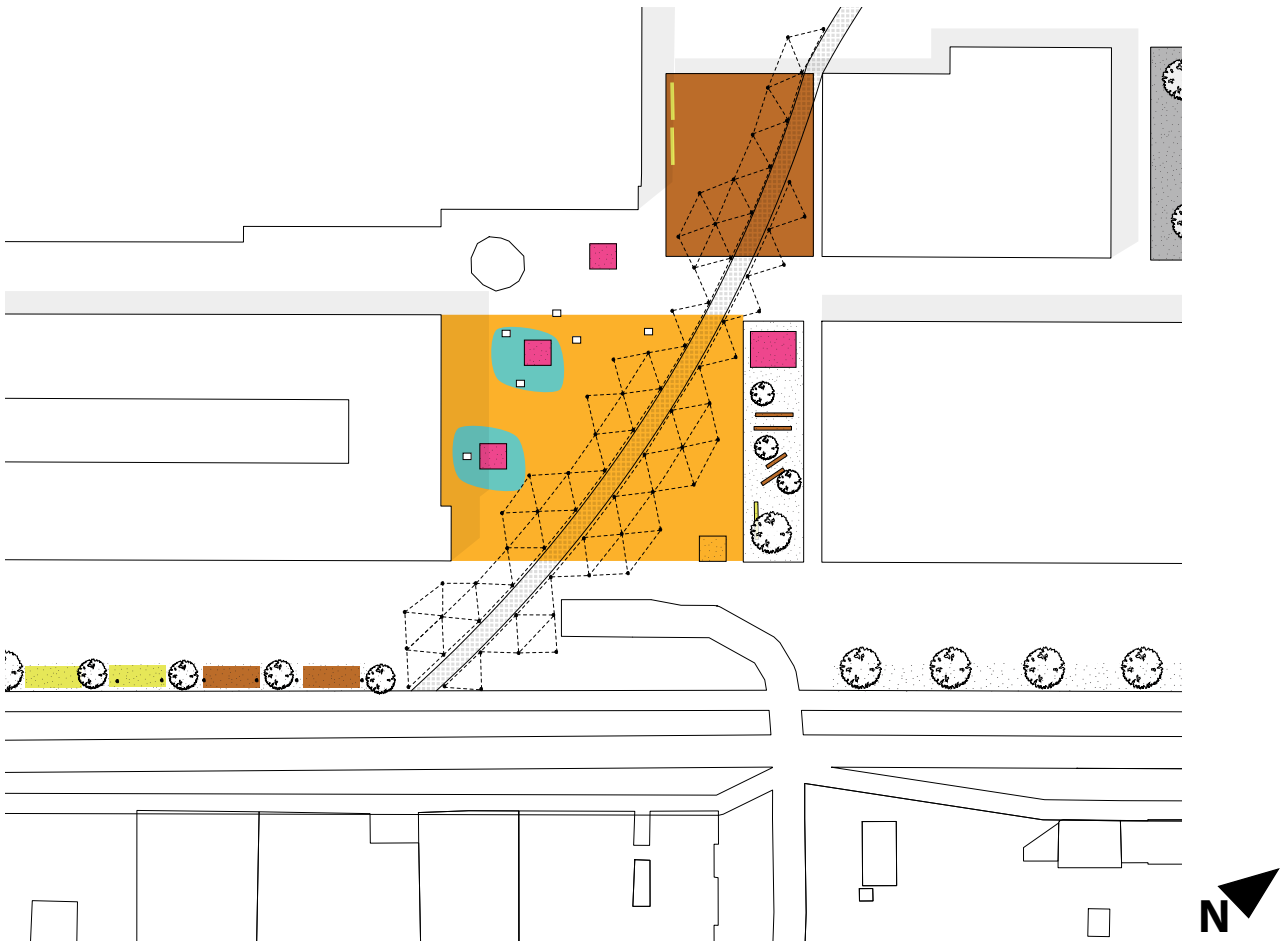


Figure 145. Map depicting the variety of social interactions that the entrance court supports



Figure 146. Image showing the windmills of molenbeek.
 (Source: <https://www.tijd.be>)

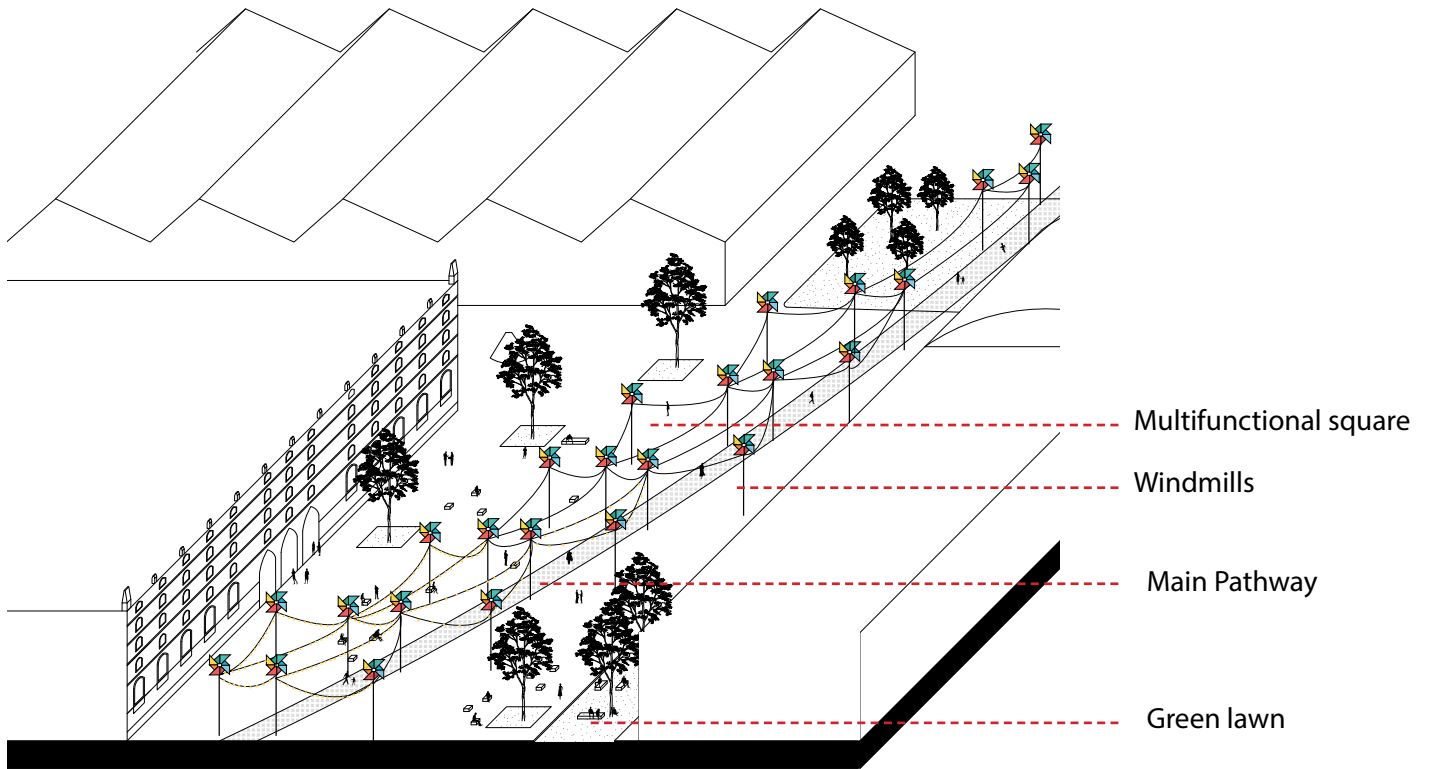


Figure 147. Section of entrance square showing the smaller spaces described by the lawn and pathway

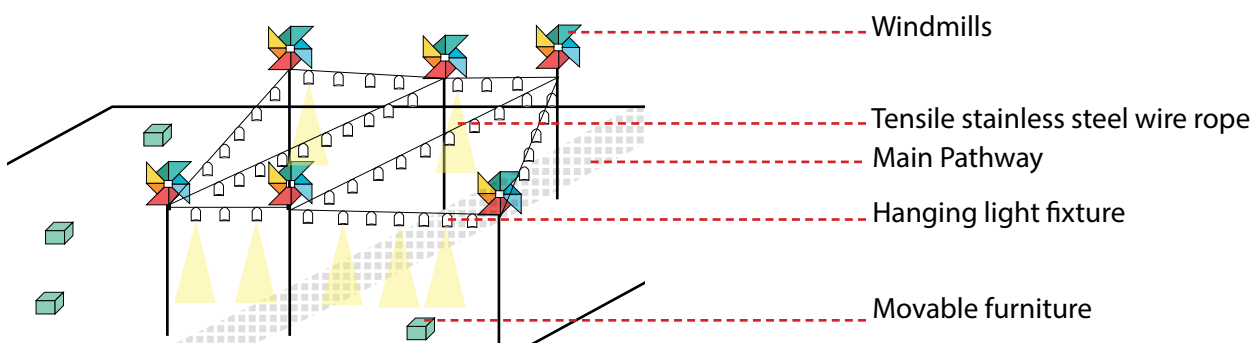


Figure 148. The windmills and movable furniture creating a connection between users and space itself

