STREETS AS PLACES

Reconnecting Toronto with its waterfront by rediscovering streets as social places

Franka Fontijn, TU Delft
Graduation Project Flowscapes, 2018

'There is much more to walking than walking'

(Jan Gehl, 2010)

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ABSTRACT

This graduation thesis concerns the reintegration and reinterpretation of infrastructure in the urban landscape. Since the Industrial Revolution, people and cities have become more dependent on cars, and by the mid-20th century, infrastructure moved toward being a component of traffic management, instead of urbanism. In urban situation, this caused barriers and isolated spaces, breaking up the fine grained pedestrian network. The car dependent city has serious consequences for health, social connectedness and the environment.

In the research location Toronto, large infrastructural elements are imposing themselves as a barrier between the city and the waterfront. In order to reconnect the city to its Waterfront, streets need to be rediscovered as social space and the balance between a street as 'movement space; and 'social space' has to be restored. 'Walkability' is the key. A theoretical framework on 'Access & Linkage' and 'Placemaking' will support the design for a succesful pedestrian network in the city.

A new pedestrian network, supported by an intensive and diverse land-use, connects landmarks, parks and attractive facilities in the area, and offers many opportunities for people to meet, relax, play, run, do sports, and so on. The design will attract public life and contribute to an active lifestyle, with positive results for health and social connectedness. The project can serve as an example for other car dominated cities or for other areas in Toronto where infrastructure is causing problems and limits the walkability of the city.

When walkability is applied in more cities in the world, this will have positive results on the environment.

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1. INTRODUCTION

1.1. THE CHANGING CITY

The original basis for settlements was for people to come together, for security and defence, for trade, access to information and resources and to engage in activities. For engaging in activities, it is essential that people come together and communicate which is basically 'the promise of the city'.

Since the first settlements, the interactions between people have multiplied massively, and because of development in technologies of transportation and communication since the Industrial Revolution, it is not necessary for people to come together in order to communicate and people can travel between places in a shorter time than before.

Urban design has contributed to the evolving trends in developing new urban forms and it responds to the pattern of the previous growth of settlements.

Because of the use and development of technologies of transportation and communication, the nature of settlements has changed. Especially the car has had a major influence of cities (figure 1.1.). It has caused urban sprawl and cities to be more chaotic and fragmented in their form. (Carmona et al, 2010)

TIMELINE

Pre industrial city
pre 18th century

Before the Industrial Revolution, cities were small-scale settlements where walking was the main means of transport. Cities developed along rivers and canals and waterpower was used for energy.

Eearly industrial city
late 18th and 19th century

Because of steam power, there was a growing factory system in cities, resulting in a general migration into cities. They grew rapidly and spread along new railway lines. Cities densified, and this, together the with polluting factories, resulted into overcrowding and poor public health.

Mature industrial city
post Industrial Revolution.

People escaped from the polluted, diseases and crime filled cities, to what became suburbs. Especially in North America, it took form of massive and sprawling suburbanisation. The development in railway systems and car ownership made it possible to live and work in different places. Road building schemes were necessary to connect suburbs to city centres.

Post industrial urban form
1970s - now

Decentralisation enabled by mass car ownership, combined with a changing transport network resulted in a breaking down of the density gradient from the dense city center to the more scattered suburbs. Cities nowadays are more fragmented and chaotic in their form. (Carmona et al 2010)
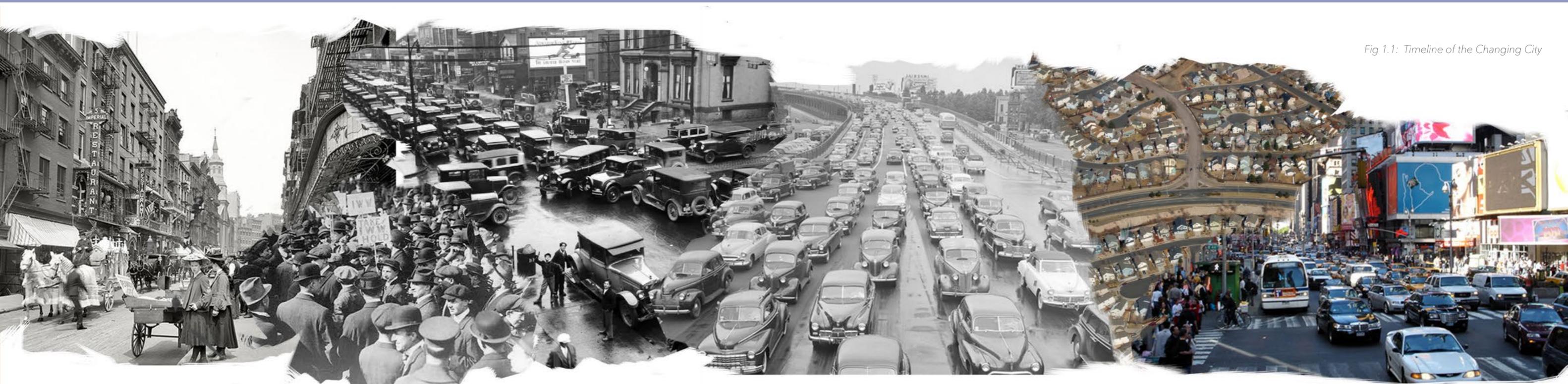

Fig 1.1: Timeline of the Changing City

1.1. THE CHANGING CITY

The change of cities can be studied by looking at the change in the physical form and shape of settlements over time: the study of Urban Morphology. According to Morphologists, settlements can be broken down into several key elements. Conzen (1960), for example, distinguished the street (cadastral) pattern, the plot pattern, building structures and land uses. Differences in these elements can create very different environments. (Carmona et al, 2010)

Jenkins' 'To Scale' (2008) is a valuable resource for studying the urban morphology. The book contains 100 fragments of cities from around the world drawn to the same scale (fig1.2.). By comparing the urban tissues we can establish a sense of scale when designing and he argues that by looking and comparing cities, it helps to establish a conversation between the past and the future.

As you can see from figure 1.2, streets are very determinative in their urban morphology. There is also a clear difference visible when comparing North American and European cities. North-American cities have a geometric and large scale grid, while European cities have a finer network of streets that are narrow and irregular.

Because of the big difference in urban morphology, there will probably also be a difference in the use of space. The use of streets will probably be different in these cities; especially with the dependency people have on cars, which is also dependent on the country that you talk about.

The impact that the car has had on the city, and the spatial and social consequences of the change in the urban morphology is the starting point of my research.
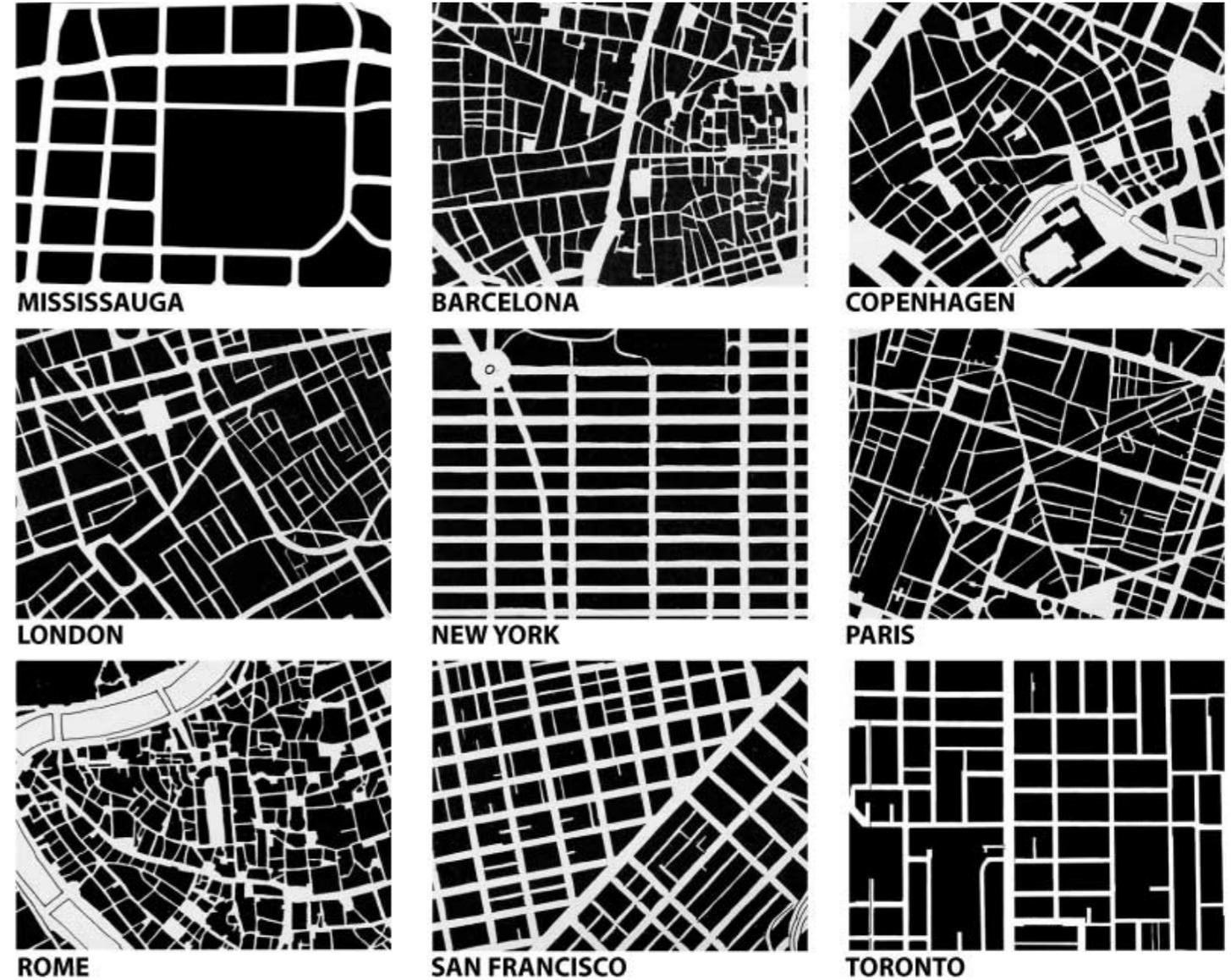

Fig 1.2: Urban tissues, (Jenkins, 2008)

1.2. THE CAR DEPENDENT CITY *SPATIAL CONSEQUENCES*

1. INFRASTRUCTURE AS TRAFFIC MANAGEMENT

From the 19th century, infrastructure became really important for the growing cities. Infrastructures for vehicular movement, as well for pedestrian circulation were designed to guide the rapidly developing cities. By the mid-20th century, infrastructure moved toward being a component of traffic management, instead of urbanism. With the rapidly spreading ownership of automobiles after World War II, a home in the suburbs, with access to the city but life in a low-density community with a yard and a driveway, appeared highly desirable. (Brown, 2001)
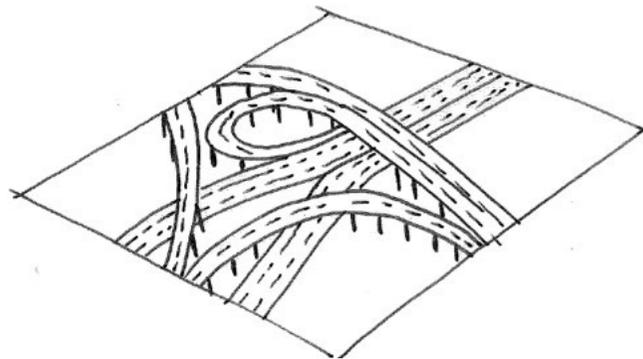
2. INFRASTRUCTURE AS A MONOFUNCTIONAL SYSTEM

Infrastructure became disconnected from the landscape and was seen as a mono-functional system, only used for transportation. This modern road network didn't connect or obey to the existing environment and did not fit into the urban or rural patterns. Instead, it imposed a new layer of traffic management.
The search for efficiency and the introduction of asphalt resulted in the specialization of road design. Highways and expressways with almost no relation to the environment became well known all over the world. (Smets & Shannon, 2010)
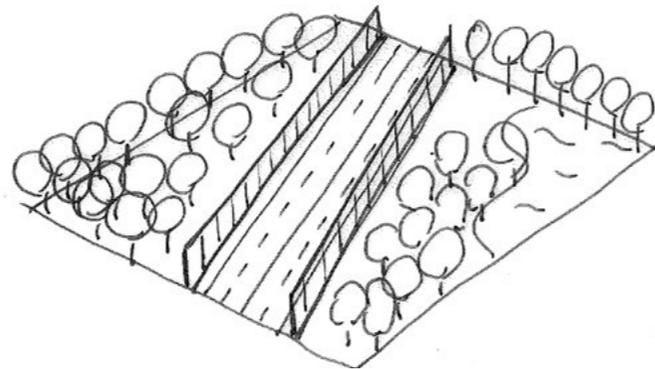
One of the most important factors in the contemporary urban form has been the car. The car was seen as an opportunity for urban life, enabling people to live and work in different places while being independent on rail stations. The thought that the car would save the average person time has been proven wrong in Germany. There, in a single generation, increased car use and the extra speed made possible by the car led not to more trips, more activities or saved time for the average person, but, instead, resulted in longer trips, with people travelling further to access the same things that used to be accessed locally.

Moreover, while cars have enabled cities and their activities to spread out and land-use patterns to evolve to privilege the car, to operate effectively cars become a necessity. The flexibility offered by the car is thus a 'coerced flexibility' (Sheller & Urry 2000: 745).

Fig 1.3: Infrasctructure as Traffic Management

Fig 1.4: Infrasctructure as a monofunctional system

3. FRAGMENTATION

When the principal modes of transport were by foot or horse, streets had a purpose for movement and socialising. But with the development of the car, spaces started to get fragmented by the high speed traffic.
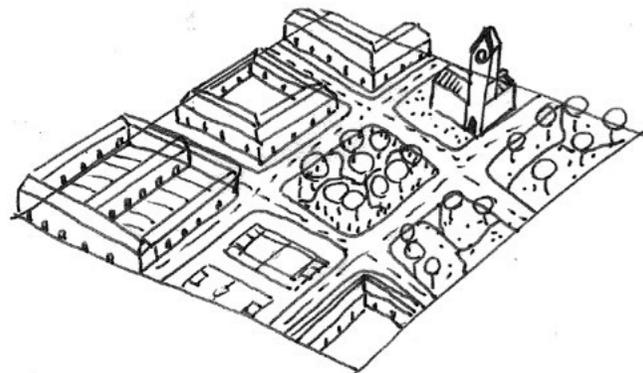
4. BREAKING UP THE PEDESTRIAN NETWORK

The automobile has undermined other forms of mobility by breaking up smaller networks like the pedestrian network. (Carmona, 2010)

By colonising public space networks, subordinating other forms of mobility and reorganising the distribution of activities in space, automobility, and the car system in general, undermines other forms of mobility. (Carmona et al, 2010)

Infrastructure is seen as a component of traffic management: a mono-functional system, disconnected from the landscape. In urban situations, it creates barriers and isolated spaces, breaking up the fine-grained pedestrian network.

Fig 1.5: Fragmentation

Fig 1.6: Infrastructure breaking up the pedestrian network

Social Space and Movement Space

The public space network knows two overlapping realms: 'movement space', circulation of traffic, and 'social space', where people engage in social interaction and exchange (economic, social and cultural) (figure 1.7), but these two realms have become more separated because of extensive car travel.

The great advantage of cars is that they provide seamless travel from origin to destination, though, as noted in Chapter 1.2.1, designing for vehicular traffic often breaks up the pedestrian network and hereby the pedestrian movement experience. Car travel primarily involves the arrival rather than the experience of travel between particular destinations (Carmona et al, 2010). Next to this, the quality and continuity of the urban space is less important to car drivers than pedestrians.

Pedestrian travel is almost never with a single purpose: in going from one place to another, we stop to buy a newspaper; talk to a neighbour, colleague or friend; window shop; have a drink at a pavement cafe; or, more simply, enjoy a view or watch the 'world go by'. Jane Jacobs (1961) famously highlighted walking as the mechanism that turns roads into streets where social interaction and economic exchange flourish. *Pedestrian travel is thus both circulation and social interaction and exchange.* As Gehl (2010) argues, 'there is much more to walking than walking.'

Benefits of walking

According to "The Pedestrian Revolution" (Breines & Dean, 1974) walking is the most important form of urban transport. In dense city centres, it is the most efficient way to a larger number of people for short distances. A pedestrian uses twenty times less space than a car.

A study in Galway, Ireland suggests that people who live in walkable neighbourhoods have higher levels of "social capital," and are more likely to know their neighbours, participate politically, trust others, and be socially engaged (Leyden, 2003).

Fig 1.7: Movement and social space (Carmona et al, 2010)

In the car dependent city, public space is colonised by the car and (vehicular) movement space has overwhelmed social space. Streets have become roads (Carmona, 2010), and opportunities for social interaction and exchange occur only when the car is parked (Southworth, 2005).

(Vehicular) movement space has overwhelmed social space, meaning that there is less pedestrian movement on the streets. this has negative results for health and social connectedness.

Cars have had a major effect on cities and their urban morphology. The dependency on cars has negative consequences on a spatial and social level. The first influencing the second. Car dependency has caused infrastructure to be merely seen as traffic management: a monofunctional system that has no relation with the landscape. In urban situations, infrastructure imposes itself as a barrier, fragmenting different places from each other and hereby breaking up the pedestrian network.

The space that the car takes in, (vehicular) movement space, has overwhelmed social space, in which social interaction and exchange takes place. This has a negative result on health and social connectedness of people in the city.

The symbiotic relationship between movement space and social space is lost.

1.3. RESEARCH LOCATION

The change of the city of Toronto is clearly visible when looking at the shoreline. (Figure 1.9)

Toronto is located on the shore of Lake Ontario and has been used as a trading post by the French since 1720 when they started building small trading posts on the Humber River and on the shoreline of Lake Ontario. And after the American Revolution, it became an important location for fur trade and settlement. Most of the city's trade has historically been by boat. Manufacturing functions, such as factories were located at the waterfront and made it easy to receive and to further transport the finished products. At first, Front street was located at the shoreline of Toronto, but later a 100 m wide Esplanade was realised.

In the 1930's and 40's there was a lack of available land in order to expade the harbour. Therefore, a campain was raised to expand the shoreline towards the South. (South of the Esplanade) The River Don was straightened, marshes were filled and land was levelled. The landfilling continued until the 1950s. That is when the modern shoreline, like we know it today was realised. (Figure 1.10.)

Originally, the river Don was a natural meandering river, with seasonal flooding. In the 1870's it became a polluted river and the flooding became a problem because people were living nearby the river. Therefore, in early 1880's plans were made to widen, deepen and straighten the lower Don River. The new plan would have positive results on the area:
1. Improved sanitary consitions of the area
2. The Don as a navigable stream to large vessels.
3. The possibility to acomodate rail traffic into the city
4. New open land for industrial purposes.

The plan was realised in 1909 and the railway company succeeded in creating their eastern entrance to the city.

In the early 1900s, Toronto's waterfront became less acttractive and people did not want to live so close to the industry that was concentrated there. People moved away from Downtown Toronto to cleaner suburbs. And with the accesibility to cars, people could still be working in the Downtown area while living further away. All this commuting was asking for a faster infrastructural network.

