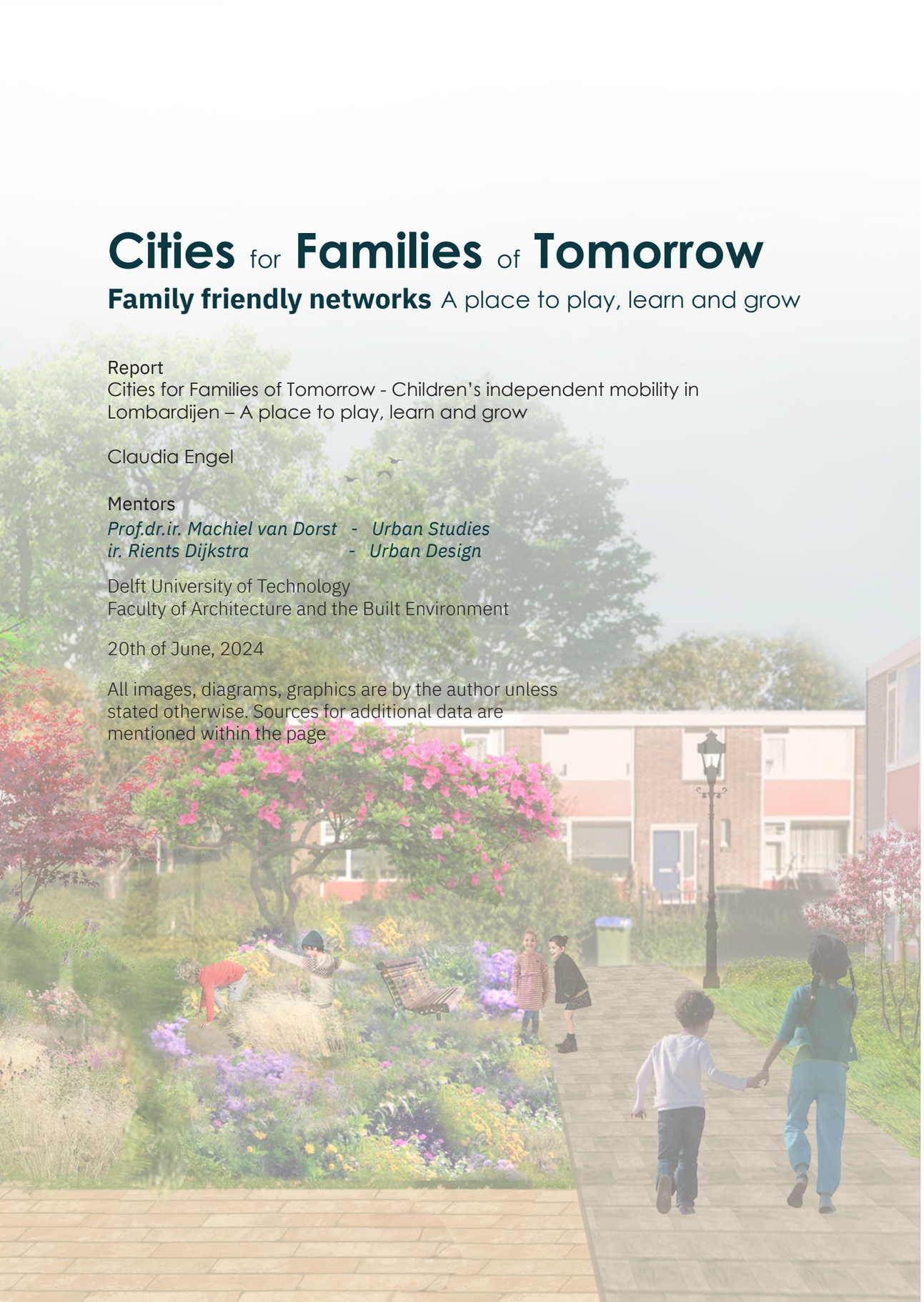
Cities for Families of Tomorrow

Increasing children's independent mobility - A neighbourhood to play, learn and grow

Claudia Engel

Cities for Families of Tomorrow

Family friendly networks A place to play, learn and grow



Report
Cities for Families of Tomorrow - Children's independent mobility in Lombardijen – A place to play, learn and grow

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#0 Abstract

This research aims to meet the needs of both parents and children growing up to create a family friendly neighbourhood, while adapting to and mitigating the parents' perceived social and traffic unsafety for their child to increase independent mobility as it's essential for a healthy and safe lifestyle. Through creating a child friendly network for children from 7 to 12 years old that accommodates places to learn, as well as meet their needs and grow up safely and independently. The project studies and proposes interventions for a family friendly neighbourhood in Lombardijen.

Free movement of children in decreasing for generations and in contemporary times places to move freely have become patches and are starting to disappear. Parents and caretakers perceive unsafety within the urban public space, consequenting in both significant decreased independent mobility for children and children that are overprotected having a higher chance to get involved in traffic accidents at a later age.

The research question is: "How can a child friendly network
facilitate to the needs of a family friendly city, where 7-12 year old children can independently go from A to B safely ?"

Through exploring the needs of families, the necessities of a child friendly network and its spatial characteristics, as well as how it can be implemented at the location Lombardijen in Rotterdam, the research question can be answered.

This research uses a multi-method approach to gain data. Objective data through literature, spatial analysis and research by design, subjective data through informal interviews, a workshop with mothers and a walking workshop through the neighbourhood with over fifty elementary school children as well as gaining insights through booklets filled in by the children.

A child-friendly network is an essential basis for a family-friendly neighbourhood, allowing 7-12-year-old children to navigate safely from place to place independently. In places like Lombardijen, safety concerns regarding traffic and social safety often limit children's independent mobility. Parents play a significant role in allowing or restricting children's movement based on their perception of safety. Therefore, creating spaces and roads that enhance both parental and child safety perceptions is vital. Needs of families as a whole are translated into seven main themes: Safety, inclusive public space (places for boy type play and girl type play as well as adult and child), playful city, mobile city,(perceived) proximity of essential facilities, social cohesion and learning experiences. A child-friendly route should be safe, challenging, and incorporate various play elements to encourage engagement and learning. Additionally, focusing on creating safe and inviting neighbourhood streets is essential for overall safety and enhanced social cohesion, ultimately promoting independent mobility for children.

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#0 Glossary

Family friendly city: A family friendly city is a dialogue between an child friendly and a parent friendly city. The focus lies in the inbetween: there where parents have principles that need to be met for children to approve them to move through the neighbourhood independently.

Child Friendly Networks: Child friendly networks are routes that are intentionally designed to prioritize the well-being, safety, and needs of children. These networks aim to create spaces and infrastructure that are beneficial to children's physical, social, and emotional development. Child-friendly networks are intended to enhance the quality of life for children (now and in the future) and create more inclusive and vibrant communities.

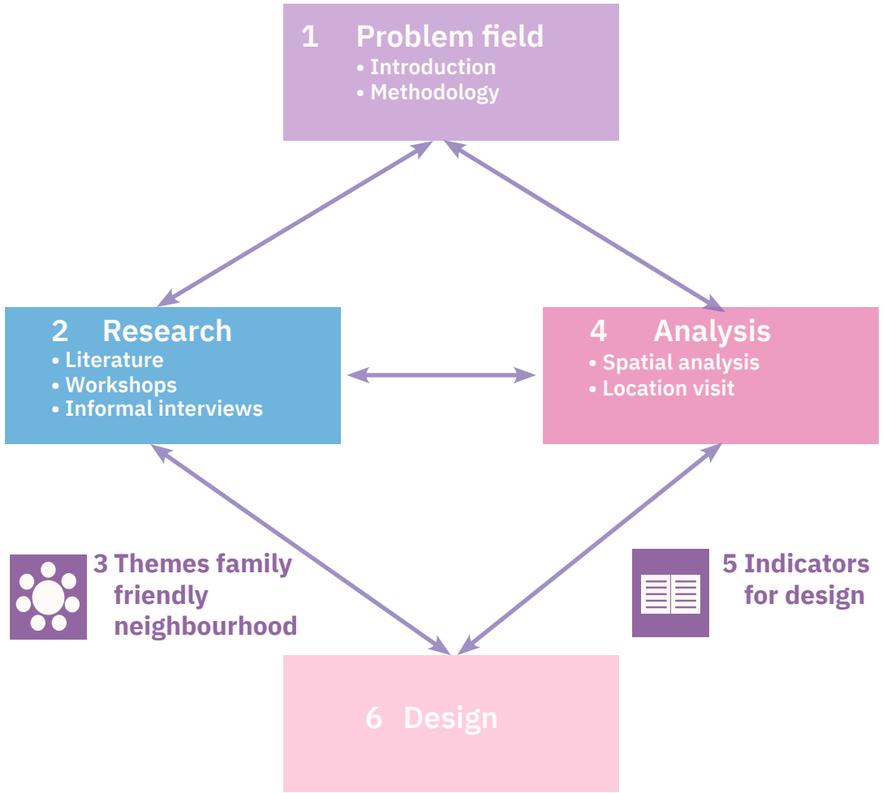
Independent Mobility: Independent mobility for children extends to freedom for those younger than 18 years old in the public space without guidance of any adult (Hillman et al., 1990).

Formal places to play: Places specifically designed for play. Examples are playgrounds and school yards.

Informal places to play: Places not specifically designed for play. Places where the public space does not provide objects that are meant for playing in itself. These places sometimes are used for play by children, through e.g. using loose objects like skipping robes, football or hula hoop or by made up games.

Institutionalised play/sports
Play or sports made possible through an organisation/association. This is play/sports under supervision. Examples are sports associations, school yards and paid playgrounds.

Narrow pedestrian space at Catullusweg during rush hour near elementary schools. Lombardijen.



#0 Reader's guide

While the report is linear, the process and thesis in itself are iterative and are more closely related to a circular and dynamic process. Therefore, the reader's guide helps navigate throughout the report and shows how to read the report. The diagram shows how the thesis is divided. It starts with the Problem field (1) which includes the foundation of the thesis and its methodology, followed by both research (2) and analysis (4). The researsch section includes literature study, workshops and informal interviews, the analysis section includes spatial analysis and location visits. Where the research provides themes essential for a family friendly neighbourhood (3), the analysis provides indicators for design (5). With these ingrediënts, the step towards the design (6) can be made.

#1 Problem field

Introduction

Independent mobility is important for children's holistic development, encompassing physical, emotional, and social aspects, also in regards of the long term. It increases movement and playtime, which correlates with a decreased risk of childhood overweight and obesity. When children are free to explore and move around independently, they engage in physical activities that contribute to maintaining a healthy weight.
Independent mobility also offers stress reduction and endurance enhancement for children. Active exploration of their environment allows them to use the excessive energy, fostering relaxation and improving their physical stamina.

By navigating public spaces on their own, children learn invaluable life skills such as awareness, cautiousness, and independence. This teaches them how to interact safely and confidently with their surroundings, both in social as well as in traffic situations.

Early experiences with independent mobility establish positive habits that endure into adulthood. Children who are encouraged to be active and independent from a young age are more likely to maintain a healthy lifestyle throughout their lives, setting a stable foundation for their overall well-being.

Promoting independent mobility in childhood correlates with a reduced risk of developing chronic health conditions later in life. By fostering physical activity and movement, children are less susceptible to obesity, diabetes, and cardiovascular diseases, which alleviates the burden on healthcare systems and enhancing their long-term happiness and health.

Lastly, designing neighborhoods that support independent mobility benefits not only children but also the entire community. Pedestrian-friendly infrastructure, safe play areas, safe places to cross the road, and accessible amenities create a liveable environment for residents of all ages and backgrounds, enhancing the social cohesion.

To secure this, safety is of utmost importance. It is a challende that needs to be tackled, not only in regards of having a liveable environment, also in relation to what is allowed by parents towards their child.

There are various types of safety, for instance social safety, traffic safety, fall protection and environmental safety. In these types of safety, a distinction can be made between objective safety and perceived safety.

This research provides a holistic approach, with a focus on traffic safety as well as perceived safety. However, it is not limited to traffic safety. Within the research, various types of safety are touched upon.

Introduction

Little scouts on an adventure in Bruges. Photo by author (2020)

Despite of the contemporary high expenses to live in the city and multitasking in daily life, families remain part of the city. There is an increased amount of two-income households in the city. This can give friction with the amount of time that parents get to spend time with their children. Parents recognize the dangers of the city, both physically in traffic as well as in the social dangers in daily life, which limits children to freely move, learn and grow up in the city. Through the Century, the innovation in technology has become prominent in the public space with the presence of vehicles in the street sights. The consequence has been for families to become more careful for children to freely move around in town, and the restriction on walking independently has become sharpened. However, it is important that children can independently move from A to B in their daily life; may it be from home to school or the supermarket or other essential amenities. This helps children to learn from life within the public space, developing the cognitive abilities to gain the cautiousness of potential dangers and awareness along the way.
A family friendly city is a dialogue between an child friendly and a parent friendly city and its spatial implications within the city. The focus lies in the inbetween: there where parents have principles that need to be met for children to be approved to move through the neighbourhood freely. As stated by Lyu (2023), attempts to be a child friendly city will not be effective in doing so unless parents perceive them to be, therefore a comprehensive focus is chosen.

In 1996, the ‘Child Friendly Cities’ initiative was launched by UNICEF,

#1 Problem field
Introduction

promoting developments within the urban environments for children to play, learn and grow.
While during play, children learn, the learning process can extent to real life situations from children of 7 years old onwards.

The goal is to create a family friendly city through child friendly networks and traffic interventions on the scale that is spatially feasible by children 7-12 years old to reach, the neighbourhood scale.
To get towards a solid proposal for this, it is important to gain insights in the needs of parents, children, urban families and the spatial implications.
this, it is important to gain insights in the needs of parents, children, urban families and the spatial implications.

It is important that, despite of parents’ concern about safety, children can go and move outside independenlty. As an urbanist, we can both facilitate not only for the needs of children, but also for the needs of parents and long term benefits for a family friendly city.
By providing space for children to freely move in the public space from a to b (e.g. From home to school) with challenges to learn from the public space, not only parents will spare time in their day to bring children to places, but providing the ability to walk independently also enhances healthy patterns and cognitive abilities.

Problem Field

In contemporary times, it has become visible that the space for children to move in cities freely through the public space is at stake. What is often addressed as urgent issues, like the lack of housing, increased heat stress in cities and the imbalance of ecological systems, asks for space to mitigate the negative effects. And, as these issues are prioritized, space is given to these matters.

However, this also affects the amount of public space available for the people, in particular for the children.
Below the two main trends that have become visible for children to not be able to move freely within the public space are shown:

Each trend will be further explained on the following pages.

1. Parents perceive unsafety within the urban public space

This has two consequences:

1.1 Significant decreased independent mobility for children

1.2 Overly protected children have a higher chance to get involved in traffic accidents at a later age

2. Places to move freely have become patches and are starting to disappear

Trend #1: Parents perceive unsafety within the urban public space

Parents limit walk radius or join the walk to school and playground

Children are restricted to go to places on their own

The first trend is the clash between needs/perception of children and of parents in regards to children. Children want play and adventure and take risks, while parents want safety for their child and efficiency in the day, to easily go from A to B to C, and then back to A. Parents often take care of their child by, at one hand, driving their child by car or walking or cycling along with them, and at the other hand protecting them from the dangers in the public space, not learning them how to deal with traffic and stay safe independently and deal with social situations. In the public space we see the perception of parents and adults by how they have categorized space for children: playgrounds are the domain for children while the space and the networks between the playgrounds and homes are for everyone: except for children.

Because of the perceived unsafety of parents within the public space, often because of fast traffic and the public space becoming fuller and fuller (with e.g. terraces, bins, bikes, charging points for e-cars), a lot of parents decided to choose the car to bring their children to places, therefore contributing to the perceived (traffic) unsafety for other parents by choosing the perceived unsafe car, which stimulates parents to also bring children to school and other locations by car. This not only creates a vicious loop, it also stimulates and strengthens the negative effects. Besides, the decrease in learning within the public space causes a higher risks for protected children to be involved in traffic incidents at a later age.

Trend #1: Parents perceive unsafety within the urban public space

- Child friendly vs parent friendly
- Slow traffic vs fast traffic
- (Too) Safe vs (too) dangerous
- Protected vs Awareness
- Independent vs Dependent

There are some perspective difference and dilemma's that are part of the parent-child challenge:

Child friendly vs parent friendly As parents you want your child to be safe at all times. Is what we as adults or what is defined by parents what is called child friendly, or is it more nuanced when combined with the child's perspective?

Slow traffic vs fast traffic. Do we have to separate both traffic types, or is getting in touch with traffic situations beneficial for learning to participate in the public space? This correlates with the next clash of

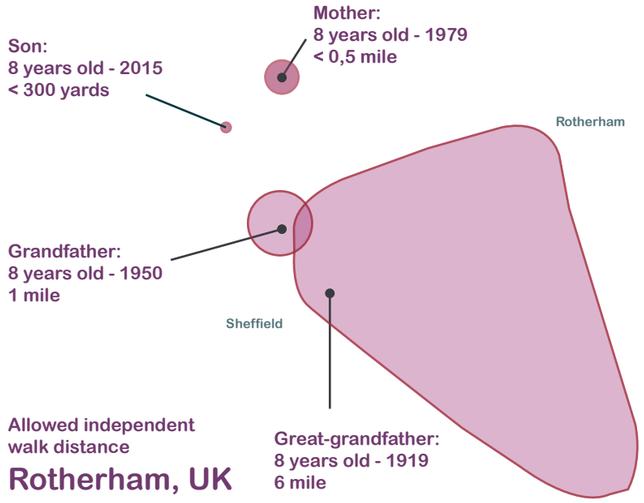
(Too) Safe vs (too) dangerous. Unclear crossings make it too dangerous to actually cross it. Or designing too safe areas, has consequences for those growing up who then never got used to dealing with cars. Do we do design for the short term or for the bigger picture?

Protected vs Awareness. If we keep children away from all the dangers by fully protecting them, we keep them dependent on other people and we do not give them a chance to enhance their cognitive abilities to deal with potential dangers within the public space, which gives a higher chance of getting into a traffic incident later in life.
Do we want this, or do we want children grow up with developing the awareness and cautiousness of their surroundings, to deal with situations themselves?

And again, this relates to
Independence vs Dependence.
Dependence: There are two main reasons for the high dependency of children:
1. parents are being more careful than ever with their children in relation to the past.
2. the dependence on parents is a consequence of traffic being busier by the day and the public space becoming fuller and fuller with terraces, bins, bikes, charging points for e-cars, etc. Therefore parents feel the need to accompany their children to places.

Therefore, the experienced -perceived- unsafety by parents within the public space causes two main phenomenons: a lack of independent mobility for children and therefore a higher risk for protected children to be involved in traffic incidents at a later age.

Trend #1.1: Highly decreased independent freedom of movement



Allowed independent walk distance per generation. Data: De nieuwe generatie stadskinderen (2016). (the new generation city children) - Karsten, L; Felder, N

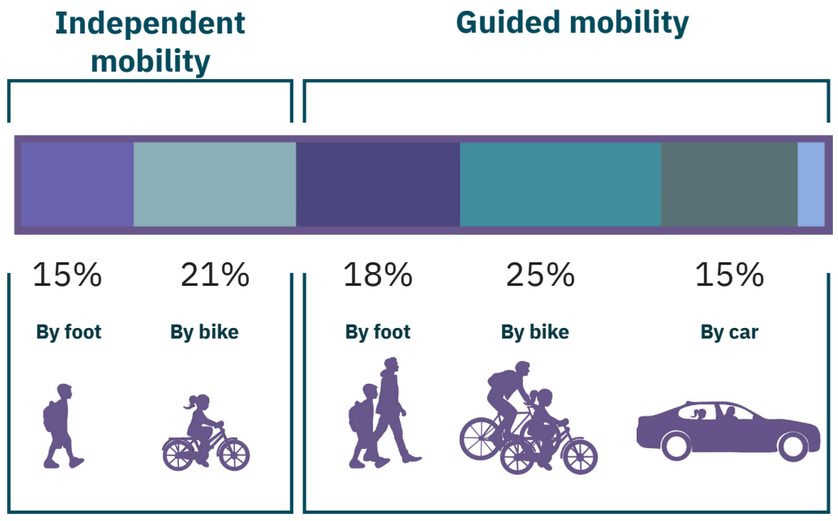
There has been an increase in guided mobility for children. After the arrival of the car, parents experience less safety in the neighbourhood for their children to walk and play around freely. However, until late in the seventies most children of age 6 or older went to school independently, as well as to various associations and friends (KpVV, 2008). According to research by Houwen et al (2004), in more recent times a third of children elementary school children are not allowed to go to school independently because parents perceive traffic unsafety. Only 36% of the elementary school children go to school independently, either by walking (15%) or by bike (21%).

The independent freedom of movement for children highly decreased the past decades. (Lia Karsten, 2020) Above the different walk radius per child in time and how far each previous generation was able and allowed to walk a bigger distance than the generation after is shown. Children in the city play outside less and less, which at one hand is a consequence of parents being more careful in relation to the past, and at the other hand, again, is a consequence of traffic being busier by the day and the public space becoming fuller and fuller. For these reasons parents prefer to keep their children inside, away from the potential unsafe public space. Because of this, parents feel the need to accompany their children to the playground.

Trend #1.1: Highly decreased independent freedom of movement for children

However, when parents cannot or do not want to come along, children often remain inside. And, dependent where they exactly live, children are taken to lots of places by their parents by car, varying from music associations to sports facilities and school. This current generation children are part of the, what Lia Karsten, Urban geographer with researches on children in the city, calls the ‘achterbankgeneratie’. (‘Back seat generation’) Again, parents take their child safely with them into the car, so they protect their child, from the car. This lack of independency for children is a huge contemporary challenge in regards to children growing up.

Combining multiple researches by both traffic institutes CROW and SWOV (see table below), the following data from independent mobility can be found: 24% to 36% of the children always go to school independently, either with the bike or by foot. Only 8 to 15% goes to school independently by foot daily.



*Average of five researches by CROW & SWOV, children range mostly between 4 and 12 years old

Trends #1.2: Overly protected children have a higher chance to get involved in traffic incidents at a later age

It is important that children grow up safely. They need sufficient amount of protectedness in life, that can be provided both through parents and others raising them and through the designed urban environment.

Preventing children from getting injured in the public space can not be achieved through only protecting them and avoiding risks to be taken. Instead, it is essential that children are empowered to develop the abilities to become aware and participate in traffic and social situations safely. Main aspects of developments are motor abilities, cognitive and social-emotional abilities.

Apart from this, it is of important to note is that being too protected, has negative consequences for children later in life.
For example, when one grows up in a completely safe, child friendly and traffic free environment, children can learn that the public space is a safe place where one can always play and run across the streets without needing to be cautious. However, when life takes children to different locations, without having learned to be aware of their surroundings and potential dangers, children have a higher risk to be involved in a traffic accident when they grow up as they can lack the awareness and alertness within the public space.

Therefore, having pedestrians roads that never intersect with any traffic within the public space is not the solution for child friendliness on the long-term. However, a crossing at a high speed road is not the solution either. The focus lies in the nuanced in-between, a combination of traffic and safety.

In a research by SWOV - *Instituut voor Wetenschappelijk Onderzoek Verkeersveiligheid* (2019), it was found that between 2008 and 2017, out of one million residents, 1 to 2 children between 5-11 years old end up in a deathly traffic accident as a pedestrian in the Netherlands. (Source: CBS, IenW, DHD)

#1 Problem field

Trend #2: Places to move freely have become patches and are starting to disappear

The second trend is that places for children to move freely have become patches and are slowly starting to disappear within the urban.