6.6 The waterfront

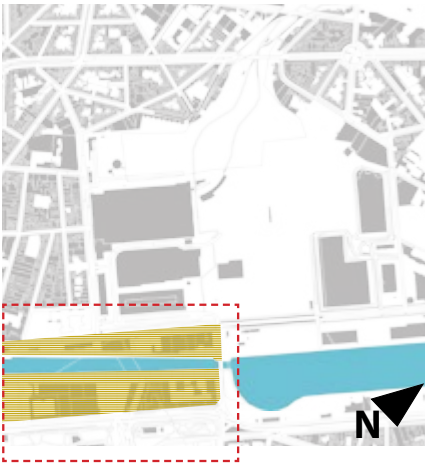


Figure 149. Waterfront as part of the walk by spaces pattern

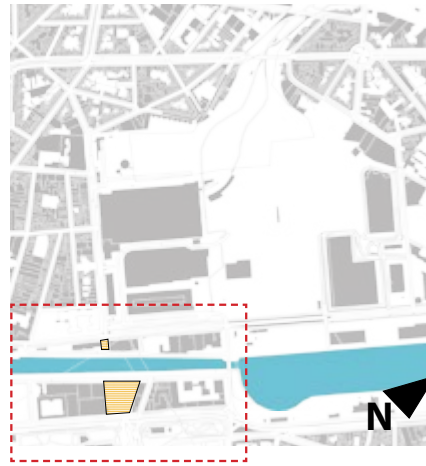


Figure 150. Waterfront as part of the vacant spaces pattern

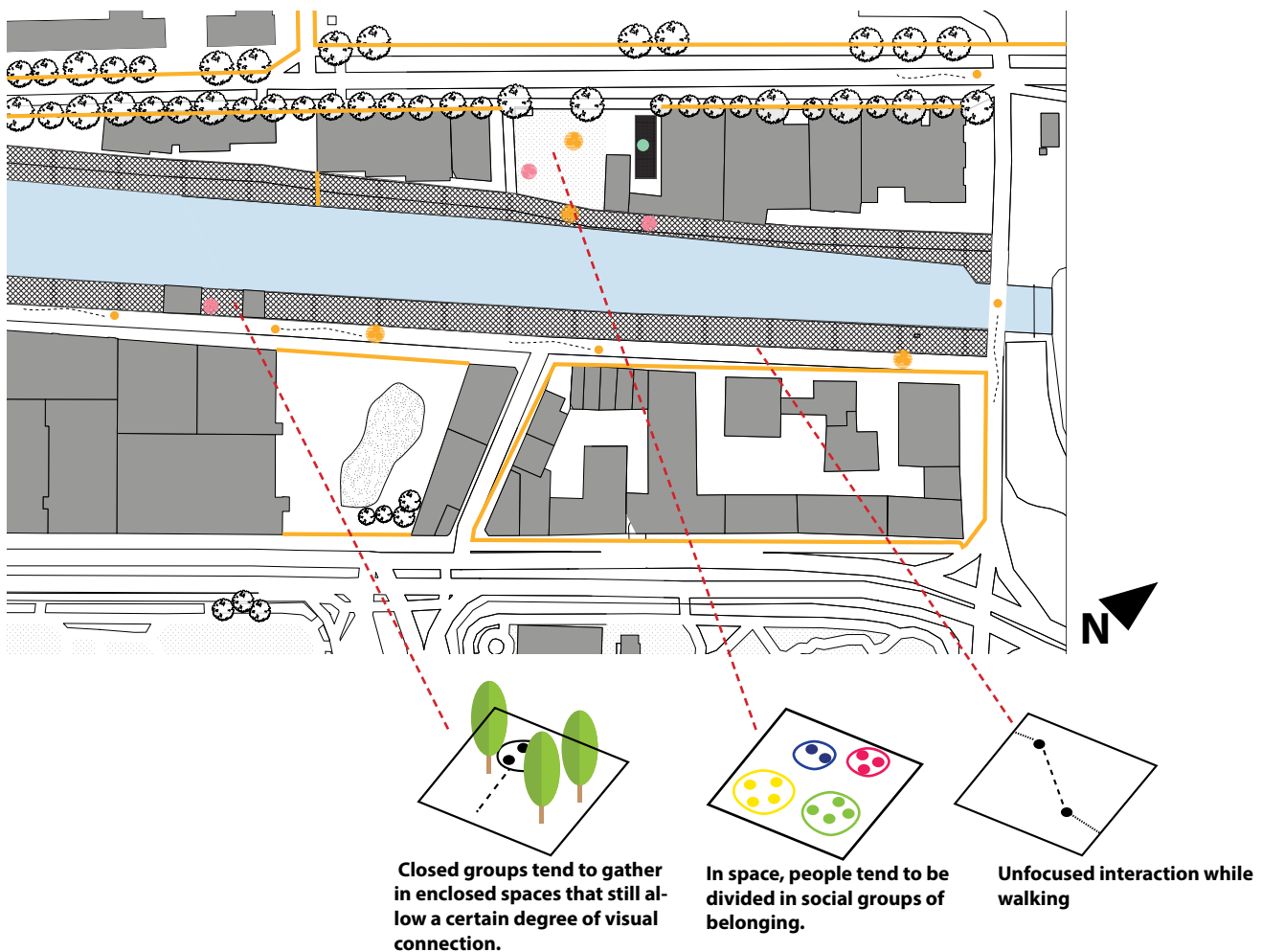
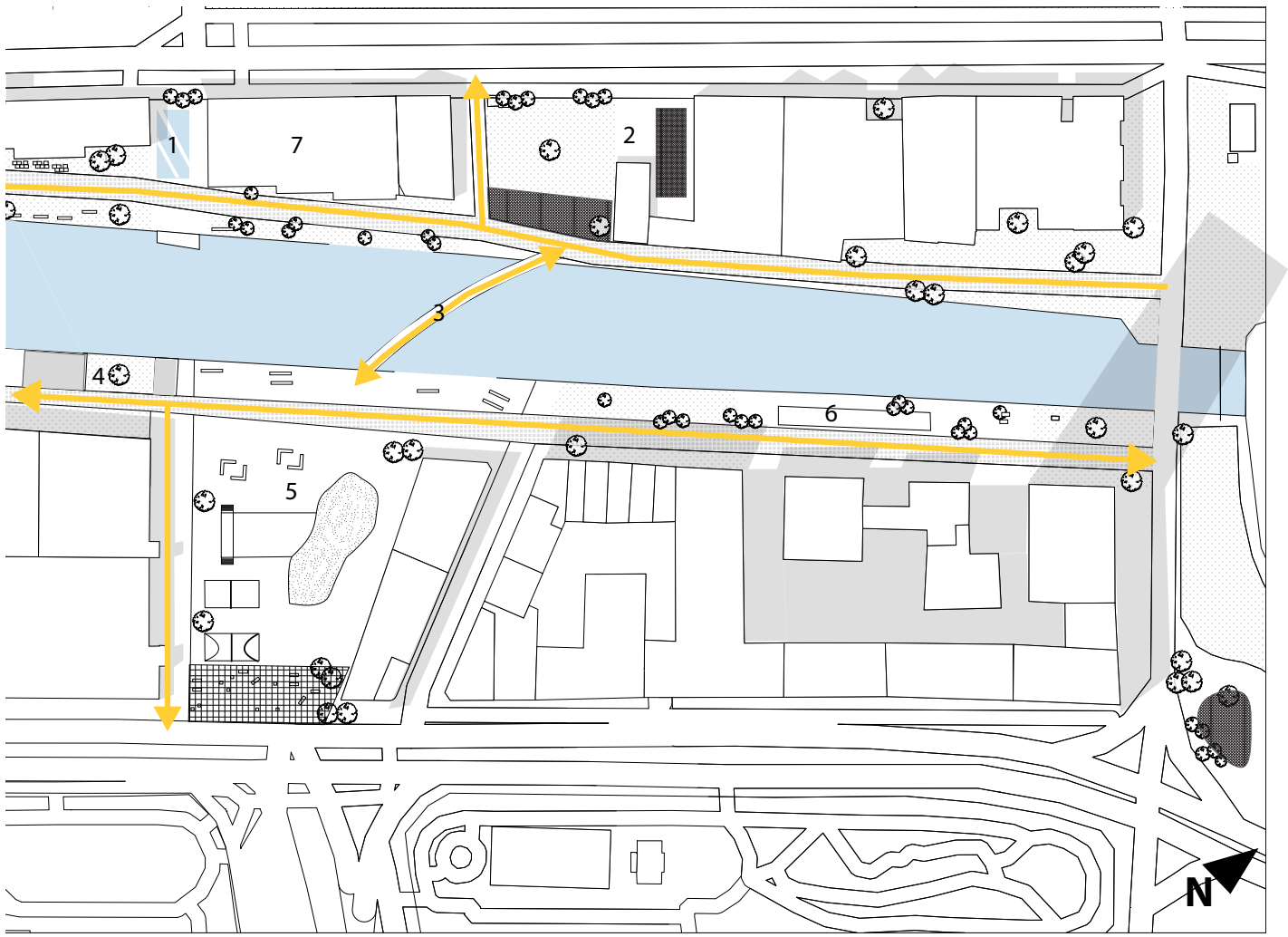


Figure 151. Existing condition and social interactions of the waterfront area

6.5.1 Current situation

The waterfront in its current state is part of two patterns: The walk by spaces pattern (Figure 149) and the vacant spaces pattern (Figure 150). The waterfront is an important transportation link. It is used widely by many people from different social groups to connect to other locations. Due to a number of vacancies in the area, the

space is not being used by people to stay. The waterfront area due to its industrial heritage has many vacant factories and un-used elements from its industrial past. These vacancies create a void, which results in reduced social interactions. These vacancies also act as barriers separating two neighborhoods (Figure 151). The only major type of social interaction in this space is through non verbal interactions while walking. (Figure 151)



- 1. Constructed water pond
- 2. Existing skate park
- 3. Bridge

- 4. Elevated walkway
- 5. Beach
- 6. Play structure
- 7. Theatre

←→ Pedestrian access

Figure 152. Map showing pedestrian access and the different spaces created to experience the waterfront.

6.6.2 Design Hypothesis

The aim was to transform a forlorn industrial and maritime area into a layered, multifunctional and mixed use precinct. Three key factors influence the design of this area: using existing artefacts and introducing new fixed feature elements to reflect the gritty industrial character of the waterfront and to use vacancies for the creation of spaces where people can come to experience the waterfront's unique characteristics (Figure 152). Unlike in the commercial street, the vacancies in the waterfront are designed to make people stay rather than to attract new commercial activity.

The waterfront becomes a pedestrian promenade (Figure 152) with pockets of spaces that provide opportunities for unique activities. Not only does the design allow the area to become more pedestrian friendly, it also provides users with opportunities to stay and experience

the industrial waterfront. Artefacts or remnants from the industrial past are given fresh and new meaning creating interesting spaces for people to gather (Figure 153). Pedestrian circulation is prioritized over vehicular traffic and for this purpose the road on the eastern bank of the canal is completely pedestrianized barring entry to vehicular traffic.

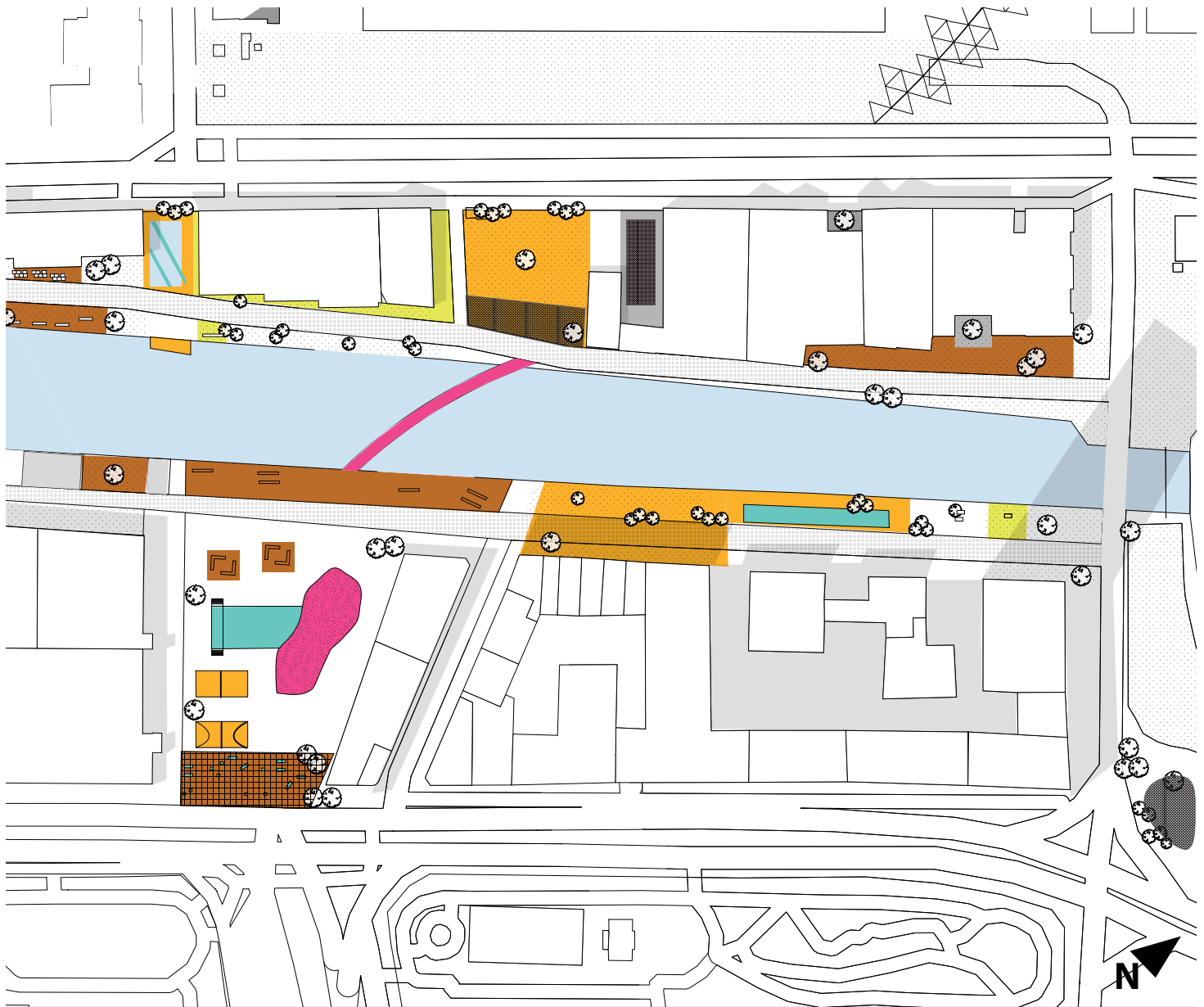
In the following sections four pockets of space that reflect the two key factors of the design will be elaborated (Figure 154):

Fixed feature elements along the canal

- 1) Elevated walkway
- 2) Play structure

Vacant spaces re-designed

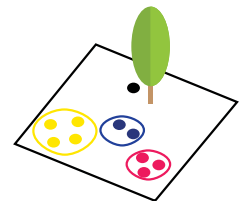
- 3) Beach
- 4) Constructed water pond



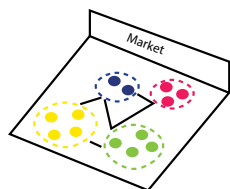
In space, people tend to be divided in social groups of belonging.



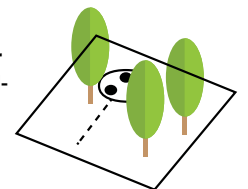
Individuals tend to gather around areas with high activity



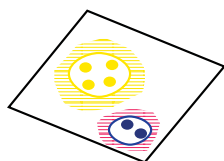
Social groups recognize homogeneous shops as core for their collective life



Closed groups tend to gather in enclosed spaces that still allow a certain degree of visual connection.



Groups personalize space around them



People gathered in groups tend to personalize the space around them.

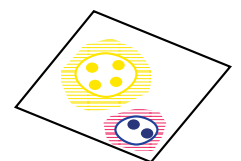
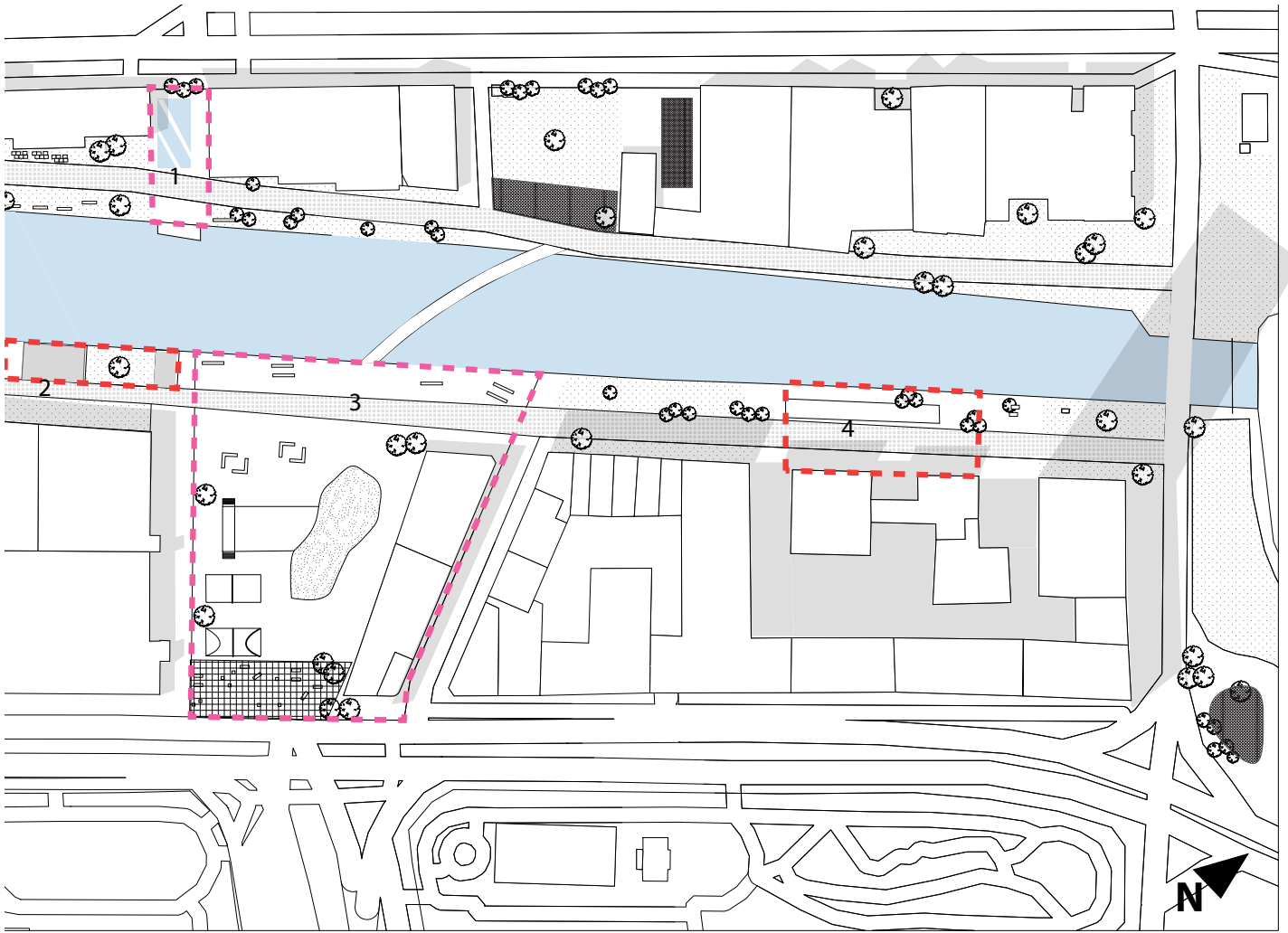