For many cities, during this time, highways were often rings around the city, often building near a waterfront. Toronto was no different and built the Gardiner Expressway in the 1950s. (Waterfront Toronto) The highway is located in between the Waterfront and Downtown Toronto.
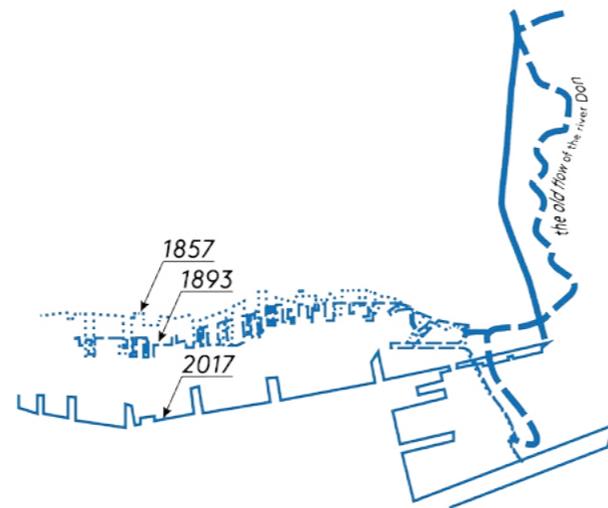

Fig 1.9: The changing waterfront of Toronto

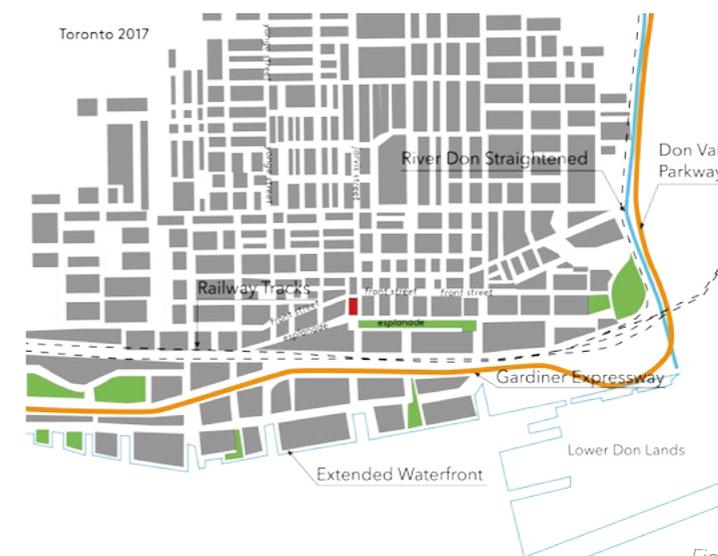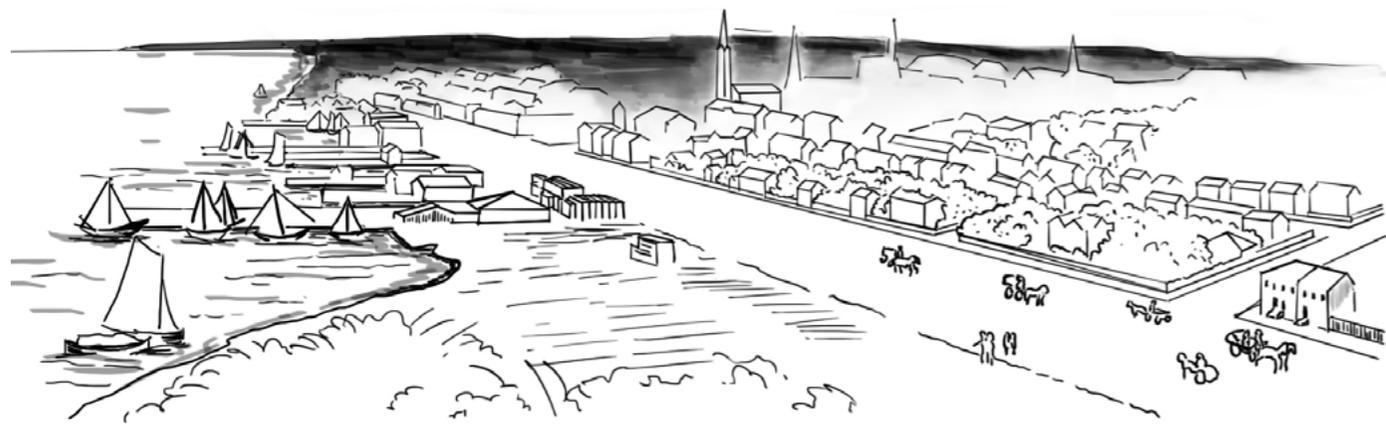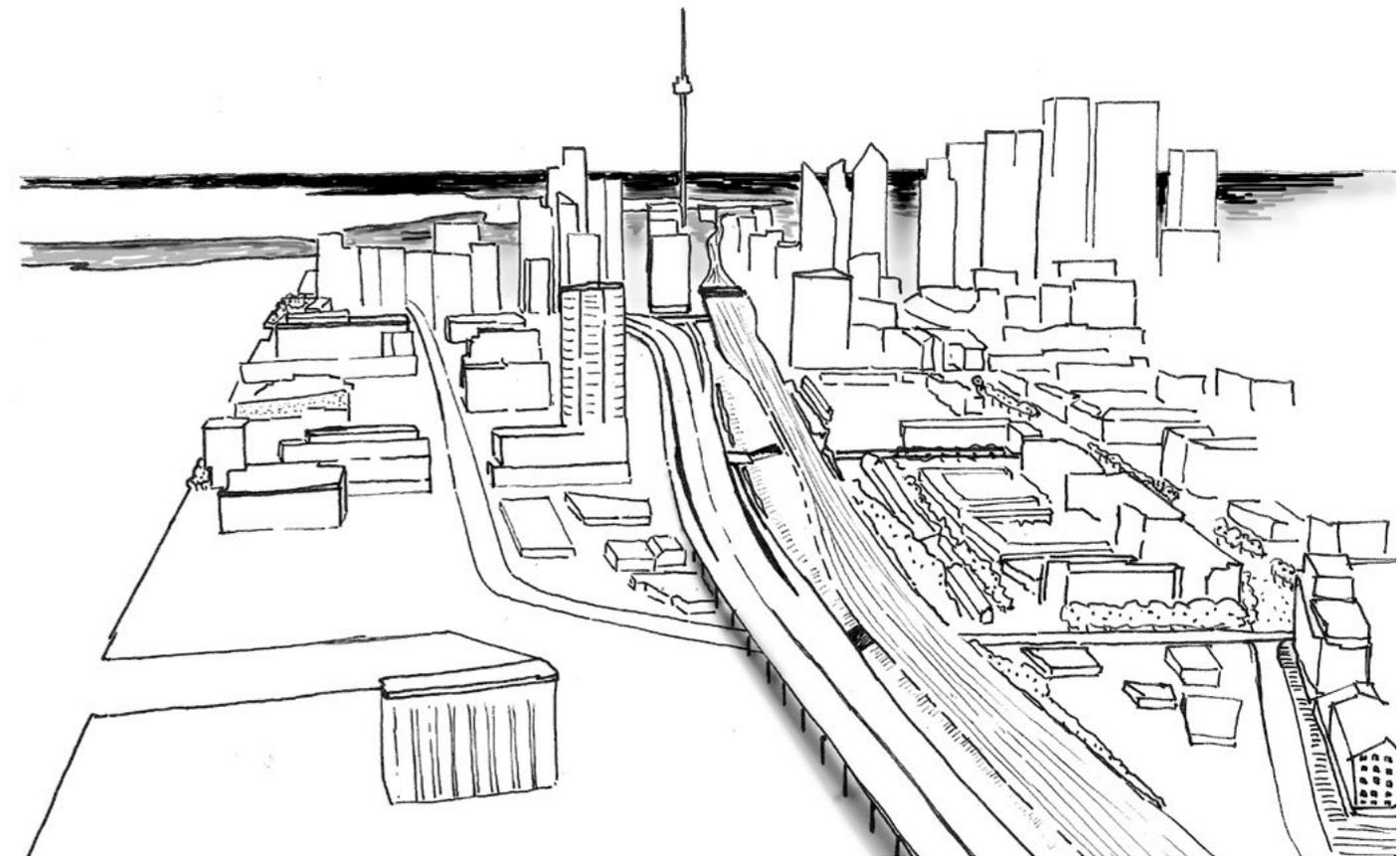Fig 1.11: Toronto Waterfront Transformation

Fig 1.12: Toronto Waterfront Transformation

1.3. RESEARCH LOCATION

Waterfront Development

Toronto's waterfront (figure 1.13) revitalization is the largest urban renewal project currently underway in North America. (City of Toronto)
This project aspires to bring together the most innovative approaches to sustainable development, urban design, real estate development and leading technology infrastructure. Hereby, the goal is to contribute to public goals like reducing urban sprawl, developing sustainable communities, increasing affordable housing, expanding public transit and increasing economic competitiveness. The waterfront is no longer a space devoted to industrial-oriented activities and governance, but an urban space associated with a globally oriented and knowledge-based economy. (Desfor & Laidley, 2011)

The priority is people, and to reconnect them with the waterfront. Therefore, parks and public spaces are of importance to the development of the waterfront. (Waterfront Toronto)

Walking strategy

The Toronto Walking Strategy was adopted by Toronto City Council in 2009 to make Toronto a great walking city. The program aims to build a physical and cultural environment that supports and encourages walking – with vibrant streets, parks, public spaces and neighbourhoods where people will choose to walk more often. By envisioning a city where high-quality walking environments are seamlessly integrated with public transit, cycling and other sustainable modes of travel, the Strategy sets out a plan that will produce tangible environmental, health and social benefits for residents and visitors to Toronto. (City of Toronto)

Cycling Strategy

In 2016, Toronto City Council approved the 10 Year Cycling Network Plan to connect, grow and renew infrastructure for Toronto's cycling routes over the next 10 years.

The 10 Year Cycling Network Plan identifies approximately 525 centreline kilometres of new infrastructure. (City of Toronto)

Fig 1.13: Central Waterfront Toronto (Google Maps, edited)

Car dependency in Toronto

The group of Torontonians who drive to work has declined over the last decade while the group that commutes by public transit has increased. Even without the construction of major new public transport infrastructure between 2006 and 2016, the city is moving in the right direction when it comes to decreasing residents' dependency on the car (figure 1.15).

In addition to the use of public transport, active transportation is also on the rise in Toronto, with more than 10% of all commuters that make use of active transportation: 8,6% by walking and 2,7% by cycling. Both modes saw an increase compared to 2006, when 7,1% of commuters reported walking, and 1,7% said they cycled. (Spurr, 2017)

The growth in active forms of transportation is not unthinkable. About 55% of all trips in Toronto are less than 7 km, a good distance to cover by bike. Over 20 % of all trips is under 2 km and are very walkable. Currently, the proportion of using walking and cycling as transportation in Toronto is still lower than in other major cities in North America (figure 1.14) (Toronto Public Health, 2012) .
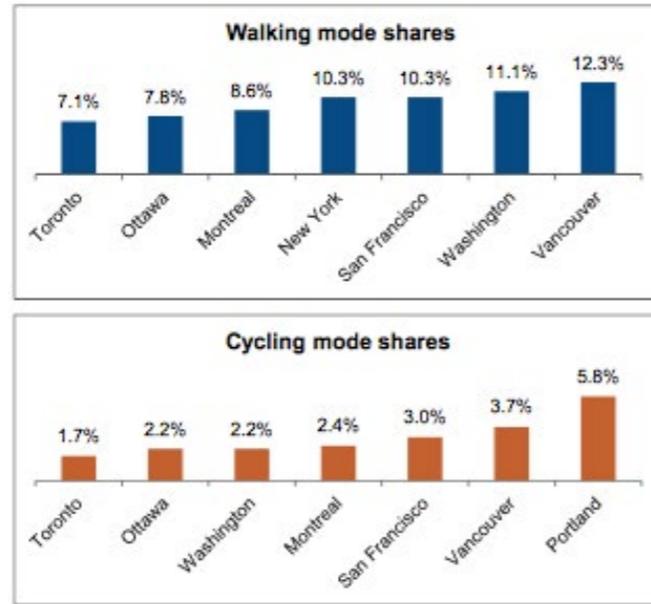
Fig 1.14: Active commuting mode shares (Toronto Public Health, 2012)

Fig 1.15: Fewer people driving to work (Spurr, 2017)

Car network

The Don Valley Parkway is a highway that follows the Don River Valley and that continues in the Gardiner Expressway, which is positioned parallel to the waterfront. The network of major roads gets denser when moving towards the Waterfront. (Figure 1.16)

Fig 1.16: Toronto car network

Bike network

In some parts of Toronto, bicycle facilities are poorly connected (figure 1.17) and less separated from traffic than in other cities, and Torontonians have identified this as a key factor limiting their use of cycling for transportation. (Toronto Public Health, 2012)

Fig 1.17: Toronto bike network

Air Pollution

Some of the highest levels of air pollution in the City of Toronto occur along the major highways where many vehicles travel together along a concentrated route, all 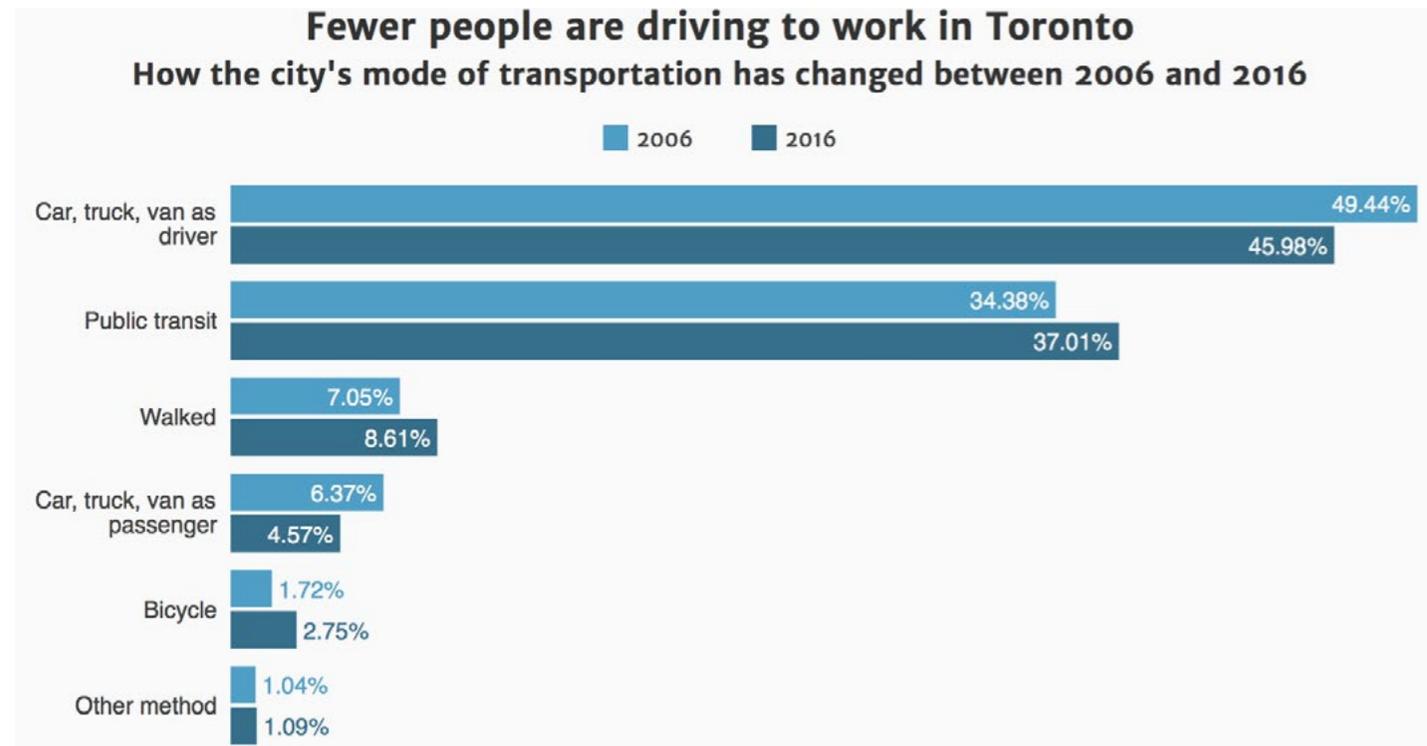releasing emissions. Figure 1.18 shows a relative high concentration of NOx along Highway 427, Highway 401, Highway 400, the Don Valley Parkway, and the Gardiner Expressway. (Toronto Public Health, 2014)

One way of reducing emissions from traffic is to create more opportunities for people to use alternative modes of transportation instead of driving the car, including walking, cycling, and taking public transport. When people walk or cycle instead of drive, they reduce the number of cars on the road, directly reducing emissions.
People who choose to walk or cycle also gain significant health benefits from the added physical activity. (Toronto Public Health, 2012)

Fig 1.18: NOx levels across the City of Toronto, 2006 (Toronto Publi Health, 2014)

The city of Toronto has ambitions for the policy in cycling and walking and recognises the environmental, health and social benefits of walking for the people in Toronto. In the redevelopment project of the Waterfront, the city prioritizes people and aims towards the creation of sustainable communities.

This project is a great start, but in order to contribute to the health of all people in Toronto, the city should look beyond the waterfront, and make the connection with the rest of Toronto as well.

Lake Shore Boulevard and raised Gardiner Expressway

Lake Shore Boulevard and The Gardiner Expressway in background

1.4. OBJECTIVE & RESEARCH QUESTIONS

There is a visible growth in the use of active transportation, but the people in Toronto are still very dependent on their car. Infrastructure is seen as traffic management and undermines other types of transportation. The car dependent city has negative results on social interaction, the environment and people's health. The following objective is a desire to go back to the original basis for settlements for people to come together and communicate and where streets are meeting-places instead of barriers for pedestrian movement and to exploit the advantage that pedestrians have in areas of a high density.

Objective

To rediscover streets as social space in order to create a pedestrian network that benefits social interaction, the environment and people's health.

Research Questions

What are the conditions for a successful pedestrian network?

What are the conditions for streets as social space?

What are the conditions for streets as movement space?

Where are the problems and opportunities in Toronto for creating a pedestrian network?

How can the pedestrian network contribute to the reconnecting of fragmented spaces in Toronto?

Fig 1.19: Streets as Places

1.5. RELEVANCE

The objective of my thesis is relevant in different contexts.

The objective fits into the policy of the City of Toronto, because they city is improving the active transportation network by implementing strategies on walking and cycling. The Waterfront revitalization project is also involved in sustainable design that wants to reduce urban sprawl, develop sustainable communities and prioritise people.

Since the car is still the main cause of air pollution and global warming, it is important to rethink transportation on a global level. According to the World Health Organisation air pollution can be significantly reduced by prioritising rapid urban transit and walking and cycling networks. Walkability fits into this global perspective.

With the prediction of growing cities, car usage will become less efficient then walking due to a higher density. It is predicted by the WHO that by 2050, 70% of the global population will live in cities, which is 50% today. (Fecht, 2013) This prediction of growing cities makes the topic of walking not only relevant in Toronto, but all over the world.

In 2015. the United Nations has formulated seventeen goals as part of the sustainable development agenda. This research project will contribute to the goal 9: Industry, innovation and infrastructure, 11: Sustainable cities and communities and 3: Good health and well-being. (Figure 1.20)

Fig 1.20: UN Goals (United Nations)

1.6. READING ITINERARY

Before arriving at this chapter, you have been able to read about my fascination for the changing city and the problems that have occurred when people and cities became car-dependent.

The city of Toronto is taken as a case study for developing a new pedestrian network that benefits social interaction, the environment and people's health.

In Chapter 2, the research methodology will explain the different steps of research, where theoretical research is the fundament of the research process. The theories guide the analysis and the design.

In Chapter 3, the theories on Walkability, supported by Placemaking and Access & Linkage will be explained, followed by a Theoretical Framework where the theories are brought together into a diagram. Walkability is the key to a successful pedestrian network. The different components of Placemaking and Access & Linkage have certain conditions to suffice to. Therefore, they are also important of the selection of a specific research location in Toronto.

The analysis on Access & Linkage in chapter 4 will identify a location in Toronto that has an intensive land-use but also problems in connectivity. An infrastructural barrier between Downtown and the Waterfront breaks up the pedestrian network and is in need for a transformative design. I will zoom in on the South-East corner of Downtown Toronto and the East Waterfront for the design.

The design in chapter 5 starts with a conceptual image of a lively walkable area with many different activities and functions. The pedestrian network connects landmarks, parks and attractive facilities in the area and there are many opportunities for meeting, relaxing, playing, running, doing sports, and so on. The network also connects the Waterfront with Downtown Toronto on the north side of the railway tracks. The concept is broken up into different layers, based on the different design principles that are developed in chapter 5.2.

In Chapter 6 you will see the design for a smaller route in the pedestrian network. For the design on a smaller scale (streets), other design principles are developed, again based on Placemaking and Access & Linkage.

The Masterplan is explained in chapter 6.3 and in chapter 6.4 the different phases in which the design for a pedestrian network should take place is visualised in four steps, including the design principles that are used in this step.

Three areas are designed in more detail: the Lower Jarvis street, St Lawrence Square and the Gardiner Park.

In chapter 6.5 is explained how the design of Lower Jarvis street consists of a layer of Connectivity and Placemaking and the street transformation is visualised.

Next, in chapter 6.6, the experience of the St Lawrence square is visualised and in chapter 6.7, the Gardiner Park is explained. The transformation of a left-over non-space to a place with many different activities is made clear in different sections. The design is again developed by using the layers of Connectivity and Placemaking. Finally, the experience of the park is visualised in a series of images.

Chapter 6.8. is the final design chapter and focuses on the planting in Lower Jarvis street & St Lawrence Square and the Gardiner Park.

This chapter will be followed up by a conclusion, discussion and reflection.

2. METHODOLOGY

2. METHODOLOGY

This chapter will explain the process and planning of my graduation project. My fascination for the changing city and the role of cars in dense (especially North American) cities has led me to formulate the objective: 'to rediscover streets as social spaces in order to create a pedestrian network that benefits social interaction, the environment and people's health'.

1. Develop a theoretical framework from the theories

Theoretical research has led to a theoretical framework centred around Walkability. A walkable design needs to follow certain conditions.

2. Theory as input for analysis

The conditions for walkability are input for the large scale Analysis, so the research location can become more defined.