Since the end of October 2023, there is an interesting phenomenon which influences all families: The Netherlands decided on getting rid of over 25% percent of all playgrounds within the upcoming five years. This partly has to do with a decrease in volunteers for the bigger playgrounds, but another important aspect is that there is both a lack in subisidies and some of those playgrounds happen to be used as spaces for new dwellings after the playgrounds disappear.

Enorm aantal speeltuinen dreigt te verdwijnen: dit is er aan de hand

Een kleine speeltuin in de Haagse Schilderswijk. Foto: ANP /

Speeltuinen in Nederland dreigen massaal te verdwijnen. Jantje Beton ziet dat met lede ogen aan en wil actie, want we hebben het hier over ruim een kwart van alle 'parken' vol wippen en schommels. Hoe zit dat precies?

'Elk kind moet buiten kunnen spelen, elke dag!', is de slogan van Jantje Beton. Dat wordt steeds moeilijker als speeltuinen in rap tempo verdwijnen

Source news article: Metro. https://www.metronieuws.nl/lifestyle/opvoeding/2023/10/aantal-speeltuinen-dreigt-verdwijnen-aan-de-hand/

The lack of housing, increased heat stress in cities and the imbalance of ecological systems, asks for space to mitigate the negative effects. However, this does not justify to take away public space for the the citizens, especially not the vulnerable or smaller ones.

This can appear as a sign for children that even with the little playgrounds that are planned as their one and only domain in the public space to move freely, children should not be part of the public space at all. In news articles it is addressed that aiming for less playgrounds could relate to the fact that children play less outside because they are into gaming and such, but after only a little deep dive into literature it becomes clear that the fact that children play less outside is actually a consequence of the first trend, the perceived safety of parents in relation to the public space.

Besides, after the arrival of the car urban designs for children are often made as patches bordered by fences within the public space, like playgrounds and schoolyards. While this might be the most efficient way to design for children, it does not provide the space for children to learn to live in the public space while growing up.

Problem statement

"The city does not facilitate for the needs of both parents and children, and because of this, parents do not allow their children to move outside independently when public spaces fail to meet their requirements, ultimately slowing down children's learning processes towards independency"

Methodology

Conceptual framework

Research question
Sub-questions

Relevance
Scientific and societal relevance

Methods
Explanation of used methods

Project Backbone

Theoretical framework

Timeline

Conceptual Framework

The main aspects to get towards comprehensive insights are the child perception, parent perception and mobility networks. Every part within this triangle, is emphasized within the thesis. All outside the triangle is also discussed to make the research comprehensive. The conceptual framework shows the scope of the thesis.
Child friendly refers to what is needed throughout the perception of the child and what is necessary for them growing up. In essence this is developing cautiousness and awareness, which can be through play, adventure and other learning experiences.
Then there is parent friendly, which has two sections: life through the perception of the parent itself, and their values in regards of their children in daily life. Where the parent and child friendly aspects meet the perceived safety and proximity come into play.
Mobility networks is the spatial aspect of the conceptual framework. This part focuses on the traffic, both slow and fast, and its connection to both children and parents, in regards of child friendly routes, traffic safety, (perceived) proximity and safe public space.
Lastly, the triangle in the conceptual framework represents the aspects of independence, slow traffic networks and efficient traffic networks.

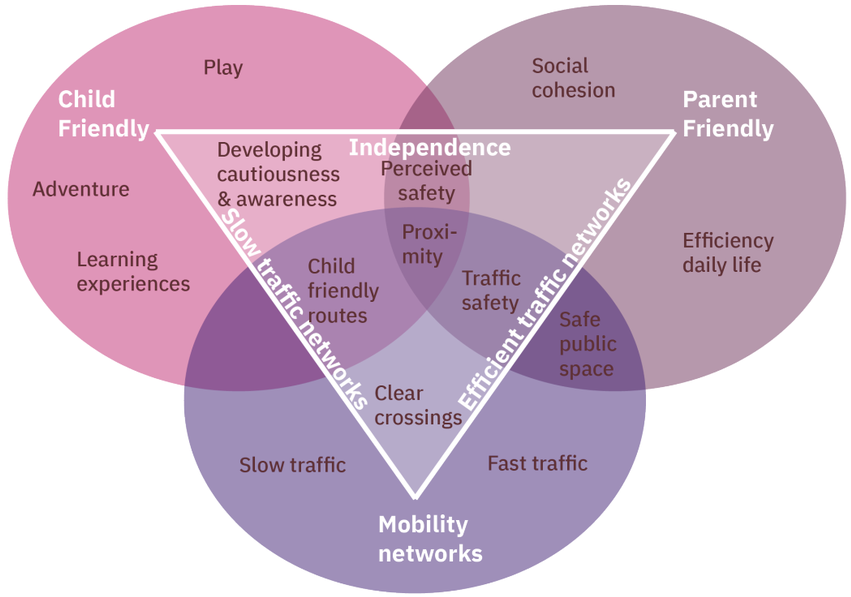


Figure 2: Conceptual framework.

Research question

To comprehend all elements of the research, it has been defined into one research question. The research question guides to research and will be divided into smaller pieces, the sub questions, to make the research objective more tangible to tackle. Below the research question is shown:

“How can a child friendly network facilitate to the needs of a family friendly city, where 7-12 year old children can independently go from A to B safely ?”

Research aim

This research aims to meet the needs of both parents and children growing up to create a family friendly city, while adapting to and mitigating the parents’ perceived social and traffic unsafety for their child to increase independent mobility through creating a child friendly network for children from 7 to 12 years old that accommodates places to learn, as well as meet their needs and grow up safely and independently.

By accommodating for urban families within daily life in the public space, parents and children can live together harmoniously and independently within the public space, despite of the clashes in needs and perception between parents and children.

The sub questions address different aspects from the research question. These are puzzle pieces that altogether, complete the puzzle. On the next page the sub questions are shown.

Sub-questions

1. What do urban families need?

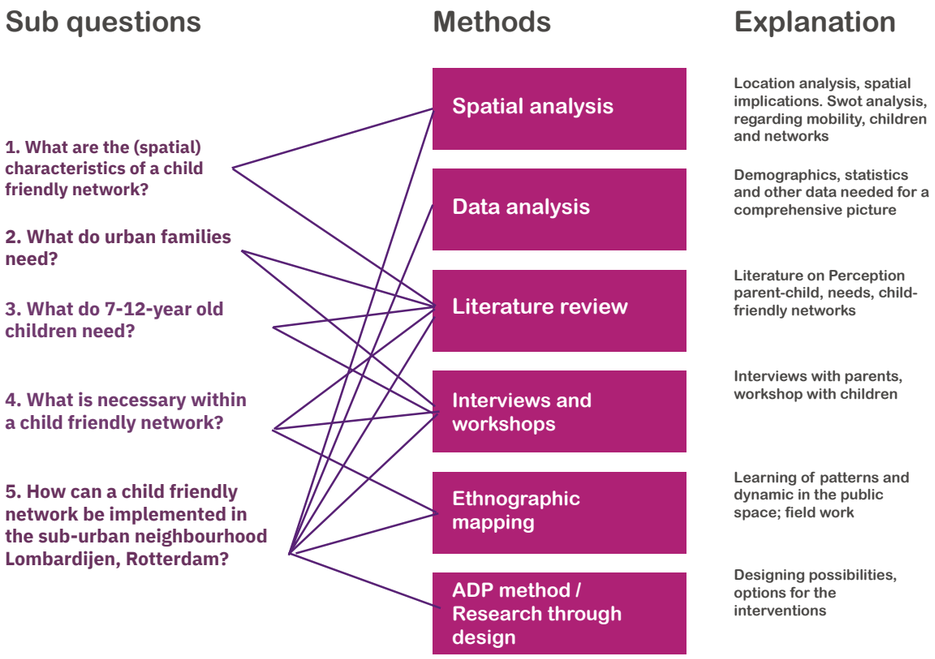
2. What is necessary within a child friendly network?

3. What are the (spatial) characteristics of a child friendly network?

4. How can a child friendly network be implemented in the sub-urban neighbourhood Lombardijen, Rotterdam?

#1 Methodology

Methods



Methods per sub-question

Above the used methods and its connection to sub questions are shown.

Spatial analysis
Through spatial analysis, the location and its complexity can be understood and insights can be gained. Spatial analysis includes location analysis, spatial implications, field work, swot analysis, both in general with a focus regarding mobility, children and networks.

Data analysis
Data analysis aims to provide a background understanding of demographics, statistics and other data needed for a comprehensive image of the chosen site location.

Literature review
The goal of the literature study is to provide insight in psychological, social and spatial matters regarding the family friendly city, the parent perception, the child perception and the spatial necessities to create both a child friendly route as well as a network that complements the busy lives of parents. It is a tool to, in combination with the expertise of an urbanist and the methods mentioned throughout the document, develop comprehensive and science-based principles.

Interviews and workshops
To receive a better understanding that surpasses literature, interviews and workshops will be held. The interviews are with parents, as well as specified question with parents with children from 7 to 12 years old. The workshop with children will be interactive, the researcher will walk with children through the neighbourhood, where children share which places are significant to them and why. After the walk there will be a moment to reflect for the elementary school students and come up with ideas that could enhance their neighbourhood.

Ethnographic mapping
Ethnographic mapping will be helpful to learn about the dynamic in the public space of the chosen site location. This will be done through knowledge of the interviews and by observing people during field work.

ADP method / Research through design
The analyse-design-present (ADP) method will be used throughout the research. It provides both understanding and opportunities of dealing with the spatial aspects of the research. The ADP method helps gaining spatial data, while showing design possibilities and various options for interventions through different lenses.

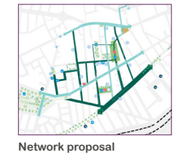
Below there is an overview of the methods per sub question, contributing to answering the main research question.

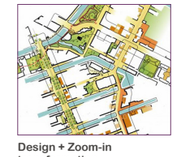
The steps and methods are needed to first gain insights on the life of parents and children, (in)dependent mobility, mobility networks, parent-child perception, urban families and spatial characteristics. After gaining these insights, principles for a child friendly Network can be proposed, that will be translated into spatial guidelines, which will be needed as the backbone to translate towards a design proposal.

Overview methods per sub-question

Sub question	Method explanation	Intended outcomes
1. What are the (spatial) characteristics of a child friendly network?	**Method #1:** Literature review **Method #2:** Spatial analysis	Insights on children, (in)dependence, mobility networks, parent-child perception, urban families
2. What do urban families need?	**Method #1:** Literature review **Method #2:** Surveys, interviews, workshops	
3. What do 7-12-year old children need?	**Method #1:** Literature review **Method #2:** Surveys, interviews, workshops	Principles for a child friendly Network
4. What is necessary within a child friendly network?	**Method #1:** Literature review **Method #2:** Surveys, interviews, workshops **Method #3:** Ethnographic mapping	Needed as backbone to translate towards a design proposal
5. How can a child friendly network be implemented in the sub-urban neighbourhood Lombardijen, Rotterdam?	**Method #1:** Spatial analysis **Method #2:** Data analysis **Method #3:** literature review **Method #4:** Surveys, interviews, workshops **Method #5:** Ethnographic mapping **Method #6:** ADP method	


Principles


Network proposal


Design + Zoom-in transformation

- Network Proposal
- Design
- Zoom-in transformation (bottlenecks)

#1 Methodology

Project backbone

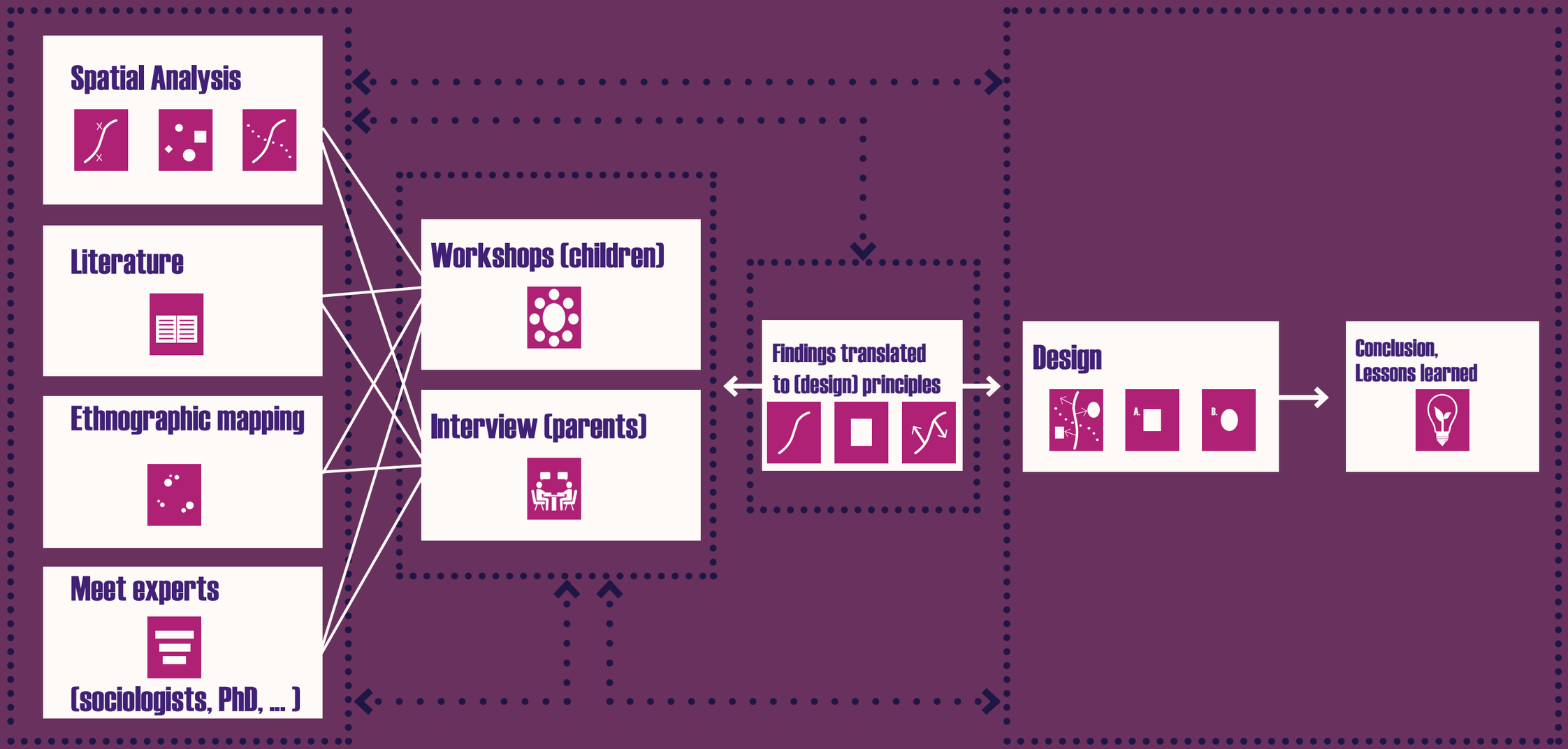
Family friendly networks

This diagram shows the set of methods used during the thesis in chronological order. The first phase focuses on the spatial nalysis, literature, ethnographic mapping and meeting with experts. This is an essential first step before there can be proceeded to the second phase.

The second phase are workshops and interviews with the people, specifically focusing on the parents and children age 7-12 years old.
Combining the first two phases, findings can be translated to (design) principles.

The mentioned principles will be specified spatially, which will serve as guidelines for the design, combined with the previous gained knowledge and expertise as an urban designer.
The design, previous phases and its process then help serve to conclude with lessons learned.

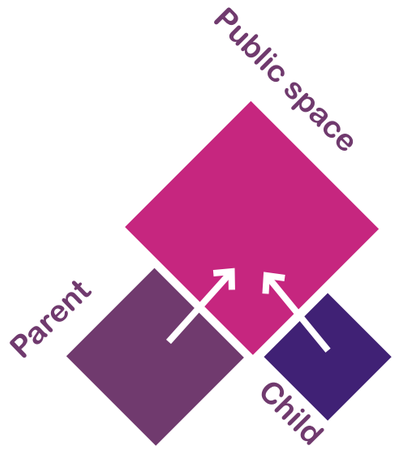
This project backbone captures the main structure used for the thesis. However, it will remain an iterative process, meaning that it is likely that steps to other phases will be made when remarkable findings come to the surface.



Scientific & societal relevance

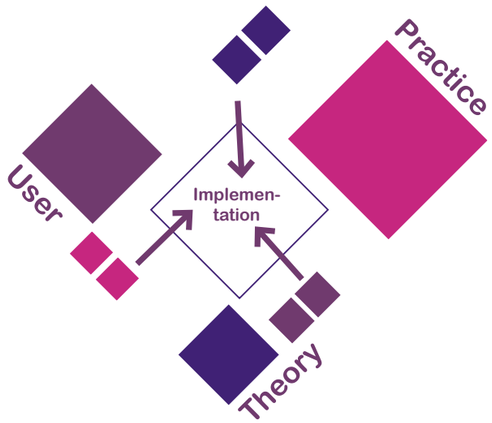
Scientific relevance

This thesis project focuses on the different perceptions of the urban realm, both from the perspective of the parents and that of children. The knowledge gap is what the parent-child perception means and implies for the design of the public space. It is about the paradigm of the values and perspective of the parent (efficiency for themselves and safety for their child) and the values and perspective of the child (play, adventure, learning).

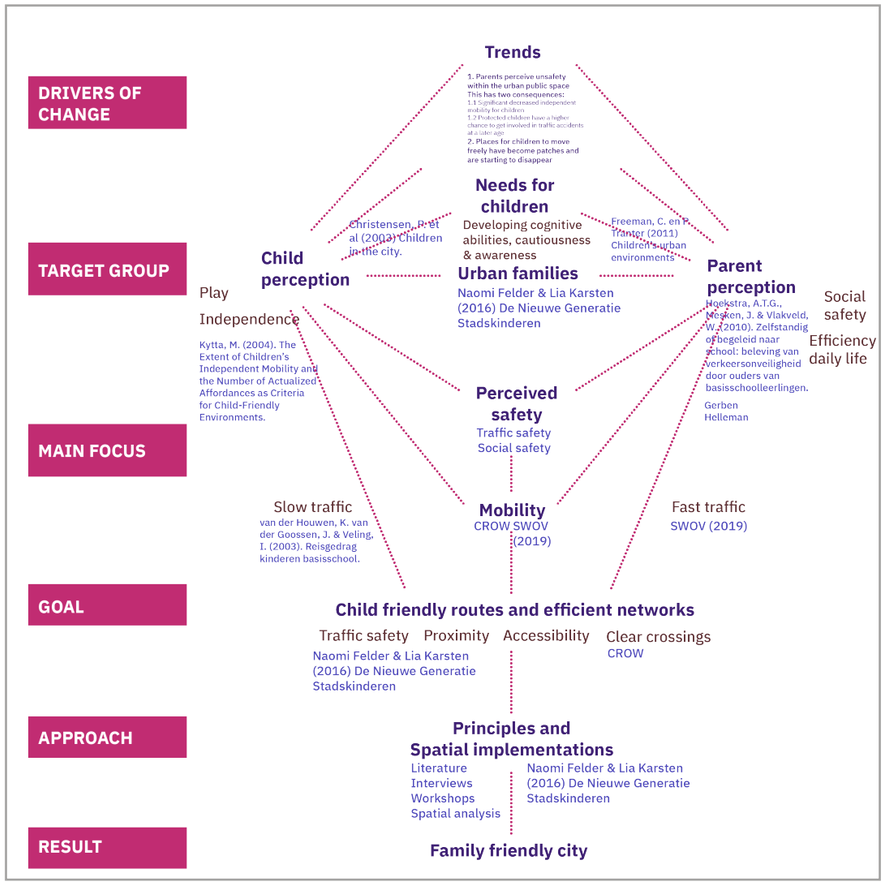


Societal relevance

Researching and implementing measures to create a family-friendly city with safe and accessible public spaces for independent child mobility is not only about the well-being of children but also about building healthier, more inclusive, and sustainable communities, neighbourhoods and cities.

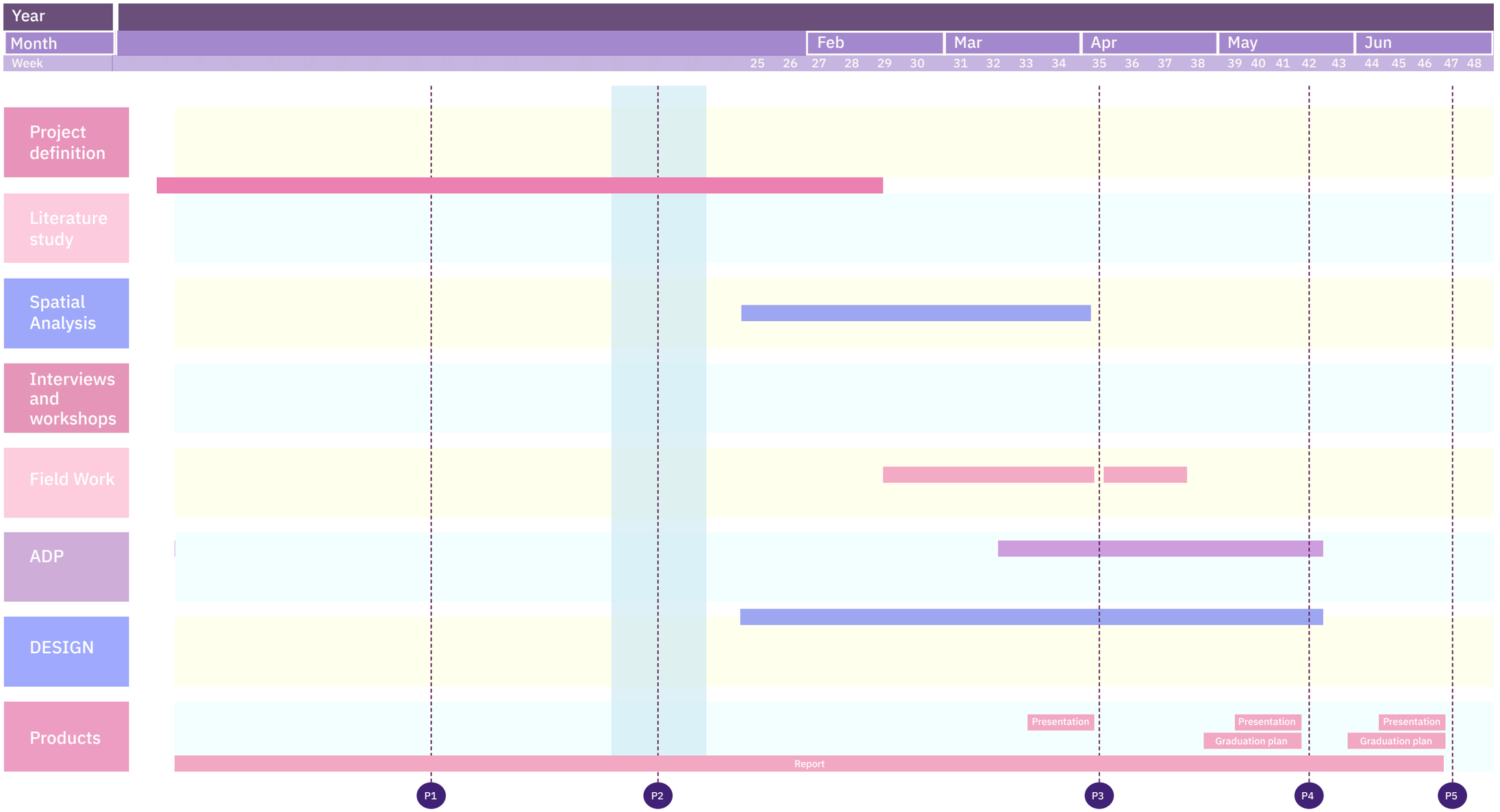


Theoretical framework



Above the theoretical framework is shown. It shows the structure of the research itself with its sub-components and scope.