Figure 153. Map depicting new social interactions



- Fixed feature elements along the canal
- Vacant spaces re-designed
- 1. Constructed water pond
- 2. Elevated walk way
- 3. Beach
- 4. Play structure

Figure 154. The two key elements of the design: Fixed feature elements and vacant space re design

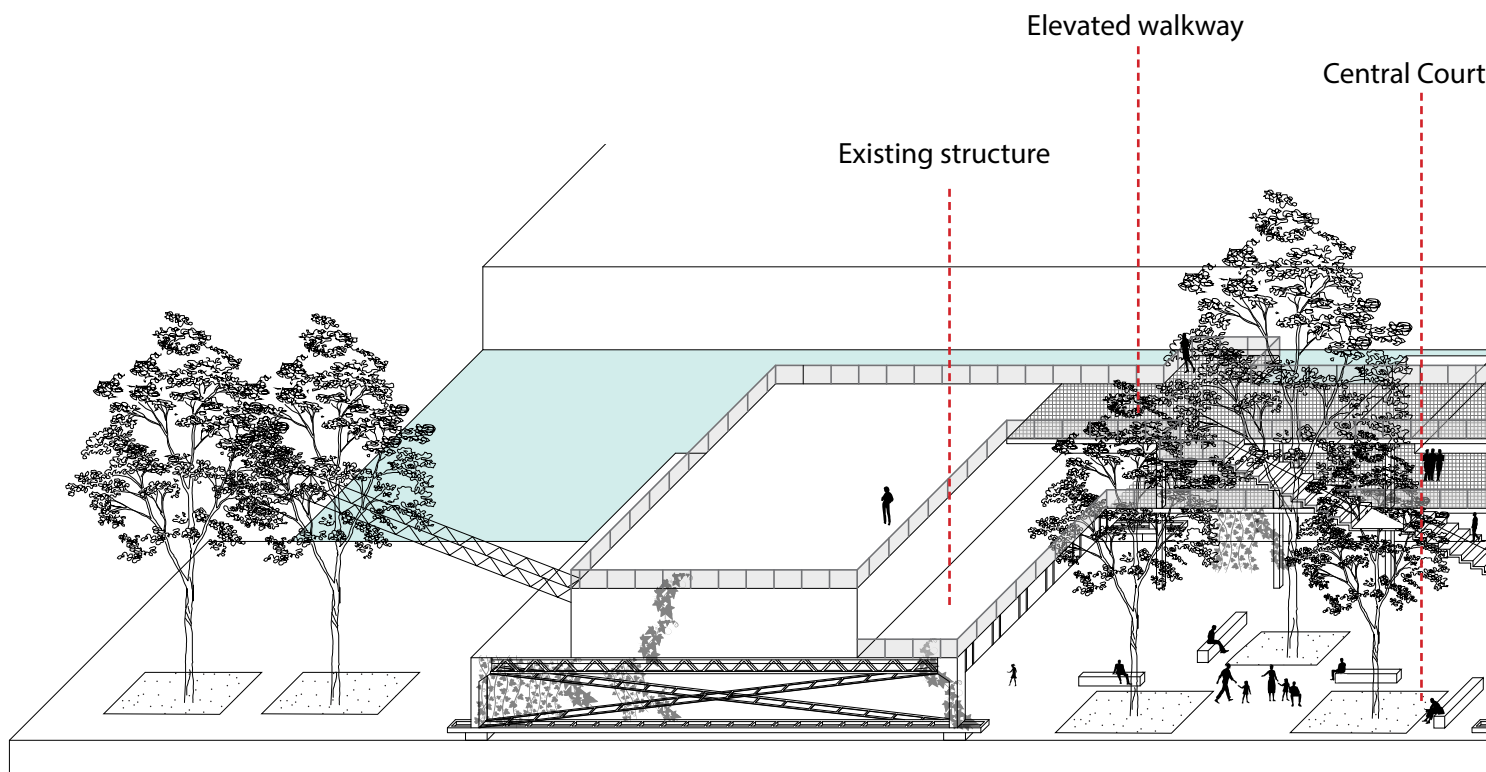


Figure 156. The walkway as a lookout structure, and event space

6.6.3 Fixed feature elements

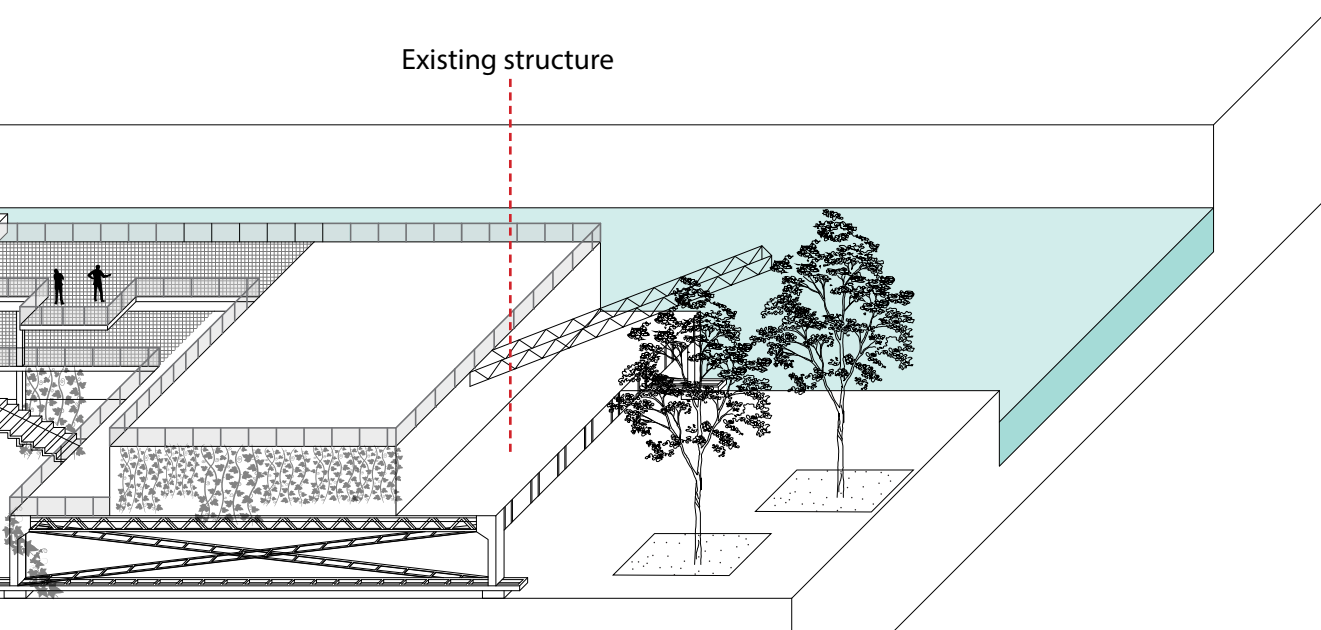
The elevated walkway

The waterfront is dotted with old industrial remanant such as the structure in figure 155. The design makes use of two of these structures by creating a walkway at 9m height connecting the two structures (Figure 156). It is designed to be a lookout, courtyard with creeper plants growing along the structure and the

spaces under the structure could function as event spaces. The walkway encloses a courtyard between the two existing industrial structures that provides the perfect setting for different groups to meet. The design of the elevated walkway creates a place for people to stay and look at the activity along the canal and even provides users with an opportunity to give them a panaromic view of the area. (Figure 156)



Figure 155. Existing structures from the industrial era



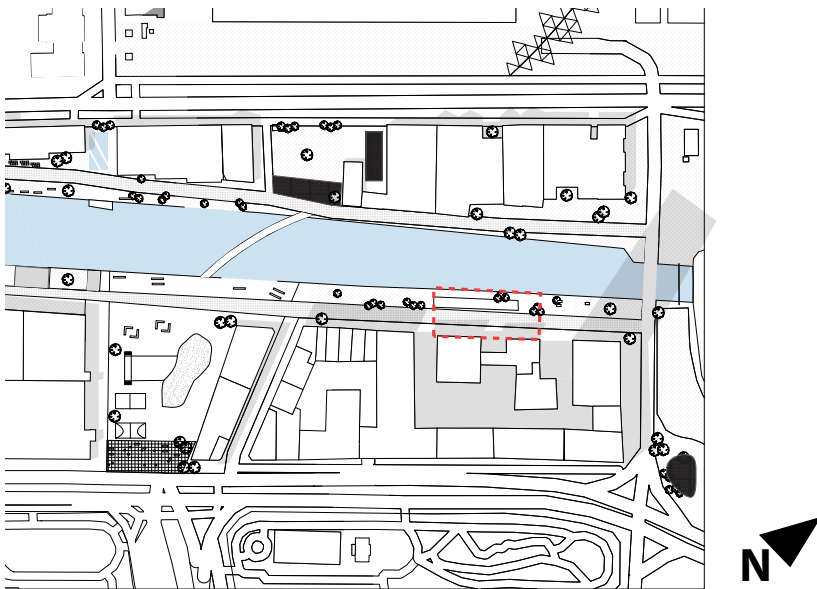


Figure 157. The Play space located in front of existing apartment complexes

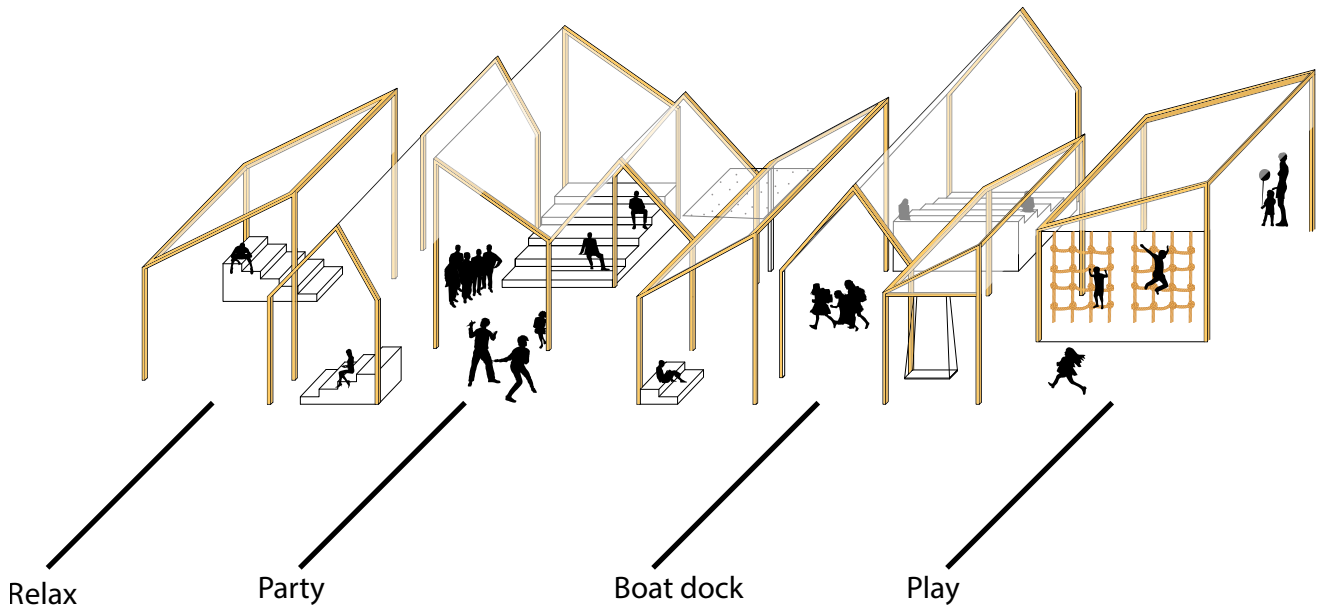


Figure 158. A series of spaces designed to accommodate different activities

Play structure

The Play structure aims to create a playful environment which promotes cultural exchange and social activity. It is located in front of an existing apartment structure encouraging the residents to use public space (Figure 157). The arrangement leads visitors through a series of spaces, each designed to accommodate different activities (Figure 158). It is composed of metal frames similar to the existing industrial structures except that it is painted bright yellow to give it a more playful tone. Simple light weight metal and wooden steps at different heights provide different seating opportunities (Figure 159). During the day the canopy provides shelter

and during night time an integrated lighting system illuminates the space (Figure 160). The metal frames can be flexible to accommodate different activities like a swing or climbing ropes etc (Figure 158). The people from the neighborhood can come together and collaborate to bring in new elements to the structure. Each part of the pavillion is designed to accommodate different functions, which can later change based on the addition or removal of elements. The design, while providing a basic structure, encourages people to come together to personalize the space according to their needs.