3. Analysis

When the location is more defined, the location will be further analysed using other important conditions for Walkability.

4. Identify problems and opportunities

The analysis is followed up by a conclusion of problems and opportunities, which will be input for the design phase.

5. Draw design principles from the theory and understanding of the site

Different design principles can be drawn from the conditions from the theoretical framework. They will be ranged in Placemaking and Access & Linkage and some are suitable for the scale of the pedestrian network and others for a smaller street-level scale.

6. Use design principles in a creative process to develop a design for a part of a new pedestrian network in Toronto.

An experimental phase of designing will incorporate the design principles into a successful pedestrian network in Toronto.
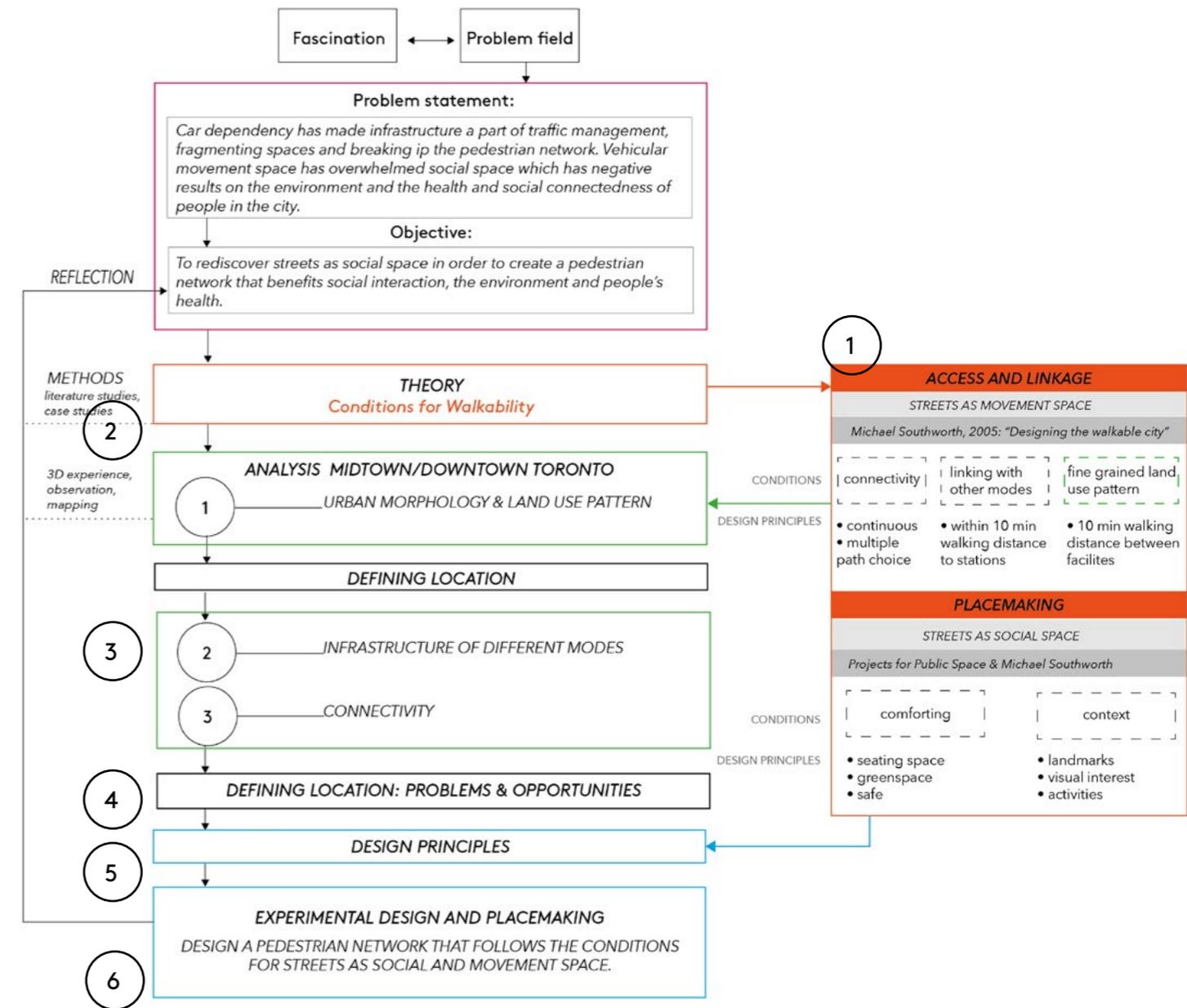
Fig 2.1: Research Methodology

3. THEORY

3.1. WALKABILITY

As discussed in Chapter 1.2.2, car-based movement is pure circulation; pedestrian movement is circulation but also permits economic, social and cultural exchange.

Opportunities for most forms of social interaction and exchange only occur once the car has been parked. Vehicular movement is thus about spatially isolated and fragmented origins and destinations and the quality and continuity of urban space are less important for car drivers,

Pedestrian flows through public space are both at the heart of the urban experience and important in generating life and activity. Where people choose to sit or linger in public space is often based on opportunities for people-watching, which, in turn, are related to the life and activity within the space and how people move through it. (Carmona et al, 2010)

Walkability is the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network. (Southworth, 2005)

Not surprising, Europeans make many more trips by foot and bicycle than do Americans (Crawford, 2000). In the United States, only 9% of total trips were by foot but 84% were by car in 1990, whereas in Sweden 39% were by foot and 36% were by car. In The Netherlands and Germany walking and bicycle trips increase with age and account for over half the trips for people age 75 and older Pucher and Dijkstra 2003. In contrast, for Americans age 75 and older, only 6% of trips were by foot in 2000 (Frank et al, 2003.)

The benefits of increasing walking are widely recognized. Walkability is the foundation for the sustainable city; without it, meaningful resource conservation will not be possible. Like bicycling, walking is a "green" mode of transport that not only reduces congestion, but also has low environmental impact, conserving energy without air and noise pollution (Newman and Kenworthy 1999) (Southworth, 2005)

In order to reconcile the role of streets as social space and connective (movement) space, they need to be designed by following the conditions for Walkability.

3.2. ACCESS AND LINKAGE

The role of streets as movement space is asking for a well-connected pedestrian network. The following three conditions for walkability are taken from theory by Michael Southworth (2005) and are grouped under 'Access and Linkage', which is one of the four components of the diagram for Placemaking by Projects for Public Space (figure 3.1.).

1. Connectivity

The first condition in order to provide a city with an internally well-connected pedestrian network is connectivity. It is determined by the continuity and presence of sidewalks or other pedestrian paths. Barriers like busy streets, dead-end streets, railroads or topographical features must be minimized.

Barriers are often the cause for a lack of connectivity. Solutions can be pedestrian overpasses, underpasses or traffic calming.

2. Linking with other modes

Beyond providing an internally well-connected pedestrian network, it is important to provide connectivity with the larger city and region through convenient and accessible links to other modes such as bus, streetcar, subway, or train within a reasonable time–distance. This means that stations need to be spaced frequently enough to allow pedestrian access for residential and commercial zones, usually 10–20 min walk. A complete pedestrian network will offer full connectivity between all modes so that one can navigate seamlessly from foot to trolley or subway to train or air without difficult breaks.

3. Fine grained land use pattern

A walkable neighborhood or city requires to have daily needs within a walkable distance. This requires a certain density and variety of facilities. Most local-serving uses need to be within a 10-20 minute distance. (Southworth, 2005) The daily needs include uses like shops, cafes, banks, laundries, grocery stores, day car centers, fitness centers, elementary schools, libraries and parks.

In order to make a walkeble city, it is important that land use intensity and diversity is established at the beginning of the development process. It is a challange to create a walkable city in a low density land use pattern.

Next to the providing of a well-connected pedestrian network, streets also need to become social space. The quality of the network is the key. (Southworth, 2005) This is where "Placemaking" plays a role.

Projects for Public Space has developed a diagram consisting of 4 different components that are crucial in the development of a successful place. The diagram is a measuring tool for establishing if a place is successful or not (figure 3.1). They generally share the following four qualities: they are accessible; people are engaged in activities there; the space is comfortable and has a good image; and finally, it is a sociable place: one where people meet each other and take people when they come to visit. (Projects for Public Space)

This tool consists of elements that can be designed for and elements that are result of the design. Access & Linkage, Uses & Activities and Comfort & Image are components that can be designed for. Access & Linkage has been described already in the previous chapter.

In this chapter I will describe the conditions for a comforting street and a street with context.

A comforting street

The most understood and fully developed aspect of walkability is pedestrian safety. In most cities in the United States, walking and cycling is still unpleasant, inconvenient and dangerous. In contrast to European cities where it is much safer because of the pathways, signing, regulations, education, traffic calming and law enforcement.

Criteria have been developed for safety from traffic including traffic speed, sidewalk width and sidewalk conditions. For traffic calming, different devices can be used like speed bumps, narrowing streets, using rough paving, roundabouts, landscaping and other means. (Southworth, 2005) Landscaping elements can help in providing safety and comfort by dividing pedestrians from other moving traffic and defining a space.

A street with context

To encourage walking you need to deal with more than connectivity, linking with other modes, land use and the comfort of a street. A street in a monotonous environment will not invite pedestrians if they don't have to be on the streets for their daily needs.

Jan Gehl has explained this by a graph (figure 3.2). Because the exchange of goods, news and transport have moved indoors because of the internet, the amount of time people spend outdoors because of necessary activities has declined. In contrast, optional recreational activities have grown exponentially. In order to let these optional activities occur, the city has to offer a high quality of city space, inviting 1) passive staying activities such as stopping to watch city life from a stair step, a bench or a café, and 2) active, sporty activities like jogging and skating. The timeline also shows when the car invasion hit Denmark in the mid-1950s. The pressure of car traffic and functional planning in the 1960s triggered a counter-reaction to reclaim city space. (Gehl, 2006)

There is no general theory of spatial design for the pedestrian environment that applies everywhere. Research on different streets over the world have given different results. Nevertheless, a few components are likely to add to the quality of the context: the scale of street space, presence of street trees and other landscaping elements, views, visible activity and transparency, scale and coherence in the built form. (Southworth, 2005)

Overall, the pedestrian network has to engage the pedestrian's interest with a visually interesting and exciting environment.

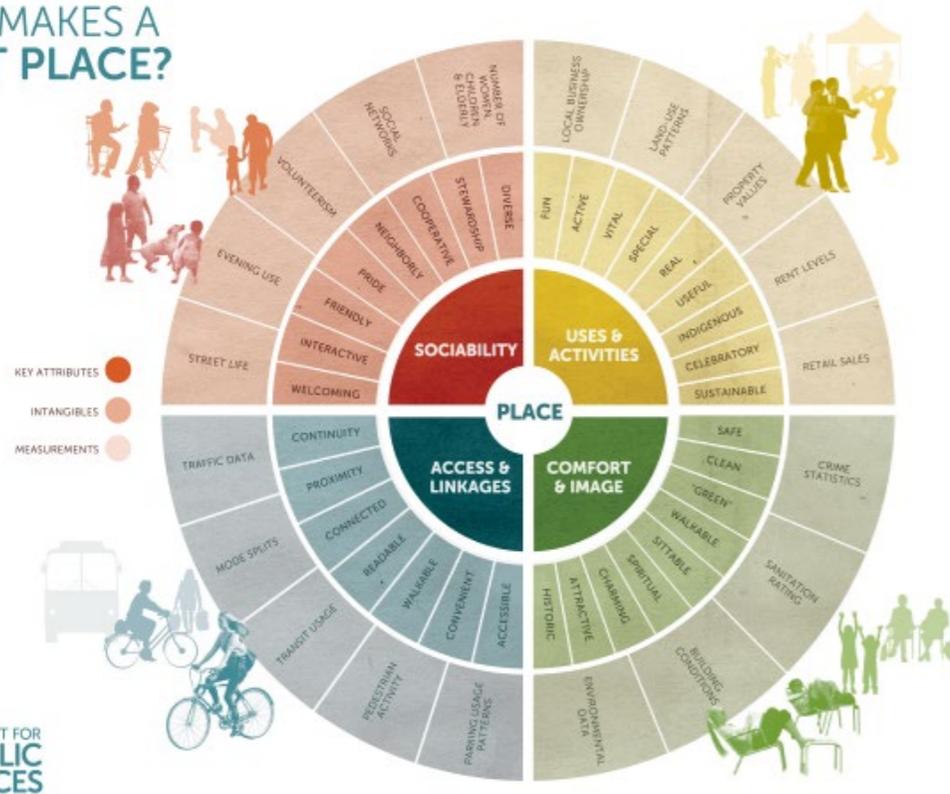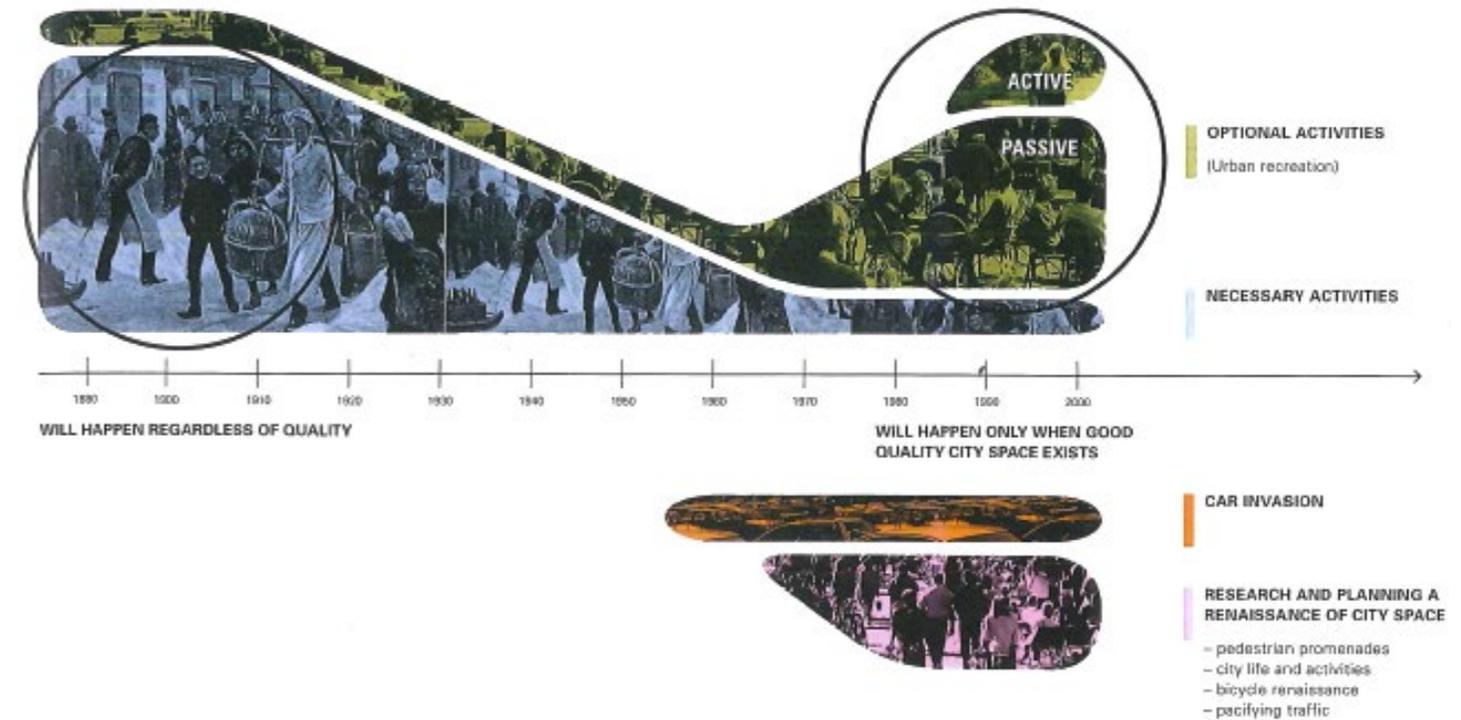*Fig 3.1: Placemaking diagram (Projects for Public Space)*

Fig 3.2: Development of city life (Gehl, 2006)

3.4. THEORETICAL FRAMEWORK

The key for creating a successful pedestrian network lies in the walkability. Walkability is the extent to which the built environment supports but also encourages walking.
Walkability is about circulation but also about the quality of space, or differently said: one needs to design for movement space and social space. Placemaking and Access & Linkage are the two components that support movement space and social space and these consist of certain conditions that have been described in previous chapters.

They are all conditions for walkability, but when creating a pedestrian network, some of the components are more imporant in the beginning of the process than others like the fine-grained land-use pattern. It takes a lot of time in order to establish a high intensity and diversity of facilities, if this is not available yet. Therefore, it is important that the chosen location already has a high diversity and intensity of facilities, or that this step is taken in the beginning of the process.

In order to make it physically possible for people to walk from one place to another or to enjoy their time on the streets, connectivity and comfort are important. Barriers need to be limited and people need to feel safe. If these components are taken care of in the design, people are able to join in activities and socialising. Facilities like playgrounds or skateparks won't be visited by a diverse group of people if it is difficult or unsafe to get there.

The order of importance of the different conditions for walkability needs to be recognised in the realisation of the design.

But first, the analysis on Access & Linkage will specify the research location in Toronto with a supportive base for the pedestrian network.
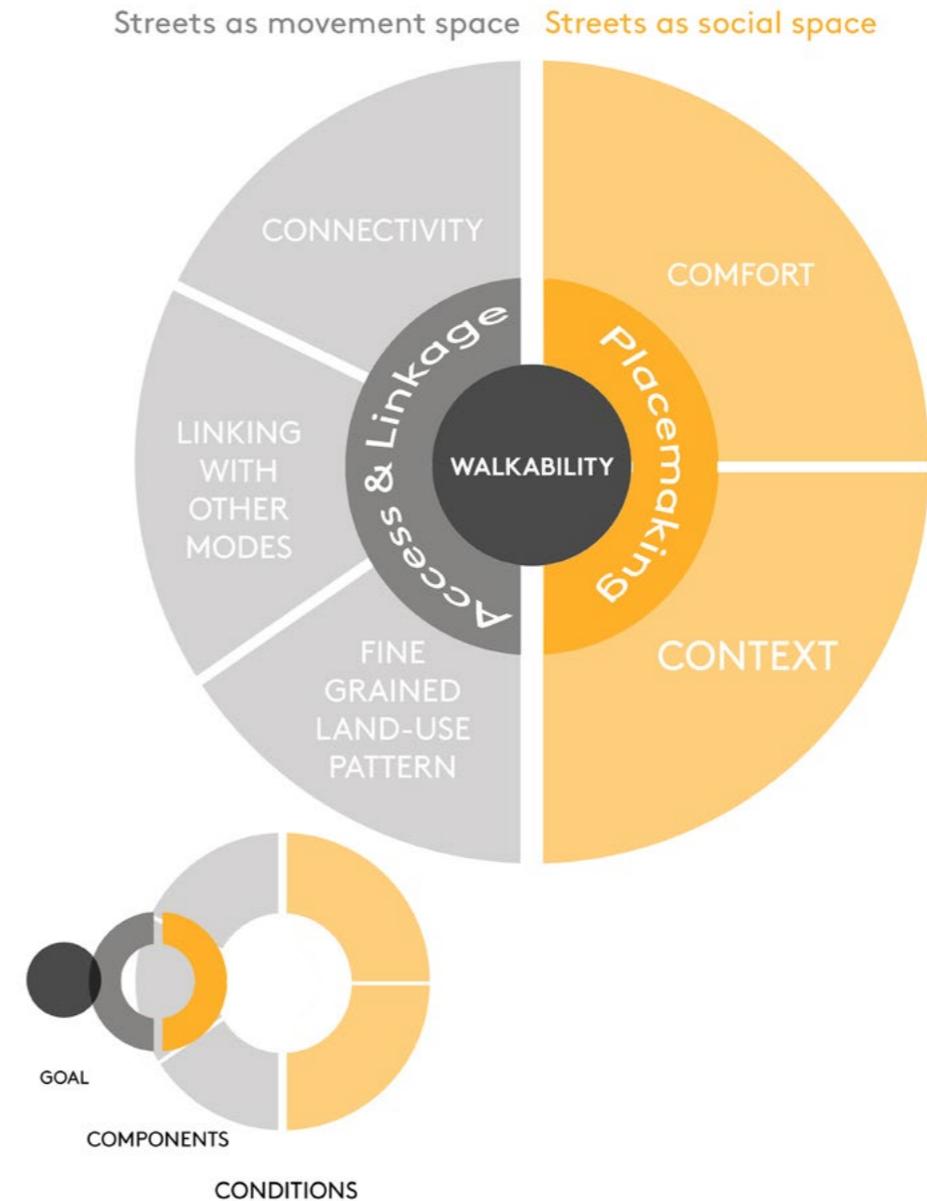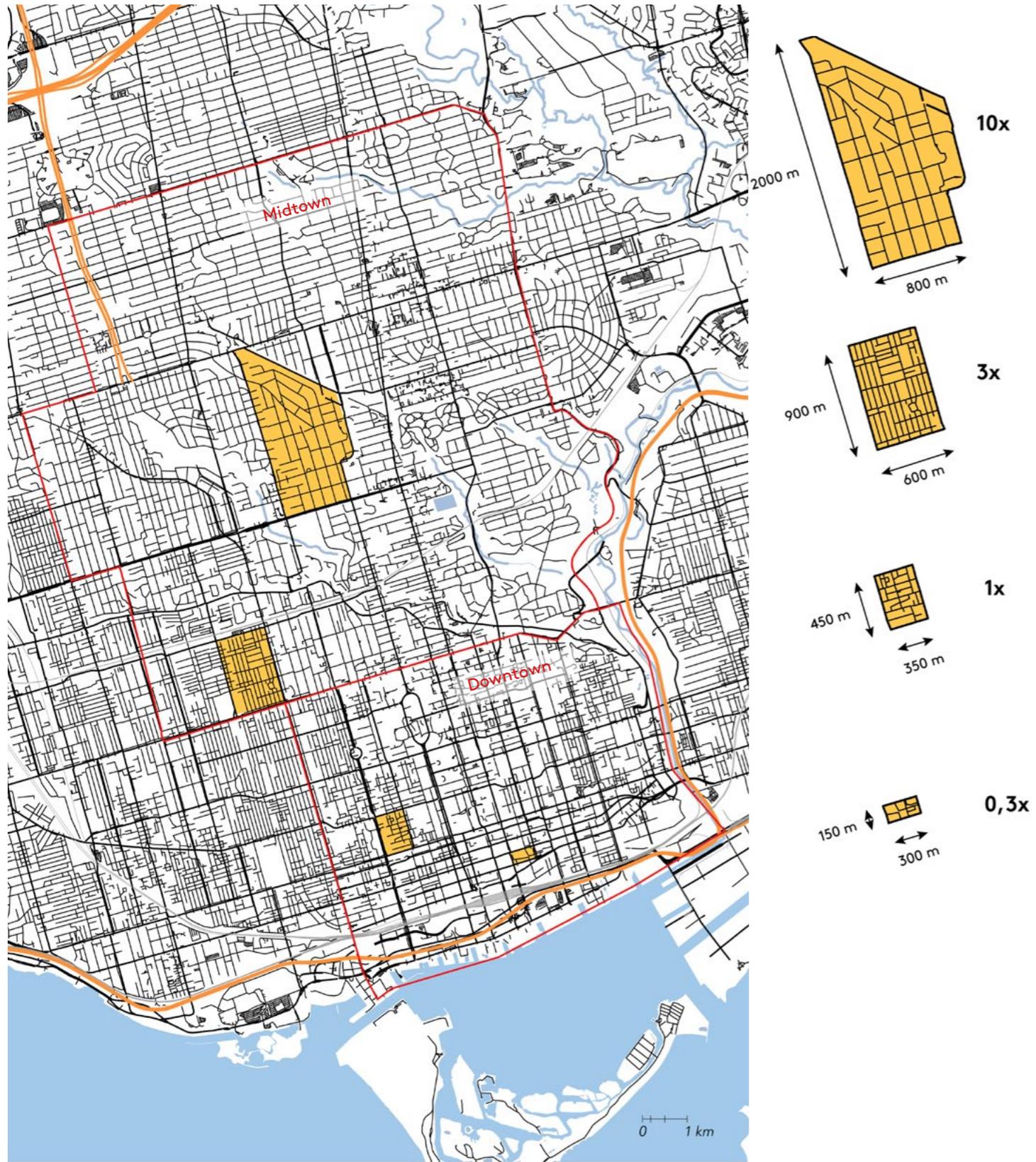