The Drivers of change show the trends and their consequences, with the target group being children, parents and urban families as a whole. The main focus lies in the intertwined area of the needs of children, both through a child perspective as well as the needs of children according to the perspective of parents. The psychological relation between the two are the perceived safety, and their way of movement, through slow and fast traffic. The related goal aims to provide a comprehensive proposal that could serve both for children as well as for parents in daily life. Through defined principles and spatial implementation, the aim is to achieve a family friendly city.



Timeline

This is the timeline throughout the thesis. Because the thesis is a process that goes through multiple phases and has feedback loops, there is chosen for a simplified version of a timeline that shows the expected focus points.

Although different parts of the thesis are shown here at different times, it is an iterative process, meaning that what is shown on the timeline are expected to be the focus points in time.

Legend

Px Assessment date

Holidays

The timeline is divided by various phases: the problem field definition where the project and its methodology is defined, the main phases of literature study, site analysis and design, the concluding phase and representation within the thesis booklet and presentation.

#2 Research

1. Needs of urban families

This chapter focuses on the needs of urban families, specifically addressing:
• 7-12-year old children
• Parents

Families and Mobility

Back in the past between the 1950's and 1960's within the Netherlands, the amount of freedom and independent mobility for children would be considered extraordinary in contemporary times. It was common that children could walk to school independently, both alone as well as together with siblings and friends. Often only on the first day of school, a mother walked along with the children that were at an age of between four or five years old (Karsten, 2005).

Children used to walk through the neighbourhood in groups. Cycling was not as common as it was a kind of luxury at the time. It was possible and allowed to walk through the neighbourhood independently. Again, it was usually walking with multiple children.

In current times everything is more individualized: it is taking care of your own family and your own children and making sure that they are in good hands when they walk out of the house. This is not uncommon and in contemporary society it makes sense that this behaviour has emerged more. Parents live exceptionally busy lives, and because of the expenses in current times, it is not uncommon that both parents work while juggling between taking care of the household, the children, while making sure there are finances at the end of the day to support it.

Workshop mothers

Needs of Parents

Workshop mothers
To get a better understanding of how caretakers and families live daily and how this influences the independent mobility of children, it is highly valuable to learn from caretakers themselves.

For this, a workshop was conducted with mothers to understand what type of places are remarkable for them, how they travel and with whom, as well as learning what places are considered unsafe, unpleasant or safe and comfortable.
To enhance the research findings within the report, the workshop was held with mothers from Lombardijen.

Process
9 mothers participated in the workshop + one daughter (11) of one of the mothers. The tenth mother left during the warm-up exercise due to personal circumstances. The exercises took longer than anticipated, and we had to skip one exercise.

The interaction were informal. Ultimately, we explained a lot mainly through discussion (minimal use of presentations, only to show examples of the exercises).

Most mothers who participated in the workshop know each other quite well. Most have two to four children and while the age range of their children varied from 2 to in the thirties, most mother's children were between 7 to 12 years old.

Workshop mothers

- 9 parents (mothers)
- One 11 year old girl
- Two groups - 3 exercises (+ extra for 1 group)

Goal: learn how parents perceive Lombardijen + places they like (and why) and dislike (and why). Traffic and social related

• Assignment 0 (warming up): Make a drawing for your child. Some made flowers, some their dream home
• Assignment 1 (individual): Cognitive mapping-Routes. Within the group, most mothers walk to places daily.
• Assignment 2 (group): On the map, mark places you often visit, like, don't like or avoid. Often visited: shopping centers outside Lombardijen, (Spinoza)park, petting zoo
• Extra assignment (Group) : Draw your neighbourhood

Map findings of group 1

Map findings of group 2

#2 Research

Workshop mothers

Outcome
Often visited places of mothers with and without children consist of the school (Catamaran), Spinozapark, petting zoo, adventure playground, nearby playgrounds, Zuidplein, the forest, shopping centers (Zuidplein or Keizerswaard), shops 'on the other side' of the Spinozaweg, swimming pool, language school, and a women-only gym. Apart from the latter two, these places are also visited with their children. Some mentioned regularly going to the petting zoo or adventure playground because their children love it.This is taken into account later in the design process regarding the shape of the child friendly network.

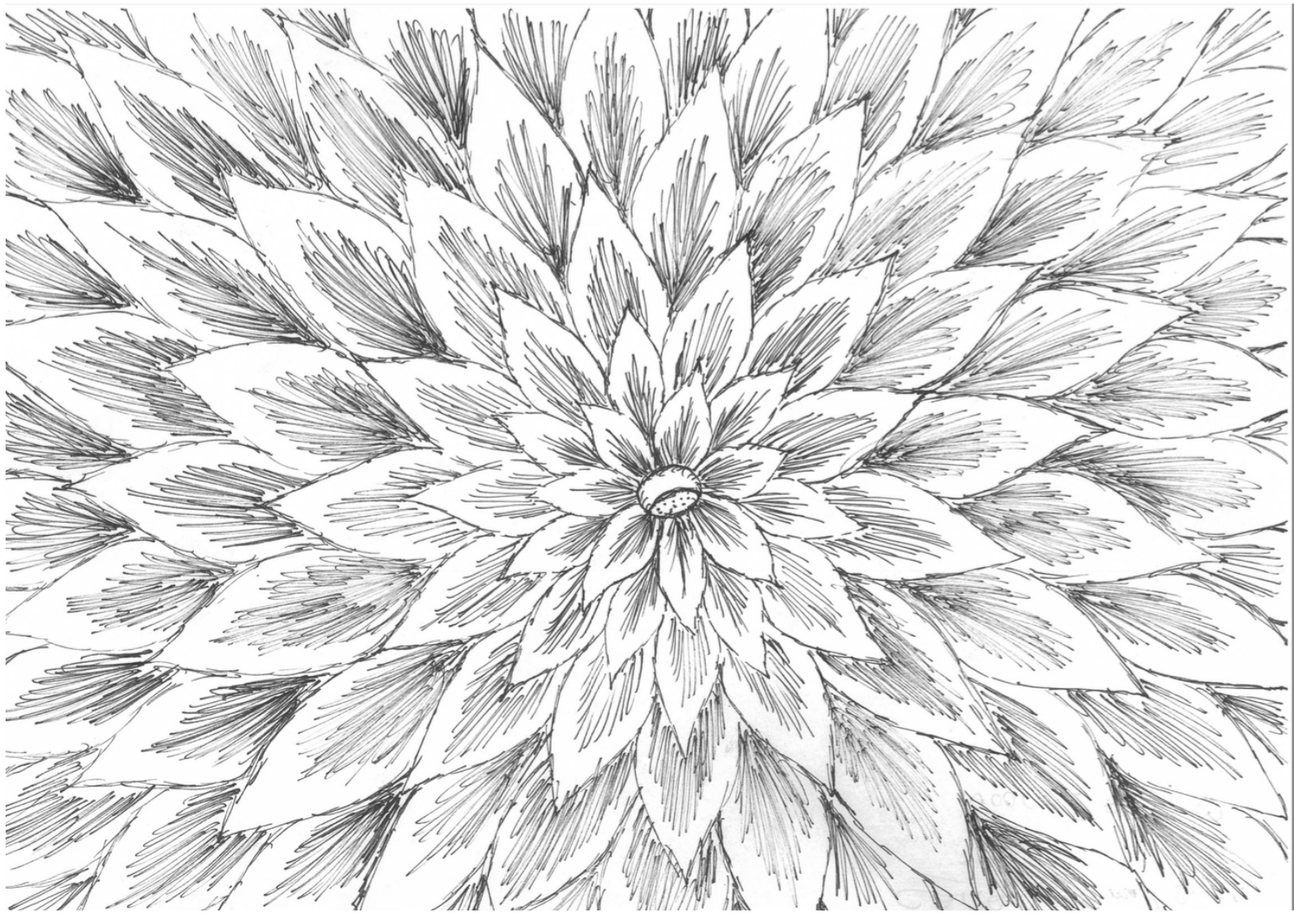
What stands out is that most of those present during the workshop travel by foot, sometimes by public transport. Only a few regularly/ daily use a car to go somewhere. Therefore the mobility choice stands out, especially when considering the car dominance within the neighbourhood as well as mothers mentioning during informal interviews that there is a lack of parking spaces.

The experiences of the following places are perceived positive during the workshop:
• Spinoza Park: cozy in summer (but crowded)
• Zuidplein: everything is available if needed
• Petting zoo: fun place for children and conveniently close
• Adventure/Building playground: children's favorite. Subscription required.

Note that, during informal interviews it was mentioned that Spinozapark was perceived unsafe and dangerous at night time.

The experiences of the following places are negative:
• Maasstad Hospital: multiple mothers have bad personal memories of this place. This also addresses that there is a need for health among mothers in the time they have lived here
• Crossings to go to the shops opposite Spinoza Park: it's a difficult place to cross

Needs
Among the mothers there is a need for women-only gyms. They already exist within Rotterdam, but they would prefer them in Lombardijen as well. They also suggested adding a swimming pool for women and children only as an additional facility, as they currently travel/drive to the pool.



Drawing by one of the mothers

Playground where parents and children connect. Slachthuisplein, Den Haag. Source image: Sylva.la

#2 Research

Perception of the Parent

Parents and play

In adult terms, play fosters cognitive, physical and social development. It creates a better understanding that other people can think differently, what their own minds and beliefs.
Often, parents oversee the fact that play for children also helps to develop skills in math, language and social interactions. This is important to note as the perception of parents is crucial in their decisions in what children are allowed to do, both regarding play as well as independent mobility, may it be together or alone, outdoors or indoors.
In general, academics are concerned with the lack of play during childhood.

Perception

Parents want the best for their children, but what in this space and time is the best? According to Lyu (2023), when one looks at the relationship between design of built environments, parental attitudes and beliefs, and parental decisions on allowing children to play, significant findings come to the surface.

In general, parents have three key beliefs that play has to provide for children:

1. It should be beneficial for learning
2. It matches the child's competence and/or personality
3. It is safe

The implications of safety are further explored.

#2 Research

Safety

The short term safest way for children to go from A to B, is by going by car (SWOV). The reason is due to the fact that they are well protected in case of a traffic accident (Instituut voor Wetenschappelijk Onderzoek Verkeersveiligheid). However, children that either walk or bike, can move, learn and develop abilities that are necessary to safely participate within traffic. Therefore, on long term, there are multiple benefits of going to school by bike or by foot. Benefits regarding traffic are mostly related to gaining cognitive abilities, developing awareness and recognizing situations and potential dangers.

During other traffic accidents where children were seriously injured, there were usually no motor vehicles involved. (SWOV, 2019)

An important downside of movements by car, is that more families taking the car to school means that it can get more dangerous for the children that are walking or cycling to school.

Most traffic deaths between children during 2008-2017 were situations of a clash between cyclist and car (21%), car and pedestrian (16%) and cyclist with truck. (14%)

#2 Research

Social Cohesion

Social cohesion is an essential matter for families to experience a higher perceived sense of safety, belonging and joy in their neighbourhood.

Having strong, reliable contacts within the area makes sure there is less of a sense of anonymity. Other people and neighbours within the area that know their families both consciously and subconsciously look out for their children when walking outside on their own, creating a neighbourhood where supervising children in the neighbourhood is the standard (social control).

In Japan, even in the dense cities like Tokyo there is a sense of supervision, even when children are not known by the people. Therefore it becomes easier for parents to let their children independently go to school, as watching out for other people is considered part of their way of living.

Design critic Alexandra Lange wrote in The Design of Childhood: How the Material World Shapes Independent Kid: “It is not greater self-sufficiency but “group reliance” that allows this freedom of movement... It isn’t just neighbors that are part of the network, but shopkeepers, cyclists, conductors.” Therefore, making it possible for children to move independently is above all a certain reliance on the surrounding that they will keep an eye out on the child.

Housing typologies

Housing typologies are important in family-friendly cities, especially in regards to children.
For children, the small scale is important to recognize. No high rise, but affordable low rise buildings are preferable for housing in regards to the threshold of children being able to go outside the house. The transition between private housing and the public space should be subtle, e.g. through front gardens, creating more informal spaces outdoor.

In addition to having accessibility, suitable residential typologies include ground-level homes, (stacked) maisonette homes, courtyards and single-family apartments.

#2 Research

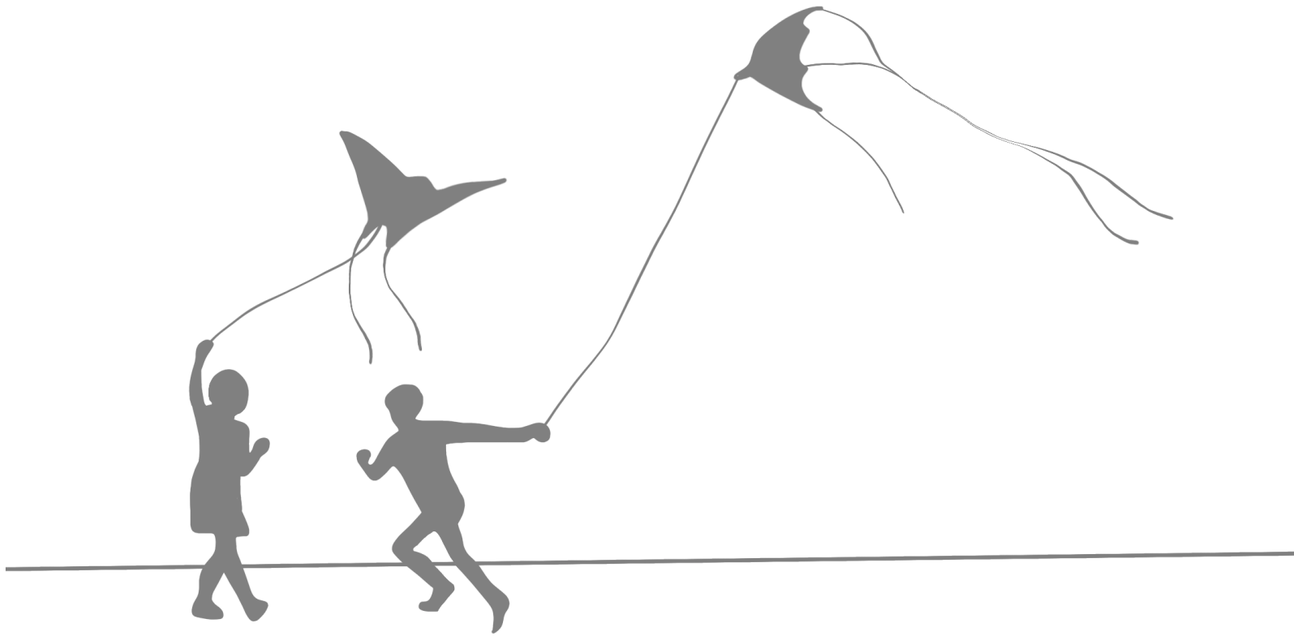
Needs of Children

Space for children to play and move is crucial for their behavioral development. Play is how children learn about themselves and their place in the world. And even more important, it is fun! However, a fundamental issue is that most public spaces often overlook children as users. Consequently, the carefree childhood seems to be increasingly disappearing as children are quickly drawn into the adult world.

For reference for the amount of time spend outdoors daily, 76% of children in the United Kingdom and 29% in the Netherlands spend less time outdoors than prisoners, who are allowed outdoors two hours per day.

Three factors are identified why children go outside frequently or less frequently (Karsten, 2016):
• Adequate play space near the home (which can also include an indoor garden).
• Presence of other children/ siblings/friends in the neighborhood.
• The outdoor activity level of parents: the higher this level, the more children are encouraged to go outside.

Green-blue school yards
The green-blue school yards were first developed in Rotterdam as an initiative by the IVN Education of Nature (IVN Natuureducatie). It provides space for both child-friendliness and climate adaptation as a whole, shifting away from fully paved school yards. (van Leer Foundation, 2024)



#2 Research

Workshop elementary school children group 8

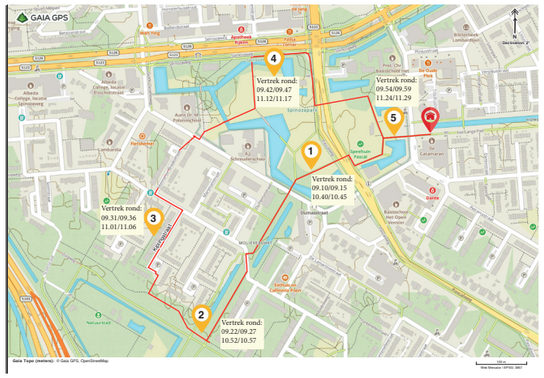
A walking workshop has been conducted to learn from the children in Lombardijen. Places they walk, enjoy, shift away from, as well as aspects they are (or are not) allowed to do or places they are allowed to visit.

Prior to the walking workshop, a booklet has been created to gain information about the general overview of the elementary school children in Lombardijen of group 8. For this, 54 booklets were handed out and 51 booklets were handed back. In the booklets, questions regarding spatial and non-spatial matters were addressed, pointing out favourite and less pleasant places and situations.

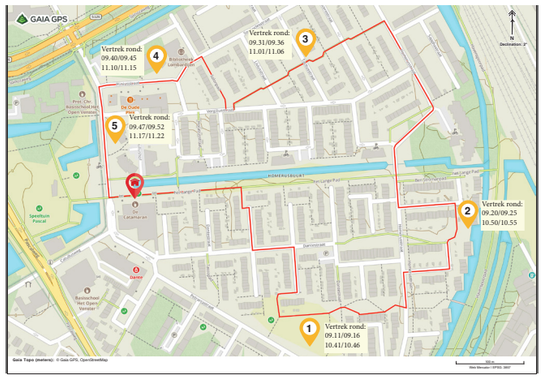
Based on these outcomes combined with spatial and data analysis, two walk routes were created.

The walking workshop consists of the same children and were divided in smaller groups of 5 to 6 children with guidance from one to two researchers.

Some of the children are fairly independent by themselves already. They often visit the bakery or local store near Huis van de Wijk, which are both less than 250 meters away from the school.



Walking route one: Molièrebuurt



Walking route two: Homerusbuurt

The elementary school children enjoyed the fairly new playgrounds while mentioning how dangerous they can be. A broken trampoline was their downside of their place

The boys liked the football field, girls liked the football goals as a place to stay. In general, boys most often enjoyed football and girls enjoyed the playground swings.

#2 Research

Play

Children are exploratory and are curious to learn about life. Learning about life through fun, playful way is one of the easiest approaches to do so. An increase in play time is related to a decline in risk for being overweight.

What is interesting, is learning from the past during children's play time, in the following example it is the situation between the 50's and 60's. (Karsten, 2005)

In 1954 the design of the public space was starting to be more and more defined for the newer mobility type at the time: the car. While the space was starting to become more and more adapted to cars, the amount of cars didn't use all of the available parking spaces.

This gave freedom for children to use the open parking spaces for play. This could be in front of the house or somewhere else nearby. Interestingly, even in the past, there seemed to be a lot of supervision outdoors. Not of parents of the child specifically, but usually of others in the neighbourhood. On one hand this happened out of care for the children's safety, but on the other hand this happened to see if the children were up to any mischief.

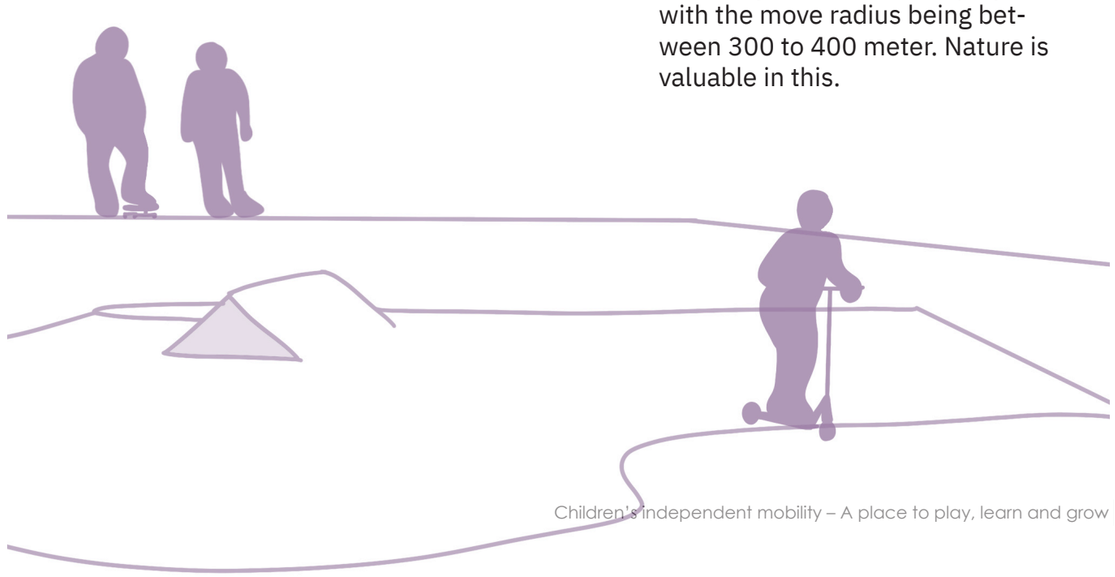
Children have a variety of interests at different ages. Depending on the age range, behaviour for play varies. Below the characteristics per age range are shown, based on the knowledge of the Dutch union of Playground Organisations (NUSO), that fused to LOS:

Age 0-6:
- Play alone
- Movements: trotting, scrambling, stepping, digging, rocking, sliding, climbing
- Fantasy/roleplay
- Games regarding constructions: building, sand, water
- Pavements for stepping/ riding bike, height differences (challenges), planting
- Move radius: 100 meter

Age 6 – 12:
- Play together
- Movements: running, climbing, jumping, roller skating, ball games
- Fantasy/roleplay
- Games regarding construction: building, sand, water
- Rules and competitive game
- Adventurous games
- Differences in preferred type of games between boys, girls
- Move radius 300-400 meter

Age 12 – 18:
- Sports
- Play/listen to music, dance, hobbies
- Sensitive to trends
- Places to meet and stay
- Move radius 800-1000 meter

As shown, children between the age range of 6 and 12 years old are more likely interested in play that does not require a playground and involves space as well as loose objects to facilitate play, with the move radius being between 300 to 400 meter. Nature is valuable in this.



#2 Research

Types of play

There is only a thin border between playing on the playground or playing elsewhere in the public realm. Designed places created by grown-ups are made as a space where children are welcome to play. The contrast is, despite the designs for playgrounds, that children play anywhere in the public space.

Types of children
3 types of children can be defined based on activity in mobility and in being more outdoor and indoor during play (Karsten, 2005):

1. Outdoor children
2. Indoor children
3. Children of the backseat generation

Types of Play
There are different ways to divide the types of play.