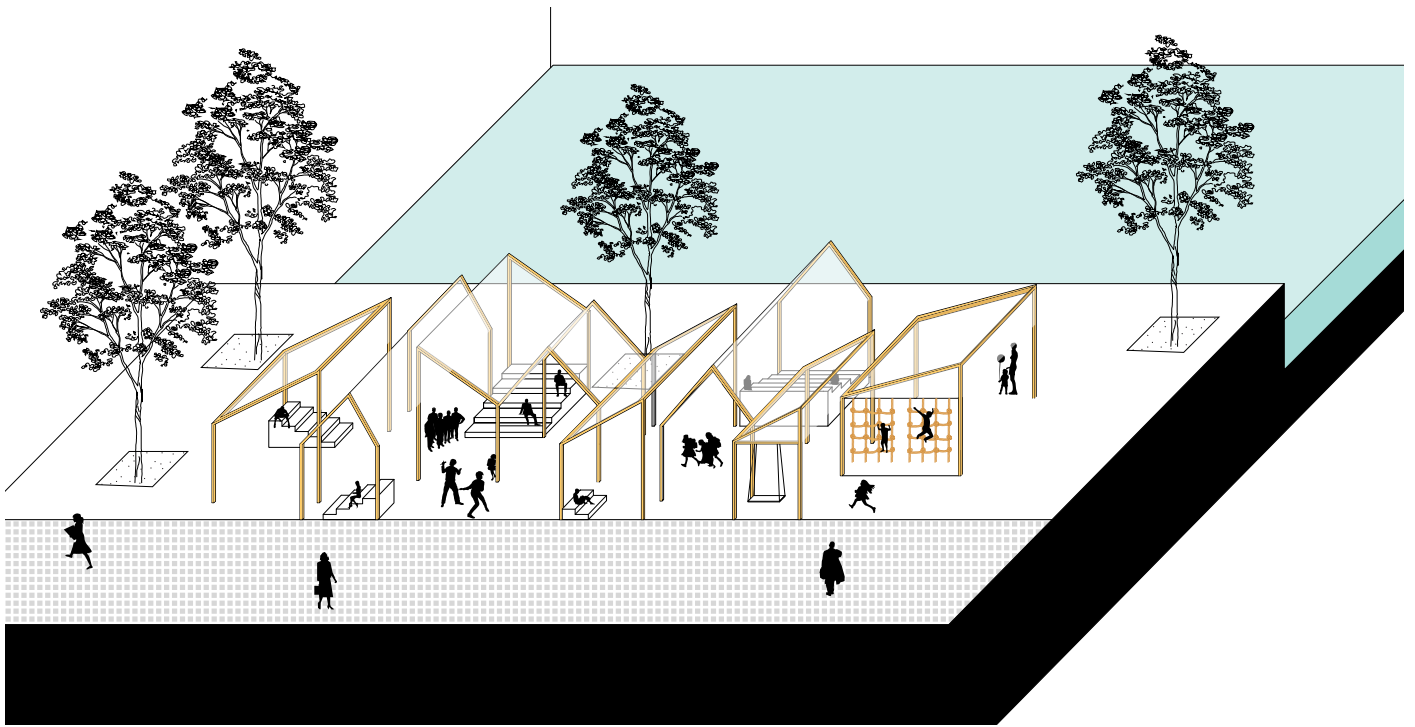


Figure 159. The Play structure composed of bright yellow metal and light weight metal and wooden steps



Figure 160. The Play structure illuminated at night

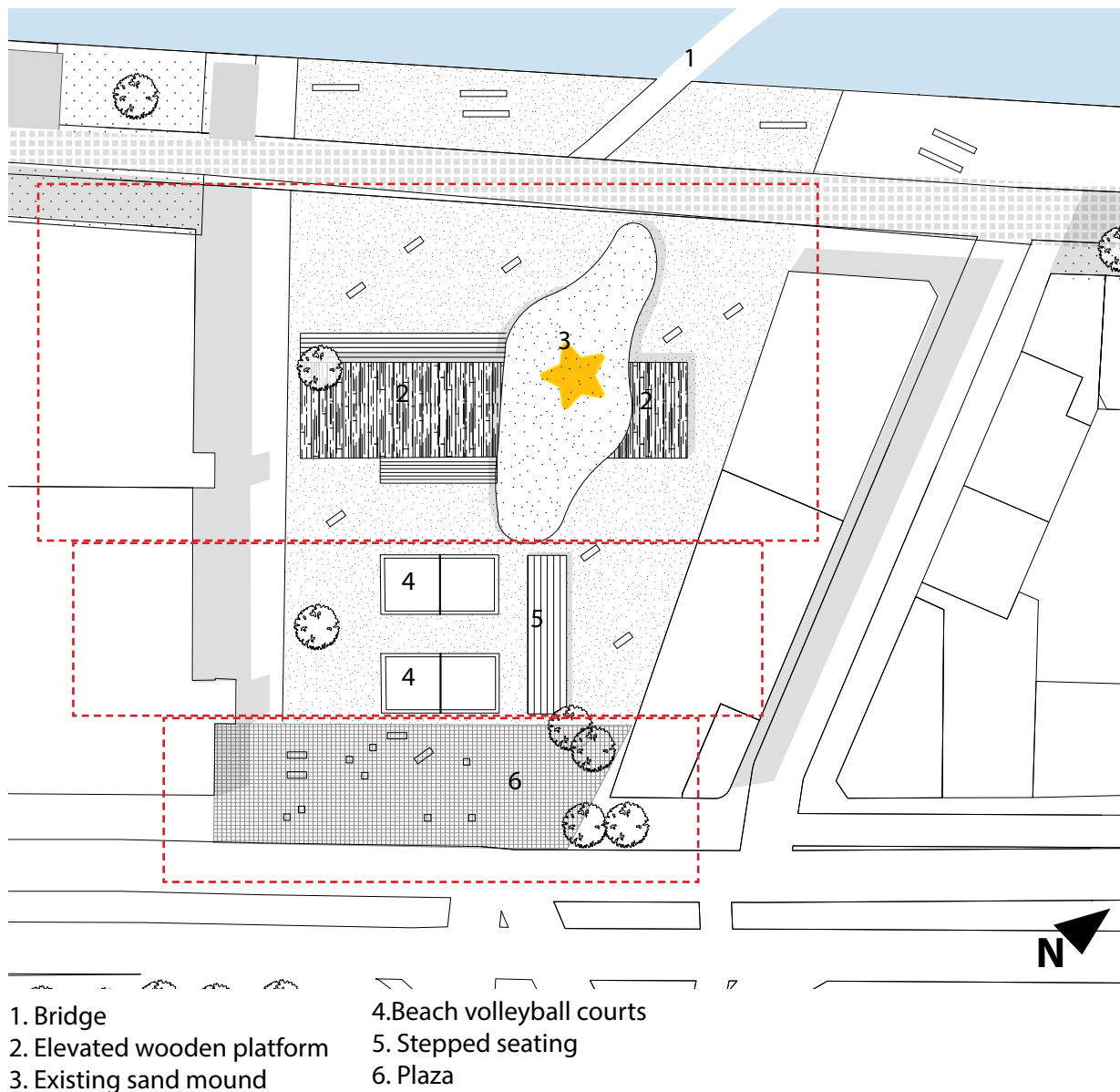


Figure 161. The three different parts of the beach

6.6.4 Vacant spaces re-designed

Beach

The waterfront has many vacancies due to its industrial past. The beach is one such vacancy. It is a site that has large amounts of sand and a large sand mound. The design of this area utilizes this sand to create an artificial “beach”. The design is split into three major parts (Figure 161):

1) The plaza : Along the main road a small plaza is designed, creating a more lively pedestrian environment.

2) The beach volleyball courts: Sports has always been a social activity that brings different people together. The addition of a beach volleyball court in the design encourages more social interaction. The strategic

placement of the beach between the neighborhood along the canal and to the side of the main road ensures that people from both sides have access to this public space.

3) The beach deck (Figure 163): The beach deck is designed extending from the existing mound of sand found on the site . The larger part of the deck provides ample space to host parties, for social gatherings and in summers as a sun deck. The smaller more private side of the deck is more for smaller groups to gather.

All three functions of the site tie together to establish a new public realm, one that promotes civic presence having a very vibrant characteristic (Figure 162)