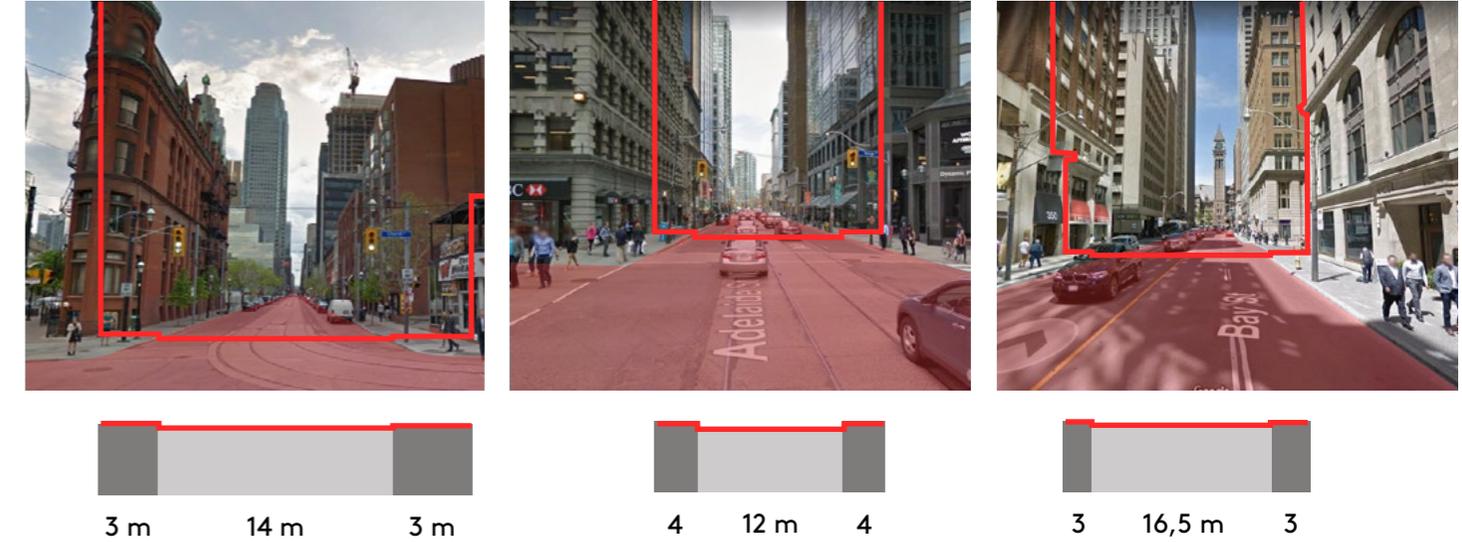*Fig 3.3: Theoretical Framework Walkability*

4. ANALYSIS

ACCESS & LINKAGE

Fig 4.1: Blocks in Midtown and Downtown Toronto

Downtown Toronto

Midtown Toronto

Fig 4.2: Streets of Toronto (edited from Google maps)

Block Pattern

The block pattern in Downtown Toronto is much smaller than in Midtown Toronto, in other words: Downtown has a finer grain. There is a gradient visible when moving towards the Waterfront. (Figure 4.1)

Street profile

The streets in Downtown Toronto are wide streets that prioritise cars. Sidewalks are available but small and there is little to no greenspace. Streets in Midtown Toronto also prioritise cars but are less wide and offer more greenspace. (Figure 4.2)

A fine grained and varied land use pattern is a requirement for creating a walkable neighborhood. Daily needs need to be accessible by foot within a 10 minute walk (800 meters) (Chapter 3.2.). Midtown and Downtown Toronto will be compared in order to establish which of these areas is more likely to become a walkable area.

Land use

Figure 4.3. shows which facilities of daily needs like schools, supermarkets and cafes are present within a radius of 10 minutes walking. There is a clear difference in the amount of facilities between Midtown and Downtown Toronto. The land use is much more intensive in Downtown Toronto. The facilities are located on smaller distances and are therefore easier to reach by foot or bicycle than by car.

Downtown Toronto has a more fine grained network of streets and has a much more intensive land-use than Midtown. Therefore, Downtown is more suited for becoming a walkable area.
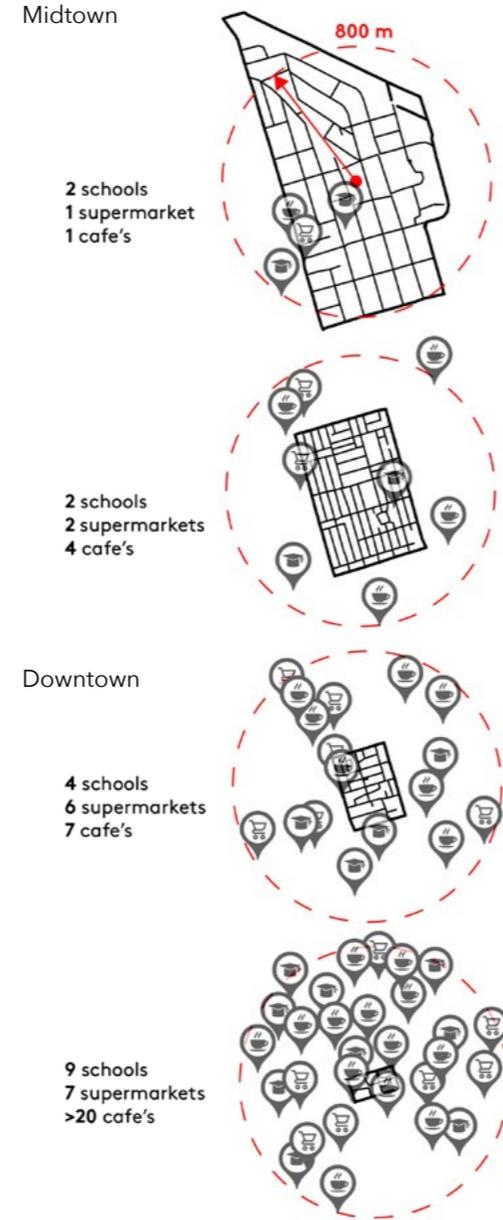

Fig 4.3: Daily needs within walking distance

Fig 4.4: Public parks in Downtown Toronto

Land use: public parks

Toronto knows many parks, most of which are located on the South side of Downtown Toronto. This might be explained by the primarily residential areas that are located in the North, where people have their own garden.
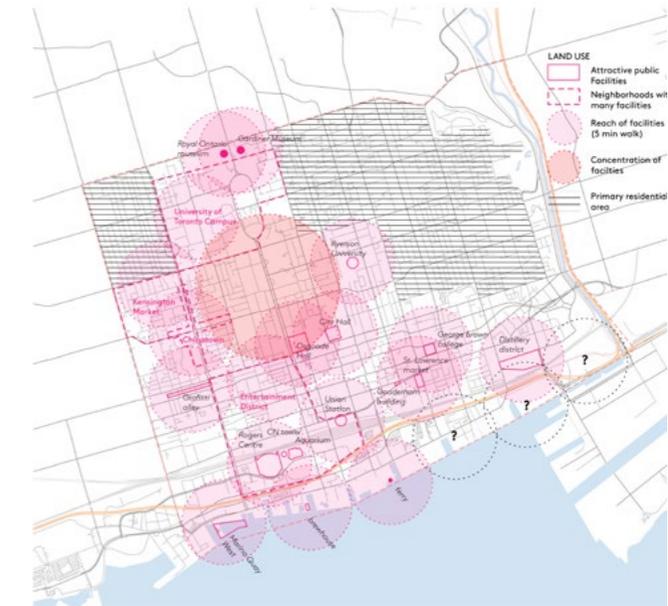

Fig 4.5: Important public facilities in Downtown Toronto

Land use: important public facilites

The most important public facilities are also not located in these residential areas. There is a large concentration of facilities in the center of Downtown Toronto. Figure 4.4. and 4.5. show that there are no important public facilities or public parks on the East side of the Waterfront.

In order to improve the walkability, there is need for new public parks or facilities in the East Waterfront

4.3. OTHER MODES

DOWNTOWN TORONTO

Another condition for walkability is the linking with other modes. I chose to analyse the streetcar network, metro - and the bike network, since they desire a specified location in the city. The bus is another public transit mode, but since this one is not clearly visible in the public realm of Toronto, I chose to leave this one out.

Fig 4.6: Public transit network Downtown Toronto

Public transit
The streetcar network has many East-to-West connections, but in the East part of Downtown Toronto, there are some North-to-South connections missing. The East Waterfront and the Lower Don Lands are not well connected to the streetcar network.

Fig 4.7: Bike network Downtown Toronto

Bike network
The bike network is fragmented and often there is no real bike lane, but only a cycle track on the side of a road. The bike network knows many East-South connections, but is lacking North-South connections.

In order to improve the walkability, more North-South connections in the public transit network and bike network need to be constructed.

4.4. CONNECTIVITY

DOWNTOWN TORONTO

Fig 4.8: Infrastructural barriers Downtown Toronto

Infrastructural Barriers
The Lake Shore Boulevard, Gardiner Expressway and Railway tracks are serving high-speed traffic that function as a barrier for slow traffic like walking. Since the Gardinder Expressway is raised, the traffic is no real problem, and the railway tracks are bridged or can be crossed by means of a tunnel. Still, in the East Downtown Toronto, where all lie closely together, the barrier is the biggest and the connectivity is the poorest.
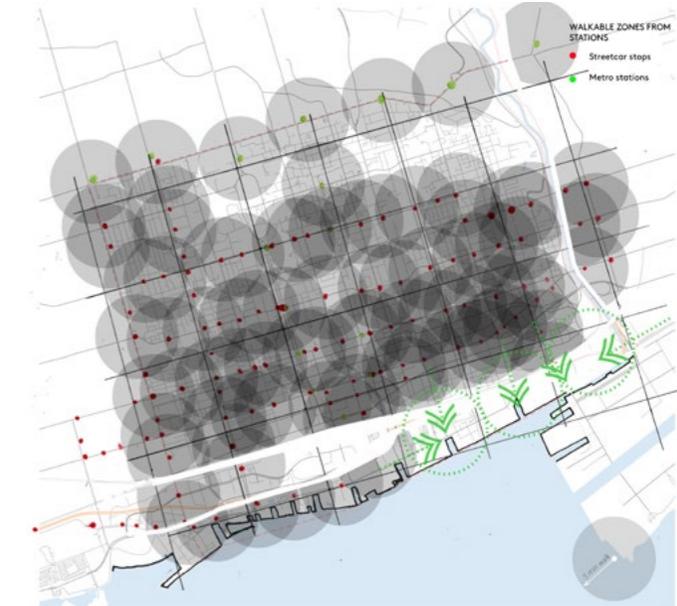

Fig 4.9: Walking distances from stations Downtown Toronto

Walking distance from stations (5 min)
On the East Waterfront, there are no metro or streetcar station located. An explanation can be the barrier of Lakeshore Boulevard, the railway tracks and the Gardiner Expressway.

The connectivity between Downtown Toronto and the Waterfront, and especially the East Waterfront is poor. This is because of infrastructural barriers in between the areas and the lacking of public transit stations at the Waterfront.

50   Analysis   51

4.4. CONNECTIVITY

Next to physical barriers, connectivity is dependent on visual barriers. Figure 4.10. shows the eye-level perspectives when walking towards the waterfront. On the way, you go under or over the railway tracks, you cross the Lake Shore Boulevard under the raised Gardiner Expressway and finally reach Queens Quay and the shore of Lake Ontario.

From Simcoe Street on to the East, all Southbound streets need a tunnel to cross the railway tracks: a visual barrier. When this is quickly followed up by the Gardiner Expressway you experience a larger visual barrier. This is the case for Parliament street, Lower Sherbourne Street, Lower Jarvis Street and Yonge Street, making these problematic when talking about connectivity.
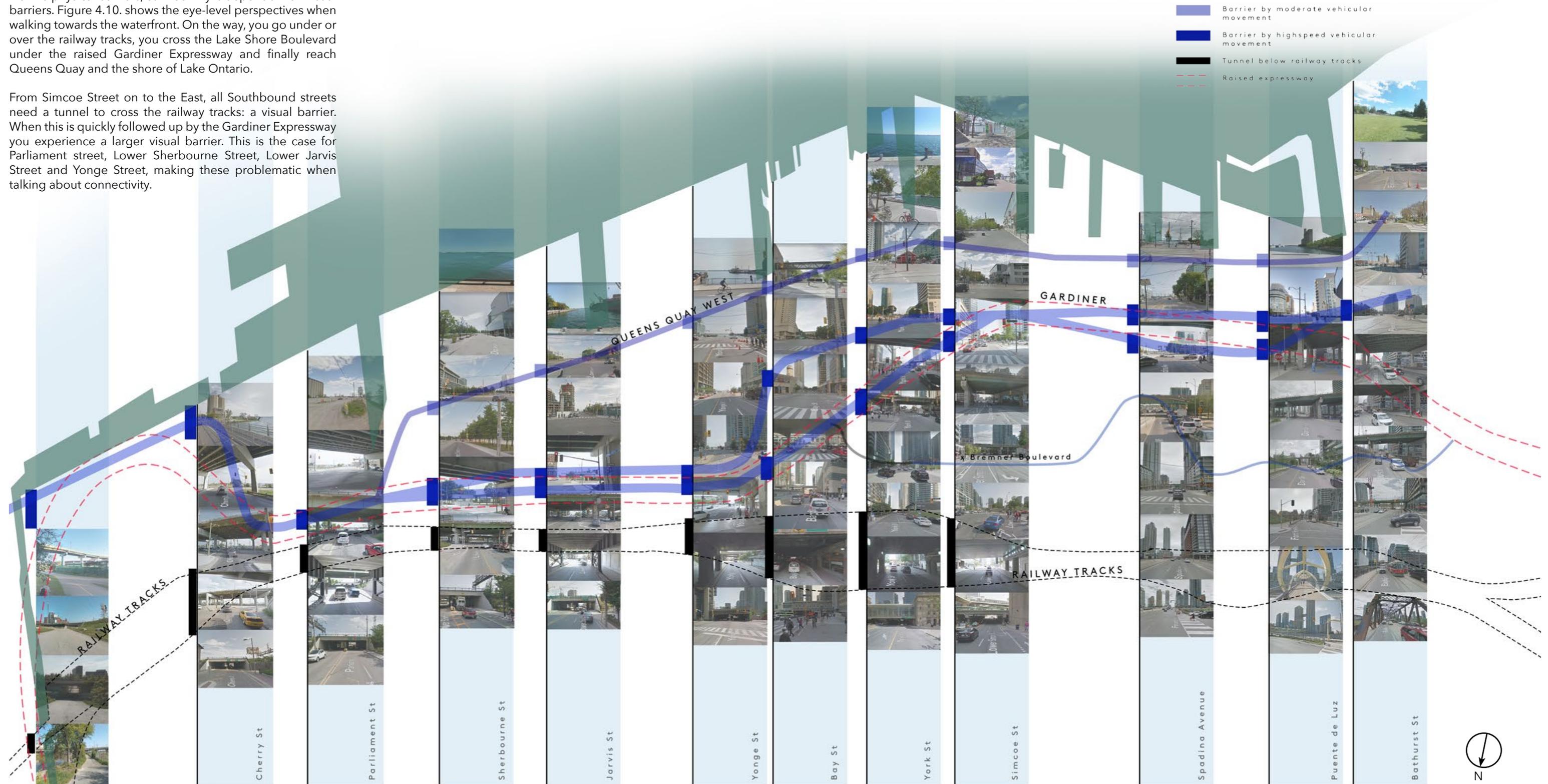

Barrier by moderate vehicular movement

Barrier by highspeed vehicular movement

Tunnel below railway tracks

Raised expressway

QUEENS QUAY WEST

GARDINER

Bremner Boulevard

RAILWAY TRACKS

RAILWAY TRACKS

Cherry St

Parliament St

Sherbourne St

Jarvis St

Yonge St

Bay St

York St

Simcoe St

Spadina Avenue

Puente de Luz

Bathurst St

N

Fig 4.10: Visual barriers in Southbound streets Toronto

4.5. PROBLEMS & OPPORTUNITIES

The South-East corner of Downtown Toronto knows many problems in connectivity. Infrastructural barriers like the Lake Shore Boulevard and the railway tracks isolate the waterfront from the city and it is poorly connected to the streetcar network, but there are still a lot of opportunities in the redevelopment of the Waterfront and to reconnect it with the city. In order to make this part of the city "walkable", the problems in the area need to be solved or turned around in opportunities like the redevelopment of non-places.