According to the research of Andel (1985), when simplified, play can be divided into four main types of play:
1. Stay and chill - in this places to stay are important
2. Movement through the area - for this, quality pedestrian and bike networks are important. this also includes micromobilities like the skateboard, waveboard etc.
3. Fantasy games. Made up games - this needs space, this could be in multiple ways: A place to stay, run, hide or view the surrounding
4. Construction games: this could be done with (natural) objects within the public space but also in private or institutionalised locations, e.g. an adventure playground dedicated to construction.

Needs of Children

#2 Research

Informal and Formal Play

On the right norms for formal play areas are shown per age category.

Formal play include:
• Playgrounds and play fields
• play or sports related to the designed location

Often formal play can also be institutionalised, for instance through an organisation with sport clubs or playgrounds that are under supervision.

Non-institutionalised
• Play fields
• Play grounds
• Places to play or play sports without being attached to organisation

Tabel 2.4 Normen formele speelruimte.

	0 t/m 5 jaar	6 t/m 11 jaar	12 t/m 18 jaar
Actieradius	**100 meter**	**300 tot 400 meter**	**> 1.000 meter**
Niveau	Straat/blok	Buurt	Kern
Minuten lopen	2 minuten	5 minuten	15 minuten
Verzorgingsgebied	3 hectare	50 hectare	300 hectare
Aantal kinderen binnen actieradius	**15 tot 30 kinderen**	**55 tot 70 kinderen**	**85 tot 100 kinderen**
Oppervlakte	**100 tot 500 m²**	**500 tot 2.000 m²**	**2.000 tot 6.400 m²**
Voorzieningen	2 tot 3 toestellen 2 tot 3 aanleidingen	3 toestellen 4 aanleidingen	4 toestellen 4 aanleidingen
Voorbeelden van speelmogelijkheid	Zandbak Speelelement Wip Huisje Glijbaantje	Trapveld Fietscrossbaan Glijbaan Zandbak Schommel Huisje/klimtoestel Bouwspeeltuin Water	Trapveld Volleybalveld Skateboardbaan Basketbalveld Rondhangtoestel Bouwspeeltuin Water
Spelvormen	Veel variatie Veel fantasie Duidelijke grenzen Grove motoriek	Groepsbesef Toename creativiteit Grotere doelgerichtheid	Informele ontmoeting Zoekt bevestiging Sportieve krachtmeting Keuzes maken
Voorbeelden voor inrichting	Enkele toestellen Grasveldje Zandbak	Meerdere toestellen Grotere speelplek/terrein Speelveld Rommellandje Klimmen en klauteren	Speelveld Objecten/toestel meer risico Ruig terrein Beschutting

Bron: OBB Ingenieursbureau, 2005.

On the right norms for informal play areas are shown per age category.

Informal play include:
• Loose objects like skipping robes or football
• Does not have to be related to the designed location (fantasy game, hula hoop, etc.)

There are initiatives from the past years where play objects can be used without having to own it. For instance, play boxes exist in Rotterdam that can be opened when volunteers are available at set times.
What is interesting this table of norms for informal play areas is that the type of play mentioned for 6 to 11 years old are mostly boy associated types of play.

Important to mention is that the past decades the institutionalisation of play is becoming a clear trend, especially in the north part of Europe. While this can mean more supervision, safety, activities and could mean for parents not having to entertain children by themselves, it also implies more planned activities and less freedom for children to choose what they prefer doing during the day as well as having to pay for activities, which can exclude children. (Christensen et al, 2003).

Leeftijdscategorie			
Normen	**0 t/m 5 jaar**	**6 t/m 11 jaar**	**12 t/m 18 jaar**
Indicator speelruimte	20 m²	20 m² per kind; 10 m² voor voetballen op straat en 10 m² voor ruiger spel	1 ontmoetings-aanleiding per 15 personen
Afstand tot woning	Aaneengesloten aansluitend aan woning	Binnen buurt, tot 400 meter overzichtelijk bereikbaar	Geen afstandsnorm, wel wenselijk in eigen sociale omgeving/buurt
Geschikt voor spelvormen als	Kind speelt zelfstandig direct bij huis; fietsje op straat, takjes zoeken, koken	Groepsspel, avontuurlijk en sport, verstoppertje/speurtocht door buurt	Ontmoeting en sport
Minimale eisen			
Verkeersdrukte	Geen auto's; doodlopend, ontsluiting voor maximaal 15 tot 20 woningen	Max. 30 km en max. 12 auto's per uur	Daar waar geen auto's rijden
Overlast	Nvt	Niet direct bij muur of raam	Niet voor de voordeur
Schoon	Geen hondenpoep, afval en onkruid beperkt	Gras of verharding zonder glas/prikstruiken	Nvt
Schaalgrootte	Geborgen, maar niet te benauwd	Grotere ruimte voor balletje trappen/doelaanleidingen	Gedekt maar toch in het zicht
Potentieel geschikte ruimten			
Tuinen	Grote eigen tuin is goud waard	Alleen indien groot	Niet geschikt
Gras	Mits droog en schoon	Geen poep, geen kuilen	Minder geschikt, mits paadje er naartoe
Bossages/ruigten	Niet geschikt	Geschikt	Minder geschikt
Stoep/hofje/plein	Mits breed/groot genoeg	Geschikt	Minder geschikt
Weg/trottoir	Vrijwel geen enkele auto, zie drukte	Mits overzichtelijk, zie drukte	Mits auto kan passeren
Winkelcentrum	Niet geschikt	Matig geschikt	Geschikt
Kraanwater	Geschikt	Nvt	Nvt
Kleine poelen	Matig geschikt	Geschikt	Nvt
Open water	Niet geschikt	Geschikt	Zwemwater

Bron: OBB Ingenieursbureau, 2005.

Diagrams from make me move! (2005)

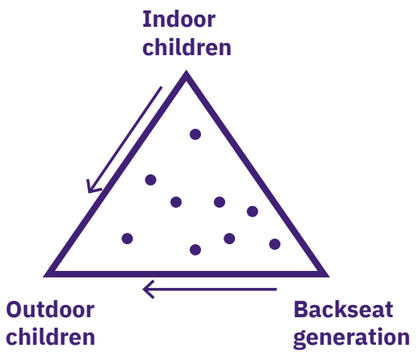
#2 Research

Places to play

Places to stay and skate. Brugge, Belgium

Places to play, move and stay
According to literature by Karsten (2005), there are 3 extremes types of children: the indoor children, outdoor children and children of the backseat generation, the latter meaning that they are still going to places, but by car. Children in general are not one type fully, as they are multiple types to an extend.

The challenge here is to motivate families to shift their indoor children more down on the diagram bottom left and accommodate to shift away from the backseat generation-type more by providing facilities nearby, keeping in mind that parents or the primary caregiver are an important factor in influencing whether children are or are not a certain type.



*Indoor children are defined through
1. less outdoor play
2. Increased supervision of adults

Skipping rope at the schoolyard.
Source image: wijkie.nl

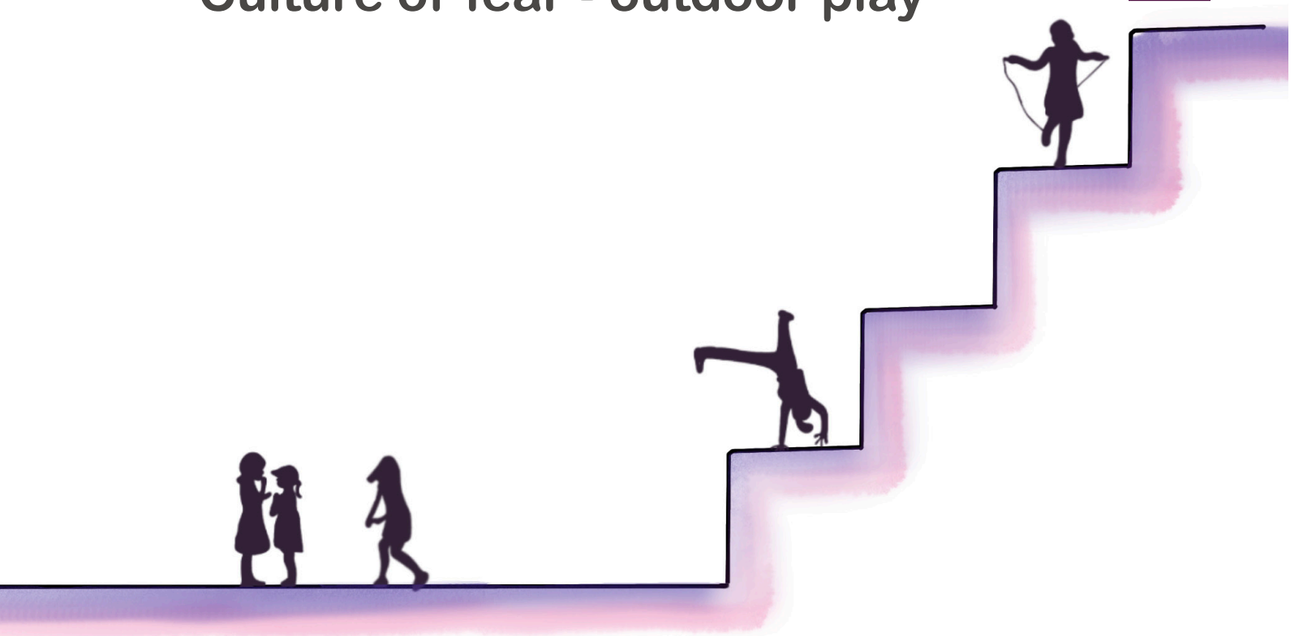
Gathering on the wood logs. Source image: Google

Walking to the other side via tree stumps. Source image: Google

Walking to the other side via a fallen tree. Adults are involved.
Source image: Google

#2 Research

Culture of fear - outdoor play



Who are the ones that play outside? According to the research of Gerben Helleman, significantly less girls play outside after they turn 8 years old.

Why is this the case? And why do girls spend less time outside than boys playing? According to research of Gerben Helleman, the following aspects are at play:

1. The design of play areas. What often is seen in the public space are large, open and/or uniform spaces like football fields or skate parks. However, these designs of play areas do not match the preferences of girls. Girls prefer quiet, social play activities, small groups, varied, role play, relaxing. Therefore, they don't feel as drawn to play areas in the public space as boys do.

2. Presence of boys. The presence of boys in the public space has impact on girls. This is because of cultural aspects, the claiming behaviour of the space of boys (which can be dominant and appropriating), exclusion through rejection or even bullying by boys.

3. Safety issues. This expresses itself in multiple ways. At one hand, parents can be protective. Protective upbringing can consequent in being allowed to play outside less. Then, intimidation can be happening in the public space. From the age of 8, girls feel 10 times as unsafe as boys in public spaces. As can be read between the lines, knowing of safety issues can influence the perceived safety of both parents and child.

Needs of Children

#2 Research

Culture of fear - outdoor play

According to the research of Helleman, there are potential ways to mitigate this matter:
- raising awareness. Knowing that the problem exists is the start of potential change
- Tasks in re-education of boys and men

Potential spatial ways to enhance girls playing outside are:
- better design of playgrounds Through Differentiation in zones, Diversity in height and materials, create seating and hanging areas (e.g. nest swing) and add natural elements.
- Create socially safe places. This can be done through Informal supervision: near homes, near busy places, as well as through multiple entrances, lighting, sight lines, etc.

Conclusion
Needs of urban families

What do urban families need? Families often go to variety of places within or near the neighbourhood. The common supermarkets, playground and elementary school, as well as more recreational places, for instance certain sports clubs, petting zoo, the forest, adventure playground, the park, shopping malls, swimming pool, gym.

Children play anywhere in the public space. Their life consist mainly of play and school. However, many public space designs overlook children as users.
Children 7 to 12 years old are interested in play that does not require a playground and involves space as well as loose objects to facilitate play, known as informal play, with the move radius being between 300 to 400 meter. Nature adds value to this.
Creating safe and attractive spaces for girls within the public space is important and often neglected, as often designing for certain age ranges of children is dedicated to boy type of play like football fields.

Play is important as it fosters cognitive, physical and social development. Parents have three key beliefs that play has to provide for children: It should be beneficial for learning, It is safe, it matches the child's competence and/or personality. As safety in general is one of the key beliefs of parents that should be provided for children, going by car is perceived as the safest way of travelling.
However, children that either walk or bike, can move, learn and develop abilities that are necessary to safely participate within traffic. Therefore, on long term, there are multiple benefits of going to school by bike or by foot regarding gaining cognitive abilities, developing awareness and recognizing situations and potential dangers.
The vicious circle of bringing children by car, which enhances the danger for other children going by bike or foot in traffic, should be discouraged to make it safer.

Parents juggle between work, taking care of the household, children. Parents need a way to travel to their job, that is not often found within the same neighbourhood. Parents also go to places that could increase their personal development, which can vary from language schools or gyms.

Despite of the individualisation, group reliance allows freedom of movement. Strong, reliable contacts within an area makes sure there is social control as well as social cohesion. People and neighbours both consciously and subconsciously look out for one's family when children walk outside on their own, creating a neighbourhood where supervising children that independently walk in the neighbourhood can become the standard.

The small scale is important to recognise, also within housing typologies.

2. Necessities within a child friendly network

#2 Research

Independent mobility

Parents recognize the dangers of the city, both physically in traffic as in the social dangers in daily life, which limits children to freely move, learn and grow up in the city. Through the Century, the innovation in technology has become prominent in the public space with the presence of vehicles in the street sights. The consequence has been for families to become more careful for children to freely move around in town, and restriction on walking independently had become sharpened. However, it is important that children can independently move from A to B in their daily life; may it be from home to school or the supermarket or any other essential facility. This for children to learn from life within the public space, developing the cognitive abilities to gain the cautiousness of potential dangers and awareness along the way. By facilitating for these developments, children's place in the city can be regained. Because of this, it is the challenge to find the balance between the needs of both the parents' life, their perception in regards of their child's safety and the needs of the child.
Independent mobility for children goes beyond moving around from one place to another. Independent mobility for children extends to freedom for those younger than 18 years old in the public space without guidance of any adult (Hillman et al., 1990)

There are some significantly positive effects of having independent mobility for children in comparison to dependent mobility, according to Kytta (2004):

- Motor abilities
- Cognitive abilities
- Physical abilities
- Emotional development
- Social developments and abilities

Independent mobility

Motor abilities

Independent movement has a positive effects on the **motor development**. This is mostly beneficial regarding young children, defined as children until 12 years old. According to Karsten (2001), better motoric abilities also makes children **less vulnerable to traffic**, also at a later age. According to Ryeng (2002), going to school by bike or by foot developes the motor abilities more than those going to school by car daily.

Cognitive abilities

Cognitive abilities, the skills of the mind, are a scala of skills that can vary from logical thinking, critical thinking to self-reflection and problem solving. Cognitive abilities can be trained through for instance play, interactions and learning at school.

Physical abilities

Movement is essential in the wellbeing of people. Having a daily routine as a child, it can become a habit. Movement, play and sports are ways to increase physical abilities.

Emotional abilities

Outdoors provides opportunities to enhance emotional abilities. Restrictions in movement could affect the emotional bond between the natural environment and children (Kytta,2004).

Social developments and abilities

By walking through the neighbourhood, children become more **familiar with their surroundings**, therefore develop a 'social identity'. This familiarity that children develop by going through the neighbourhood alone or within a group, extends **both to physical and social aspects** (Christensen, 2003)

#2 Research

Independent mobility

It is important that, despite of parents' concern about safety, children can go and move outside independenlty. As an urbanist, we can facilitate not only for the needs of children, but also for the needs of parents and long term benefits for a family friendly city. By providing space for children to freely move in the public space from a to b (e.G. From home to school) with challenges to learn from the public space, not only parents will spare time in their day to bring children to places, but providing the ability to walk independently also enhances healthy patterns and cognitive abilities.

Kindlint

In the Netherlands the intervention of SOAB's (SOAB, Adviseurs voor Woning en Leefomgeving) concept 'Kindlint' is already known. The Kindlint aims to be a traffic safe, play friendly & social friendly for children, while providing attractive routes that are fun and exciting. However, the difference with this project is that the "kindlint" does not provide places to learn from life within the public space.
It doesn't provide places where they can learn to deal with traffic situations, it only avoids traffic situations as much as possible. In practice this can lead to problems in the future, as not having experienced any dangers in the public space and having learned to move freely as a child, this in practice causes a higher chance of getting involved in e.g. a traffic incident, as there was never learned to be aware.
Therefore, being too protected is not the way to go.

Independent mobility

According to Van der Houwen and Goossen (2004), one out of three children in elementary school are not allowed to independently travel to school by their parents, because of the route towards school is perceived as unsafe because of traffic.
Only 36% of the children independently go to school, either walking (15%) or by bike (21%). (Van der Houwen et al., 2004)
The crucs lies in the fact that through the Century more and more children are brought to school by car by their parents, because of the unsafety caused by the vehicles themselves. However, the cause and effect has decreased the independent mobility for children drastically.
The perceived unsafety by parents keeps children from the open public space, providing mobility through car, increasing the amount of the perceived unsafe vehicles and therefore the perceived unsafety. It strenghtens each other.

When the perceived traffic safety - along with the social safety - can be made visible and tangible, developments can be proposed that increase perceived safety, which then is a stepping stone towards independent mobility by children, especially in the age range of 7 to 9 years old. (van Oel et al., 2005).
However, parents do not only bring their children by car. There are also parents that bring them through walking or biking together. This is beneficial for regular movement of children, but children remain dependent on parents in their daily life.
When the main challenge of parents to let their children independently walk or bike to school is that traffic in the neighbourhood appears unsafe, it is understandable that parents rather accompany them.

Regarding the slow traffic networks and its facilities, the movement and behaviour that is possible for the vulnerable group should become the norm (Asmussen, 1996). In this document this translates to the vulnerable group of children, specifically to the age range of 7-12 years olds.

Spatial aspects also influence the behaviour of childen and their independent mobility.
Besides spatial aspects, demographic, individual, family and social environment characteristics influence independent mobility. (Davison et al., 2008)

#2 Research

Independent mobility

From the age of 7 years old, children start to learn and imagine how it is to stand in another person's shoes. They are becoming more and more aware what the intentions are of a driver based on the driver's behaviour. However, it is still difficult for them to understand time and speed of the traffic approaching. Complex situations are still difficult for 7 year olds as well.

From the age of 10 years old, children are becoming better at recognizing risks. Cycling during complex traffic situations is still difficult for them.

However, cycling can be made easier through creating less complex situations as well as adapting towards the bike through some small scale changes.
According to Fietsbond (2023), safe and comfortable bike networks spatial interventions should include:
- safe edges adjacent to the bike network, implying ground floor or beveled edges.
- safe elements for bike networks, mostly the use of bike posts (fietspaal)
- flat and sufficient
- no extended elevated road surfaces across bike networks at locations within intersections

Traffic calming is important near schools, for both traffic safety as well as an having an attractive zone to walk and cycle to school. (Gehl, 2019)

#2 Research

Child friendly network

A route for children is a safe but challenging, small-scale and fun path with varied (play) areas to make it fun and attractive and to encourage encounters. It is a walking route but also contains play elements and space to play, making it multifunctional in use. Children generally find walking boring and cycling remains the preferred option. Walking only becomes fun when there are things to do or see along the way that children can enjoy. As shown in literature, an extremely important aspect of the route is playful walking. Being able to move freely and choose in which way is fun, so a public space that stimulates this form of creativity is important. Next to this, gaining learning experiences is essential for growing up. Through the age of around six to seven, children can start to gain awareness and judge situations as either safe or dangerous. Within the route, there will be places that do provide a challenge with safe crossings, which helps to develop awareness and cautiousness of children in the public space. Various subtle play elements can be placed in the route to encourage playful walking, such as tree trunks to walk on or use to sit on. In addition to a route, it is very easy to connect in this way and meet other children, because of the space that is made available for this purpose.

Conclusion

Necessities within a child friendly network

What is necessary within a child friendly network?

For the public space to become part of a child friendly network, space to move freely and independently as children is essential.

To increase independent mobility, it is important to recognise the caretakers as the ones that can allow and restrict movement of children. A third of elementary school children are not allowed to independently walk to school because of the route towards school is perceived as unsafe because of traffic. Therefore, it is important to create spaces and roads that decrease the sense of unsafety of both parents and children, which may imply that a shift of priority in mobility types has to be made. Parents restrict their child to freely move when parents perceive places as unsafe, may it be in relation to traffic, social or environmental safety.
Adapting to both the needs of parents and of children in this aspect is essential.

A route for children is a safe but challenging, small-scale and fun path with varied (play) areas to make it fun and attractive and to encourage encounters. It is a walking route but also contains play elements, space to play, stay and encourage playful walking.

Places to learn from and in the public space is important. Low key interactions with traffic and people increases the awareness, helping children to assess situations.

In the slow traffic networks and its facilities, the movement and behaviour that is possible for the vulnerable group should become the norm.

For 7 year olds it's still difficult to understand time and speed of traffic approaching, as well as complex (traffic) situations. Therefore it is important that routes that intersect with vehicles, crossings, are not to complicated and car speed is not excessive. By the age of around six to seven, children start to gain awareness and judge situations as either safe or dangerous.
Traffic calming is important near schools, for both traffic safety as well as an having an attractive zone to walk and cycle to school.

To conclude, a route for children is not only about walk and play. Along a children's route there are various play areas, facilities for children, and a suitable, small-scale residential typology based on eyes on the street, for a (socially) safe area. Next to a safe network, the children's route should be challenging, as it helps children to develop awareness and cautiousness. This helps children during growing up and in their lives in the future.

Remise parks. Source image by Landezine

3. Characteristics of a child friendly network

Children are more aware of details within the public space, especially near the ground, like vegetation, insects and materials. Slachthuisplein, Den Haag. Source image: Sylva.la

#2 Research

Child friendly network

Now that the requirements for a child friendly network are clear, (spatial) characteristics can be explored.

As stated in the previous chapter, a child friendly route need attention for traffic safety, social safety, recognisability, safe crossings and places with spaces to play.

#2 Research

Spatial characteristics

In *Designing streets for kids* by National Association Of City Transportation Officials and Global Designing Cities Initiative (2019), streets for children are discussed to be safe and healthy, comfortable and convenient, inspirational and educational. These spatially imply the following:

A. Safe and healthy
• Safe infrastructure
• Equitable access to key city services
• Streets must be designed to remove or minimize risk of life-threatening conditions
• Promote physical and mental well-being for children and caregivers. (Green is proven to help mental well-being)

Spatially:
• Continuous pedestrian infrastructure
• Accessible pedestrian infrastrucutre
• Safe cycling
• Transit facilities
• Safe vehicular speeds
• Clean air
• Access to nature through landscape and trees
• Opportunities for physical activity
• Adequate lighting

B. Comfortable and convenient
• Pay attention to details beyond basic needs to encourage children and caregivers to spend more time using streets. To invite additional trips and make existing journeys more enjoyable
• Reliable transit options

Spatially:
• Places to sit for a moment of rest or interpersonal connection
• Reliable transit option with legible way-finding and schedules
• Shade and shelter suitable for the local climate along sidewalks and at transit stops
• Facilities like restrooms and drinking fountains

C. Inspirational and educational
• Interesting
• Joyful
• Educational
• Places/streets that are a destination in itself

Spatially:
• Beautiful places
• Spaces for learning, development and play (through images, color, texture and games)
• Offer opportunities for imaginations to develop

Reference
National Association Of City Transportation Officials, & Global Designing Cities Initiative, G. D. C. (2019). Designing Streets for Kids.

Child friendly network - Spatially

To improve the independent mobility of children, attention has to be given to the (spatial) needs of parents in relation to children and to children themselves. Through inventarising these, it delivers a valuable piece to create principles for the child friendly network for it to be useful in practice.