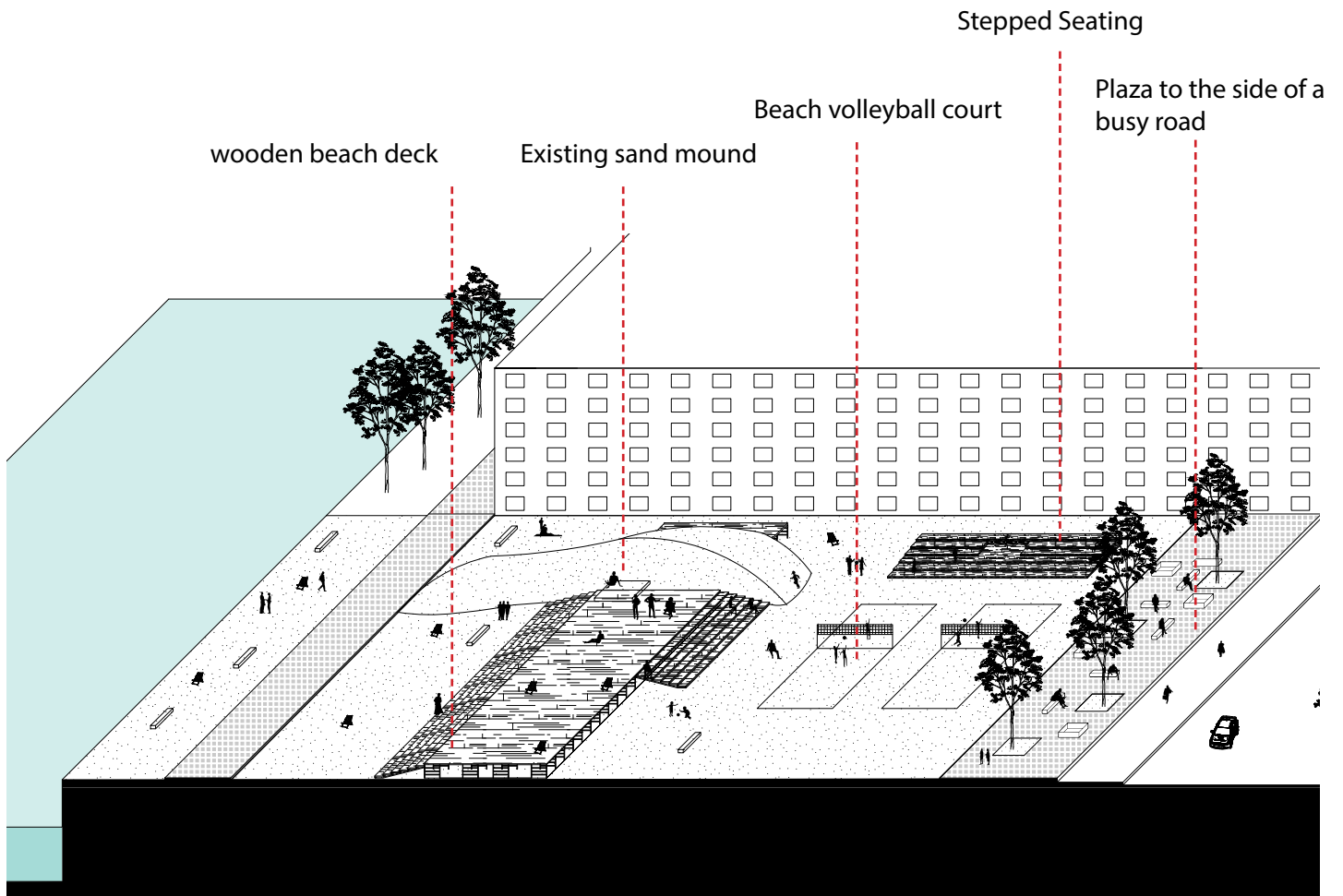


Figure 162. The beach creating a vibrant public space promoting civic presence

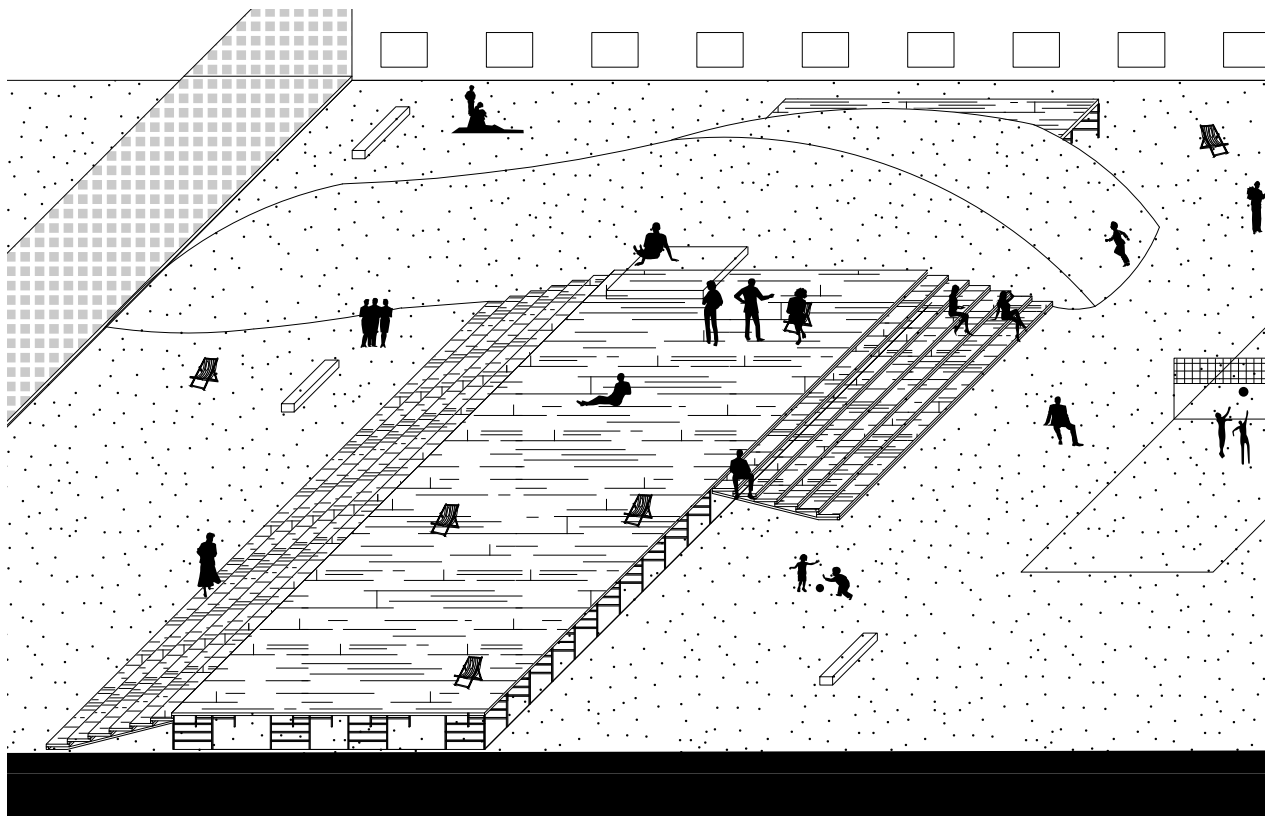


Figure 163. The beach deck

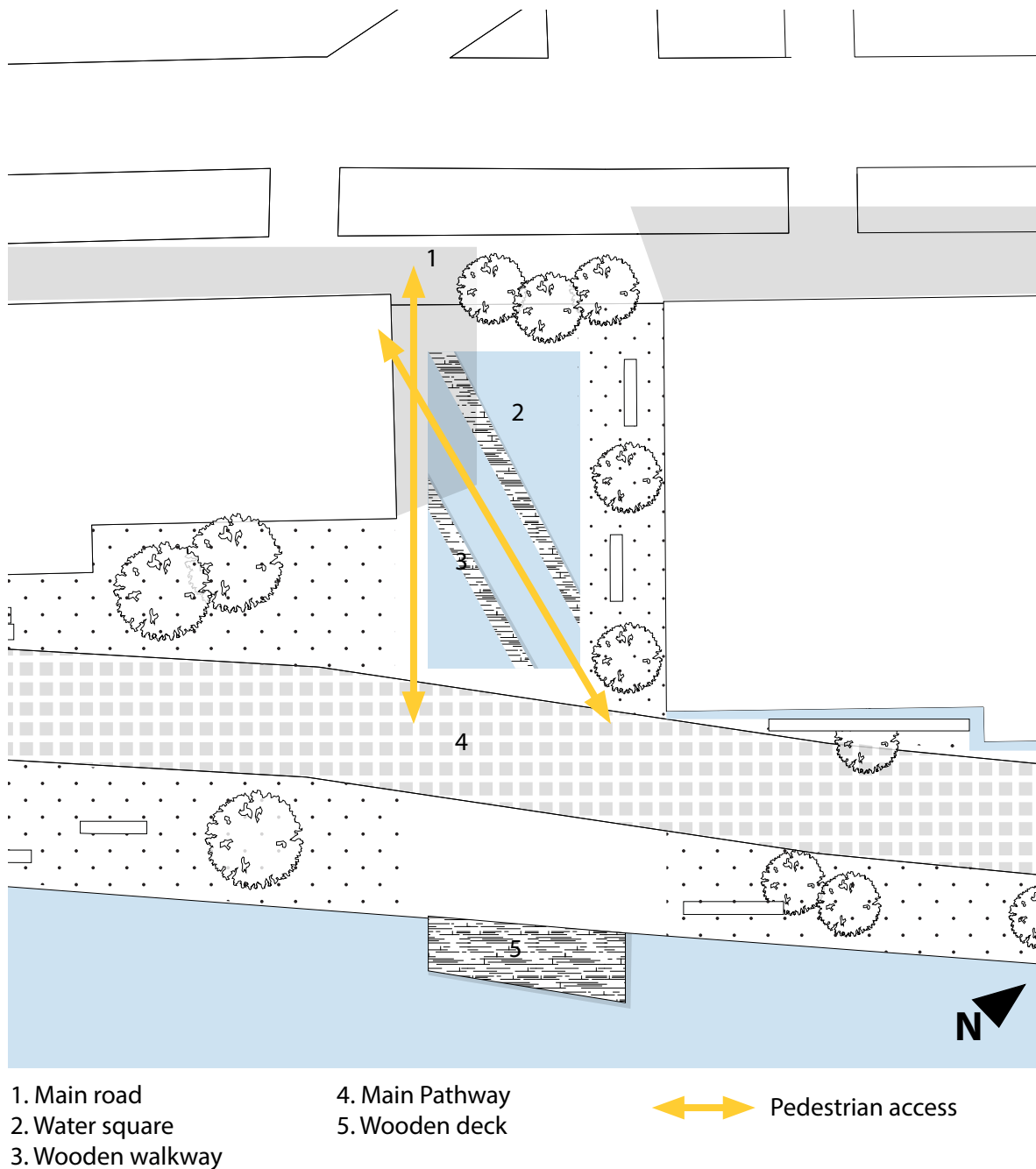


Figure 164. The constructed water square

Constructed water square

The constructed water square is designed as a place where people can stay. It connects the main road to the waterfront increasing the flow of people. (Figure 164) The constructed water square is designed to have two functions: It acts as a water retention area during rainy seasons while also functioning as an urban public space, providing a dynamic environment for play and leisure. The water square is designed to behave in three different ways. During the dry season it is a square that supports sport, play and also provides spots to sit (Figure 167).

During seasons of periodic rain three smaller basins fill up creating interesting spots for children to play with water and run around (Figure 166). During heavy rainfall the entire square fills up but it is still possible to enjoy the square by dipping your legs in the water while sitting on the wooden pathways that cut across the square (Figure 165). Apart from the water square this area also has a wooden deck extending out over the canal allowing activities from the square to spill out (Figure 164). The area also provides various quieter seating options away from the busy square.

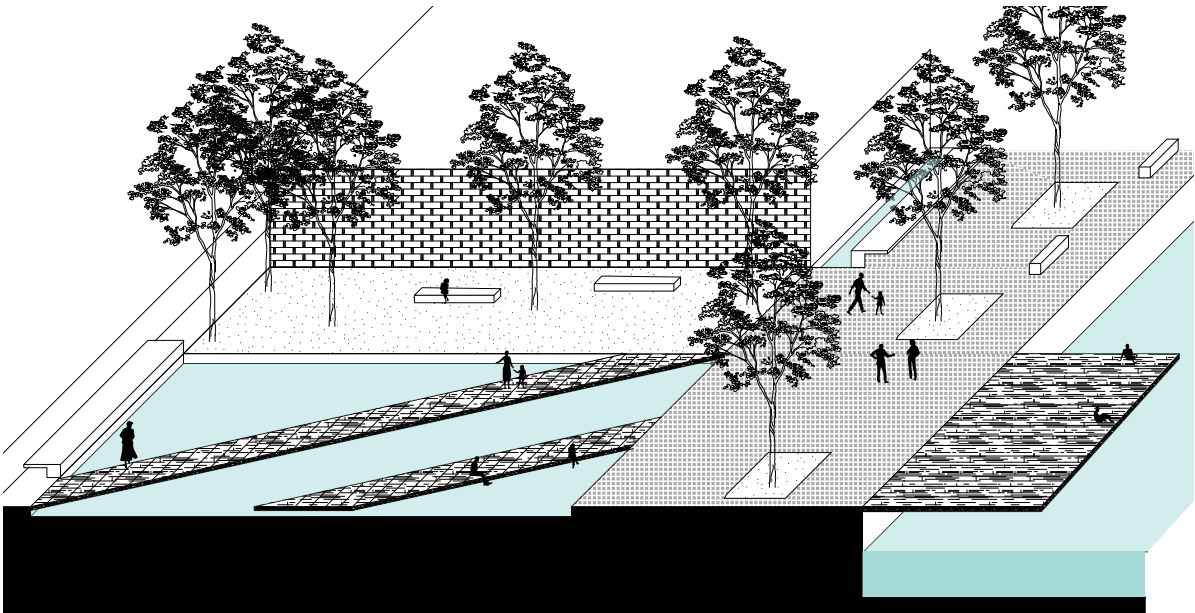


Figure 165. Water square during rainy season

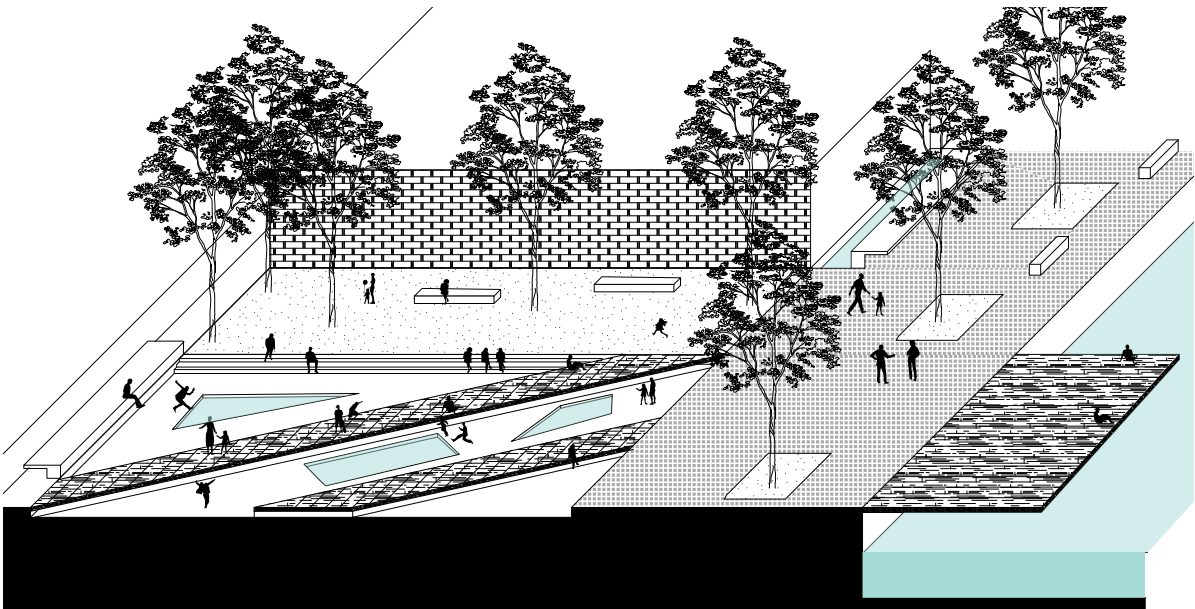


Figure 166. The water square during periodic rains

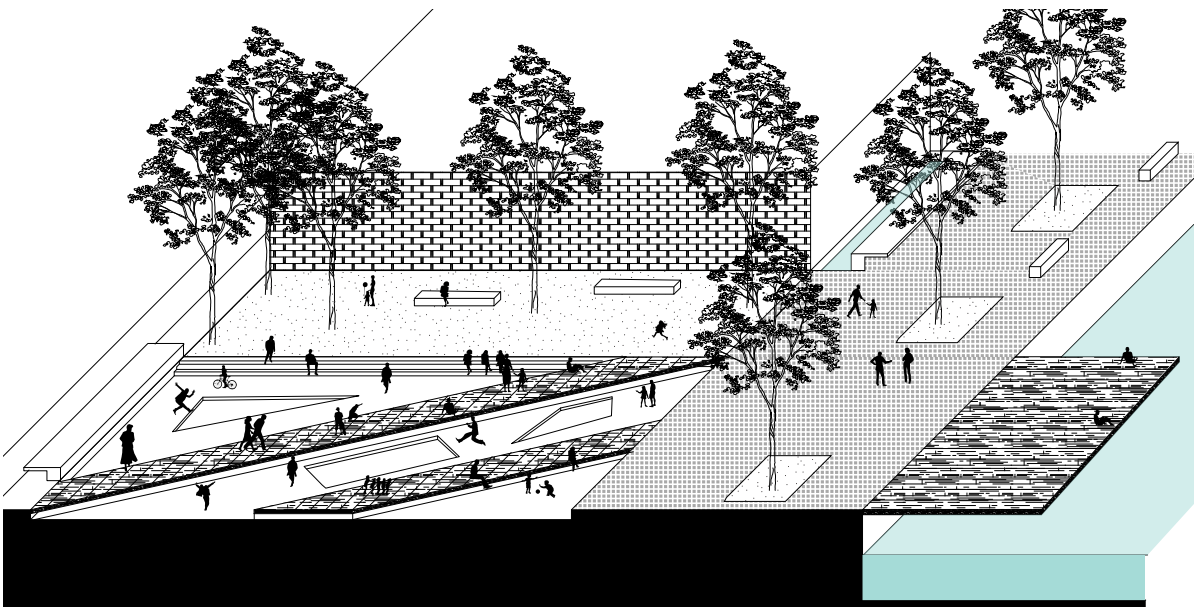


Figure 167. The water square during dry seasons

6.7 Chapter conclusions

In this chapter we took the example of one area and implemented the design hypothesis of the pattern language in this area. The design shows that by utilizing the pattern language as a tool, more vibrant and well connected public spaces can be designed. Apart from this it also helps creating spaces that can be used by people from different social groups and brings down the barriers between neighborhoods, facilitating more social interaction between groups. If we implemented the design hypothesis for all patterns found in the research area (Figure 168) it will create a well connected pedestrian network with many places along the network that support a variety of activities thus becoming active spots (Figure 169). This not only improves the accessibility but also creates a more welcoming, diverse, interactive, friendly and sociable area. It breaks barriers between neighborhoods, creating a mosaic of subcultures, allowing people to freely move within neighborhoods.