Fig 4.11: Problems conclusion

Fig 4.13: Opportunities conclusion

PROBLEMS:

- Missing link in streetcar network
- Lake Shore Boulevard is a barrier for slow traffic like pedestrians and/or bikes
- Not people-friendly Southbound streets
- Non places
- East Waterfront is lacking destinations

Fig 4.12: Research Location

OPPORTUNITIES:

- A new streetcar connection
- Overcoming the barrier of Lake Shore Boulevard
- Transforming Southbound streets to walkable streets that connect to the waterfront
- New destinations: non-places beocme places
- Sites for development on the Waterfront
- Only maximumof 10 minutes walking distance between landmarks
- Parks as a possible connective element

5. DESIGN

THE PEDESTRIAN NETWORK

5.1. CONCEPT

The concept (figure 5.1) shows a fine pedestrian network connecting landmarks, parks and attractive facilitie in the area. There are many opportunities for meeting, relaxing, playing, running, doing sports, and so on. The network connects the Waterfront and the area on the Northside of the Railway tracks.
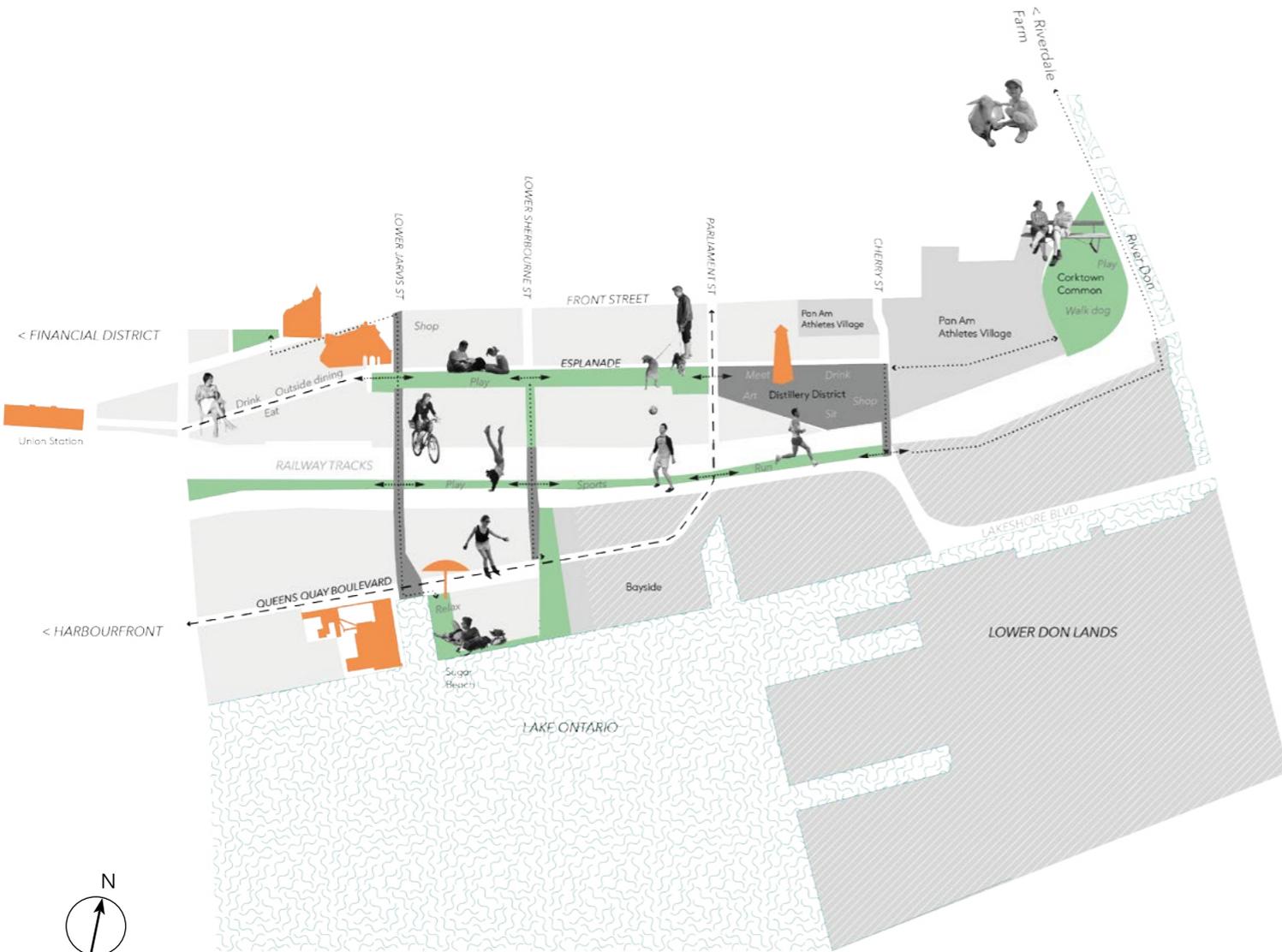

Legend:
- Attractive facilities/landmarks
- Connection
- Important pedestrianised streets
- Slow traffic street (cars allowed)
- Area/street with pedestrians prioritised
- New neighborhoods
- Area for development
- Other existing neighborhoods
- Parks or green streets

Fig 5.1: Concept

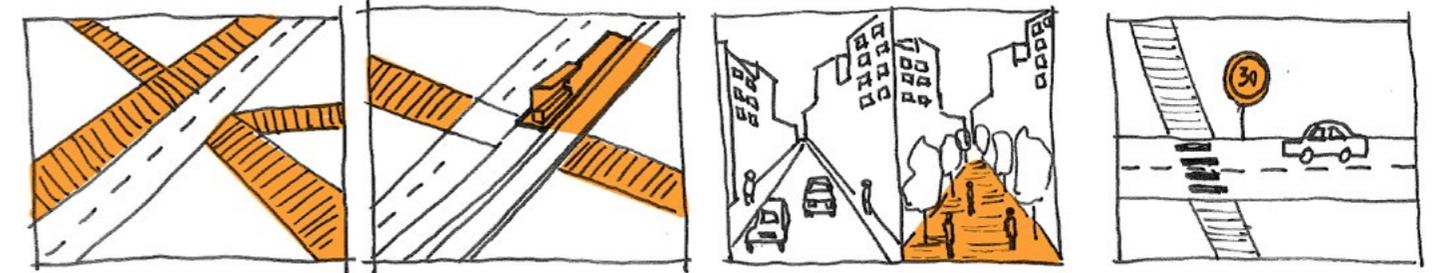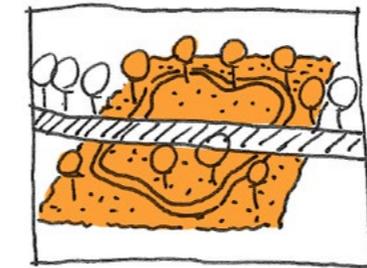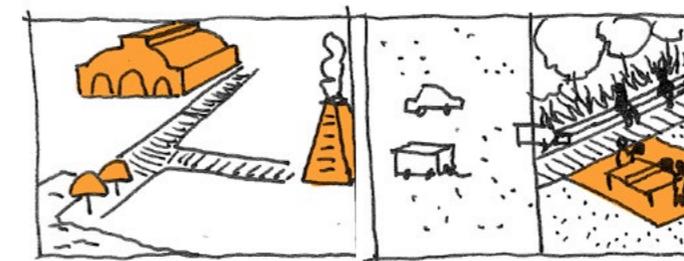# 5.2. DESIGN PRINCIPLES

Access & Linkage

Fig 5.2: Design Principles for the pedestrian network

A choice of paths: multiple paths

Linking with other modes: Stations located within a 10 minute walking distance

Car dominated Southbound streets become pedestrian prioritizing streets

Traffic calming: Traffic on infrastructural barriers is slowed down by speed regulation.

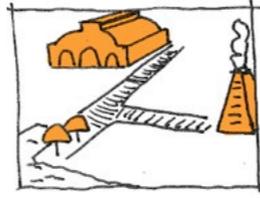*Parks as connective elements in the pedestrian network*

Placemaking

Landmarks connected by a pedestrian network

Non-places are transformed to places with a mix of activities

5.2. DESIGN PRINCIPLES

Landmarks connected by the pedestrian network

In the introduced pedestrian network, there are many interesting buildings, but also parks that can serve as points of reference and are interesting to visit for a large number of people. The St Lawrence Market knows a rich history and is located at the historical shoreline of the city: Front Street. In the beginning a market square which was the centre if city's social life, and later the first building, a temporary shelter was built in 1814. The current building dates to 1845 and used to be Toronto's City Hall. Now, it features food stalls and restaurants.

Union Station, a major railway station of Toronto is also located at Front street. The Beax-Art style building is named a National Historic Site of Canada and a Heritage Railway Station. It is Toronto's busiest transportation facility.

The Distillery District is a national historic site that once was the largest distillery, owned by the firm Gooderham & Worts. It is now a vibrant arts and cultural centre with many bars and cafes and shops. (Distillery Heritage)

The Gooderham building is also known as the Flatiron builllding and one of Toronto's most iconic buildings, located at Front Street. The building was built for the Gooderham familiy.
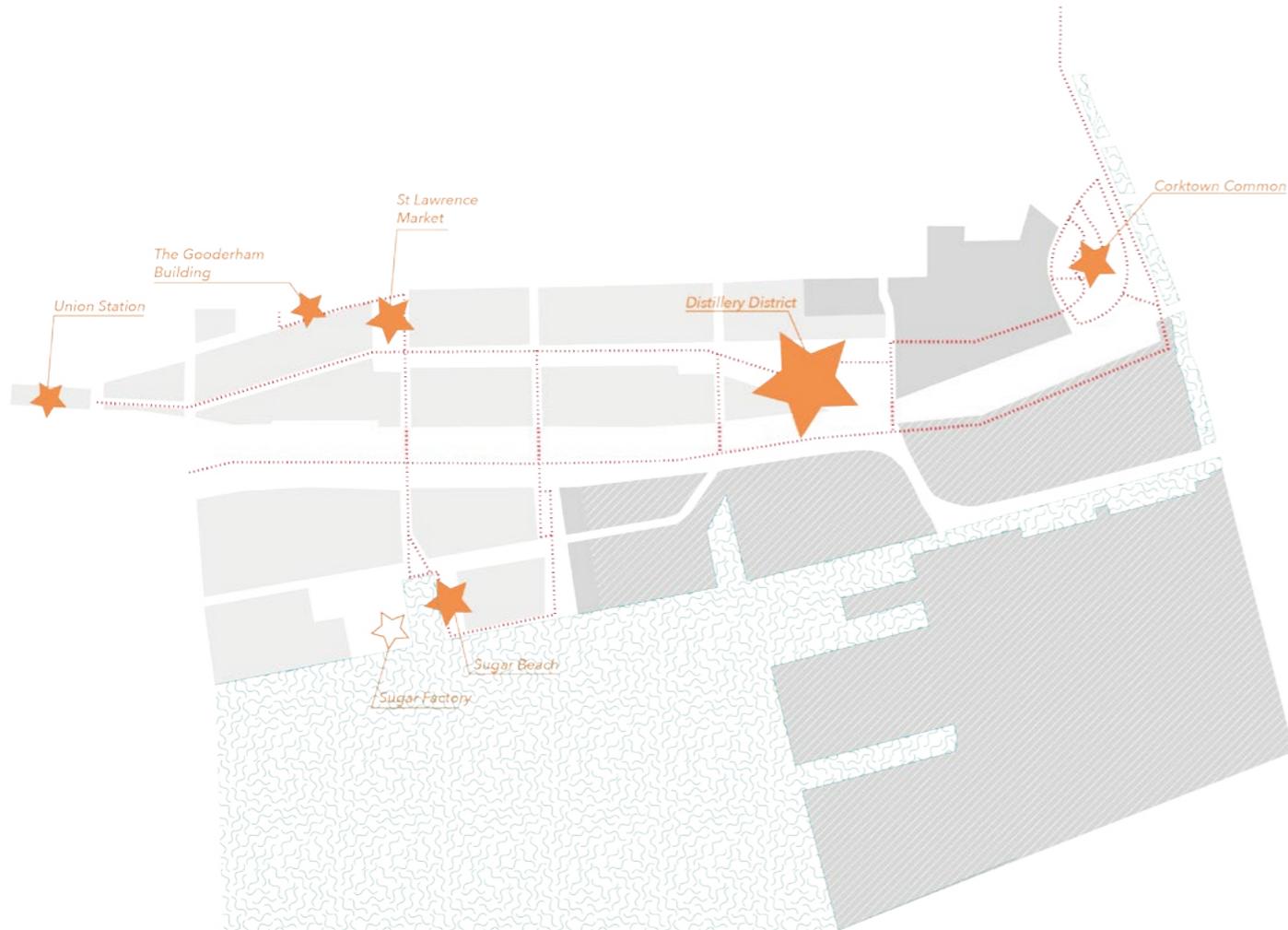

Fig 5.3: Landmarks connected by the pedestrian network

Fig 5.4: Union Station (Rosiak)

Fig 5.5: St Lawrence Market (Tonic Toronto)

Fig 5.6: The Gooderham Building
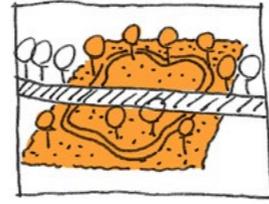

Fig 5.7: Distillery District

Parks as a connective elememt

The Southeast part of Downtown Toronto knows many parks, of which some are really new. The most well known is probably Sugar beach. It is located next to the Sugar factory, explaining the name. The beach has light sand, almost like sugar and pink candy-like parasols.

A range of parks with mostly historical importance is the Esplanade. When the Esplanade was built, it was the new shoreline of Toronto. And instead of a street with parks, it was a 100 m wide boulevard.

Corktown Common and Sherbourne Common are the newest parks in the area. Corktown Common is a transformed post-industrial site functioning as a flooding zone with grassland, meadows and meandering trails. (Urban Toronto)

Sherbourne Common, realised in 2011, is a transformed brownfield serving as an outdoor living room for the mixed-use and residential East Bayfront community. It is a multi-faceted urban park with tranquil spaces and engaging social spaces. It celebrates water throughout the year with a skating pond in winter and fountains in summer. The park integrates an experiential stormwater system. (Arch Daily)
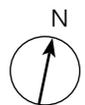
Fig 5.8: Parks as connective elements

Fig 5.9: Corktown Common (Kapflyer)

Fig 5.10: Sugar Beach

Fig 5.11: The Esplanade (blogTO)

Fig 5.12: Sherbourne Common (Arch Daily, 2013)

Car dominated Southbound streets become pedestrian prioritizing streets

Southbound streets like Lower Jarvis Street, Lower Sherbourne Street and Cherry Street (from left to right) will be transformed in order to improve the connectivity from the North with the South of the railway tracks. Sometimes this means that cars are banned or get less space. Pedestrians get more space and bikelanes and a new streetcar track is added.
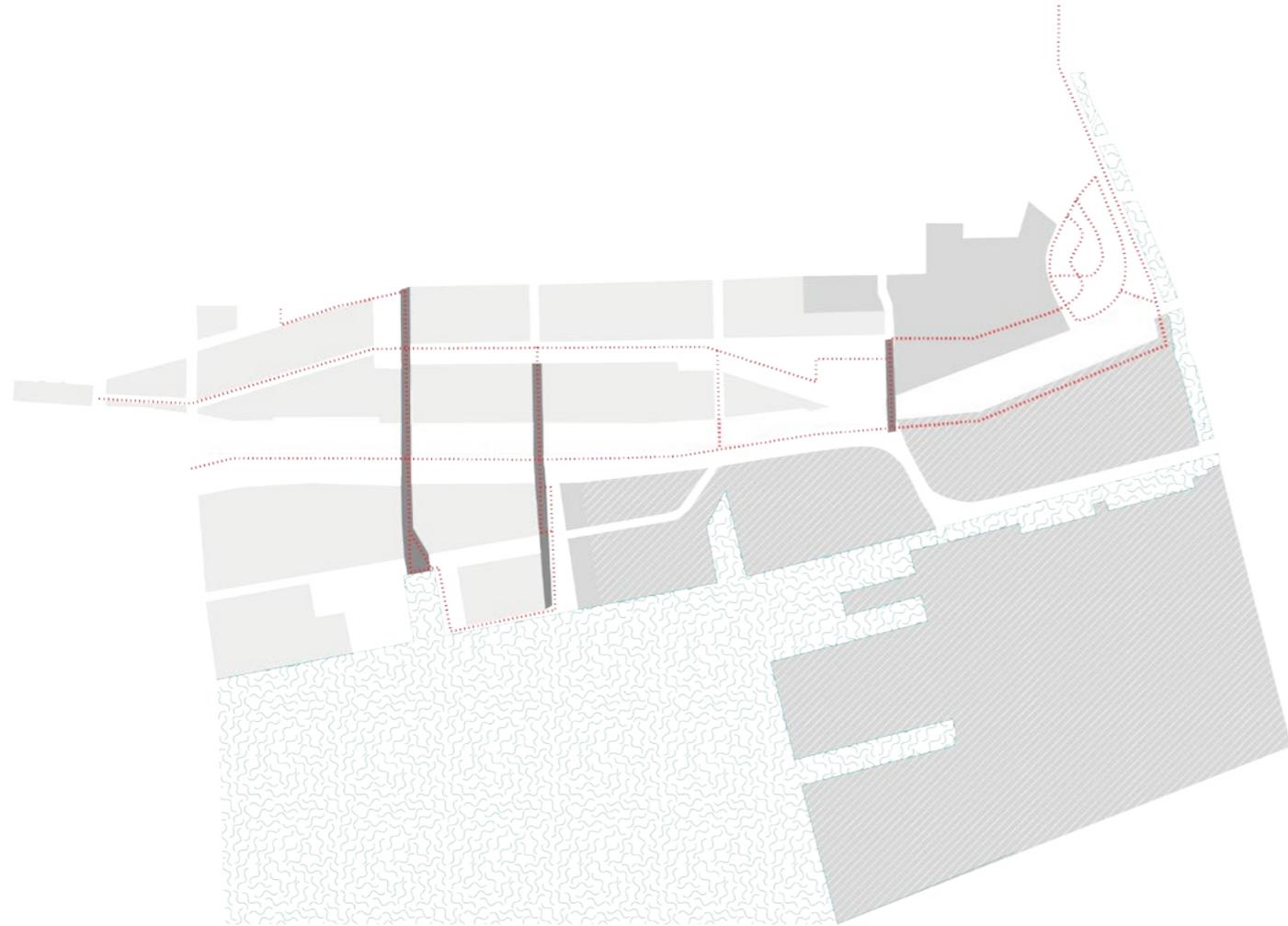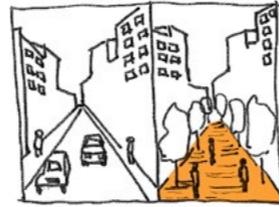

Linking with other modes

Lower Jarvis Street gets a new streetcar line that connects the Waterfront with Downtown Toronto. First, the line will stop at the crossing with Queens Quay and Lower Sherbourne Street, but when the East of the Waterfront and Lower Don Lands are further developed, the streetcar line can be further expanded. By adding this network, there is always a station within a 5 min walk available.
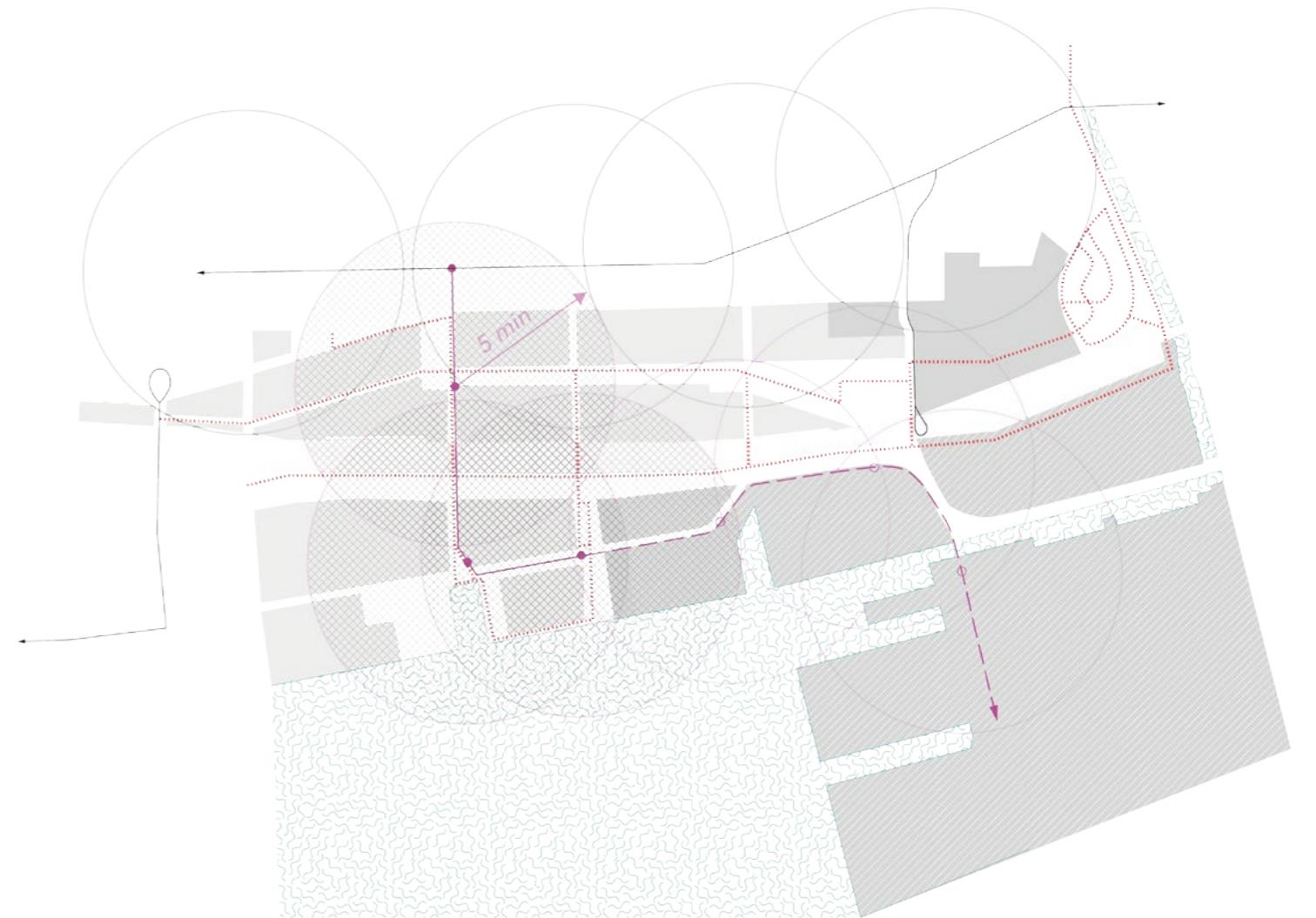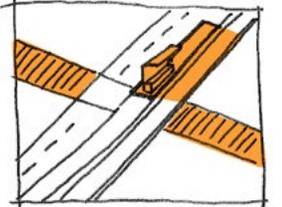

N

Fig 5.13: Pedestrianised Southbound streets.