According to Kindvriendelijkesteden.nl (2010), the following aspects needs to be met to create child friendliness:
• Allowed to be
• Able to reach destination
• Feeling welcome
• Able to participate

Child friendly routes need attention for:
• traffic safety
• Social safety
• Recognisability
• Safe crossings
• Places with spaces to play

The route is a connector between important facilities for children to go to. This can vary from school and playgrounds to after school associations, education gardens and a petting zoo.

Conditions / Guidelines family friendly city

Through various data from literature, multiple conditions or guidelines for a family friendly nieghbourhood can be defined.

Spatial numbers
- Elementary school within 400 meter
- Green areas within 1000 meter
- Clubs nearby, sports within 400 meter

Public space - General
- Spaces that are suitable for both parents and children
- Pedestrians within the public space are prioritized above cyclists. Pedestrians and cyclists prioritized above car
- wider pedestrian roads
- Diversification of neighbourhood streets through variety in street profile and built environment for recognisability, for wayfinding children
- Efficient fast network that is safe to cross for slow traffic
- Proper lighting
- Clean and well maintained public space
- Reduce the amount of (parked) cars on the street level wherever possible

Child friendly network
- main route as play and connect zone within the neighbourhood, that makes important areas for children accessible
- Places to play
- Diverse places to play. Formal, informal, big, medium and small scale
- Safe crossings
- slow traffic routes: safe, recognisable routing with low-risk challenges
- Places to meet, varying from places to stay, places to play to facilities and green areas
- fast mobility can intersect with routing for children. However, speed limit cannot exceed 30 km/h
- Space to (learn how to) cycle. This implies spaces that have a low frequency of fast traffic (e.g. streets where not more than average of 5 cars in an hour pass by) or places that do not meet fast traffic, like widened pedestrian roads
- In slow routing for children, small scale and human scale have to be taken into account. Variety in materials, structures, nature and details enhances the child's experience.

Social cohesion - control
- Interventions to enhance social cohesion. A spatial low-key example is letting residents appropriate a front garden, to make the space between private and public subtle and therefore create space to be outside while also having a chance to see and speak with neighbours. Community events in the neighbourhood can provide in this as well
- People that supervise the area; either through eyes on the street, neighbours, supervisors, neighbourhood police officer

Conditions / Guidelines family friendly city

Play
- Stimulating informal play, through e.g. providing loose objects (football, skipping rope etc.) and flat surfaces that accommodate space for informal play
- Providing play that support both the needs of boys and the needs of girls within the public space
- Places with a variety in heights within the public space

Built environment
- When dealing with new developments, it is important to recognise that housing typologies that suit child friendliness and support decreasing the threshold between indoor and outdoor are
• single-family homes,
• ground floor apartments
• single-family apartments.
The hofjes can be included in the design. Fully enclosed building blocks in moderation, as the positive side is that it has the potential to create a community within the building block and gives younger children the freedom to walk around outside of the house. However, it is still the (over)protected version of the public space.
Houses on eye level are important in this for the perceived safety
- In the case of homes with their own gardens, the importance of the alley comes forward, the easiest way for children to go to other children.
- In an era where densification is important: densification is alright, anonimity is not. Therefore it is important to deviate from housing typologies that increase anonimity
- Recognisability/wayfinding

Use of space
- Temporality in residential streets. To provide space for both parents and children, temporality of space can provide a solution in this.
- Multifunctional use of space
- The neighbourhood provides both calmness and places full of life and activity
- A mix in functions on the smaller scale

Movement friendly
- Besides the already mentioned, a city that encourages movement is important for families if it is intended that children move from A to B independently.
1. Connected city cores
    - Mixed neighbourhood
    - High quality public transport
    - Places to park the bike/ other micromobilities near public transport locations
2. Walk and bike
    - Intensive mix in functions
    - Cluster car parking

Literature:
Karsten, L., & Felder, N. (2016). De Nieuwe Generatie Stadskinderen. Amsterdam: nai010 Uitgevers.

Urhahn. (2023). If cities were family-friendly. Urhahn. https://www.urhahn.com/en/if-cities-were-family-friendly/

Van Leer Foundation. (2024). Nederland - Van Leer Foundation. https://vanleerfoundation.org/nl/country/netherlands/

Also based on knowledge of previous chapters.

Conclusion

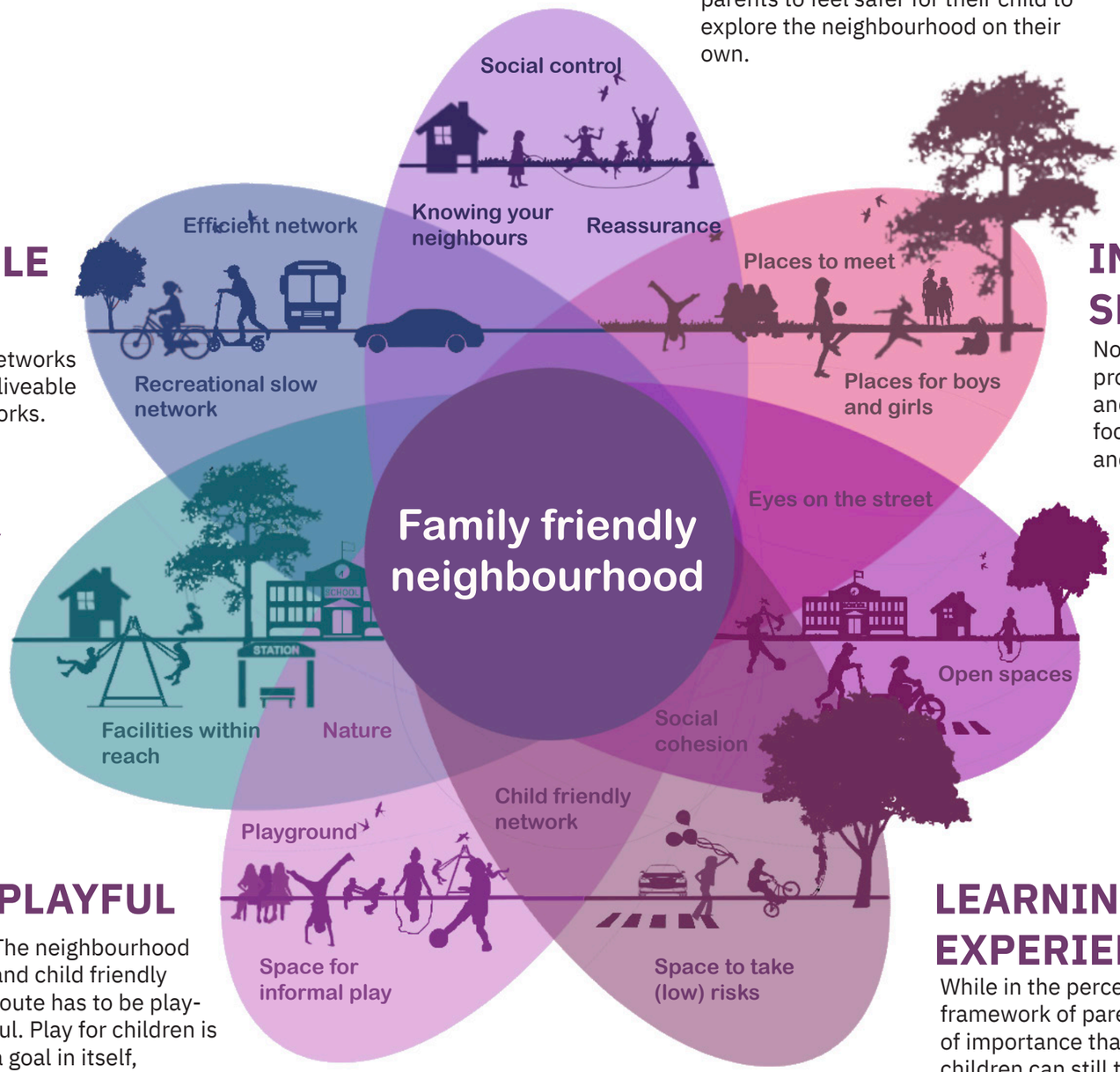
What are the (spatial) characteristics of a child friendly network?

Spatial characteristics of a child friendly network are essentially related to safe and healthy, comfortable and convenient, inspirational and educational interventions. This to enhance the liveability of a place. Main focus is the safe, accessible and continuous pedestrian infrastructure, places to stay, play, comfortable climate, interesting, beautiful, joyful and educational places as well as green areas to promote physical and mental well-being, reliable transit options and facilities.

Through sticking to spatial numbers that are either within children's walk radius or provide sufficient support for essential facilities, movement friendly interventions within all of the neighbourhood's public space, child friendly network specific interventions, social cohesion enhancing, play stimulating spaces and a built environment that supports families' daily life, a child friendly network can be achieved.

Themes family friendly neighbourhood

To achieve a family friendly neighbourhood liveability and safety public space are a priority. Based on the guidelines and theory mentioned previously, themes for design have been defined based on previous insights.
These themes for design are essential to aim towards a family friendly city and are defined and consists of the following:



SOCIAL COHESION

Enhancing social cohesion stimulates the knowing that someone is watching out for children when they play outside, which is essential for parents to feel safer for their child to explore the neighbourhood on their own.

MOBILE CITY

Efficient networks as well as liveable slow networks.

INCLUSIVE PUBLIC SPACE (boys-girls & adult-child)

Not only should the public space provide for the needs of children and adult, it should specifically focus both on the needs of boys and girls.

PROXIMITY

Making sure that necessary facilities for families can be found nearby

SAFE Perceived safety & traffic safety

Enhanced focus on both (perceived) traffic and social safety

PLAYFUL

The neighbourhood and child friendly route has to be playful. Play for children is a goal in itself, therefore playful facilities and play motivators and even nature that provides informal play possibilities.

LEARNING EXPERIENCES

While in the perceived safe framework of parents, it is of importance that children can still take opportunities and have space to take risks to learn from the life in the public space and enhance their abilities.

Playful city

Playful city: space in front of the door. It is unthinkable to let children walk and play independently in the neighbourhood if the first street, one's own neighbourhood street, it doesn't accommodate for it.

3. Play. As many researches already cover the aspects of play, this part will specifically focus on the boy-type and girl-type play within the public space.

Spatial:
- Providing spaces for different types of play and for girls and boys type play
- Height differences
- Different textures within the public space
- Stimulating informal play, through e.g. providing loose objects (football, skipping rope etc.) and flat surfaces that accommodate space for informal play
- Providing play that support both the needs of boys and the needs of girls within the public space
- Places with a variety in heights within the public space

Non-Spatial:
- Regulations on traffic speed in neighbourhood and especially near the school and streets adjacent to playgrounds.

- Temporality in residential streets. To provide space for both parents and children, temporality of space can provide a solution in this.
- Multifunctional use of space
- The neighbourhood provides both calmness and places full of life and activity

- Places to play
- Diverse places to play. Formal, informal, big, medium and small scale
- Green areas within 1000 meter

Learning experiences

- main route as play and connect zone within the neighbourhood, that makes important areas for children accessible

- Safe crossings
- slow traffic routes: safe, recognisable routing with low-risk challenges
- Places to meet, varying from places to stay, places to play to facilities and green areas
- fast mobility can intersect with routing for children. However, speed limit cannot exceed 30 km/h

- Space to (learn how to) cycle. This implies spaces that have a low frequency of fast traffic (e.g. streets where not more than average of 5 cars in an hour pass by) or places that do not meet fast traffic, like widened pedestrian roads

Proximity

Proximity and specifically perceived proximity happen to be important to actually go to places, facilities, homes and go there by slow traffic, knowing that children's walk radius is 400 meter at the age of 7 to 12 years old.

- Clubs nearby, sports within 400 meter
- A mix in functions on the smaller scale

Mobility of children:
Decrease the threshold between inside-outside. When it comes to children leaving the house on their own, it is important that the threshold between inside and the place they want to go isn't too big. The threshold involves the amount of floors one has to pass before stepping out of the building (housing typologies) and other people they might encounter (or not). The connection they have with the outside (from the inside) can motivate to go outside. The latter could relate to seeing things that trigger an inspiration, enthusiasm or fascination to go outside (social, perceived beauty, seeing people play etc.). In any case it is important that it sparks a motivation.

Mobile city

Mobile City: Not car free, but a neighbourhood that is not lead by the car (autoluw). At locations where cars are still allowed to drive low-risk traffic challenges for children can be found.
1. Shifting away from the anonimity caused by the dominance of fast traffic going through the neighbourhood and being put on a pedestal (priority shift).
2. Temporality in streets. changing functions throughout the day to adapt to the needs of families and residents
3. Revising the hierarchy within streets. This implies redesigning of streets that currently decrease the liveability by being either difficult to cross, dangerous or perceived as a barrier. This could indicate changes like shifting to one way streets.

a. Priority shift. In the neighbourhood low traffic and the residents are more important than passing cars.
(As a consequence) b. max 15 km/h in neighbourhood streets. As children from 7 years old are being able to recognize and judge traffic situations, it is important to recognize that there stil are difficulties with estimating how fast traffic goes. This excludes the main traffic corridors.

(As a consequence) car roads will be taken out, making those streets change in (car) function and giving back liveability Crossings have to be made as crossable for pedestrians as possible. Bigger car roads are often seen as barriers, for children as well as for parents. By cutting down on the excessive space for cars within the street profile, bigger car crossings appear more like other neighbourhood streets, making it more accessible to cross, which can increase the perceived proximity as well.

- Elementary school within 400 meter

- When dealing with new developments, it is important to recognise that housing typologies that suit child friendliness and support decreasing the threshold between indoor and outdoor are
• single-family homes,
• ground floor apartments
• single-family apartments.

Movement friendly
- Besides the already mentioned, a city that encourages movement is important for families if it is intended that children move from A to B independently.
1. Connected city cores
    - Mixed neighbourhood
    - High quality public transport
    - Places to park the bike/ other micromobilities near public transport locations
2. Walk and bike
    - Intensive mix in functions
    - Cluster car parking

- Recognisability/wayfinding

- Pedestrians within the public space are prioritized above cyclists. Pedestrians and cyclists prioritized above car

Social Cohesion

Social Cohesion/ Liveability:
1. Places to connect and to stay, play, meet and connect. Shifting away from anonimity caused by the immense amount of space.
2. Transition private-public. Appropriate of the space inbetween in front of dwellings if there are no front gardens. This could be facade garden as well as benches in front of the house.
3. Places to meet. More life and informal encounters.
4. Densifiy. rebalance the amount of public space versus the amount of people living in the area. This increases the chances of seeing neighbours and other residents.

- In an era where densification is important: densification can result in more support, however the anonimity that in cases is a result of this, decreases liveability. Therefore it is important to deviate from housing typologies that increase anonimity

Social cohesion - control
- Interventions to enhance social cohesion. A spatial low-key example is letting residents appropriate a front garden, to make the space between private and public subtle and therefore create space to be outside while also having a chance to see and speak with neighbours. Community events in the neighbourhood can provide in this as well
- People that supervise the area; either through eyes on the street, neighbours, supervisors, neighbourhood police officer

Inclusive public space

Inclusive public space:
1. Human scale - small scale
2. (Non-spatial) (affordable + scale) housing -
3. sufficient facilities to secure the accessibility for children on the smaller scale

Often the needs of girls in the public space is neglected, think of lack in places to stay, more enclosed places and gathering places outside.

Built environment
The hofjes can be included in the design. Fully enclosed building blocks in moderation, as the positive side is that it has the potential to create a community within the building block and gives younger children the freedom to walk around outside of the house. However, it is still the (over)protected version of the public space.
Houses on eye level are important in this for the perceived safety
- In the case of homes with their own gardens, the importance of the alley comes forward, the easiest way and most low-key way for children to go to other children's house.

Public space - General
- Spaces that are suitable for both parents and children
- wider pedestrian roads
- Diversification of neighbourhood streets through variety in street profile and built environment for recognisability, for wayfinding children
- Efficient fast network that is safe to cross for slow traffic
- Proper lighting
- Clean and well maintained public space
- Reduce the amount of (parked) cars on the street level wherever possible
- In slow routing for children, small scale and human scale have to be taken into account. Variety in materials, structures, nature and details enhances the child's experience.

#3 Themes family friendly neighbourhood

Safety

(Perceived) Safety:
1. Densify. Having sufficient people that can support facilities and the public space. Especially in neighbourhoods with a social challenge, having few to no eyes on the street decreases the perceived safety and increases the chances of that being a location for bad events happening (drugs dealing, violence etc.) Therefore densification is important.
2. Clean city - make sure it is safe to be outisde.
3. Non-spatial: raising awareness for safety of children and consequences. Also possibilities for shifting towards a child friendly neighbourhood

On the eye level, this part will specifically focus on the first steps outside of the house, as (perceived) safety within the public space starts with the space most near and familiar: the

2. Traffic Safety. In the child friendly network you also come multiple intersections with fast traffic. To ensure the traffic safety of children, it is important that it is Overviewable. One thing at a time. Therefore the main preference is to have one way roads, making it easier for children to predict where traffic comes from. Having an overviewable neighbourhood also extends to a decrease of 'noise' on the street. 'Noise' in the sense of unnecessary objects that could block the view of 7 to 12 year olds that independently move from home to school and beyond. More specifically, this also implies parked cars and bigger bushes.

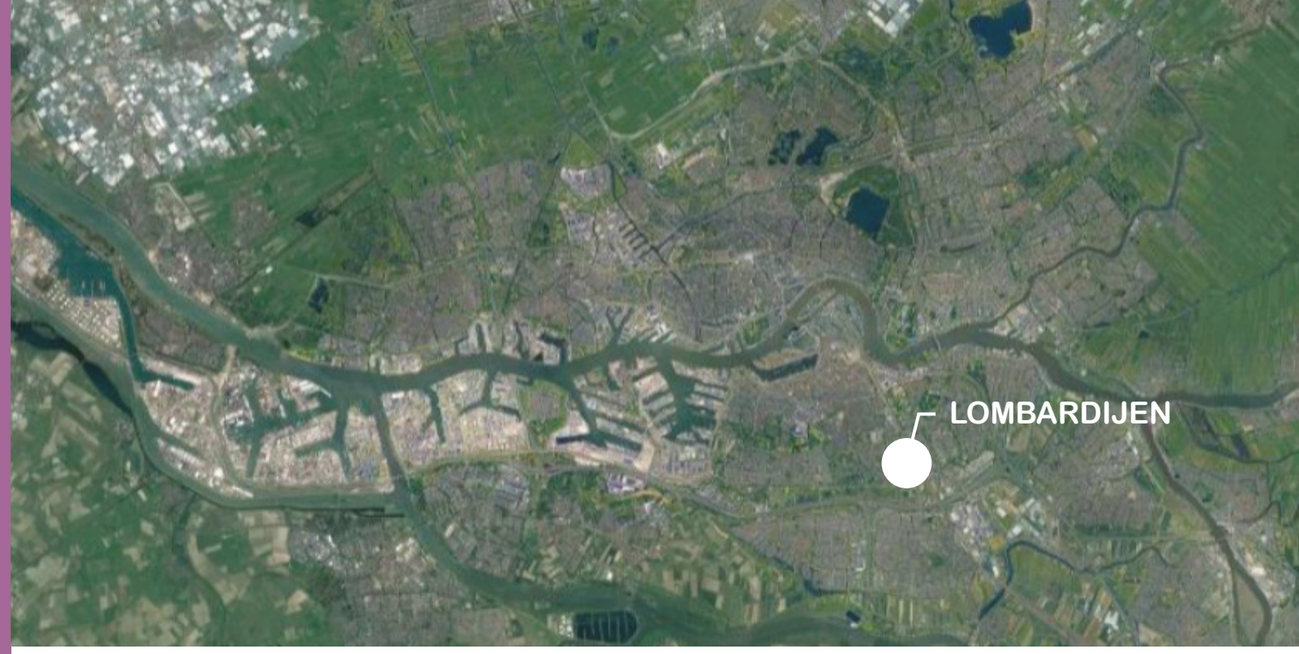
Social Safety. Sufficient eyes on the street. This closely relates to the social cohesion theme.

Learning about plants. Source image: Archdaily

4. A family friendly Lombardijen

Analysis

As the guidelines have become clear for a family friendly design, the location analysis on the proposed location, Lombardijen, Rotterdam, will be discussed.



LOMBARDIJEN

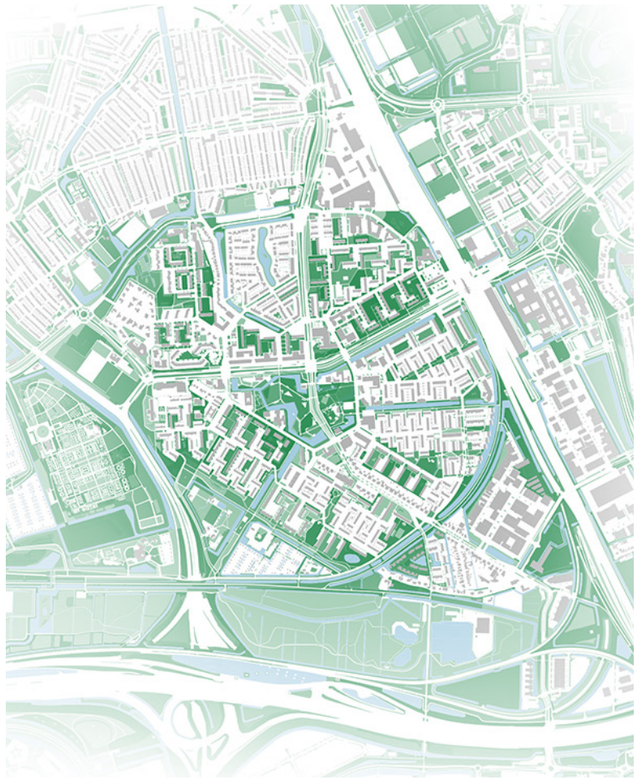
#4 Location analysis

Lombardijen is located within borough IJsselmonde on the south of Rotterdam.

Lombardijen consists of over 14.000 residents and is characterised by it's wide public space with many green patches as well as a combination of low rise and high rise.

The core and spatially the centre of Lombardijen itself is the Spinozapark, a park that is split into two by the traffic road Pascalweg that runs through it.

On the north and south parts of Lombardijen towards the neighbourhood's border, two industry areas are located, showing a clear distinction between living and working areas.



Lombardijen - History

Jacob Vrijstraat, 1978. Lombardijen, Rotterdam. Source images: https://mijnrotterdamdestijds.blogspot.com/2011/01/lombardijen-van-toen-en-het-tuindorp.html

Lombardijen is built in the sixties, with the intend to create an independent neighbourhood, which includes facilities like having schools, shops, churches, playgrounds and an excessive amount of open green spaces for places to meet and leisure.

After WOII the urban plan for Lombardijen was designed. The first intend was to create a similar neighbourhood as garden city Vreewijk, which is adjacent to Lombardijen. Garden City is a concept by Ebenezer Howard, written in his book 'Garden Cities of Tomorrow' (1898), that aims for a healthy place for residents and workers. A place separate from industries while having all facilities nearby.
However, the design of Lombardijen was finalized as a combination of a garden city and urban plan, meaning there is a mix of low and high rise. The design proposed multiple neighbourhood parks, but during the construction it changed to one park, Spinozapark, situated in the middle of the neighbourhood, and multiple green patches throughout Lombardijen.