Figure 168. Map locating all the different patterns

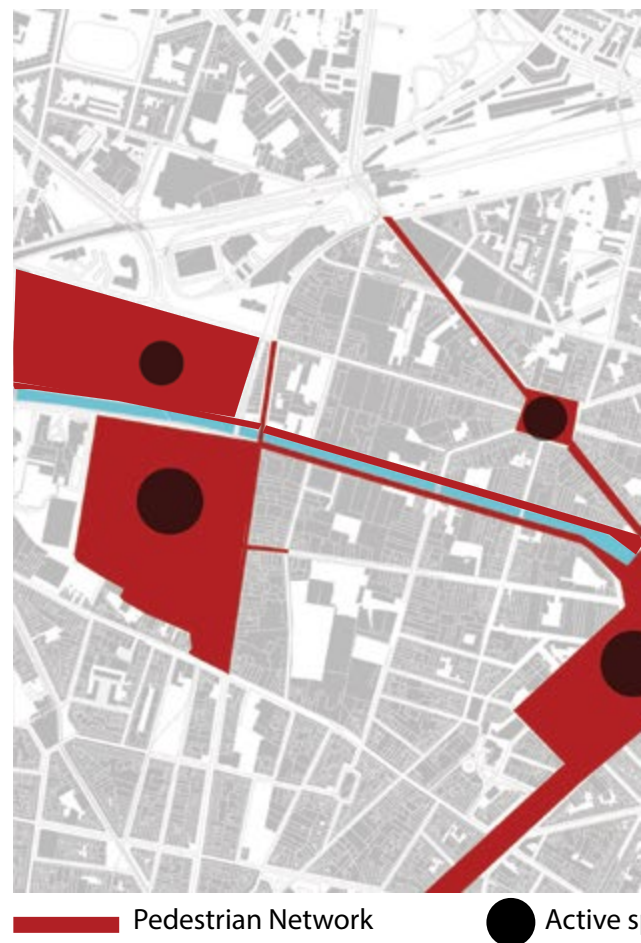
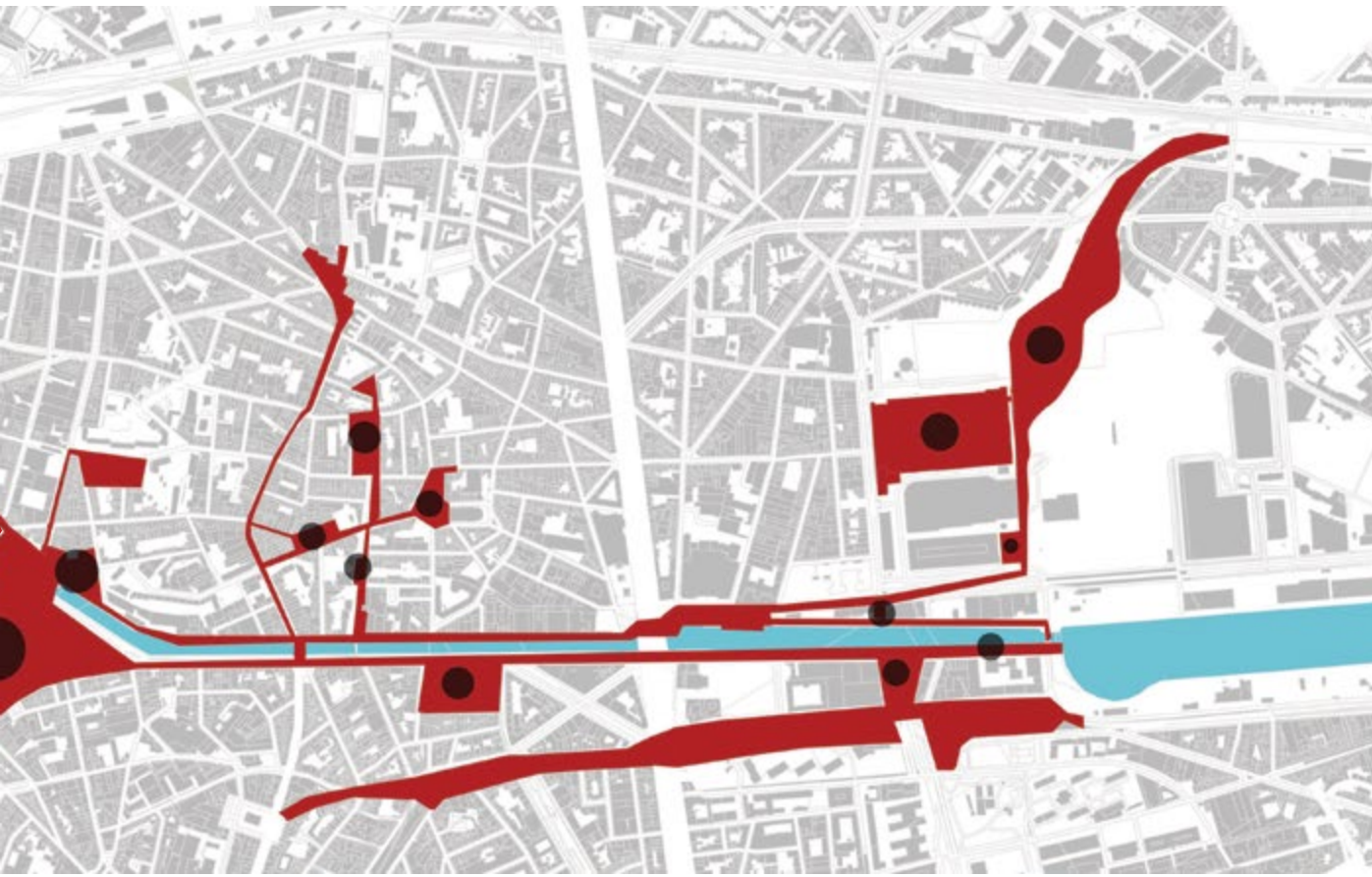
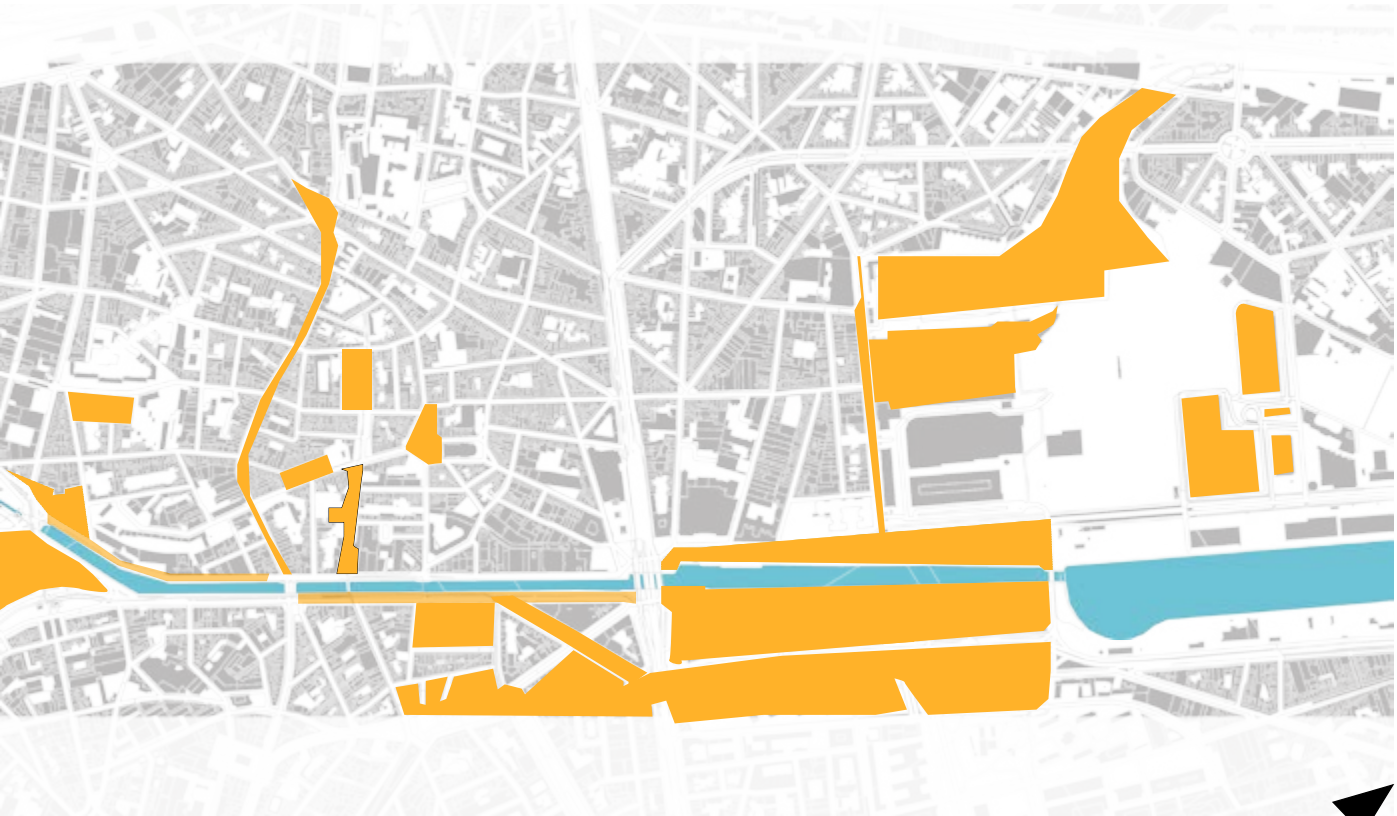


Figure 169. Map representing the pedestrian activity and the active spots



spots
e zones if the design hypothesis for all patterns was implemente

7. REFLECTION

7.1 INTRODUCTION

Shakespeare famously wrote “What is the city but its people”. In the 20th century with our cities becoming hugely cosmopolitan, this quote by Shakespeare struck a chord with me. The people of the city make the city what it is. They bring bits of themselves, their experiences, their culture, their thoughts, practices and ideologies to the city. The city of today is much like a patchwork quilt, with different cultures and people coming together to share space. Diversity, the heart of multiculturalism, defines the world economy and social fabric of cities around the globe, and most certainly characterizes the populations of Australia, Singapore, India, Brazil, Canada, the United States, UK, South Africa, UAE, Dubai, Indonesia, Switzerland and many other European nations—and will for generations to come. Many of these cities face large problems of social inequality which then brings with it a barrage of other problems such as increased crime rates, poverty, unemployment and a lot more. In an era of social protests, with movements that are bringing inequality back into the national discussion, it’s time to reassess the practices that have perpetuated these problems—and how we fix them.

To me, Landscape Architecture is about making connections between people and places, movement and urban form, nature and the built fabric. It is a hybrid discipline rooted in both human and “formal” sciences. What then is its role in designing cities that are for the people? This Graduation project is an attempt to understand how a “human dimension” approach to landscape architecture can become a tool to invent spaces for our future cities and to design spaces of inclusion.

7.2 Flowscapes and the project

The main purpose of the project is to understand the possibility to create a more diverse social space while preserving the overall identity of each community. As mentioned in the introduction, our cities are moving towards becoming hugely multicultural and we need to devise tools to help design spaces that respond to the needs of all of these different people.

With movement and flows at the core, the Flowscapes studio looks at landscape infrastructure that helps facilitate aesthetic, functional, social and ecological relationships between natural and human systems. “Infrastructure” is defined as the basic physical and organizational structures and facilities that are needed for the operation of a society. Infrastructures embody the relationship between humans and landscape, as they are the underlying structures that are built by people in the landscape to make existence possible.

Starting with similar visions, the project begins to look at infrastructures such as: streets, sidewalks, parks, squares and other different public spaces as the cities most important assets and begins to evaluate the relationship these core infrastructures of the city have with the people

of the city.

It became clear while proceeding through the project that “flowscapes” was an integral theme to it.

Brussels as a city has developed in close relationship with its landscape. The railways networks following the valleys, the canals built to respond to the landscape and the development of its two distinct “cities” : The low city and the high city, all responded to the landscape. Brussels is a city where the social landscape was intertwined with the physical landscape. The current landscape of Brussels is one of discord, where the relationship between the social landscape and the physical landscape is not visible anymore. Spatial design plays a crucial role in responding to this discord by providing new spatial conditions where the balance between the social and physical landscapes is restored once again.

The challenge of social inclusion is not an issue that can be tackled from one perspective alone. The integrative nature offered by the flowscapes studio was helpful throughout the project. It allowed me to look beyond the traditional approaches to landscape design and develop a method to study urban landscapes and the social issues related to these landscapes.

Through its very open and large research framework, flowscapes allows you to take your stance on an issue and to understand and tackle the issue from your view point. The wide range of subjects it covers does not limit you towards one direction but rather allows you the freedom to explore a topic of your choice.

7.3 Research and design

The project was an attempt at developing tools for design that are provided by the users themselves. The research by design and design by research approach was integral to gather these tools. The first part of the research which involved a historic analysis and literature reviews, allowed me to develop a coherent problem statement and a theoretical framework. The research method that is followed is divided into four stages: Analysis, Synthesis, the connection and the design. Each of these stages played an important role in contributing to the design of a methodology that can be used to study social issues and urban landscapes.

The analysis

The analysis, uses a combination of spatial and social methods. The two theories of landscape as place and landscape as space used in the analysis gave me a way to link theory to practice. They provided me with ways to understand how human perception depends on spatial features and also on other factors such as group dynamics and social interactions. I could identify spatial features in Molenbeek that had an effect on human perception. I could also understand how various social groups gathered and interacted in space. Although this was a very important part in my research it was not enough to study spatial and social features as individual factors.

Synthesis

The second part to the research, the synthesis is a combination of the spatial and social analysis. This was a necessary step in the research as it helped me identify user preferences, spatial potentials and the relationship between space and social interactions. In this step of the research I could clearly point out what kind of social interactions happened in what kind of spaces. This gave me a solid relationship between the two theories of space and place.

The connection

This was the most important part of the research as it helped bridge the gap between analysis and design. The connection is an important step in the research as it is where analytical thinking and design based thinking come together. It helped me design a method that took the findings of the previous two stages and proposed relevant spatial design strategies. The connection helped create a toolbox of a language of patterns found in the research area. This toolbox can be used by the users themselves to make a change to their neighbourhood. The design hypothesis should not be taken as concrete spatial design solution, but rather methods through which a spatial design can be derived.

The design

The final stage of the research is the design. The design is used as a tool to implement the methodology developed in the previous stage. The language of patterns did not provide a concrete spatial design solution, but rather methods through which a spatial design can be derived. In the design stage it was useful to understand how these methods can be utilized to develop a concrete design solution for a particular site.