N

Fig 5.14: Linking with other modes

5.3. TRAFFIC CIRCULATION

Traffic calming

The traffic below Front Street is slowed down. From some streets, cars are banned and on other, the traffic is slowed down in order to diminish the barriers caused by vehicular traffic.

Fig 5.15: Traffic Circulation

Fig 5.16: Pedestrian circulation

Pedestrian circulation
A pedestrian network is strenghtened by improving the walkability of the streets leading from the Esplanade to the Waterfront and in order to create more connections, the area in between the Lakeshore Boulevard and railway tracks is added to this network.
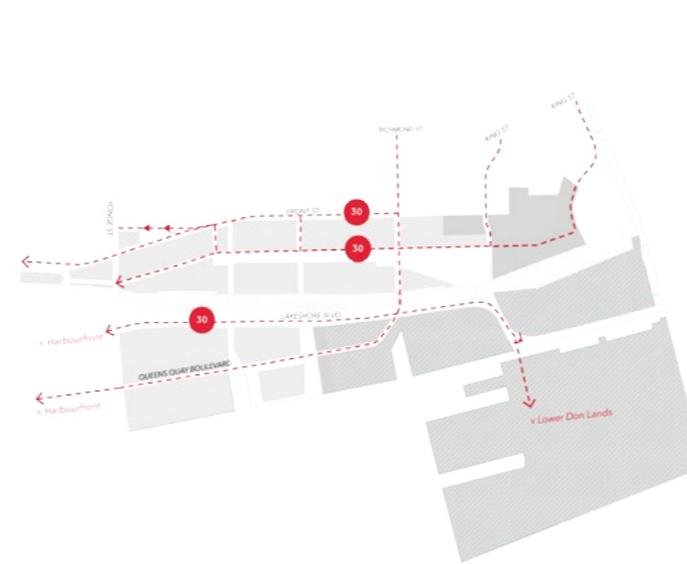

Fig 5.17: Streetcar circulation

Streetcar circulation
A new streetcar line from the crossing of King Street and Lower Jarvis St. to Queens Quay connects the waterfront to the existing network. When the Lower Don Lands are redeveloped, they can be connected to it too.

Fig 5.18: Slow traffic circulation

Slow traffic circulation
Traffic on Lakeshore Boulevard is slowed down, to improve the connection from Downtown Toronto with the Waterfront. Other taffic from Front street to the South is slowed down from 40 km/h to 30 km/h.
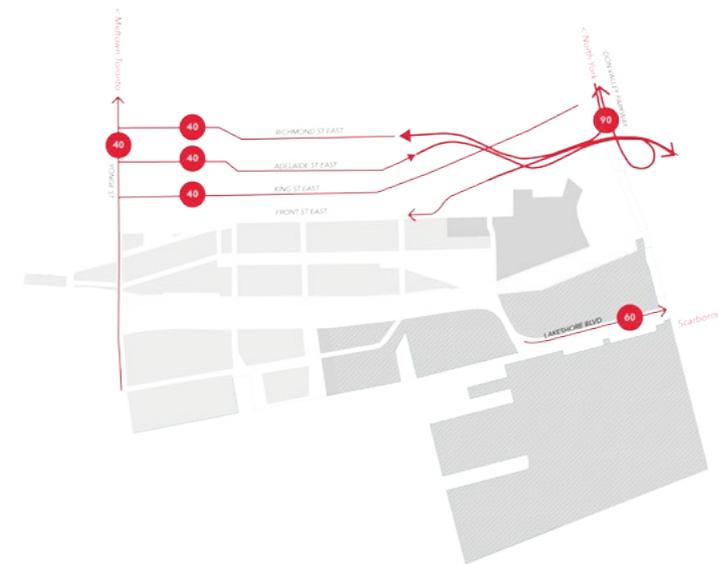
Fig 5.19: High-speed traffic circulation

High-speed traffic circulation
High speed traffic is banned from the streets below Front Street East. On Lake Shore Boulevard from Cherry street to the East, traffic can drive the current allowed speed of 60 km/h to get out of Downtown Toronto.

6. DESIGN

STREETS AS PLACES

6.1. A PEDESTRIAN ROUTE

The most important route from the new pedestrian network will be explained and visualised in this chapter. The route includes important landmarks and popular destinations in the area and connects them by attractive walkable streets and parks.

The Route:

1. The Gooderham building
2. St Lawrence Market
3. St Lawrence Square
4. Lower Jarvis Street
5. Gardiner Park
6. Sugar Beach
7. Lower Sherbourne Park
8. Lower Sherbourne Street
9. Esplanade
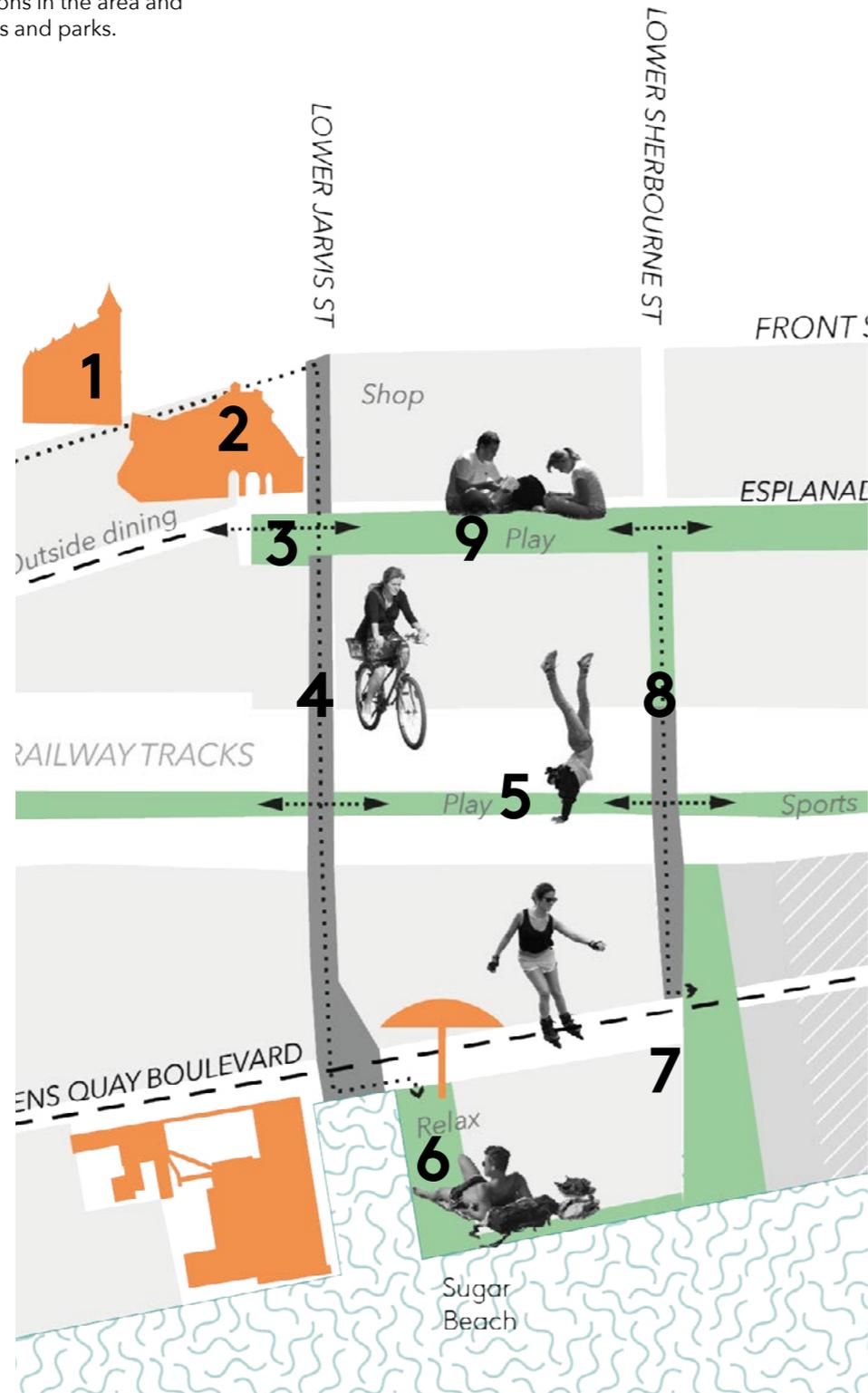
Fig 6.1: Pedestrian route

6.2. DESIGN PRINCIPLES

Access & Linkage

Fig 6.2: Design Principles for street level design
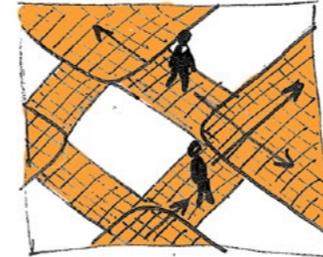
Continuous pedestrian paths
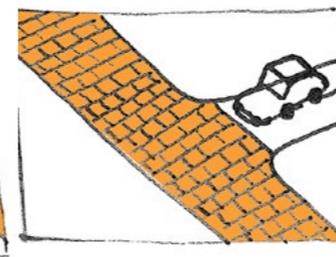
Traffic calming through rough pavement

Seperated traffic flows by natural elements like trees and shrubs
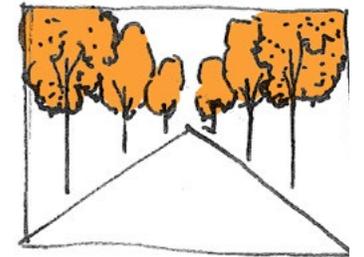
Give direction to streets that are leading to the waterfront by using rows of trees.

Placemaking
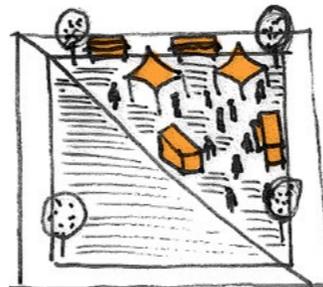
Flexible public square

Defining spaces by using trees and other vegetation
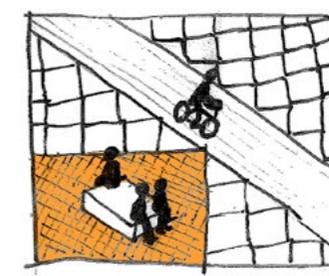
Define different spaces by different materiality: More detailed paving at resting spaces
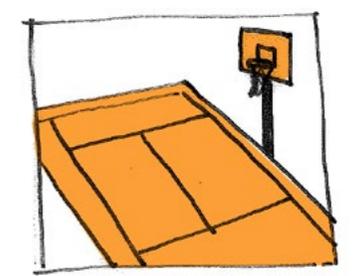
Active sports facilities
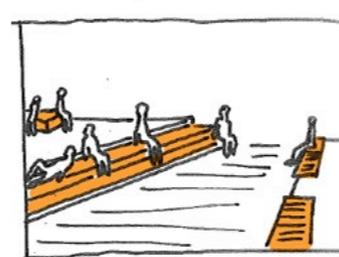
Passive staying facilities like formal seating spaces or informal stairs.

An intensive and diverse land use.

6.3. THE MASTERPLAN

The masterplan is made for the most important route of the new pedestrian network. St Lawrence is an important historical location in the area of South-East Dowontown Toronto, and is therefore the starting point of the network.

The network consists of a design of the car-free Lower Jarvis Street, a redesigned market square in front of the market, a new park between Lake Shore Boulevard and the railway tracks called the Gardiner Park, the Esplanade and existing parks like Sugarbeach and Sherbourne Common. These destinations are all well connected by pedestrian paths, a bike network and a new streetcar line.

In the area, there are fascinating historical buildings like the Gooderham Building, but also newly developed buildings or buildings in development of which many modern apartments, an innovation centre and a college. These will bring more people to the area that will benefit from the pedestrian network and all the interesting facilities.

LEGEND

- 🟡🟢 Trees
- Existing buildings
- New buildings
- Greenspace
- Seating space
- Pedestrian path
- Rough paving to slow down traffic
- Asphalt
- Sand
- Water
- Bikepath
- Streetcar track
- The raised Gardiner expressway
- Basketball Court
- Skatepark
- Beachvolleyball court
- Pingpong tables
- Outdoor gym
- Stairs/platform

MASTERPLAN

0 25 50 75 100 m

Fig 6.3: Masterplan

6.4. PHASING

In order to realise this walkable network, the transformation needs to take place in phases. (Fig 6.9)

Phase 0: Existing situation
In the area of the new pedestrian network there are some destinations. The Gooderham building and St Lawrence Market at Front Street are iconic buildings in the area and the Esplanade, Sugar Beach and Sherbourne Common are parks that could become connected by the new network. There are some new appartments in the area and a College, and some buildings are still under development.

Phase 1: Land use Planning

In order to attract people in the area to walk, interesting shops, cafe's and other public facilities need to be available. The facilities need to be diverse in order to make the area interesting for young, old, women and men. Facilites in Lower Jarvis street and surroundings will benefit from the planned pedestrian network.

Some buildings aready have an interesting program but could be improved and some buildings areas are already planned but not yet realised. In Phase 1, public facilities like the market and college, but also the new Innovation centre, offices, restaurants and cafes, retail and residential housing will contribute to a diverse and intensive land use that will attract many people to the area.

- intensive and diverse land use
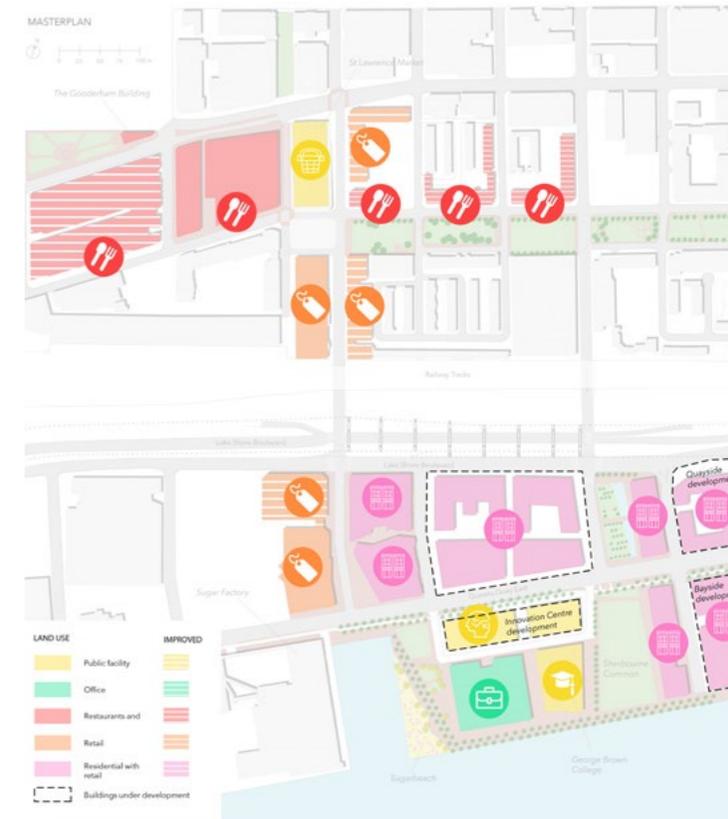
Fig 6.5: Phasing: phase one

Phase 2: Pedestrian prioritizing and connectivity

Next to attracting people to the area, it is important to provide them with comfort. Therefore, pedestrians are prioritised, car traffic is removed or slowed down and the connectivity with the surroundings is strenghtened by implementing the bike and streetcar network. This makes the facilities more accessible.

- Traffic calming by regulations
- Traffic calming by rough pavement
- Seperating traffic flows by vegetation
- a continous pedestrian path
- prioritizing pedestrians
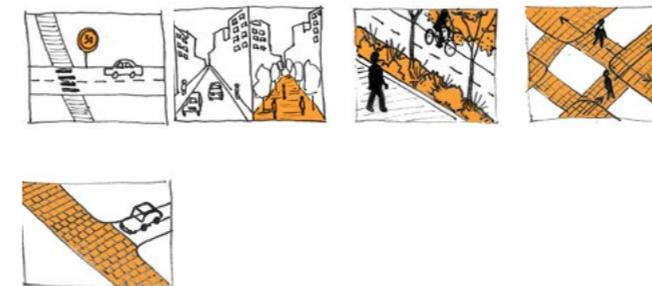
Fig 6.6: Phasing: phase two

Phase 3: Placemaking

The quality of space becomes important in this phase. The active facilites in the Gardiner park like the skatepark, tabletennis tables and basketball courts are realised and passive staying facilities like seating spaces are placed. Next to this, the trees and plants are planted. The design becomes visually interesting and exciting.

- Active sports facilities
- Passive staying facilities
- Using different pavement to distinguish spaces
- Flexible spaces
- Transform non-places to places
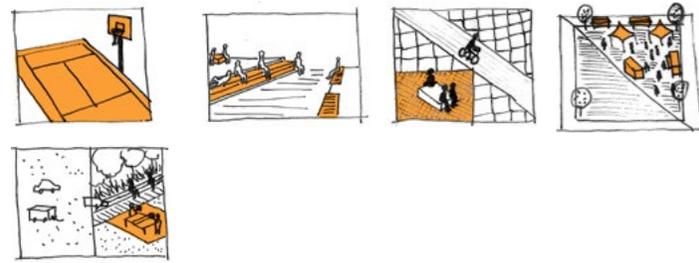
Fig 6.7: Phasing: phase three

Phase 4: Expansion of the pedestrian network

The design will have a positive result on the walkability, making the area more actively used by people. This will attract more developments in the abandoned or poorly used spaces and the pedestrian network can be expanded towards the Distillery District and the Gardiner park extends itself along the railway tracks.