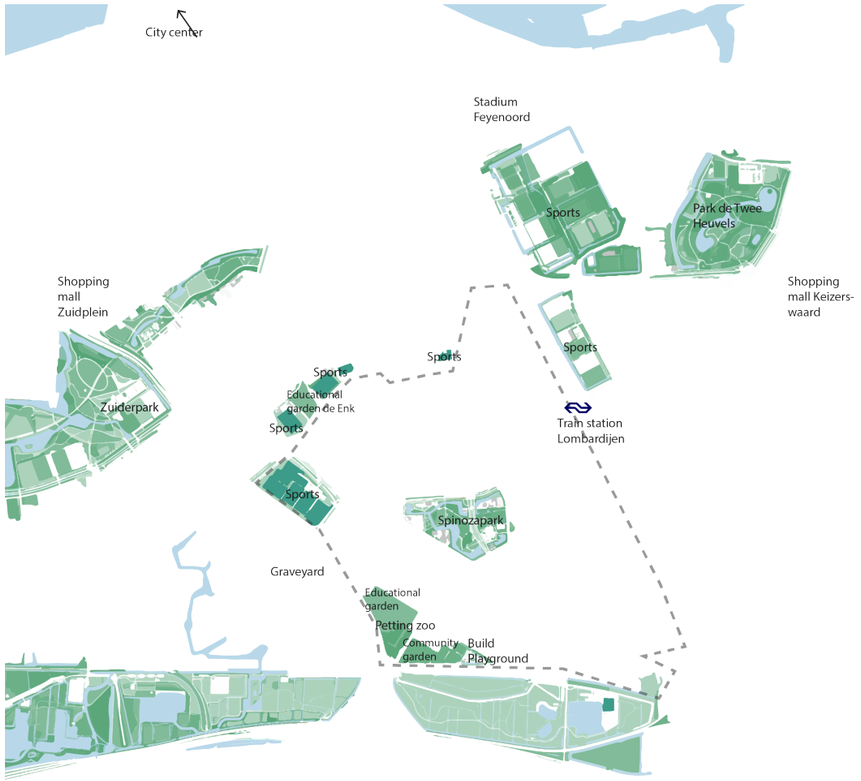
Housing typologies
The housing typologies vary within the neighbhourhood. However, it can be divided in mostly the following typologies:
- the traditional row housing
- 'flat' dwellings (flatwoningen). Both low rise, often four to five floors (sometimes two), as well as high rise

Playground, 1978. Lombardijen, Rotterdam

Car tunnel, 1973. Lombardijen, Rotterdam

Train station, 1972. Lombardijen, Rotterdam.
Source images page: https://mijnrotterdamdestijds.blogspot.com/2011/01/lombardijen-van-toen-en-het-tuindorp.html

#4 Location analysis

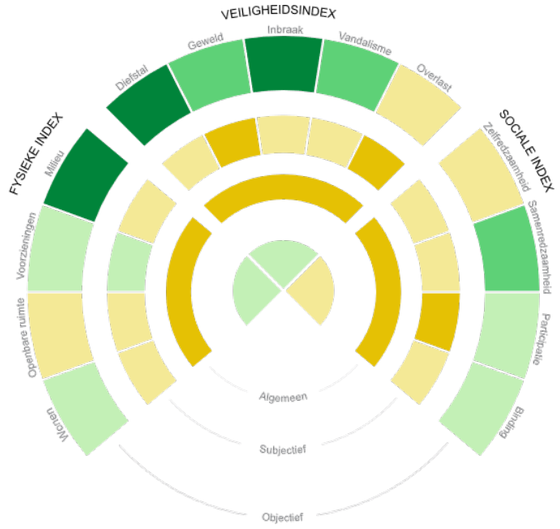


Surrounding

Lombardijen is situated within an urban fabric that is near a variety of amenities and facilities. Lombardijen has a train station adjacent to the neighbourhood and is surrounded by multiple sports facilities. These are mostly related to football, as within short distance there is the big football clu Feyenoord with its stadium and training fields. It is therefore not uncommon that there are children within Lombardijen who aspire to become a professional football player.
Lombardijen is near two shopping malls: Zuidplein and Keizerswaard.

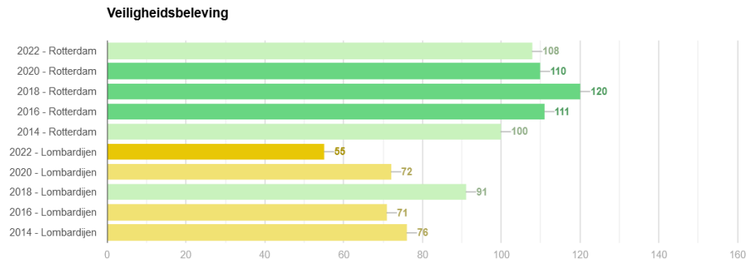
Within Lombardijen there are a scala of possible activities that can be done for children. This will be further discussed in facilities.

Perceived Lombardijen



Index Lombardijen 2022 on physical, safety and social domain
Source: wijkprofiel.rotterdam.nl

Index Lombardijen 2014. Objective index enhanced, subjective index decreased



Perceived safety: Rotterdam X Lombardijen
Source: wijkprofiel.rotterdam.nl

The perceived quality of life in Lombardijen is low. Despite of there being less burglary than in the years prior, the sense of unsafety has increased in the neighbourhood. There is a big different in the trend of the objective safety index and the subjective, perceived safety index. Where the objective index enhanced, the subjective index decreased.

Field work

The decreased perceived safety has to do with the negative events happening in the neighbourhood. Multiple incidents have taken place in Lombardijen, varying from stabbing incidents, violence, the use and dealing of drugs and vandalism. These multiple events happening stigmatizes the image of the nieghbourhood. Not necessarily from the oustide; the residents living there are more careful when leaving the house.

During the field work, a few remarkable things were observed. Firstly there were different times that windows from public buildings were broken. During the first site visit, this was the case for the neighbourhood-hub of Lombardijen. The second visit multiple windows from the school het Open Venster were broken. This in itself shows the vandalism happen, not only on paper.

Besides, vandalism with cars happen too. A resident mentioned that a few weeks before the conversation on a car was turned upside down by 14 year olds. It was said that it was without any bad intentions, just for the joy of it. During the second visit, a car was found as shown below, with the windows broken on all sides of the car.

Field Work

Spinozapark

- Spinozapark is divided into two motorways - unsafe crossings for children
- Public playground adjacent to motorway

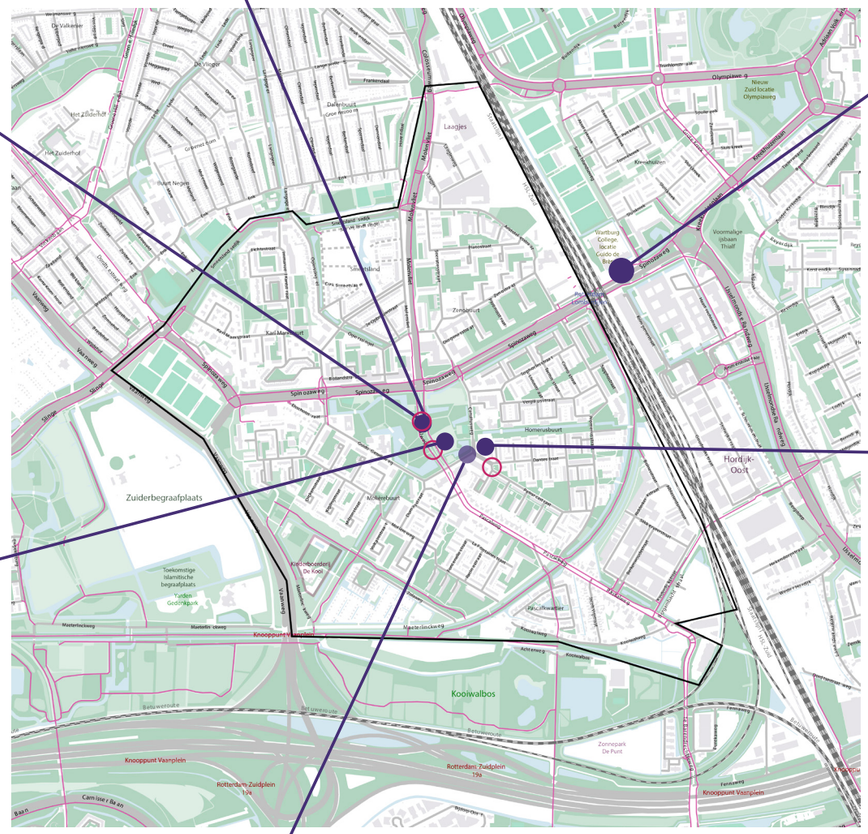
Playground under supervision of volunteers

- Subscription for the playground (for most residents this might not be financially feasible)

- Groups of children walk through the neighbourhood independently, sometimes also seem to hang around (distinction
between boys and girls)

Traffic signs to slow down doesn't seem to impress drivers

-There are both public elementary schools as well as special education for elementary students



- According to residents: Dangerous crossing near school
- parents park car everywhere around start of school - unsafe
- According to the Stadsmarinier: even children living near school by 20 meter, the parents will bring them by car (after this parents drive to work)

Public transport not very punctual

Elementary school OBS Catamaran

- A lot of parents seem to not know how to ride a bicycle; there are initiatives with bike instructors

○ = Dangerous crossing

Impression Lombardijen

Wide pedestrian path in the Sapphostraat

Playground accessible via grass that is covered with trash. Sapphostraat

Blind wall

Playground with eyes on the street and lighting. Cervantesstraat

Broken toy airplane. Homerusstraat

Impression Lombardijen

Multiple children and parents need to cross this often busy neighbourhood street near Tanger supermarket and elementary school. Pliniusstraat x Catullusweg

Excessively paved street with objects next to road to prevent cars from parking on the pedestrian path

Unmaintained pathway in the Sapphostraat

Impression Lombardijen

Intricate pedestrian network near elementary school

Street in front of homes is used as little parking square

Big grass field with multiple patches of small playgrounds

Multiple benches near the above mentioned smaller playgrounds. Seemingly new design, with on the right potentially a collective vegetable garden. Despite the new design, there is a lot of trash in the grass and the trash bins are all overly full

This path leads to one of the playgrounds. Wide street profile. Barely eyes on the street. Trash ends up in grass. Little lighting. Mostly back garden fences adjacent to this path.

Impression Lombardijen

During field work, other important findings came to the surface as well.

Spinozapark
To start with, there is the Spinozapark. It is the heart of Lombardijen. However, Spinozapark being the heart of the neighbourhood might not be as positive as expected. Some qualities that you often see in a park are missing:
- (traffic) safety,
- being mainly surrounded by nature,
- relaxation,
- seclusion
- eyes on the street,
- on winter days a lack of support in amount of people

Constantly pay attention at traffic crossings + no eyes on the street. (too little housing density and shelter at the park to make the experience comfortable.

Regarding children:
Both sides of the park have traffic crossings (also from school) and the crossing at the Pascalweg being perceived as dangerous, therefore not feasible for children to reach independently easily, mainly because many drivers do not stop at a zebra cros-

When crossing the Pascalweg within the Spinozapark, the road is quite a barrier in itself as the Spinozapark cannot fully function as a park as a whole where people can enjoy their time carelessly.

Remarkable findings Lombardijen
• many care homes / elderly flats
• many schools, both elementary as well as high schools (also special education)
• Variety of cultures within the neighbourhood
• Social issues (feeling unsafe, drug use, criminality, poverty)

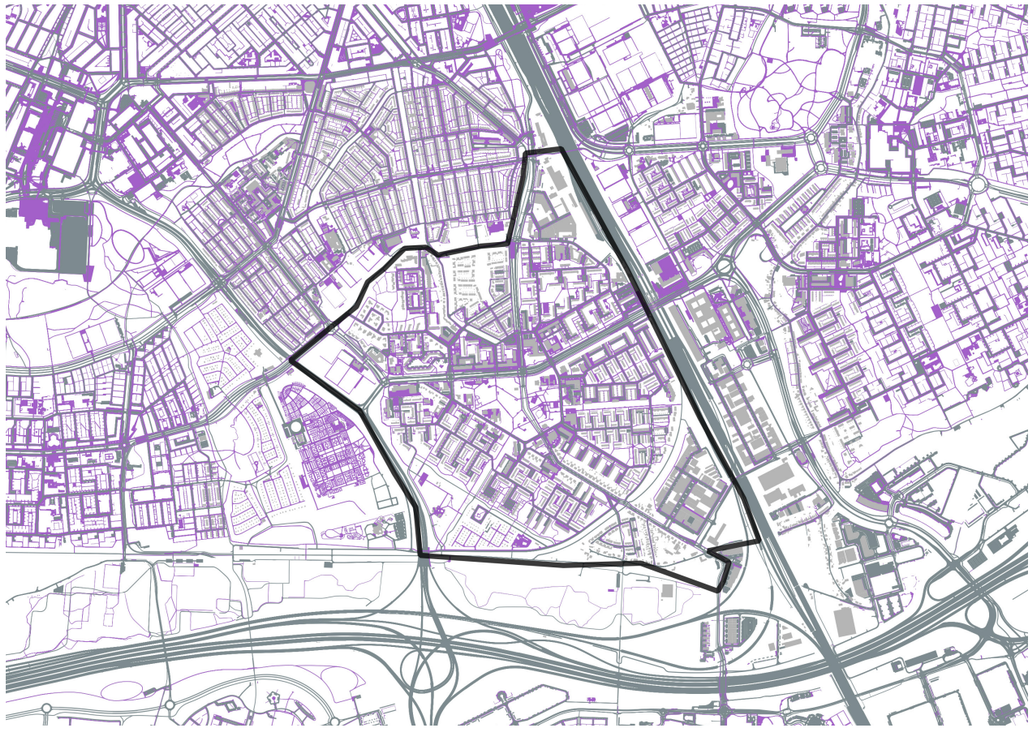
First impressions
In Lombardijen the car seems an important vehicle for residents. Spatially there is designed as the car being the main network over slow traffic flows.

There are communities within the neighbourhood for mothers to gather.

First assumption: There seems to be due to a lack of time for children, it is a kind of obligation that children have to figure it out for themselves outside the home - no indications

It is remarkable to see that children are allowed to walk around the area independently at a fairly young age

Pedestrian Network



1.Pedestrian network Lombardijen and surrounding

Pedestrian network
The pedestrian network has both possibilities to walk on a sidewalk near car roads or apart from any traffic. However, most pedestrian routes within Lombardijen will eventually intersect with car roads. As motorised vehicles are prioritised in Lombardijen within the street profiles, there are various roads that can be considered challenging to cross for parents and children.

Pedestrian network Lombardijen in relation to car and bike network

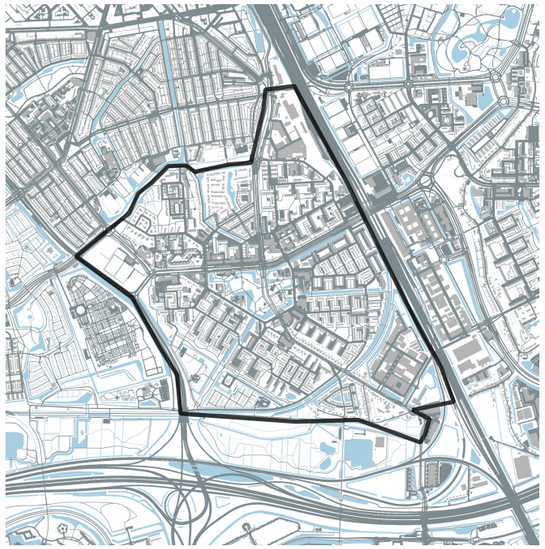
There is a large already existing pedestrian network. Some pedestrian roads are used by pedestrians and cyclists, think of the roads within the Spinozapark (1). Most pedestrian roads are located adjacent to car roads with sometimes unclear or no pedestrian crossings as shown at the Dantestraat (2). However, there are also pedestrian roads that are specifically for walking, for example within the housing blocks with green fields inbetween (3).

Elementary schools Lombardijen and surrounding

Mobility networks

Regional car network

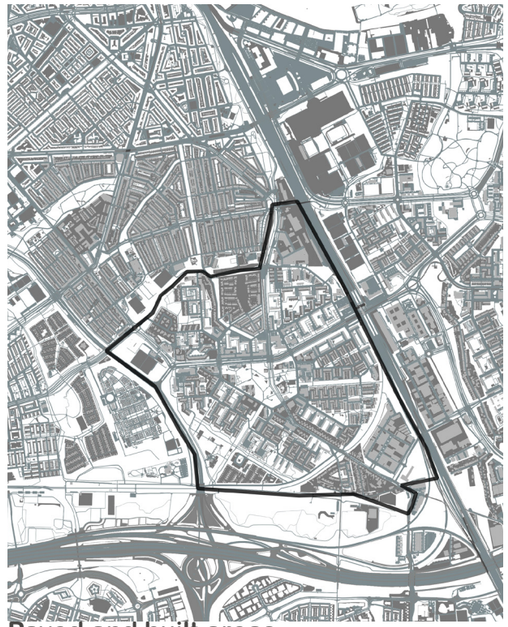

Rotterdam South car network


Lombardijen car network

1. Roads
For parents, a significant barrier that children often are not allowed to cross is the Spinozaweg, one of the main roads within Lombardijen. There are also social barriers; the differences in cultures within the neighbourhood sometimes creates clashes between norms and values of families or neighbours.

Location analysis

Paved and built areas
There are quite a lot of paved areas next to the built environment. However, there are green patches throughout the neighbourhood as well. Especially the industrial areas within Lombardijen are paved, which is necessary for traffic reasons.

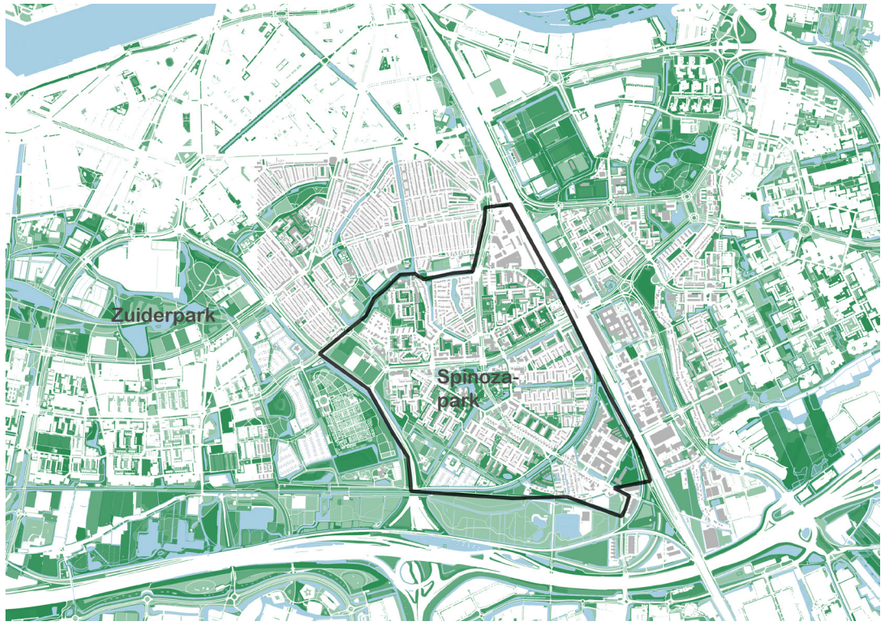

Paved and built areas

Traffic speed
Two main roads within the neighbourhood have the highest traffic speed: Spinozaweg that splits the neighbourhood in two and the Pascalweg that splits the Spinozapark in two. These roads can be challenge if these are considered barriers by parents for their children to cross there.

Traffic speed

Location analysis

Green-blue scapes



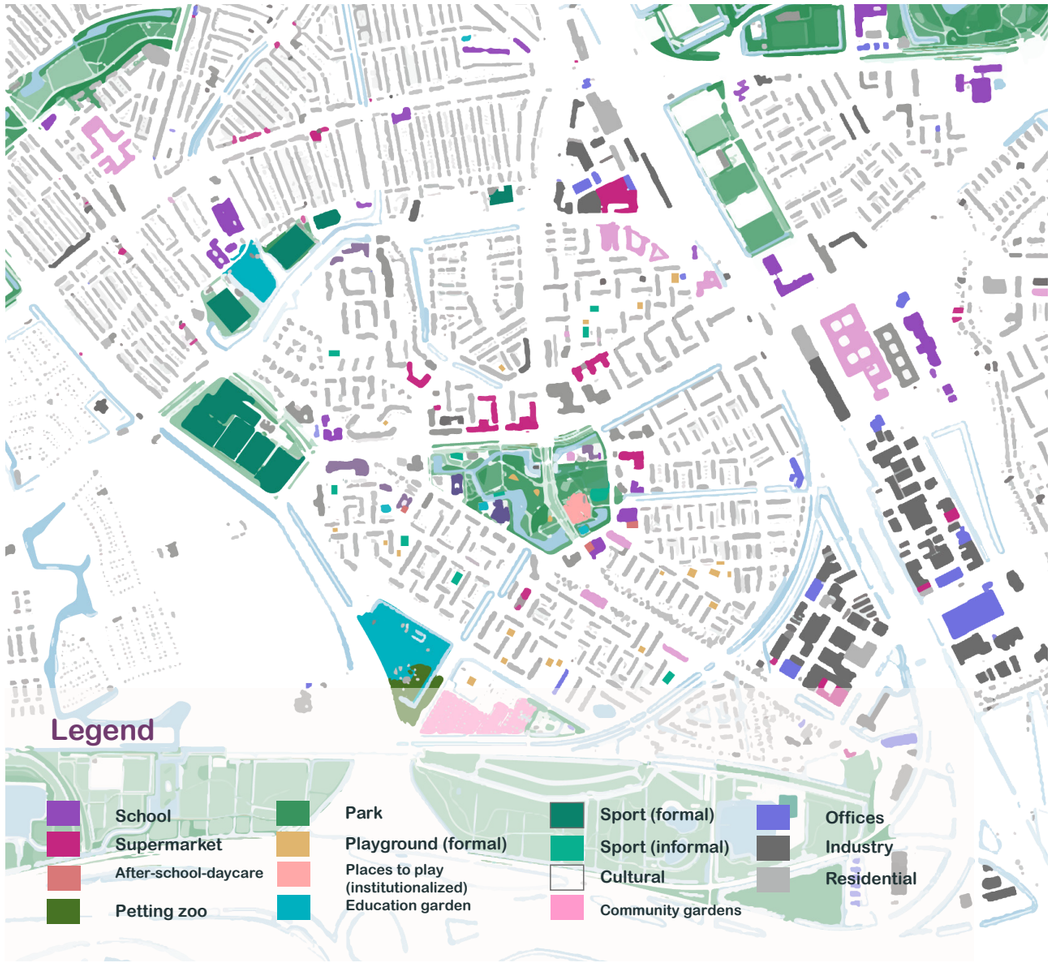
Legend Green scapes Water

Public transport networks

Legend Train Tram Bus

Green-blue scapes
Lombardijen was partly meant to become built as in the garden city concept. This is clearly visible in the green structures with multiple patches throughout the neighbourhood. In the end, only the Spinozapark was considered a park in Lombardijen, with on the west edges sports facilities, education garden and community gardens.
On the South of Lombardijen, a green structure extends towards the west.
Slightly out of the neighbourhood, towards the nord-west, the Zuiderpark is situated. During the informal interviews with parents, it was mentioned that Zuiderpark is a place that is often visited by Lombardijen families during the weekends.