7.4 The project and the wider social context

Our cities are facing rapid urbanization and globalization. In the future, most of our major cities will become hugely multicultural and it is important to learn how to deal with this diversity and to design our public spaces to respond to this change. The study of human perception in landscape architecture is gaining relevance in today's world. Through my research I have developed a strategy to research the human dimension in landscape architecture, providing tools and methods to compare and combine social and spatial methods of analysis. I have also created a language of patterns, which is an important tool that can be used in any city with a diverse population. These patterns along with relevant site-specific analysis can provide concrete spatial design solutions.

As an individual master thesis project with limited resources, the research does have some shortcomings. The project calls for a multidisciplinary approach, where professionals from the fields of architecture, landscape architecture, urbanism and sociology work together to provide a stronger basis. Working solely from a landscape architecturally

background, a few things might have been overlooked. As mentioned earlier, most of the methods used for the analysis were through observations, the accuracy of the analysis can be improved by using technological tools. Cameras and computer software's would give us more precise data to work with. Though there are some things that could be improved, I believe the research is a very strong basis for a human based approach to landscape architecture. It could be used as a basis for future studies in the topic.

Resolving environmental problems with sustainable development is a major focus to mitigate climate change. Sustainable development, however, involves more than just matters of ecological balance. Humans are the cause of unsustainable development, the victims and hopefully the solution to this problem. Human needs that constitute the social aspect of sustainability remain underrepresented in sustainability research. These needs are important for the success of a landscape design. As landscape architects, it is always important to look beyond the ecological implications of the design and to include a human dimension approach. I believe that combining the findings of this research with an ecological research will help provide more sustainable design solutions for cities.

8. Bibliography

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APPENDIX



11/2016

Place Saint Jean le Baptiste (Oude)

10:00 AM (Saturday)
Women - 13
Men - 25
Youngsters - 10
Children - 12
North African - 45
Central - 0
European - 10

Tour and Taxi site square
- 11:30 AM

Women - 6
Men - 8
Youngsters - 4
Children - 6
North African - 3
Central - 0
European - 20

11/2016

arc farm - 10:30 AM (Tour & Taxi)

Women - 4
Men - 2
Youngsters - 8
Children - 2
North African - 8
Central - 2
European - 2

Allee du Kaai - 12:00 PM

Women - 2
Men - 4
Youngsters - 6
Children - 3
North African - 2
Central - 1
European - 10

Abattoir

12/11/2016 - 10:30 AM

Market day / W

Women - 35
Men - 38
Children - 15
Youngsters - 20
North African - 38
Central African - 50
European - 20

Plaine de Jeux Quai des Hainaut

12/11/2016 - 3:30 PM (Saturday) (Porte De Ninove)

Women - 2
Men - 4
Children - 6
Youngsters - 3
North African - 6
Central African - 0
Children - 6
Youngsters - 3
European - 0

Porte De Ninove

12/11/2016 - 1:30 PM

Women - 0
Men - 3
Children - 0
Youngsters - 5
North African - 2
Central African - 1
Children - 0
Youngsters - 5

Place Communale Molenbeek (Oude Molenbeek)

12/11/2016 - 4:30 PM

Women - IIIIIII - 9
Men - IIIII - 7
Children - III - 4
Youngsters - II - 2
North African - 16
Central - 0
European - 0

Comte de Flander - 5:00 PM (Oude Molenbeek)

Women - 10
Men - 6
Children - 4
Youngsters - 2
North African - 12
Central - 2
European - 5

11/2016 (Monday)

Le Farm - 10:30 AM

women - 1	North African - 4
men - 0	Central African - 0
children - 0	European - 0
youngsters - 5	

S and T square - 11:00 AM

women - 2	North African - 1
men - 2	Central African - 0
children - 5	European - 5
youngsters - 2	

Allee du Kaai - 12:30 PM

Women - 0	North African - 3
men - 0	Central African - 0
youngsters - 3	European - 0
children - 1	

Chaussée de Gand (Wednesday) (Aude)

11/11/2016, 1:30 PM

women - 6	North African - 5
men - 2	Central African - 0
children - 1	European - 3
youngsters - 2	

Eglise Saint Jean de Baptiste (Aude)

9/11/2016, 1:00 PM (lunch time?)

women - 3	North African - 12
men - 15	Central African - 0
children - 0	European - 6
youngsters - 2	

Porte de Ninone

9/11/2016, 5:30 PM

Women - 1	North African - 1
men - 2	Central African - 2
children - 0	European - 1
youngsters - 3	

Chaussée de Gand (Aude)

9/11/2016 - 6:00 PM

Women - 20	North African - 40
men - 15	Central African - 0
children - 5	European - 10
youngsters - 10	

OBSERVATION PROTOCOL

- Site/ Place of observation: *Fort de Niame*
- Date and time: *10/11/2020, 11:00 AM*
- Event/Activity:
- Length of observation

<p>1. Description of physical environment</p> <ul style="list-style-type: none"> - Type of public space (Open, close, semi-public, typical uses) <ul style="list-style-type: none"> - Surrounding architectural elements <ul style="list-style-type: none"> - Weather conditions 	<p><i>Ward space. Feels like a leftover space. Unkept and dusty</i></p> <p><i>All unused building</i></p>
<p>2. Description of social environment</p> <ul style="list-style-type: none"> - Approximate frequency of people <p><i>North African - 0</i> <i>Central African - 1</i> <i>European - 0</i></p>	<p><i>Hardly any people</i> <i>Especially quiet</i> <i>women - 0</i> <i>men - 2</i> <i>children - 0</i> <i>youngsters - 2</i></p>

<p>5. Personal Reflections (Thoughts emotions)</p>	<p><i>Not a well maintained space</i></p>

<ul style="list-style-type: none"> - Activities undertaken by people (Walking, eating, sitting, playing etc.) 	<p><i>Walking past. ^{Just} No other activity</i></p>
<p>3. Description of activity</p> <ul style="list-style-type: none"> - The atmosphere 	<p><i>Shady and uncomfortable</i></p>
<p>4. Description of social interactions</p> <ul style="list-style-type: none"> - Communication amongst users - Non verbal interactions 	<p><i>None</i></p>

OBSERVATION PROTOCOL

- Site/ Place of observation: *Place communale Molenbeek*
- Date and time: *11/11/2016, 10:00 AM*
- Event/Activity:
- Length of observation


<p>1. Description of physical environment</p> <ul style="list-style-type: none"> - Type of public space (Open, close, semi-public, typical uses) 	<p><i>Open square with the community center (Town hall) This is literally the heart of old Molenbeek</i></p>
<ul style="list-style-type: none"> - Surrounding architectural elements 	<p><i>Town hall is a heritage building MIX of residence + Commercial</i></p>
<ul style="list-style-type: none"> - Weather conditions 	
<p>2. Description of social environment</p> <ul style="list-style-type: none"> - Approximate frequency of people <p><i>Woman dominated area North African - 3 Central African European - 2</i></p>	<p><i>People walking through and sometimes stop to see this art piece that was put up. They are on their way to the commercial street or to the metro Women - 6 men - 2 children - 5 youngsters - 3</i></p>

<p>5. Personal Reflections (Thoughts emotions)</p>	

<ul style="list-style-type: none"> - Activities undertaken by people (Walking, eating, sitting, playing etc.) 	<p><i>walking, eating, shopping tasting the art piece Apparently its where a few dance shows/events happen</i></p>
<p>3. Description of activity</p> <ul style="list-style-type: none"> - The atmosphere 	<p><i>You know that you're in the Moroccan district lively and friendly</i></p>
<p>4. Description of social interactions</p> <ul style="list-style-type: none"> - Communication amongst users 	<p><i>Known shopkeepers friendly interaction</i></p>
<ul style="list-style-type: none"> - Non verbal interactions 	

OBSERVATION PROTOCOL

- Site/ Place of observation: *Panck farm*
- Date and time: *12/03/17 3:00 PM*
- Event/Activity:
- Length of observation

<p>1. Description of physical environment</p> <ul style="list-style-type: none"> - Type of public space (Open, close, semi-public, typical uses) - Surrounding architectural elements - Weather conditions 	<p>Open space with a nice glass house in it. <i>Small Urban-farming plots</i> Typically used to sell the urban sun around farming social events organised by the farming people</p> <p>Residences - very green space old bridge - </p>
<p>2. Description of social environment</p> <ul style="list-style-type: none"> - Approximate frequency of people <p>North African - dominant group Central African - 20-30 European - along with NA they were all dominant in numbers children - youngsters - 40 → Many!</p>	<p>Very busy as it was a sunny day. A whole mix of people sitting in their own groups and chilling. all at least around 80-90 people (was very hard to count)</p>

<p>5. Personal Reflections (Thoughts emotions)</p>	<p>lovely space. Enjoyed the vibrance and liveliness.</p>

<p>- Activities undertaken by people (Walking, eating, sitting, playing etc.)</p>	<p>Walking, eating, sitting, laying in the sun, people playing with drones, jogging, children playing and running around</p>
<p>3. Description of activity</p> <ul style="list-style-type: none"> - The atmosphere 	<p>Very lively good mix of people</p>
<p>4. Description of social interactions</p> <ul style="list-style-type: none"> - Communication amongst users - Non verbal interactions 	<p>Went for an urban-farming event organised in the space and a day before good social interaction between groups then. Now closed groups mostly and Non-verbal interaction between groups The North African people weren't very open to conversations - very very closed.</p>

OBSERVATION PROTOCOL



- Site/Place of observation: *TOWN & TOWN site - square*
- Date and time: *12/03 - 2:30 PM*
- Event/Activity:
- Length of observation

<p>1. Description of physical environment</p> <ul style="list-style-type: none"> - Type of public space (Open, close, semi-public, typical uses) <ul style="list-style-type: none"> - Surrounding architectural elements <ul style="list-style-type: none"> - Weather conditions 	<p><i>large open square. Typically used as a spill out space by shopping mall and exhibition</i></p> <p><i>old town and town site surrounded by The old building refurbished into shopping mall + exhibition space</i></p>
<p>2. Description of social environment</p> <ul style="list-style-type: none"> - Approximate frequency of people <p><i>North African - 5</i> <i>Central African - 2</i> <i>European - 8</i> <i>Children - 10</i> <i>Youngsters - 2</i></p>	<p><i>Few people hanging around, mostly people moving out of mall or exhibition</i> <i>children playing cricket</i> <i>women - 5</i> <i>children - 10</i> <i>men - 8</i> <i>youngsters - 2</i></p>

<p>5. Personal Reflections (Thoughts emotions)</p>	

<ul style="list-style-type: none"> - Activities undertaken by people (Walking, eating, sitting, playing etc.) 	<p><i>walking, sitting, playing cricket.</i></p>
<p>3. Description of activity</p> <ul style="list-style-type: none"> - The atmosphere 	<p><i>Calm except for kids playing</i></p>
<p>4. Description of social interactions</p> <ul style="list-style-type: none"> - Communication amongst users - Non verbal interactions 	<p><i>Not much communication</i></p>

Questionnaire



MAKING MULTICULTURAL PLACES

Survey and questionnaire 2017
Msc. Landscape Architecture, TU Delft

This questionnaire is for study purposes alone and all data obtained will remain solely with the researcher. The identity of the persons participating in the survey will remain anonymous and the information will not be shared without their consent.

- 1) Name:
- 2) Male/Female:
- 3) Age:
- 4) Area:
- 5) Are you Turkish/Moroccan/Congolese/Belgian/Other (Please specify if other) origin?
 - Turkish
 - Moroccan
 - Congolese
 - Belgian
 - Other (Please specify):
- 6) How long have you been living in Belgium?
- 7) What is your employment status?
 - Employed
 - Unemployed
 - Student
 - Part time employment
 - Other (Please specify):

Please evaluate the following statements (questions 8-12) with regards to how you feel about the neighbourhood you live in and how at home you feel in the neighbourhood, on a scale 1-5:

(1) Completely Disagree, (2) Disagree, (3) Maybe, (4) Agree, (5) Completely Agree.

	1	2	3	4	5
8) I like living in this neighbourhood					
9) I feel safe in this neighbourhood					
10) There are many parks and squares in this neighbourhood for recreation.					
11) I visit public squares/parks/markets etc. in my neighbourhood very frequently					
12) If you do not visit parks often, why do you not?					

Please evaluate the following statements (questions 13-15) with regards to how you feel about the neighbourhood you live in and how at home you feel in the neighbourhood, on a scale 1-5:

(1) Completely Disagree, (2) Disagree, (3) Maybe, (4) Agree, (5) Completely Agree.

	1	2	3	4	5
13) I think the parks/squares etc. are vital to my neighbourhood					

Please evaluate the following statements (questions 14-15) with regards to how you feel about the neighbourhood you live in and how at home you feel in the neighbourhood, on a scale 1-5:

(1) Completely Disagree, (2) Disagree, (3) Maybe, (4) Agree, (5) Completely Agree.

	1	2	3	4	5
14) I think my neighbourhood needs more parks/squares and places to relax/hangout/play					
15) I participate in a lot of activities in this neighbourhood?					

16) If you do not participate in activities, why do you not?

Please evaluate the following statements (questions 17-20) with regards to how you feel about the neighbourhood you live in and how at home you feel in the neighbourhood, on a scale 1-5:

(1) Completely Disagree, (2) Disagree, (3) Maybe, (4) Agree, (5) Completely Agree.

	1	2	3	4	5
17) I use spaces along the canal to relax					
18) The canal area is where a lot of activity happens and is vital to the neighbourhood					
19) The canal is not very accessible					
20) The spaces along the canal can be made into nice parks/playgrounds.					

21) What are your reasons for visiting parks? Please tick the ones you feel are most important to you.

- Recreation
- Scenery
- Vegetation
- Stress buster
- Spend time with family
- Spend time alone
- Other(Please specify):

22) What kind of activities do you enjoy participating in? Please tick the ones you feel are most important to you.