Fig 6.8: Phasing: phase four
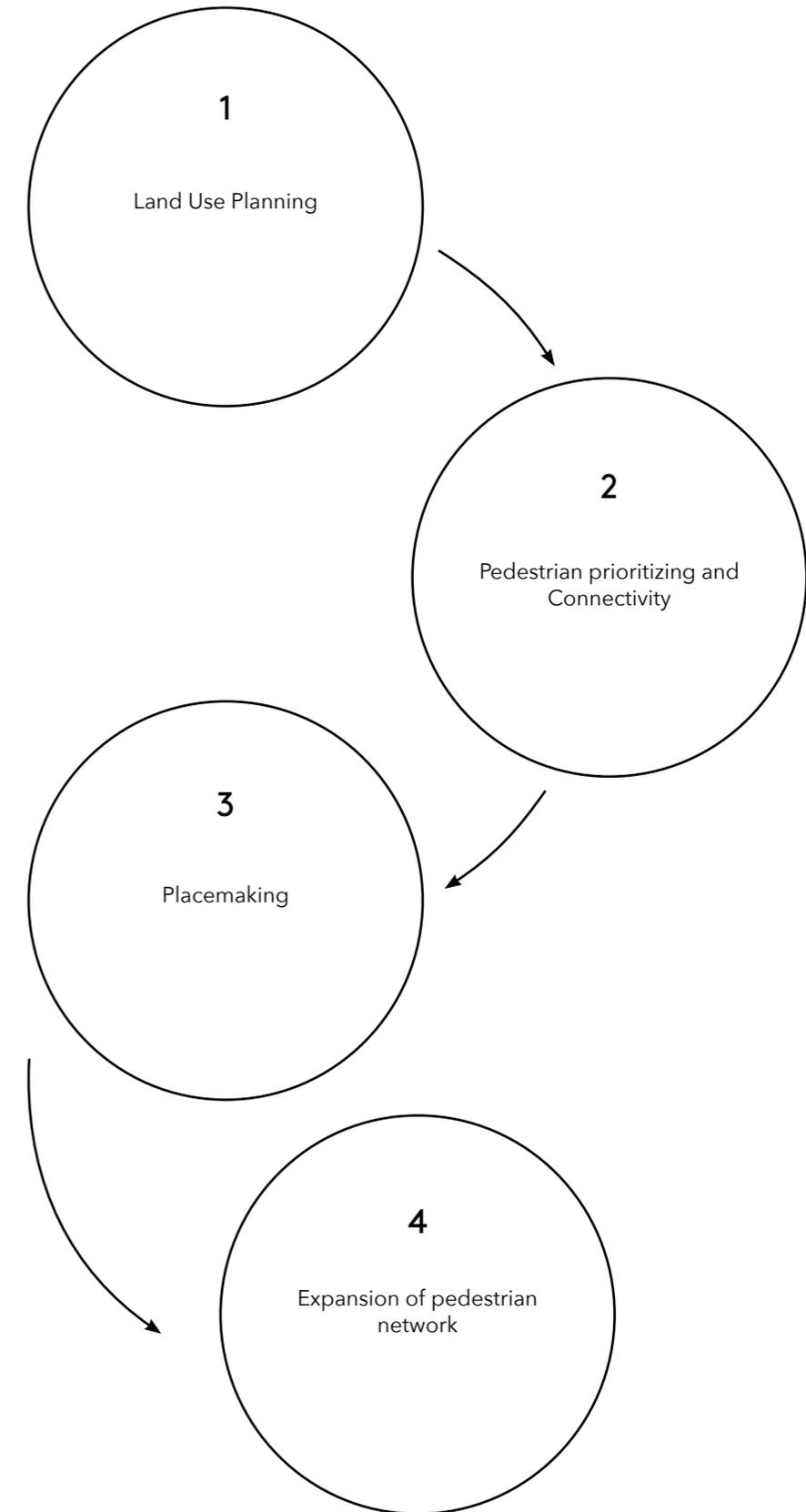
Fig 6.9: Phasing of walkability in diagram

6.5. LOWER JARVIS STREET

CONNECTIVITY AND PLACEMAKING

The plan for Lower Jarvis street can be devided into elements of Connectivity and Placemaking. Bikelanes, pedestrian paths and a streetcar network contribute to the connection internally but also with the surroundings. Many seating spaces and greenspace contribute to a nice and social place.

Plant beds
Seating Space
Flexible-use square
Seating Spaces on platform
Greenspace
Tram Stop
Seating Space
Rows of trees

Placemaking

Streetcar tracks
2-way bikelane
Pedestrian path
Rough pavement for car traffic
Safe crossing
Continuous pedestrian path
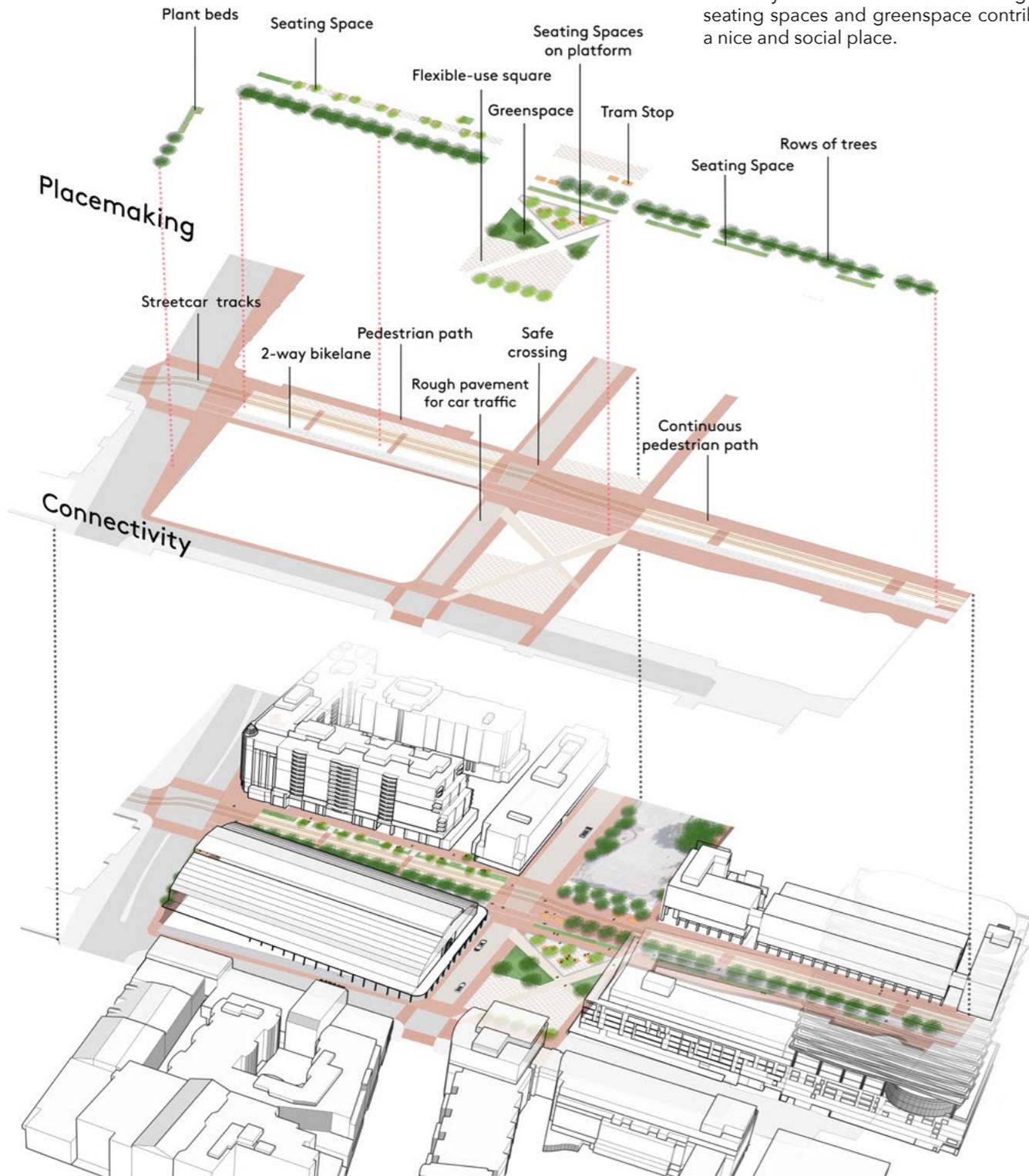
Connectivity

Fig 6.10: Connectivity and Placemaking in Lower Jarvis Street
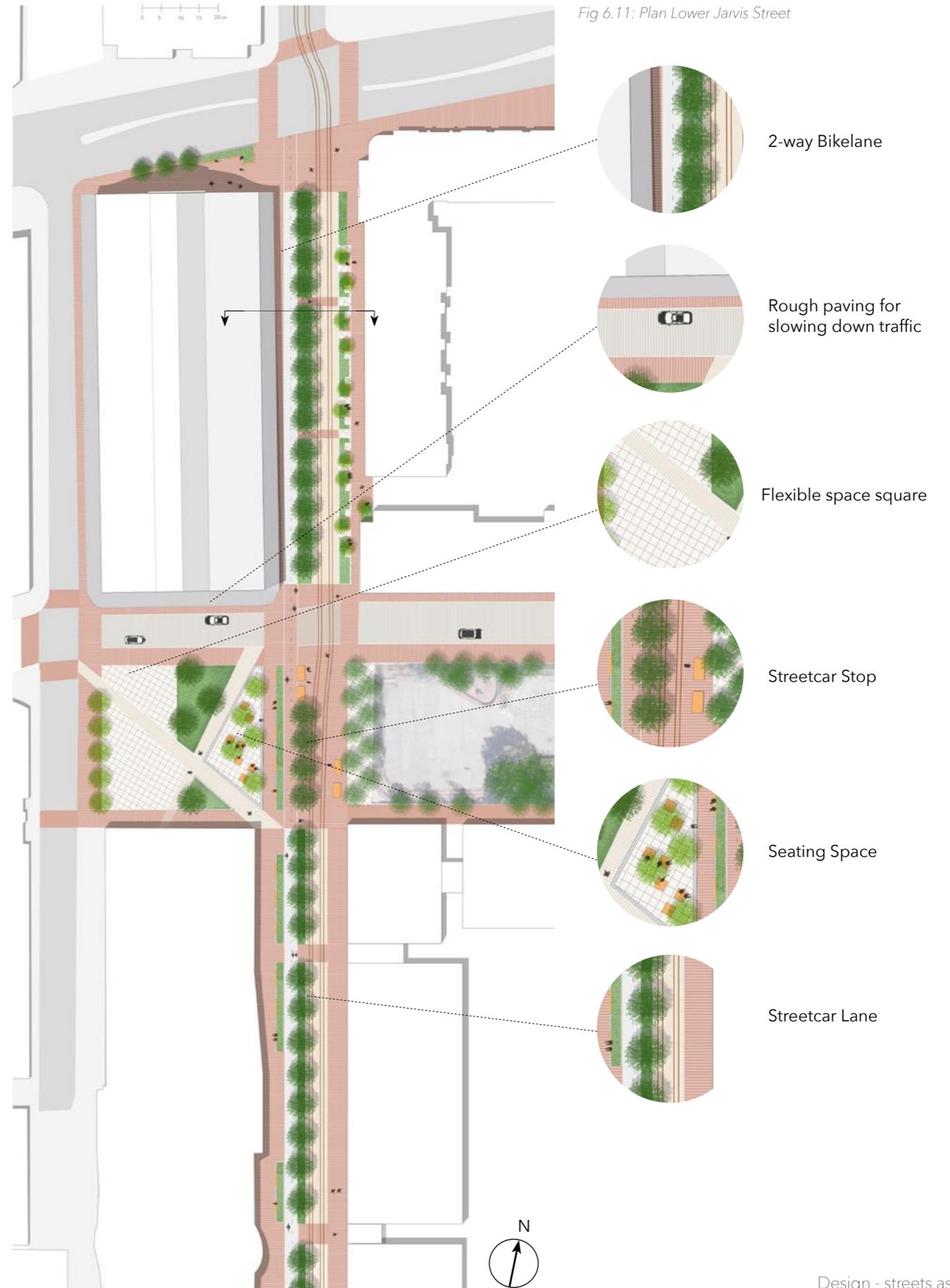
2-way Bikelane

Rough paving for slowing down traffic

Flexible space square

Streetcar Stop

Seating Space

Streetcar Lane

N

6.5. LOWER JARVIS STREET

BEFORE

concrete slabs	square bricks	asphalt	concrete slabs
	concrete kerb		brick halfstone

Fig 6.12: Section Lower Jarvis Street Before

AFTER

Acer saccharinum

brick halfstone	square bricks	gravel tramway	concrete kerb	concrete kerb	asphalt bike path	brick halfstone	concrete slabs
	drainage gutter					drainage gutter	

Fig 6.13: Section Lower Jarvis Street After
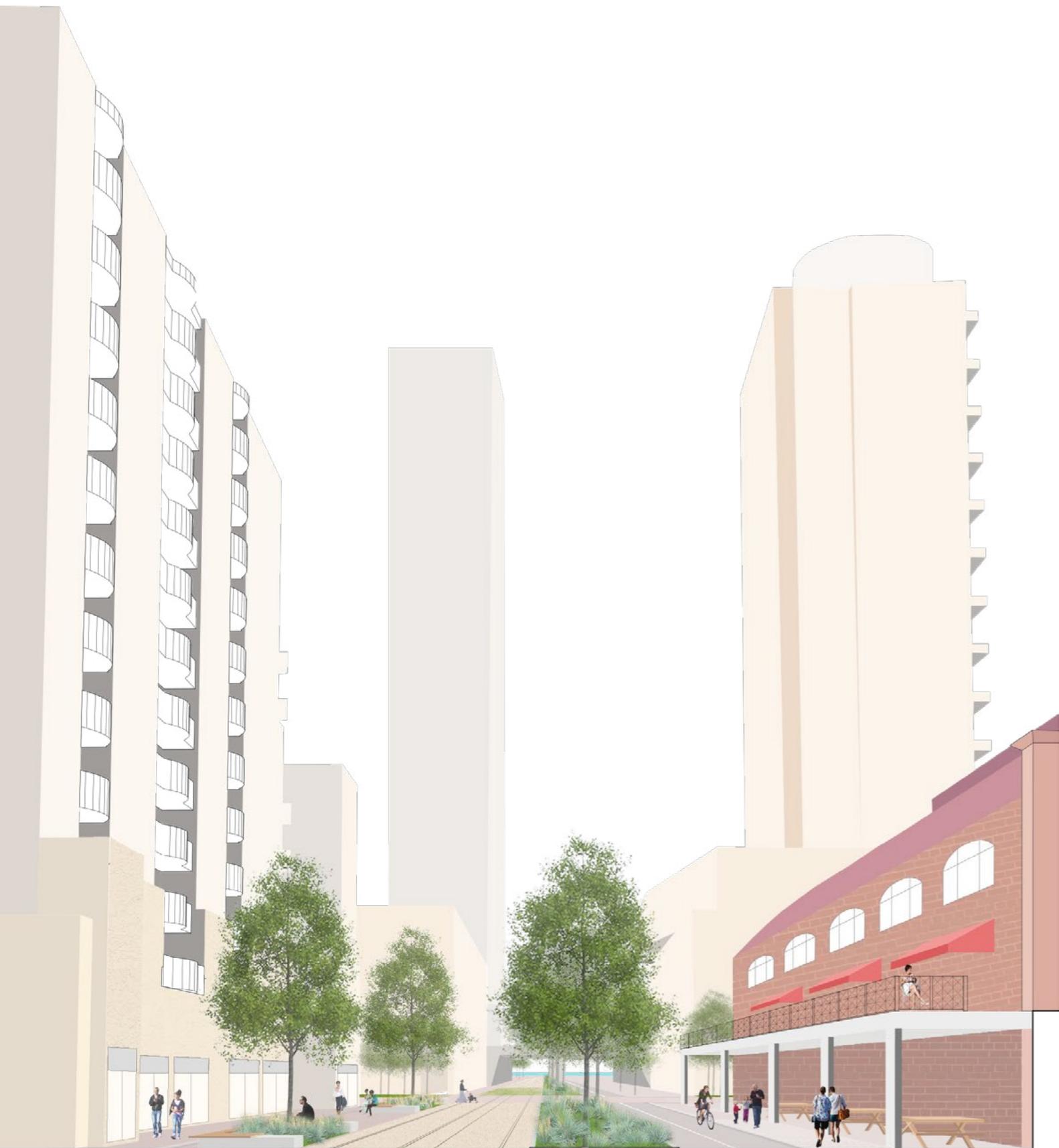
Lower Jarvis Street is transformed from an asphalt street with 4 lanes for cars, to a street where cars are banned and pedestrians get more space for walking, relaxing and meeting. Benches with incorporated green offer a nice opportunity for people to wait in front of one of the shops, or to take a moment to rest on their walk to the waterfront. The space below the terrace of St Lawrence market will become a lunch spot, with picnicktables where people can enjoy their freshly bought goods from the market. A tramline and bikepath will provide a good and quick connection with the waterfront and surrounding areas.

Fig 6.14: Perspective Lower Jarvis Street

6.6. ST LAWRENCE SQUARE

Fig 6.15: Lower Jarvis Street and St Lawrence Square

The St Lawrence Market Square is an open space that can be used for different events, like antique markets, open air yoga classes, food truck markets, etc. The square also offers many seating spaces, along the way to the waterfront or on a raised platform, which is perfect for meeting or watching people coming by.

Fig 6.16: St Lawrence Square in quiet times

Fig 6.17: St Lawrence Square with a food truck event

Fig 6.18: view from the balcony of St Lawrence Market

6.7. GARDINER PARK

Streetcar lane and bikepath

Seating space

Cafe

Outdoor gym

Basketball court

Stairs/platform

Skatepark

Beach volleyball court

Multi-use path

Greenspace

0 5 10 15 20 m

C

B

A

N

The plan for the Gardiner park can be devided into elements of Connectivity and Placemaking. Bikelanes, pedestrian paths and a streetcar network contribute to the connection with Lower Jarvis street and the Waterfront but also with Lower Sherbourne street. Functions like a skatepark, volleyball court and basketball court, seating spaces and attractive greenspaces contribute to the transformation of a non-space to an exciting place.
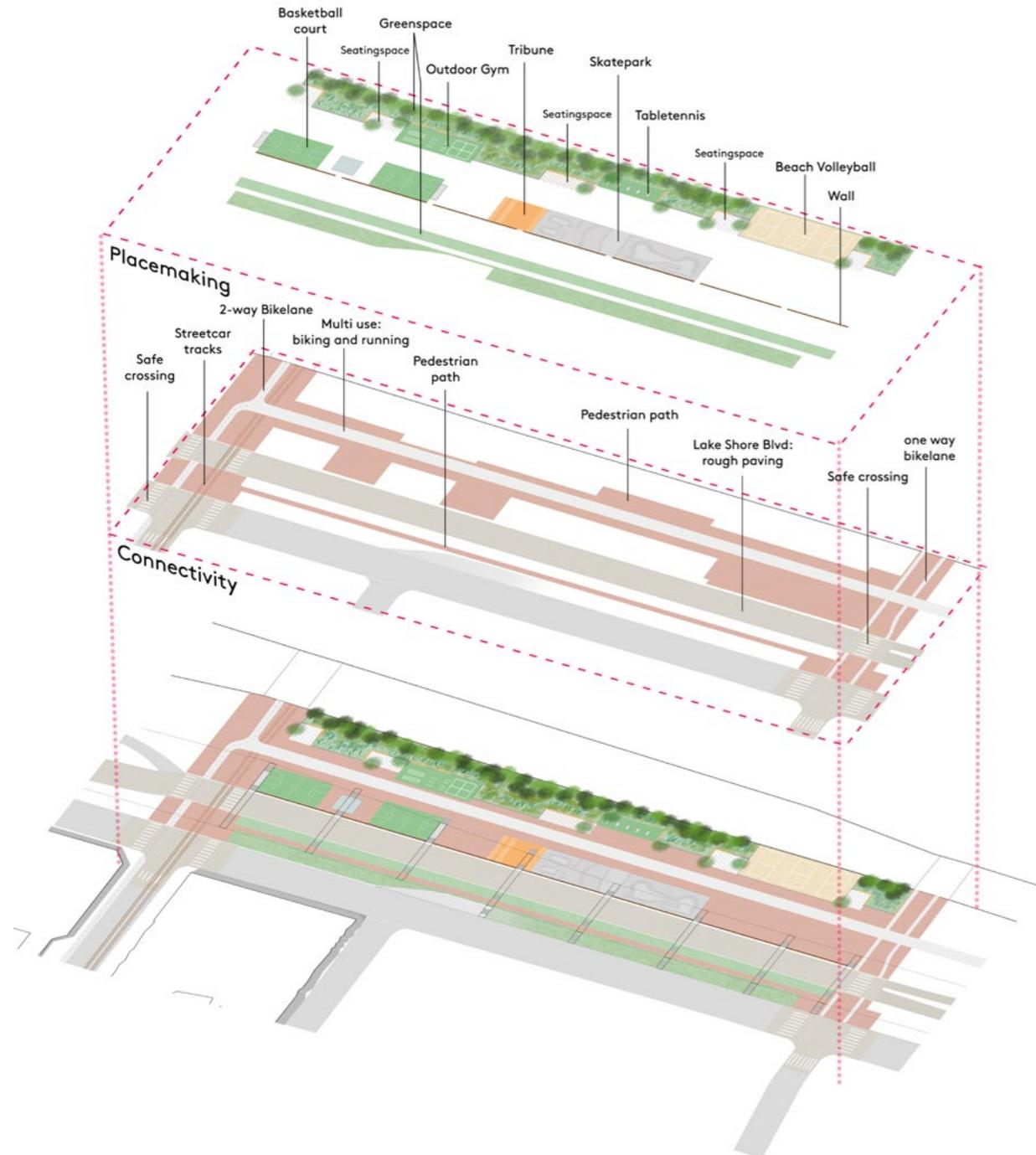
Fig 6.20: Connectivity and Placemaking in the Gardiner Park