Public transport networks
Lombardijen can be considered highly accessible with the variety of public transport options. The train station is within 5 to 10 minutes reach, while the tram line goes through the Spinozaweg. Apart from the train and the tram, there are also buses that go through the neighbourhood and stop at multiple locations.



Facilities

Facilities mentioned in literature and interviews that seem important for children and parents have been highlighted within this map. The core of children's daily life extent from their home's street to the school, with institutional after school activities. Within the neighbourhood, there are lots of facilities that enhance the spectrum in children's daily life's experiences, varying from different types of play (playgrounds, skateparks, educational garden, petting zoo, adventure playgrounds) to elementary schools, different sports, community gardens, parks and supermarkets. The only aspect that seems missing in this neighbourhood is places for the parents to work, which is currently mostly outside of this area. To reach work, many residents are using the car. In this area, most residents cannot ride a bike, therefore everything outside of their walk radius is usually done by car. (as the public transportation is expensive as well)

Accessibility

Below the accessibility of main facilities within Lombardijen are shown.

	By foot	Bike	Car
Elementary school	< 15 minutes	< 5 minutes	< 5 minutes
Playground	< 12 minutes	< 5 minutes	< 5 minutes
Supermarket	< 15 minutes	< 5 minutes	< 5 minutes
Sports club	< 25 minutes	< 7 minutes	< 5 minutes
Train station Lombardijen	< 25 minutes	< 8 minutes	< 5 minutes

Initiatives Lombardijen

Initiatives to make Lombardijen more liveable as well as developments in attempt to change towards a different mix of residents.

Educational garden

Source image: Natuurstad

One of the two educational gardens is de Enk, a place where children can learn from nature through activities in nature.

Vrijlandt

Source image: https://www.tuinbuurtvrijlandt.nl/rotterdam/contact

This new housing development in the north of Lombardijen consists of a combination of social housing and of high segment dwellings. Main target groups are families and seniors. However, it is interesting that this development in promotion does not mentioned that Vrijlandt is located in Lombardijen and that it specifically points towards high segment dwellings.

Initiatives Lombardijen

Lombardijen neighbourhood newspaper

End of 2023, a newspaper for Lombardijen has been made, sharing events coming up as well as positive statements and aiming for a community feeling within the neighbourhood.

Positief, betrokken en trots!

WINTER 2023

WIJKKRANT Lombardijen

Tien jaar Like Je Wijk

POSITIVITEIT IS DE SLEUTEL

Voor je ligt de wijkkrant van Lombardijen, en daar zijn we trots op! Like Je Wijk bestaat tien jaar en in 2024 gaan we dat in Lombardijen vieren met elk kwartaal een uitgave van deze informatieve en positieve wijkkrant. Dat doen we met bewoners, wijkorganisaties en Like Je Wijk AlliantiePartners. Het is belangrijk om elkaar te informeren over wat er allemaal te doen is en welke ontwikkelingen er zijn die het wonen, werken en leven in Lombardijen leuker en beter maken.

In deze eerste wijkkrant hebben wij ons best gedaan om te informeren, motiveren en stimuleren. De volgende uitgave is in het voorjaar. Volg ons intussen ook via de wijksocials en stuur zelf iedere dag jouw nieuws, activiteiten en mooiste plaatjes in.

Fijne FEESTDAGEN EN EEN MOOI 2024!

Bij het verschijnen van de wijkkrant zijn de Sint en zijn Pieten mogelijk net weer naar Spanje. Wij wensen jou en al je dierbaren een hele fijne en liefdevolle decembermaand. Denk en zorg goed voor elkaar, ook in de straat en buurt. Iedereen kan in zijn eigen omgeving een ander helpen of een praatje maken.

In 2024 stropen we samen de mouwen op. Werken we samen op z'n Rotterdams aan een mooi, gezellig en veilig Lombardijen!

Geef de wijkrant een cijfer, volg Like Je Wijk Lombardijen dezelijks via social media, stuur eigen nieuws in en ontdek je wijk!

Stadsgesprek

'WE GAAN DIT SAMEN DOEN!'

Op 31 oktober vond er in het Albeda College op de Spinozaweg een stadsgesprek plaats waarbij bewoners uit alle delen van Lombardijen aanwezig waren, evenals drie wethouders, de hoofdofficier van justitie, de eenheidschef van de politie en de burgemeester. Meer dan 150 personen kwamen bij elkaar om te praten over Lombardijen en hoe het gaat met de wijk. Er werd gekeken naar waar de bewoners trots op zijn en welke aspecten meer aandacht verdienen.

De avond begon met een heerlijk buffet met smaken uit de wijk, gevolgd door een opzwepend optreden van brassband La Protagonista. Burgemeester Aboutaleb opende de avond en daarna kregen bewoners op verschillende manieren de kans om hun stem te laten horen. Dit gebeurde onder andere via straatinterviews, het invullen van rode en groene kaarten, door 10 vertellers die hun eigen ervaringen in Lombardijen deelden en door in groepen met elkaar in gesprek te gaan over deze verhalen.

Het werd al snel duidelijk dat bewoners trots zijn op hun wijk, maar ook bezorgd. Deze bezorgdheid wordt veroorzaakt door ontwikkelingen in de wereld, maar ook door ingrijpende gebeurtenissen in de eigen woonomgeving. Tijdens de avond bleek dat elke buurt zijn eigen zorgen heeft, maar dat er ook gedeelde zorgen zijn. Veel groepen vroegen aandacht voor de opgroeiende jeugd. Een bezoeker verwoordde het als volgt: "Ik gun alle jongeren een veilige leefomgeving, stabiliteit en rust. Dat ze gezien worden en hun talenten kunnen ontwikkelen om te kunnen bereiken wat ze willen. Dat ze een stapje verder komen dan hun ouders."

Wijkbeheerder Havensteden Peter Hop

'REPAREREN, HELPEN EN ORGANISEREN MET DE BUURT'

LEKKER KORT UIT LOMBARDIJEN!

Jaarkaart Bouwspeeltuin

Spinozapark on holidays

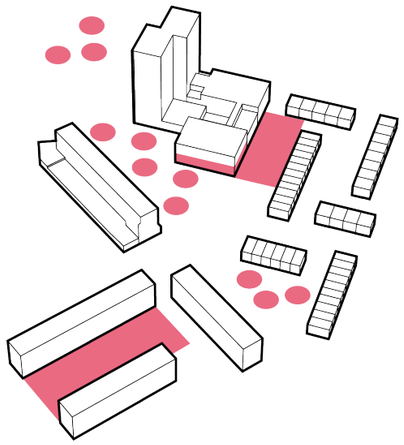
During some holidays, the Spinozapark is used as location for events and social encounters, as shown on the left on Kingsday with a flea market and on the right for sports activities.

Flea market and sports activities during Kingsday.
Source image: Google

Design challenges Lombardijen

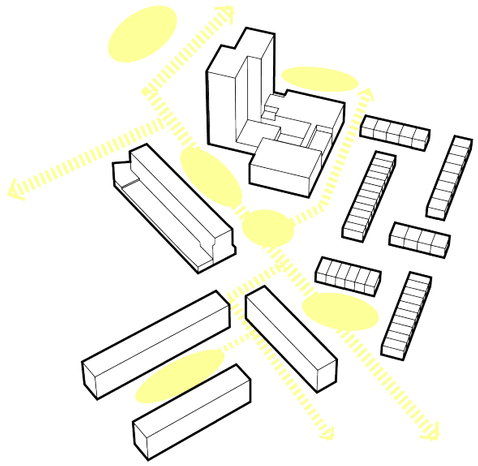
Within Lombardijen there are challenges to be faced in general as a foundation to adapt towards a family friendly neighbourhood. Therefore below some principles have been defined for Lombardijen.

Human & Small-scale



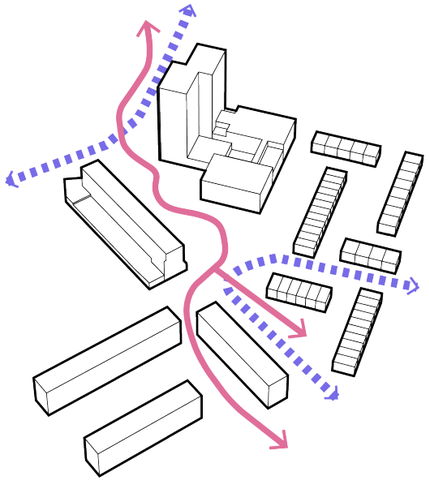
Emphasize on small-scale within the public space.
• Densification. Densification is needed for both support of the public space for more people and eyes on the street. It increases possibilities of meeting of other children. It makes it socially safer.
• Different types of places. It makes it more interesting for children with a walk radius of 400m to encounter a variety of places

Connect & Place to Stay



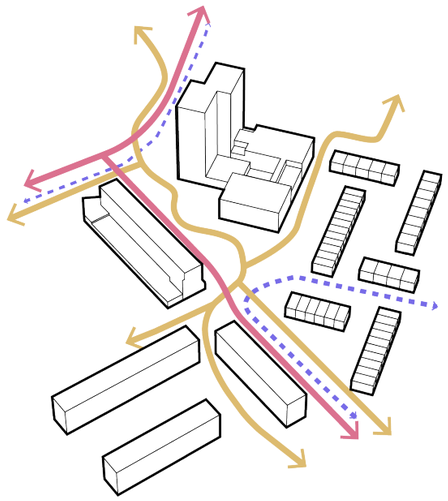
Connect and places to stay.
• Increasing walkability.
• Pleasant, smaller scale places to stay.
• Make amenities and facilities accessible
• Increasing walkability.
• Adapting to the needs of girl type play. This includes smaller places to stay, play and informal play as well as attractive, beautiful places.

Beyond Barriers



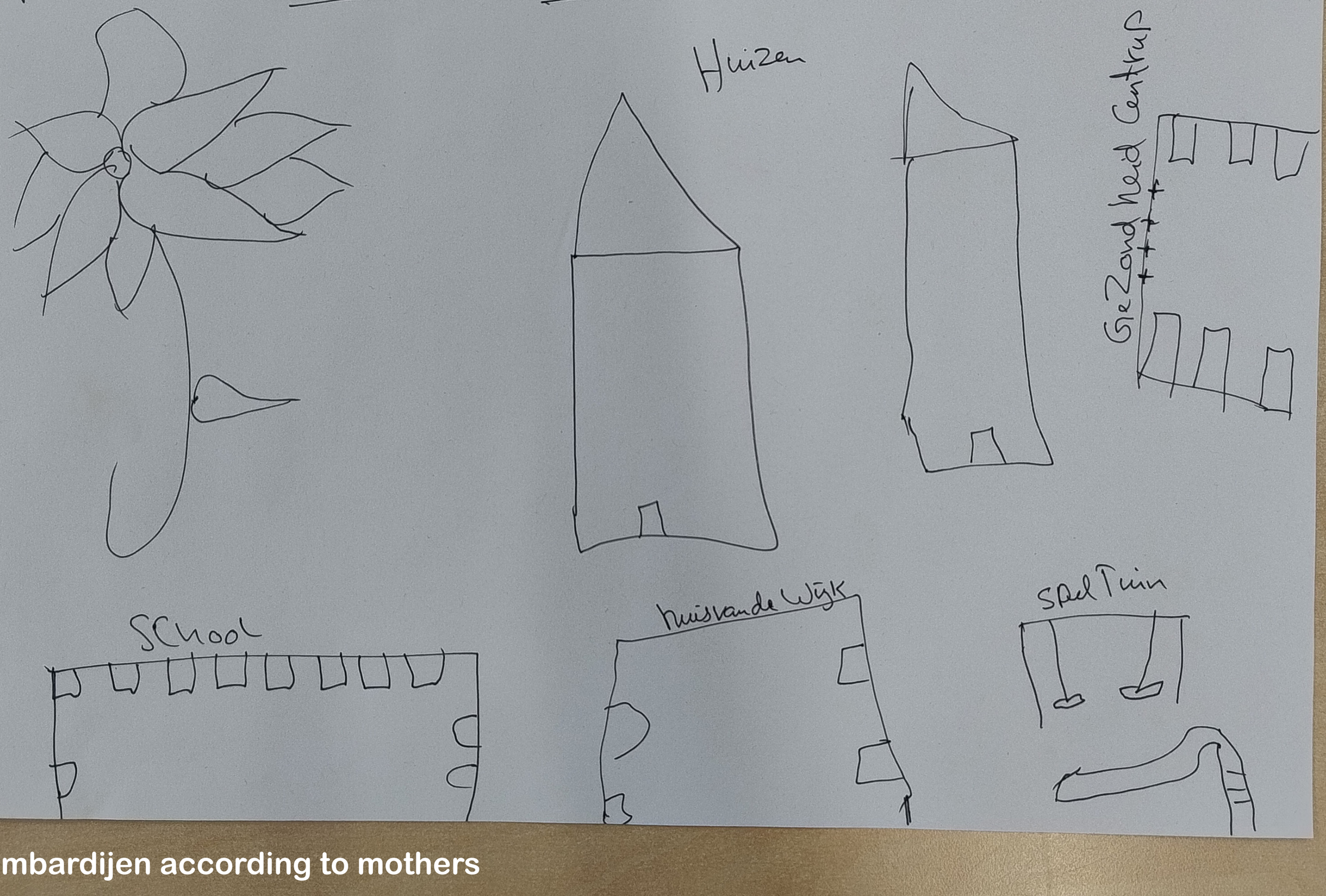
Bridging the barriers to make walking accessible for everyone and increase the perceived proximity.
• Emphasize and tackle challenges of barriers (e.g. difficult crossings)
• Proximity and perceived proximity of amenities and facilities.
• Increasing walkability.
• Decrease anonimity

Priority Shift Transport modes



Priority shifts in transport modes.
Currently the cars are dominant in the street profile, increasing anonimity and barriers on the streets, which decreases liveability. In essence, the main spatial challenges Lombardijen faces are related to spatial traffic priority decisions as well as the lack of support for the public space. A priority shift that prioritizes the pedestrian and the bike and shifts away from the car and other motorised fast traffic, increases liveability within the neighbourhood.
• Enhance and prioritize slow traffic networks within the neighbourhood
• Increase liveability

Rustig Buurt

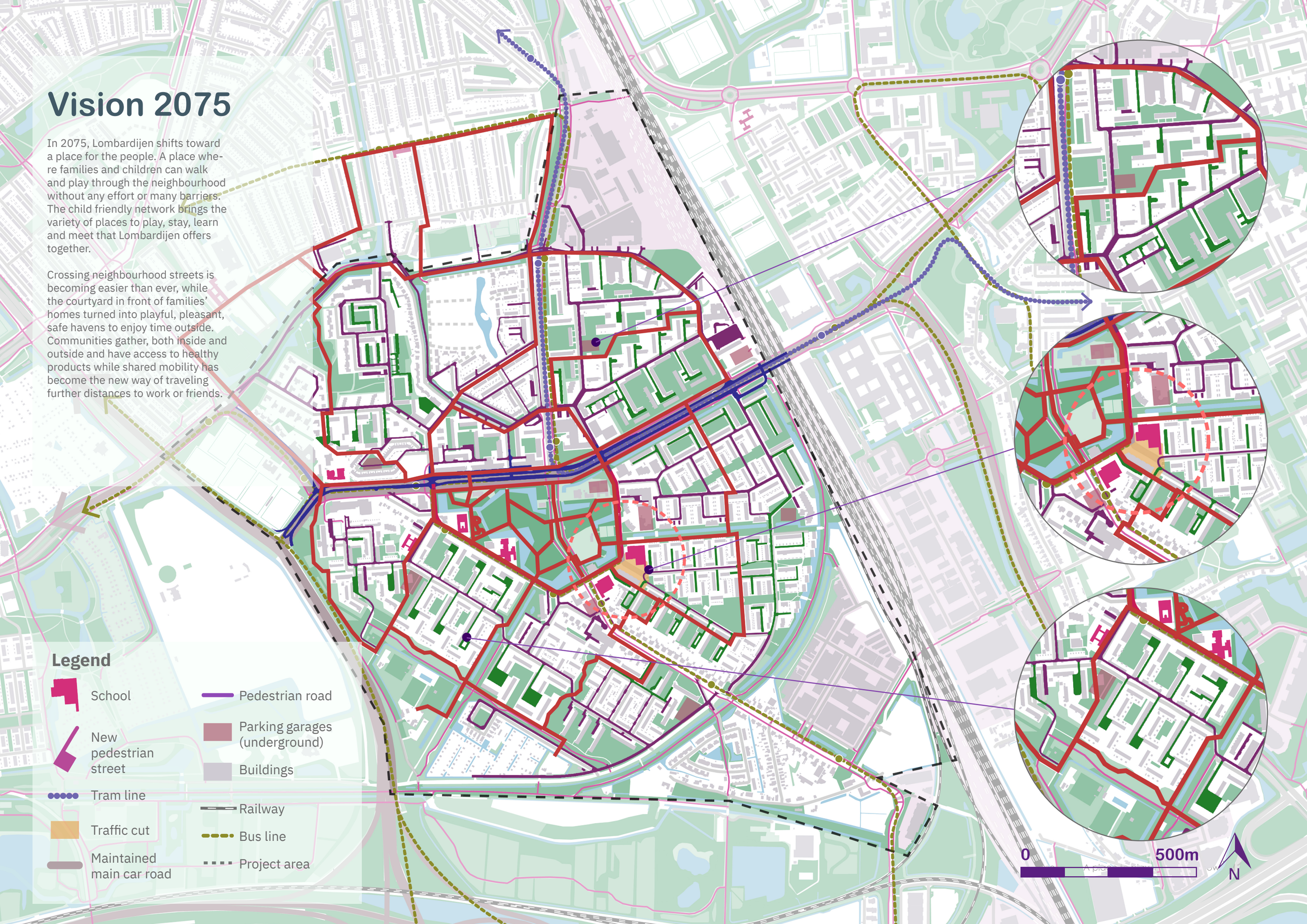


Lombardijen according to mothers

Vision 2075

In 2075, Lombardijen shifts toward a place for the people. A place where families and children can walk and play through the neighbourhood without any effort or many barriers. The child friendly network brings the variety of places to play, stay, learn and meet that Lombardijen offers together.

Crossing neighbourhood streets is becoming easier than ever, while the courtyard in front of families' homes turned into playful, pleasant, safe havens to enjoy time outside. Communities gather, both inside and outside and have access to healthy products while shared mobility has become the new way of traveling further distances to work or friends.



Vision 2075

In 2075 Lombardijen as a family friendly, comprehensive, liveable neighbourhood is providing safe routes while being cognitively challenging and therefore creating space for children to move outdoors freely

... and parents allowing this independent mobility

Network for families and traffic

Biodiverse planting

Places to stay

Stimulating health and prosperity

Enhancing social cohesion

Safe crossings where speed is discouraged

Vision

Families (mainly thanks to children) are seen as the connector of the neighborhood, and thanks to a child friendly route, the connecting factor between neighbours can be strengthened.

The children's route is the backbone throughout the neighbourhood, and wires out to different areas. Along the route there are various play areas, facilities for children, and potential suitable, small-scale residential typology based on the eyes on the street, for a (socially) safe area. Sufficient eyes on the street is important to enhance the perceived safety.

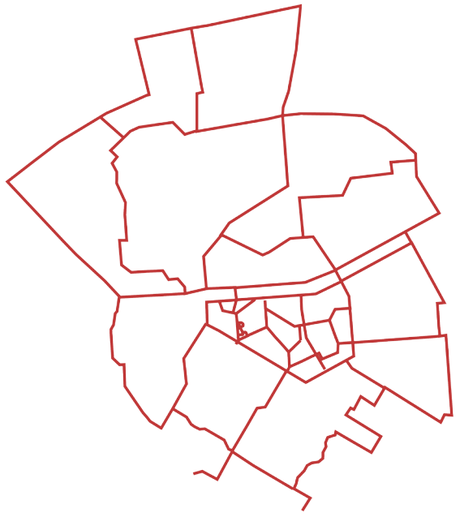
The route for children is a safe but challenging, small-scale and fun path with varied (play) areas to make it fun and attractive and to encourage encounters. It is a walking route but also contains play elements and space to play, making it multifunctional in use. Children generally find walking boring and cycling usually remains the preferred option in Dutch neighbourhoods. However, in the area of Lombardijen most people do not and sometimes cannot ride a bike due to a lack of learning this ability.
Walking only becomes fun when there are things to do or see along the way that children can enjoy. An extremely important aspect of the route is therefore playful walking. Being able to move freely and choose in which way is fun, so a public space that stimulates this form of creativity is important. Next to this, gaining learning experiences is essential for growing up. Through the age of around six to seven years old, children can start to gain awareness and judge situations as either safe or dangerous. Within the route, there will be places that do provide a challenge with safe crossings, where cars do drive but the speed is up to a maximum of 30 km/h. Small risks help to develop awareness and cautiousness of children in the public space.

from Overprotecting to Empowering

Routing

Various informal elements can be placed along the route to encourage playful walking, such as tree trunks to walk on or to gather. In addition to a route, it is very easy to connect in this way and meet other children, because of the space that is made available for this purpose.

The sidewalks along the buildings are wide enough - although dependent on the exact location - to provide space for the residents of the adjacent homes to appropriate a piece of the street. Appropriation by residents can vary from benches to plants and decorations. On the one hand, this gives the route even more interesting and diverse things to see, but also provides a sign of life in the street.



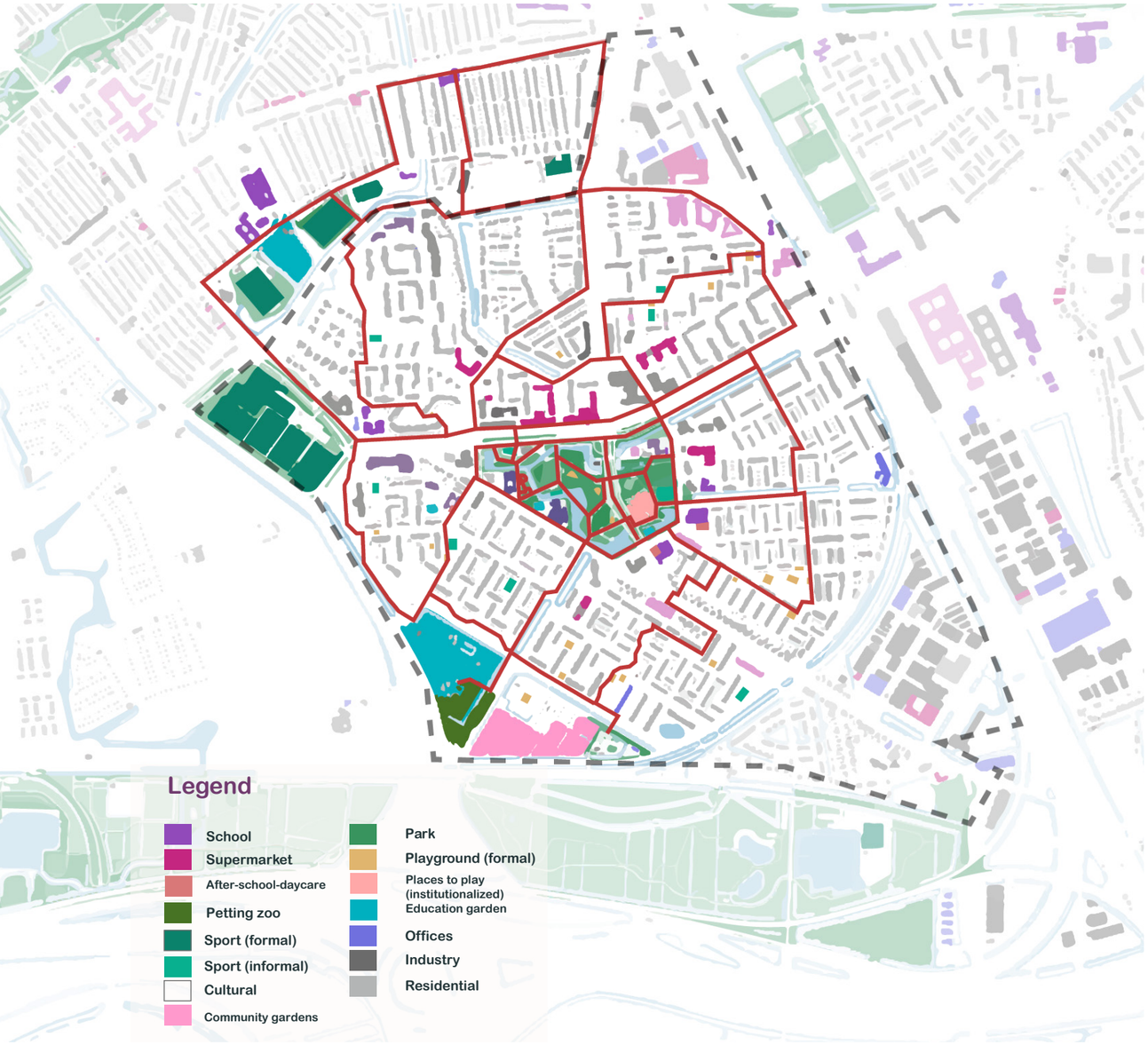
Child friendly network

Neighbourhood streets

Main traffic network decreased in amount of roads. The North-South corridor is not accessible for cars anymore, to decrease the amount of go-through traffic. This not only consequents in less anonimity and less fast traffic in Lombardijen, it also decreases the frequency of cars within the neighbourhood itself and gives back a sense of liveability to the residents, including parents and children. The remaining traffic corridor (East-West) will be degraded to less and smaller lanes, as well as lower traffic speed. This to make the the pedestrian crossing more tangible and feasible to cross, both as a child but also as a parent.