- Theatre
- Music
- Other cultural activities
- Gardening
- Play
- Sports
- Food/Markets
- Other(Please specify):

23) What do you think is the most important feature in a park? Please tick the ones you feel are most important to you.

- Benches and places to sit
- Place to work
- Safety
- Accessibility
- Children friendly
- Handicapped friendly
- Comfort
- Cleanliness
- Green trees and nature
- Water elements
- Play areas
- Quiet spots to relax
- Barbeque areas
- Other (Please specify)

24) Please tick the images that appeal the most to you.

a)



b)



c)



d)



e)



f)



g)



Timestamp	Name (Prenom, Nom)	Gender (Sexe)	Age	Area (Adresse)
3/13/2017 17:56:53	Zaide	Female (Femme)	26	Brussels
3/13/2017 18:01:55	Matthios Kirsch	Male (Homme)	40	Brussels
3/13/2017 18:04:47	Rob Katti	Female (Femme)	30	Yser
3/13/2017 18:07:19	Nicolas Van puymbroeck	Male (Homme)	30	Parckfarm
3/13/2017 18:10:59	Judith	Female (Femme)	48	Laeken
3/13/2017 18:13:39	Kabien	Female (Femme)	27	Ixelles
3/13/2017 18:16:44	Loic De Bethune	Male (Homme)	28	Brussels
3/13/2017 18:20:14	Eva De Bruyn	Female (Femme)	28	Brussels
3/13/2017 18:24:32	Sissi	Female (Femme)	25	Aumale
3/13/2017 18:26:54	Alfonso Alberti	Male (Homme)	32	Brussels
3/13/2017 18:31:22	Marie Laboide	Female (Femme)	27	Boulevard d
3/13/2017 18:33:51	Sade dine reda	Male (Homme)	37	Rue de cara
3/13/2017 18:37:08	Camille Bullot	Female (Femme)	30	Rue Verhoe
3/13/2017 18:39:48	Emmanuel Berard	Male (Homme)	24	Ixelles
3/13/2017 18:43:18	Nicoise Valerie	Female (Femme)	40	Molenbeek
3/13/2017 18:46:32	Janas Narig	Female (Femme)	27	Rue de la N
3/13/2017 18:51:05	Mouboud	Male (Homme)	40	Molenbeek
3/13/2017 18:53:16	Flippolyte godait	Male (Homme)	25	Ixelles
3/14/2017 14:20:48	Niels Wennekes	Male (Homme)	41	Albert Vand
3/14/2017 21:21:43	Sarah De Boeck	Female (Femme)	38	1080 Sint-J
3/16/2017 16:11:24	Thomas, Swerts	Male (Homme)	31	Molenbeek
3/16/2017 17:18:44	Maya Hammoud	Female (Femme)	18	Boulevard l
3/16/2017 19:33:12	Nabila B.	Female (Femme)	35	Comte de F
3/17/2017 0:08:07	aurelie verst.	Female (Femme)	23	anderlecht
3/17/2017 16:41:24	Sophie Baeijens	Female (Femme)	34	Molenbeek
3/17/2017 19:04:59	Michael Creek	Male (Homme)	34	Stalingrad
3/17/2017 19:47:26	Brigitte	Female (Femme)	51	Laeken brus
3/17/2017 23:22:13		Female (Femme)	56	1000 Bxl
3/18/2017 9:27:50		Female (Femme)	28	Rue anoul i
3/18/2017 10:03:41		Female (Femme)	28	Rue anoul i
3/21/2017 21:52:11	Ine	Female (Femme)	38	Molenbeek
3/23/2017 11:52:13	Jan Schaerlaekens	Male (Homme)	43	Onafhankel

es)	Are you Turkish/Moroccan	How long have you lived in	What is your employment	I like my neighbourhood.
	Dutch	5 years	Student (Étudiant(e))	5
	Belgian (Belge)	all my life	Employed (Salarié)	5
	Belgian (Belge)	7 years	Employed (Salarié)	5
	Belgian (Belge)	All my life	Employed (Salarié)	4
	German	23 years	Employed (Salarié)	4
	Belgian (Belge)		27 Employed (Salarié)	3
	Belgian (Belge)	Forever	Employed (Salarié)	4
	Belgian (Belge)	Forever	Employed (Salarié)	3
	Congolese (Congolais)		25 Employed (Salarié)	4
	Italian	5 years	Employed (Salarié)	5
du jubile	French	8 months	Employed (Salarié)	4
advelde 93	Algerian		Unemployed (Non-salarié)	5
even -1020 La	French	4 years	Employed (Salarié)	5
	French	6 years	Student (Étudiant(e))	4
	Belgian (Belge)		Employed (Salarié)	5
euse, 1080 m	Belgian (Belge)		1990 Unemployed (Non-salarié)	4
	Algerian	20 years	Employed (Salarié)	1
	Belgian (Belge)		25 Student (Étudiant(e))	4
erkinderestraat	Dutch	1976-1994, 2006-2012, 2	Employed (Salarié)	4
ans-Molenbee	Belgian (Belge)	Most of my life, with an ex	Employed (Salarié)	3
	Belgian (Belge)	27 years	Employed (Salarié)	4
ouis mettwie	Origine libanaise et nation	J'y suis née	Student (Étudiant(e))	5
landre	Moroccan (Marocain)	Née en Belgique	Employed (Salarié)	5
	Belgian (Belge)	toujours	Student (Étudiant(e))	
	Belgian (Belge)	toujours	Employed (Salarié)	4
	UK	12 yrs	Employed (Salarié)	4
ssels	Belgian (Belge)		51 Employed (Salarié)	4
	Finnish	20 years	Employed (Salarié)	4
xelles matong	Neerlandaise-francaise	3 ans	Employed (Salarié)	5
xelles matong	Neerlandaise-francaise	3 ans	Employed (Salarié)	5
	Belgian (Belge)	all my life	Employed (Salarié)	4
ijkheidstraat 6	Belgian (Belge)	43 jaar	Employed (Salarié)	3

I feel safe in this neighborhood	There are many parks and public squares in this neighborhood	I visit public squares/parks	If you do not visit parks or squares, why not?	I think the parks/squares in this neighborhood are good
4	1	5		
4	3	5		
5	3	4		
5	4	4		
4	4	4		
3	2	4		
3	1	3	There are no good parks in this neighborhood	
4	1	3	I go to other neighborhoods	
4	1	5		
5	5	5		
4	5	5		
1	5	5		
4	4	4		
4	5	5		
5	5	5		
2	3	2		
1	1	1		
4	4	5		
3	1	2	I do not always have time	
3	1	4		
4	1	2		
4	5	4	Car j'ai mon parc habituel	
3	2	2	Il n'y en a pas assez	
3	1	2	Parce qu'il y en a pas beaucoup	
4	2	5		
4	4	4		
4	4	5		
4	3	4	Il y en a pas Bcp directement	
4	3	4	Il y en a pas Bcp directement	
4	3	4		
3	1	2		

ares	I think my neighborhood r	I participate in a lot of acti	If you do not participate in	I use spaces along the ca
2	5	2	Not well informed about th	1
5	4	4		3
5	5	3		2
4	3	4		4
5	5	3	I would like to do it more c	3
5	5	3		2
4	5	1	There is no sense of comi	2
5	5	2	There is no sense of comi	3
5	5	1	Do not know that they are	5
5	4	5		3
5	4	4		2
1	5	1		5
5	5	5		2
5	5	3	Don't have much informat	3
5	4	3		4
4	5	2		1
1	1	2	I work and take care of the	3
5	4	3		3
5	5	4		3
5	5	3		4
4	5	1	Nothing there that interes	2
4	4	5		3
5	5	3	Prise par le travail	3
4	4	1	trop peu d'activités	2
5	5	2	Pas le temps	2
5	5	4		3
4	4	3		3
5	5	5		5
5	5	3	Pas Bcp de temps le soir	1
5	5	3	Pas Bcp de temps le soir	1
5	5	4		3
5	5	3		4

The canal area is where a	The canal is not very acc	The spaces along the canal can be made into nice parks/playgrounds
1	5	
3	3	
3	5	
4	3	
4	5	
3	5	
2	4	
3	4	
4	3	
2	3	
5	5	
2	5	
5	4	
5	1	
3	3	
3	5	
5	3	
4	4	
2	4	
4	4	
4	2	
4	2	
3	4	
4	5	
4	4	
3	3	
4	5	
3	3	
3	3	
4	1	
4	4	

(Les espaces le long du canal peut être transformé en beaux parcs / terrains de jeux.)	5
	4
	5
	4
	5
	5
	3
	5
	5
	5
	5
	5
	5
	2
	4
	5
	5
	2
	5
	3
	5
	3
	5
	4
	5
	5
	4
	5
	3
	3
	5
	5

If you do not use the canal zone for recreation, why do you not use it? (Si vous n'utilisez pas la zone)

Not very nice places around the canal to go to

Too many cars

Car le canal c'est un canal! Les endroit au alentour ne m'intéresse pas beaucoup mais je connais

Ce n'est pas très joli, il n'y a pas de parks

it's too far away.

Cest loin

Cest loin

Ik gebruik het kanaal vooral om te joggen

one du canal pour les loisirs, pourquoi ne l'utilisez-vous pas?)

s quelques endroit sympa mais sans plus.

What are your reasons for visiting parks? Please tick the ones you feel are most important to you. (Vous allez au parc pour

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se

Anti stress, Spend time with family (Temps en famille)

Take a walk

Recreation (des loisirs), Scenery (Paysage)

Recreation (des loisirs), Scenery (Paysage), Spend time with family (Temps en famille), Picnic

Recreation (des loisirs), Scenery (Paysage), Anti stress

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se

Recreation (des loisirs), Scenery (Paysage), Anti stress

Scenery (Paysage), Spend time with family (Temps en famille), Spend time alone (Se reposer seul)

Recreation (des loisirs), Scenery (Paysage)

Recreation (des loisirs), Anti stress, Spend time alone (Se reposer seul)

Spend time with family (Temps en famille), Spend time alone (Se reposer seul)

Recreation (des loisirs), Scenery (Paysage), Anti stress

Recreation (des loisirs), Anti stress

Recreation (des loisirs), Anti stress, Spend time with family (Temps en famille)

Spend time with family (Temps en famille)

Spend time with family (Temps en famille)

Recreation (des loisirs), Scenery (Paysage)

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time alone (Se reposer seul)

Scenery (Paysage), Anti stress, To walk in fresh air

Recreation (des loisirs), Anti stress

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time alone (Se reposer seul), Faire des anniversaire ou de

Anti stress, Spend time with family (Temps en famille), Spend time alone (Se reposer seul)

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time with family (Temps en famille)

Scenery (Paysage), Anti stress, Spend time alone (Se reposer seul)

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time alone (Se reposer seul)

Recreation (des loisirs), Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se

Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se reposer seul)

Scenery (Paysage), Anti stress, Spend time with family (Temps en famille), Spend time alone (Se reposer seul)

Recreation (des loisirs), Spend time with family (Temps en famille)

sport

. Veuillez cocher celles que vous jugez les plus importantes pour vous.)

reposer seul), Smell, Nature, see the seasons

reposer seul)

s petites promenades et sorties.

reposer seul)

reposer seul), avoid the noise coming from chaotic traffic, avoid private voiturist who have no manners (= most of the drivers)

What kind of activities do you enjoy participating in? Please tick the ones you feel are most important to you. (Dans quelles activités)
Music (Musique), Sports, Don't need an organised activity
Music (Musique), Skateboarding
Other cultural activities (Autres activités culturelles), Gardening (Jardinage), Food/Markets (Gastronomie)
Gardening (Jardinage), Sports, Food/Markets (Gastronomie)
Theatre (Theatre), Music (Musique), Other cultural activities (Autres activités culturelles), Gardening (Jardinage), Play (Jeux), Sports
Theatre (Theatre), Music (Musique), Gardening (Jardinage), Food/Markets (Gastronomie)
Music (Musique), Sports, Walking
Theatre (Theatre), Gardening (Jardinage), Sports, Food/Markets (Gastronomie)
Gardening (Jardinage), Play (Jeux), Sports
Gardening (Jardinage), Play (Jeux), Food/Markets (Gastronomie)
Theatre (Theatre), Other cultural activities (Autres activités culturelles)
Sports, Food/Markets (Gastronomie)
Music (Musique), Gardening (Jardinage), Sports, Relax, Have a drink, Talk and meet with people
Gardening (Jardinage), Sports
Play (Jeux), Sports
Music (Musique), Play (Jeux)
Food/Markets (Gastronomie), More gastronomy
Music (Musique), Gardening (Jardinage)
Other cultural activities (Autres activités culturelles), Food/Markets (Gastronomie), With an architect I organize a monthly "apero" a
Theatre (Theatre), Neighborhood activities, such as street BBQ's
Theatre (Theatre), Music (Musique), Other cultural activities (Autres activités culturelles), Sports, Food/Markets (Gastronomie)
Theatre (Theatre), Other cultural activities (Autres activités culturelles), Rencontre politique, faire entendre nos voix, parler avec d
Theatre (Theatre), Sports
Music (Musique), Other cultural activities (Autres activités culturelles), Sports
Sports, Food/Markets (Gastronomie)
Theatre (Theatre), Music (Musique), Other cultural activities (Autres activités culturelles), Sports, Food/Markets (Gastronomie)
Music (Musique), Other cultural activities (Autres activités culturelles), Gardening (Jardinage), Food/Markets (Gastronomie)
Music (Musique), Other cultural activities (Autres activités culturelles)
Theatre (Theatre), Sports, Food/Markets (Gastronomie)
Theatre (Theatre), Sports, Food/Markets (Gastronomie)
Theatre (Theatre), Other cultural activities (Autres activités culturelles), Food/Markets (Gastronomie)
Sports

és vous aimeriez participer? Veuillez cocher celles que vous jugez les plus importantes pour vous.)

arts

at Place Duchesse de Brabant, sort of a potluck event in order to bring people together around Place Duchesse de Brabant

es gens qui pourrait avoir des préjugés sur les molenbeekois ou autre..

Bhavna Thyagarajan

**Master Thesis Report Landscape Architecture, 2017
TU Delft**