6.7. GARDINER PARK

THE TRANSFORMATION

SECTION A: BEFORE

railway tracks — derelict space

non-place — Lake Shore Boulevard — crossing area — Lake Shore Boulevard
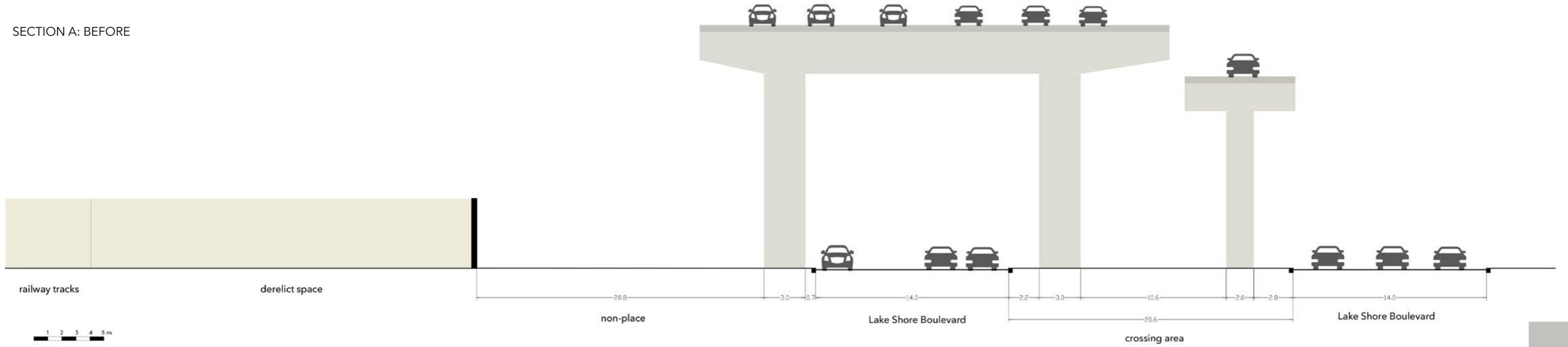
Fig 6.21: Section A Gardiner Park before

SECTION A: AFTER

railway tracks

planting — **ping pong area** — pedestrian path — main path (multi-use) — pedestrian path — **Skatepark** — Lake Shore Boulevard — running/walking path — Lake Shore Boulevard

SECTION B

planting

outdoor
gym/workout
area

pedestrian
path

main path
(multi-use)

pedestrian
path

Basketball court

Lake Shore Boulevard

running/walking path

Lake Shore Boulevard

1 2 3 4 5 m
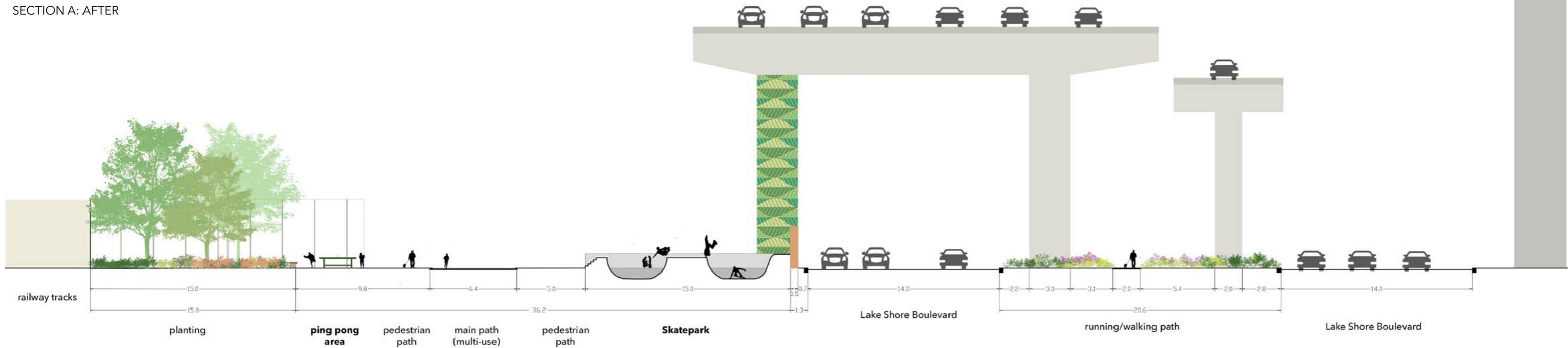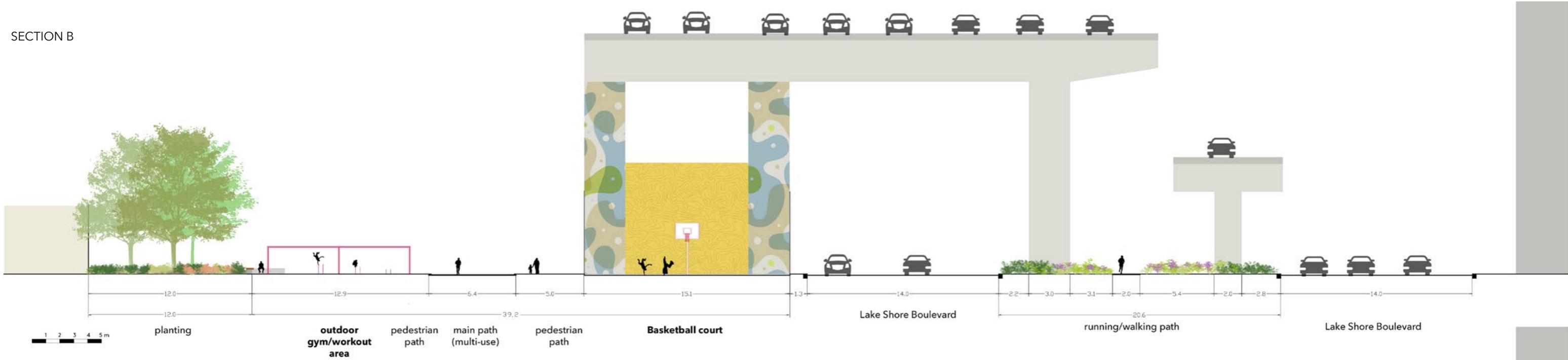
Fig 6.23: Section B Gardiner Park

SECTION C

Gardiner Cafe

planting

**ping pong
area**

pedestrian
path

main path
(multi-use)

pedestrian
path

Skatepark

Lake Shore Boulevard

running/walking path

Lake Shore Boulevard

A new purpose for left-over space

Often, there is left-over space below highways. These spaces can be transformed to shelter different activities. (Fig and) The pillars can devide different functions or become part of something like a bouldering wall or cinema screen.

It is also perfect for offering shelter from rain or sun, depending on the time of the year.

Fig 6.27: Cafe

From non-place to a place
The left over space is a non-place that is not suitable for people. When adding context and quality, people will be attracted and it can become a gathering space for social interaction. For instance, by the development of a new cafe. (Fig)

Fig 6.28: Outdoor cinema

From non-place to a place
Even during the night, people could make use of the space, for instance to visit the outdoor cinema. (Fig)

Fig 6.30: Playing pingpong in the Gardiner Park

Fig 6.29: Skate fun in the Gardiner Park

Fig 6.31: Outdoor cinema in the Gardiner Park

The Gardiner Park offers a wide varierty of uses like skating, playing pingpong, basketball and even beach-volleyball. The park is seperated from the Lake Shore Boulevard by a colorurful fence consisting of a long stretch of individual metal slabs. The wooden stairs are also a platform for young people to meet and to watch others do their skating tricks.

By night, movies can be screened on the wall that is incorporated in the structure of the Gardiner Expressway. The wooden stairs are like a tribune and offer a good view on the screen.

Fig 6.32: The view towards the Waterfront

Fig 6.33: Trail under the Gardiner Expressway

The transition towards the Waterfront is made safer by slowing down traffic, but also the use of materiality makes for a more continuous route.

The left-over space under the Gardiner Expressway is transformed in a running track surrounded by wild planting.

A non-place in between railway tracks and the Gardiner Expressway is transformed to a lively city park for all Torontonians. Here, they can experience fun and active activities, meet friends at the cafe or sit and relax. Also, the park provides the city with a new recreational between Lower Jarvis Street and Lower Sherbourne Street and hereby contributes to walking and cycling in the area.
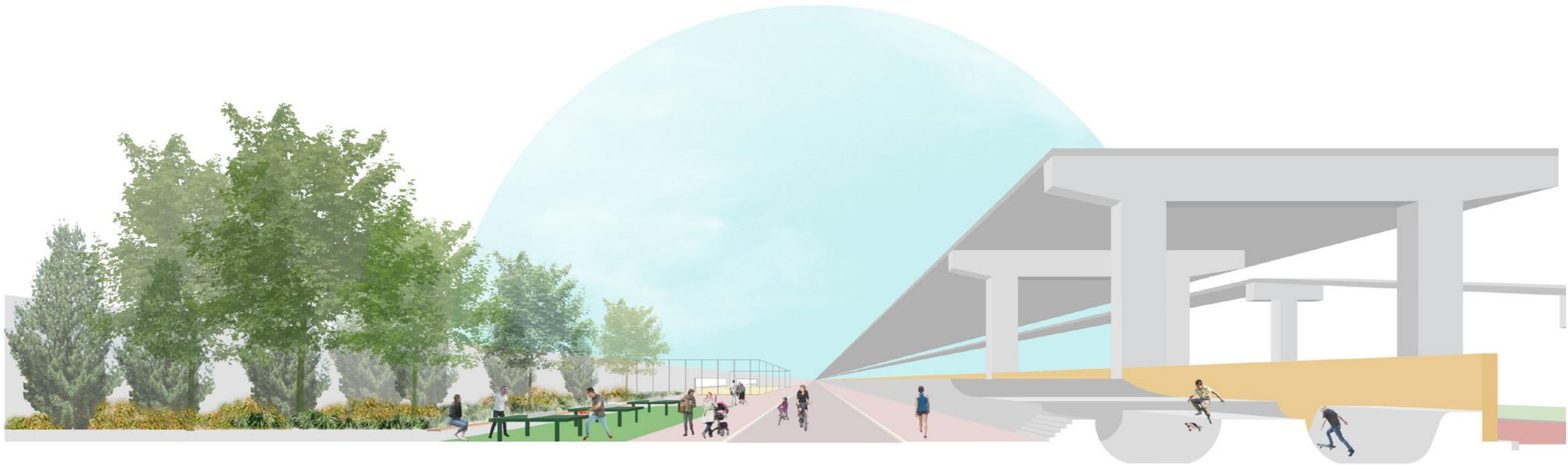

Fig 6.34: Overview of the Gardiner Park

TREES	Acer saccharinum	Betula populifolia 'Whitespire'	Fagus grandifolia
deciduous/evergreen	deciduous	deciduous	deciduous
height	12-20 m	8 m	30
width	8 m	5-6 m	12-18
(seasonal) interest	red to yellow foliage in autumn	chalky white bark in winter and yellow foliage in autumn	yellow foliage in autumn
use	lineair rows in streets	ornamental near seating spaces	solitairy tree on the square surrounded by grass
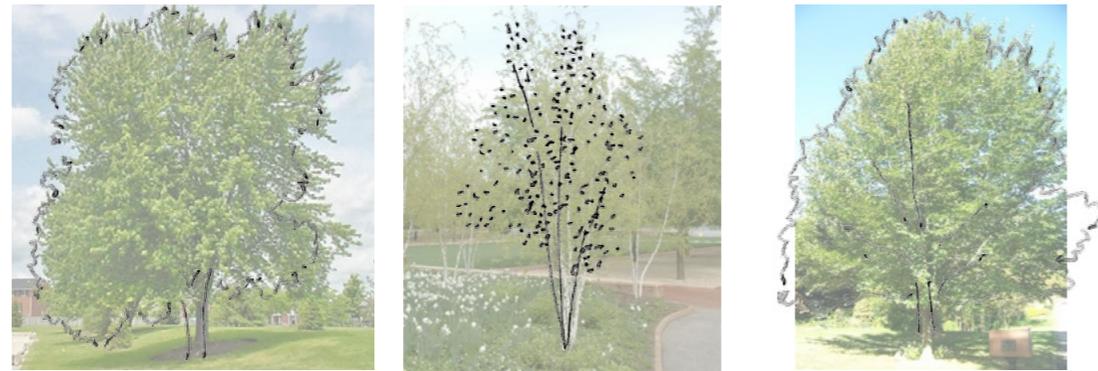
PERENNIALS	Helictotrichon Sempervirens	Nepeta racemosa 'Walker's Low'	Stipa tenuissima
deciduous/evergreen	evergreen	semi-evergreen	semi-evergreen
height	1 m	0,6 m	0,4 - 0,5 m
width	0,6 m	0,5 m	0,3 m
(seasonal) interest	yellow-brown flowers in summer	violet lilac-blue flowers in june-sept	fine structured feather grass from green to lightbrown
use	in planting beds	in planting beds	in borders deviding traffic lanes

TREES	Pinus strobus 'Fastigiata'	Quercus rubra	Pinus parviflora 'Glauca'
deciduous/evergreen	evergreen	deciduous	evergreen
height	10	20-25	6-12
width	4		4
(seasonal) interest	pillar shaped, cilindric cones	red orange foliage in autumn	cilindric cones and blue-gray needles
use	as an ornamental tree in the woodland next to the railway tracks	in the woodland next to the railway tracks	as an ornamental tree in the woodland next to the railway

PERENNIALS/ SHRUBS	Artemisia ludoviciana 'Valerie Finnis'	Cornus sanguinea 'Midwinter Fire'	Aronia melanocarpa 'Viking'
deciduous/evergreen	semi-evergreen	deciduous	deciduous
height	0,6 m	1,5	6 m
width	0,6 m	1,5	rounded
(seasonal) interest	silver green foliage and yellowish brown flowers in late summer	orange warm coral twigs all year round. White flowers in june.	white flowers in spring, glossy dark leaves in summer and red/orange foliaga in autumn, black berries till winter
use	as a groundcover in woodlands	lower layer woodland	lower layer woodland

CONCLUSION

OBJECTIVE

To rediscover streets as social space in order to create a pedestrian network that benefits social interaction, the environment and people's health.

RESEARCH QUESTIONS

What are the conditions for streets as a social space?
What are the benefits of streets as social space?
Where are the problems and opportunities in Toronto for creating a pedestrian network?
How can the pedestrian network contribute to the reconnecting of fragmented spaces?

A successful pedestrian network has to follow the conditions of streets as movement space and streets as social space. Because of car dependency, vehicular movement space has overwhelmed social space, and broken up the pedestrian network. Pedestrian movement space has to be supported following conditions for Access & Linkage and social space has to be supported by following conditions for Placemaking.

In order to rediscover streets as social space, walkability has to be supported. Walkability has benefits for the social connectedness but also has health and environmental benefits when people are replacing car trips by walking or cycling or spending more time outdoors enjoying activities (active or passive).

Toronto's waterfront is poorly connected with the city. It is missing links with the streetcar, bike network there is a big infrastructural barrier in between the city and itself.

By using design principles for Placemaking and Access & Linkage a better connection will be made with the waterfront and surroundings. Crossings will be safer because of traffic calming, streets will be more comfortable and offer visual interest and excitement and new activities in the Gardiner park will interest people in going outdoors. There will be no barriers preventing people from continuing their walk until they reach Lake Ontario.

DISCUSSION

Theory of Placemaking

The theory of Placemaking is a popular theory but it is also hard to measure or to define design tools.
The analysis that I have done is mostly top-down. In order to make a more precise design and to really know which spaces are used, and which are not used, an analysis at location could help to identify smaller problems and opportunities in the walkability. People's behaviour could be registered and this would also be a helpful tool in the design process of Placemaking.

The use of Design Principles

Following the rules for Placemaking and Access & Linkage is a helpful tool to benefit the walkability.
The rules for Access & Linkage are clear when distances between stations are stated. But, the rules cannot be followed blindly, because you have to look at the context of the site. The design has to fit into the existing urban landscape. Some locations are more logical to position a station then others. For example, it is more logical to locate the station at an attractive facility where people want or have to go, then to locate it in an uninteresting spot but exactly 400 or 800 meters away from the previous station.

When talking about infrastructural barriers, the design is most important in diminishing this barrier and theory can be supportive. Not every barrier is the same, so it is important to take into account the existing landscape when using design principles. The design principles are supportive and can also be used in other projects.

Solutions for Connectivity

In this project I chose for the solution of traffic calming in order to improve the connectivity with the waterfront. Other possibilities could have been overpasses or even moving the Lake Shore Boulevard underground. I did not move this road underground because of different reasons. It is a much more expensive way to deal with infrastructure, and the Lake Shore Boulevard has an important role in connecting many places in the city. By moving it underground it would lose its connective function in the downtown area of Toronto. An overpass could still be a nice edition to the pedestrian network, especially when well designed, but overpasses can still be troublesome for elderly or disabled. I chose for traffic calming because I think the Lake Shore Boulevard is important to maintain because of its connective function, but it needs to change in order to fit into the urban landscape where walking and cycling is the main means of transport. It could for instance reduce its number of lanes, so that the crossing of Lake Shore boulevard takes less time.

REFLECTION

Research & Design

The theoretical research I have done on Walkability, Placemaking and Access & Linkage is aiming towards a design that can reconnect places that have been separated by infrastructure and making connections that are not just serving traffic circulation but also serve as a social space for social interaction and exchange between people. In order to make a successful design that improves the walkability in a city like Toronto, or any city with a similar structure that is dominated by cars, it is necessary to know the conditions for walkability, like at what distance essential uses need to be located, or what the maximum distance to a public transit station should be. The analysis on the city of Toronto has helped me to establish which location has problems in connectivity but also has the potential in becoming a more walkable area of the city. The project site has problems in connectivity because of infrastructural barriers. They need to be diminished in order to create potential for walkability. Conditions from Access & Linkage can help, but design plays a more important role here, there are no clear rules that can directly be implemented on the site..

Graduation topic and Flowscapes

The studio topic Flowscapes explores infrastructure as a type of landscape and landscape as a type of infrastructure. It is about redefining infrastructure and that is exactly what I am aiming towards in my graduation project. The topic of my graduation: 'Streets as places' rediscovers the social role of streets and makes them part of the urban landscape again, where people and social exchange play a role. A multi-layered understanding of the site is required in this studio. History plays an important role in understanding how the role of streets have changed, but also site specifically, how the relationship with the waterfront in Toronto has changed and what locations have an important historical meaning and are therefore essential in the connection with the waterfront (like St. Lawrence Market).

The process and scientific relevance

Starting my Graduation project, I did a lot of theoretical research and read many articles about the influence of car ownership on the city, and new policies on improving city life. Different theories on improving city life like Jan Gehl with 'New City Life' and Jane Jacob with 'The death and life of great American cities' have inspired me, but when doing more research on my research location: Toronto, I realized that I had to focus more, specifically on walkability and the improvement of streets as social space in order to be able to reconnect to the waterfront. In order to achieve this walkability, streets need to be movement space, where Access & Linkage is the key, and also a social space, where Placemaking comes in. The two component of walkability: Access and Linkage and Placemaking have guided my analysis in order to investigate where the problems and opportunities are lying. Based on this, a concept for an area will be the starting point of more detailed design of some key components that will contribute to reach my objective. From my research, one can learn that in order to connect two places that are fragmented by infrastructure, it is not enough to break down the barrier and that a physical connection is not enough. It is also about placemaking: creating a visual attractive and interesting space that invites people, making them stay and interact. Especially in large scale cities like Toronto, where distances are much longer and the urban grain is bigger, it is important that there is enough context in order to make streets a social space.

Relevance to a wider social, professional and scientific framework

The research topic is a very relevant topic because cities are growing, becoming denser and together with car ownership this is becoming a problem. If cities are becoming denser, facilities will have to densify as well. Cars are then much less efficient then pedestrian movement. Therefore, it is good to think about reinterpreting the structure of cities. Since streets are the most enduring element and also the most determinative element of a city (chapter 1.1), it is logical to take a closer look at streets. The research done here in Toronto can also be applied to other North-American city centers with a high density of facilities. Next to this, waterfronts all over the world are being redeveloped but are often cut off from the city center by railway tracks or highways that used to have purposes for trafficking goods from the harbour to the inlands. This projects offers solutions for the reconnection with the waterfront, but also for the use of the left over non-places besides or below a highway for recreational purposes.

Ethical issues and dilemma's

When doing my research I have often been in a dilemma on whether I could remove cars from streets. In the end, I decided that in order to improve the social life on the street and improving the walkability, I had to set an example with my design. I have actually been quite careful and only made 3 streets into pedestrian streets, while at the same time adding a new streetcar connection. The connection from Queens Quay and Lake shore Boulevard to Parliament street, leading towards the highway, is still intact, but Lake shore boulevard becomes a slow traffic Boulevard, like its name is suggesting already.

Making these changes, I want to support pedestrian and bike movement in a specific location in Toronto, where new mixed neighbourhoods (Pan Am village) and areas under development are located that can set a modern and Western example. I am positive about the effect that these actions will have on peoples traffic behaviour. By providing people with less high-speed traffic networks, making it less efficient for people to drive their car in dense urban areas, they will be likely to use other means of transport. These other means need to be provided, therefore, I have made a new streetcar line and improved the network for bikes and pedestrians.

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