Main traffic network

Child friendly network



The main aspect and priority within the vision of Lombardijen is the child friendly network. The child friendly network is a pedestrian network specifically made for children in the sense of protecting them while going to places through a route important in their lives. The network doesn't exclude non-children, it does specifically adapt to the needs of children and parents.

Child friendly street
What makes a street child friendly? When looking back at the previous chapters, a child friendly street at least has to include:
Social:
a. Lighting
b. Eyes on the street
c. Accessibility
d. Clear visability of the street activity - a clear overview
e. The public space can be supported through sufficient density
Space:
a. Sufficient space for children to play
b. the public space in front of homes is the stepping stone for families' perception of space, safety and accessibility and therefore extra important
Traffic:
a. fast traffic speed
b. clear crossings
c. continuous pedestrian roads within the neighbourhood
There are extra aspects that provide for a child friendly street:
a. Playful: - informal play possible
- A variety in textures
- connects or facilitates play
- Height differences
b. Nature - Natural objects encourage informal play
c. Interesting and/or attractive: pleasant, places to stay, comfortable climate, different types of places

Housing typologies

Housing typologies are important in child-friendly cities.

In Lombardijen it is extremely important to provide draagvlak for the amount of public space available. Therefore, it is proposed to densify within the neighbourhood. Both from the stance of increased social encounters which could lead to increased social cohesion, potentially resulting in an enhanced amount of social control for children, as well as increased eyes on the street are important for sense of social safety. Regarding housing typologies that could be implemented within Lombardijen the importance of small scale, low-rise buildings are shown. Up to five floors, with the layers above three floors being located slightly set back, making these layers less present. Within Lombardijen, most building blocks can already be considered low rise.

The recognisability is important as well. Knowing where one is and knowing that one is on a defined route makes it easier for children in their wayfinding.

Commute and stay

Natural elements can be play motivators and are therefore included in the design as well, next to do an attempt to raise awareness for children regarding nature and its beauty. Benches are implemented to invite people to stay there.

Some streets are more paved and can be used to provide space for games and free movement as well as places to stay. As mentioned in the literature section, children mainly play with loose objects (such as skipping rope, football, diabolo, hula hoop and much more), the paving in the neighbourhood provides more space for this. However, as Lombardijen is already highly paved despite of the green patches, natural and higher quality green is proposed. Type of green that actualy can enhance life and health quality, think of vegetation that increases being comfortable outside in different seasons, depollutes and purifies air plus estethic biodiverse species to increase the quality of life and give reasons for informal play.

Neighbourhood streets

Neighbourhood street types

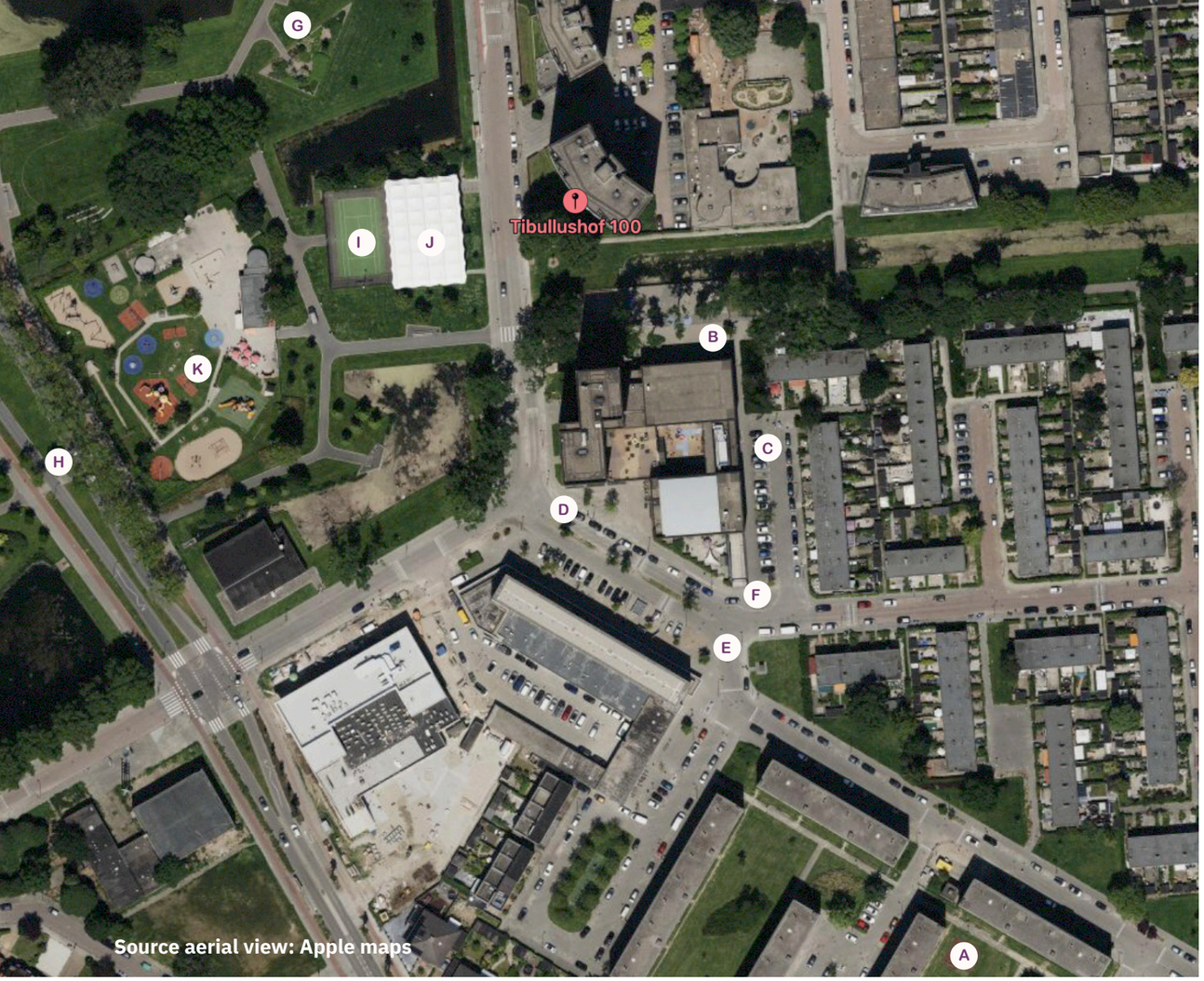
To ensure the safety of families within Lombardijen and regaining liveability within the neihbourhood, street types have been defined. There are four street types:

• Courtyard: a calm, car free place just outside of the house where children can freely move around without having to worry their parents. The first steps outside of the house are the most significant for the perception of the neighbourhood, therefore the aim is to make these places most remarkable

• Neighbourhood street: The neighbourhood street is a shared space where cars are allowed to drive. It mixes in functions, from leaving the neighbourhood by bike or car to informal gathering places, depending on the daily routine of the families and other residents.

• Bike Street Spinozapark: The ring street around the Spinozapark transforms into a one way bike street. Cars remain important here as it's a significant traffic vain of the traffic within the neighbourhood. Multiples elementary schools are adjacent to this street, therefore it is essential to provide a street that is easy to read for children and while a challenge, remain low risk. Two of these elementary schools provide special education for children with a disability, therefore it is important that these places can still be reached through traffic.

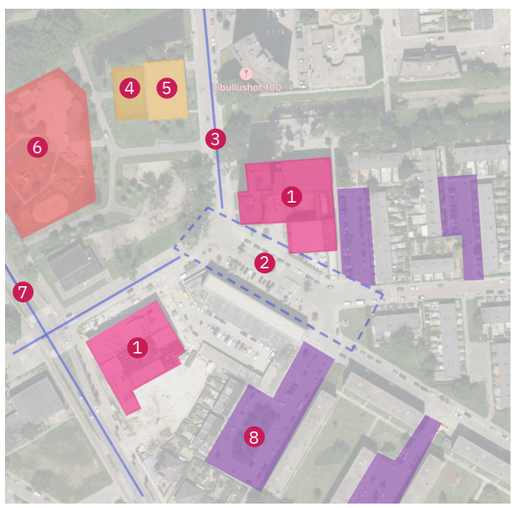
• Spinozaweg: This main corridor within Lombardijen will be down graded in traffic speed and road lanes



Source aerial view: Apple maps

Zoom-in

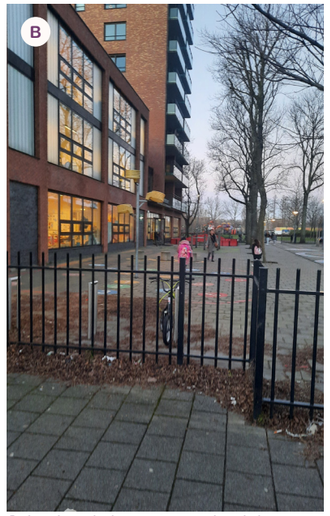
From the different proposed implications, the above location is chosen as a place to zoom-in. It has two elementary schools (Het Open Venster and De Catamaran) (1), has a challenging crossing near De Catamaran (2) and a traffic road where currently drivers not always stop for zebra crossings (3).
It shows part of the Spinozapark, with both informal places to play like the park in itself with it's natural object (trees to climb and branches as swords) and formal places to play (like the play fields (4), where the sheltered 'Krajicek Playground Pascal' is often mentioned by children as 'het blauwe veldje' (5)) or the institutionalised Pascal playground with a variety of play objects dedicated to play (6). The Pascalweg (7) is visible with pedestrian crossings that do not prioritize the pedestrian, but signs that act as awareness for drivers that people could cross.
The first thing most families in this area see when they step out of their homes in this area (8) is the car, accompanied by their potential dangers when letting their child walk outside independently.



Impression

Below an impression is shown of the location within Lombardijen. The photos are marked with a letter that can be found on the map of the previous page as indicator where it is located.

Playground for younger children on a grass field in front of homes



Schoolyard elementary school de Catamaran

Parking hof in front of homes

Grey, paved and excessive amount of public space

Walking parent with children in a jungle of cars. Long distances to cross the road near school as pedestrian

Sidewalks besides the school are also used as parking during rush hour

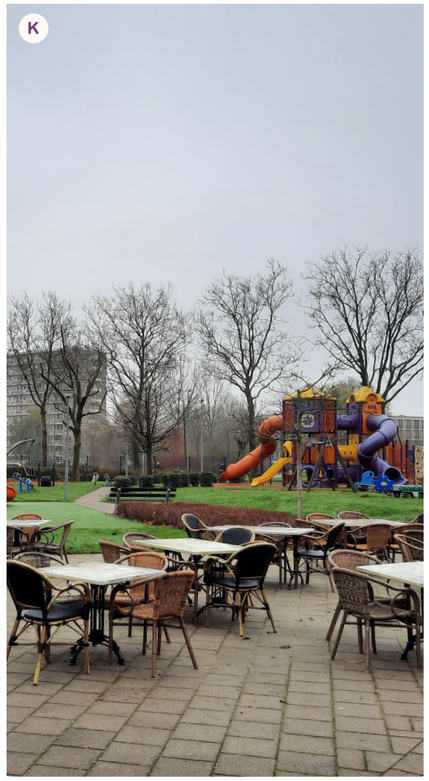
Impression

Spinozapark with on the back the previous building of elementary school Het Open Venster, that moved away from the Spinozaweg to the Catullusweg.

Pedestrian crossings of the Pascalweg that goes through the Spinozapark. The traffic signs indicate the possibility for pedestrians to cross here.

Sports field within Spinozapark

A sheltered sports field, also used by elementary schools for sports classes. Often referred to by children as ‘het blauwe veldje’.



Pascal playground located within the Spinozapark is a paid playground with volunteers and facilities for both parents and children.

Market Square

Bike street

Courtyard

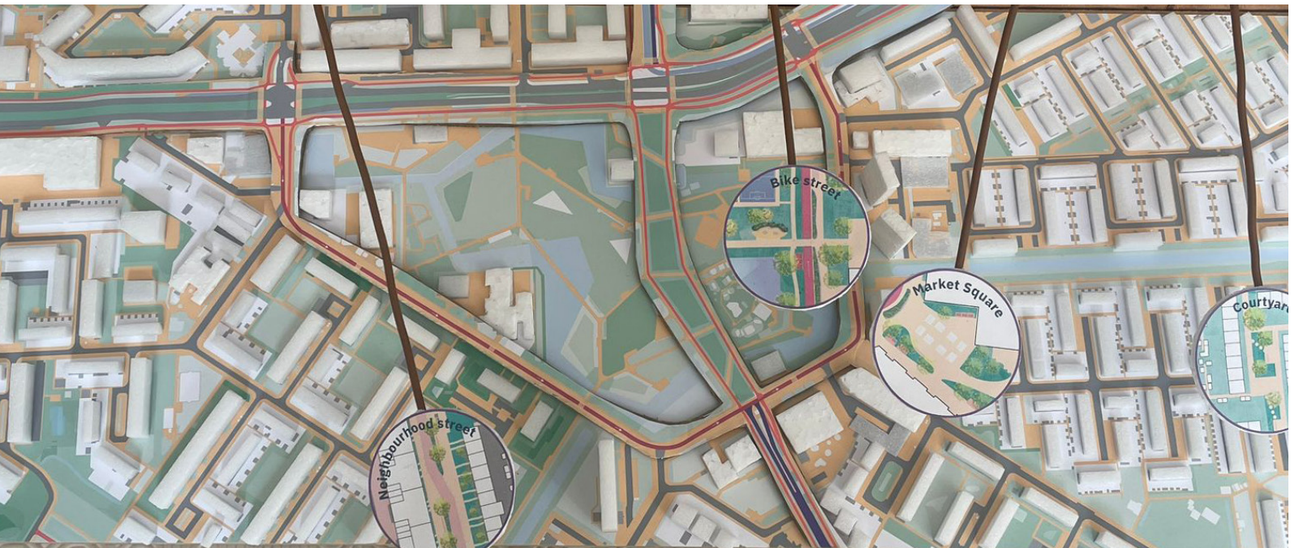
Neighbourhood street

Zoom-in

Overview traffic interventions

The removal of the Pascalweg, change of the Spinozaweg and surrounding of the Spinoza-park as well as further expored zoom-in areas are shown on these pages. The purple marked streets emphasize the public transport only areas, where cars are not allowed to drive.

Overview of main traffic interventions



Current situation of the traffic network is the basis of the model

A second layer shows the propo-sed interventions of the neighbourhood scale

Courtyard

Neighbourhood streets

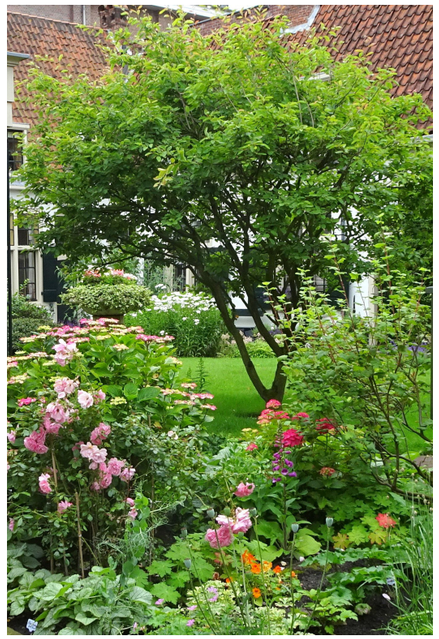
The first steps outside of the house are the most significant for the perception of parents and children towards the liveability and safety of the public space.
The courtyard in front of families' homes transform into a playful, pleasant, safe haven to enjoy time outside. Here parents are able to choose to watch their children play outside the house. By doing so, parents can build the confidence to let their child alone outside freely and could even start to rely on neighbours watching their child to ensure its safety. This is therefore also the first step towards a potential extension of independent mobility for children.
The courtyards function as a woonerf, despite that there are no cars allowed, making these dead end streets car free.
Within the courtyard there are places to stay, places to play, both open spaces for informal play as well as some objects to walk playfully through the green areas.
The variety in vegetation helps to increase the attractiveness of the space as the gardens of the adjacent housing is monotonous. It makes it colorful and biodiversity can be increased which can spark interest of children to explore insects and plant types. With the variety of height differences within the green patches, water retention is possible.

Courtyard

Neighbourhood streets

References

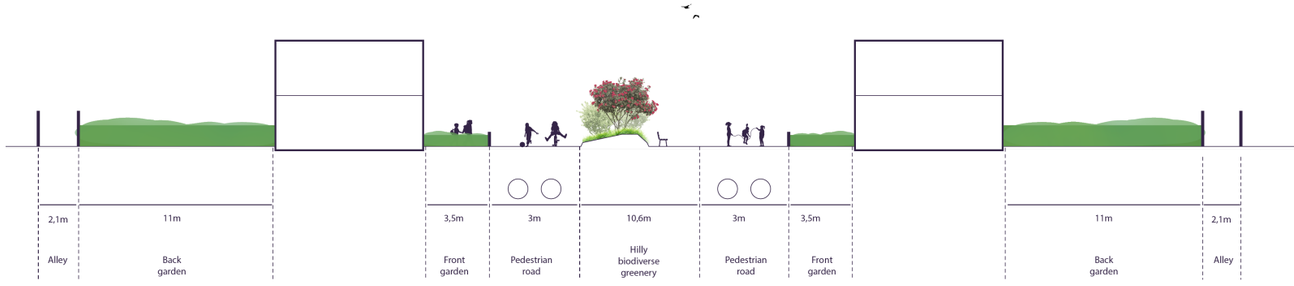
Extra pathways for children vary from flat to challenging. Source: Hosper



Variety in vegetation. Hofje van Bakenes, Haarlem. Source: Pinterest

Nature play.
Source: natuurgroenenbeleving.nl

Height differences and space for informal play. Source: natuurgroenenbeleving.nl



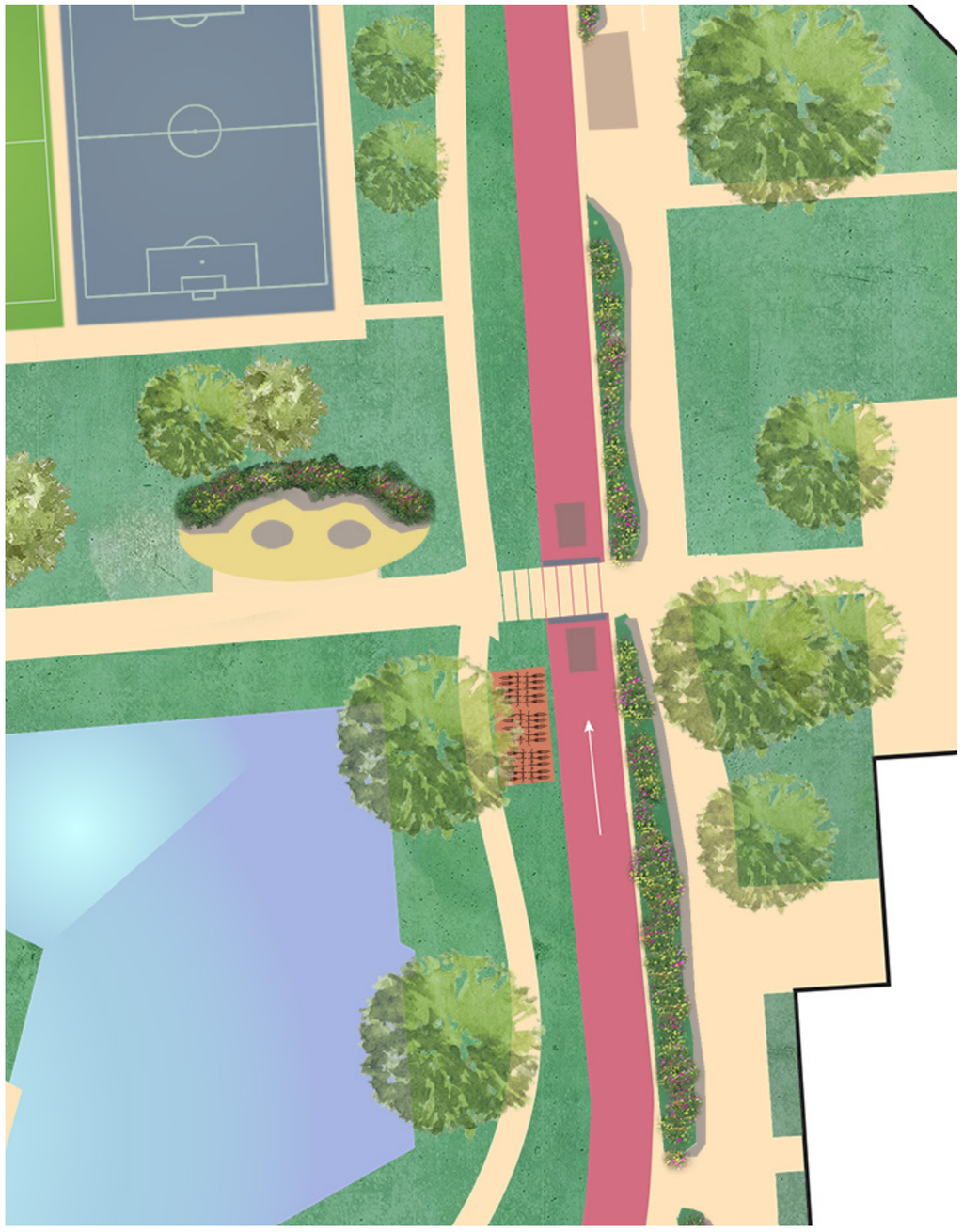
Bike street Spinozapark

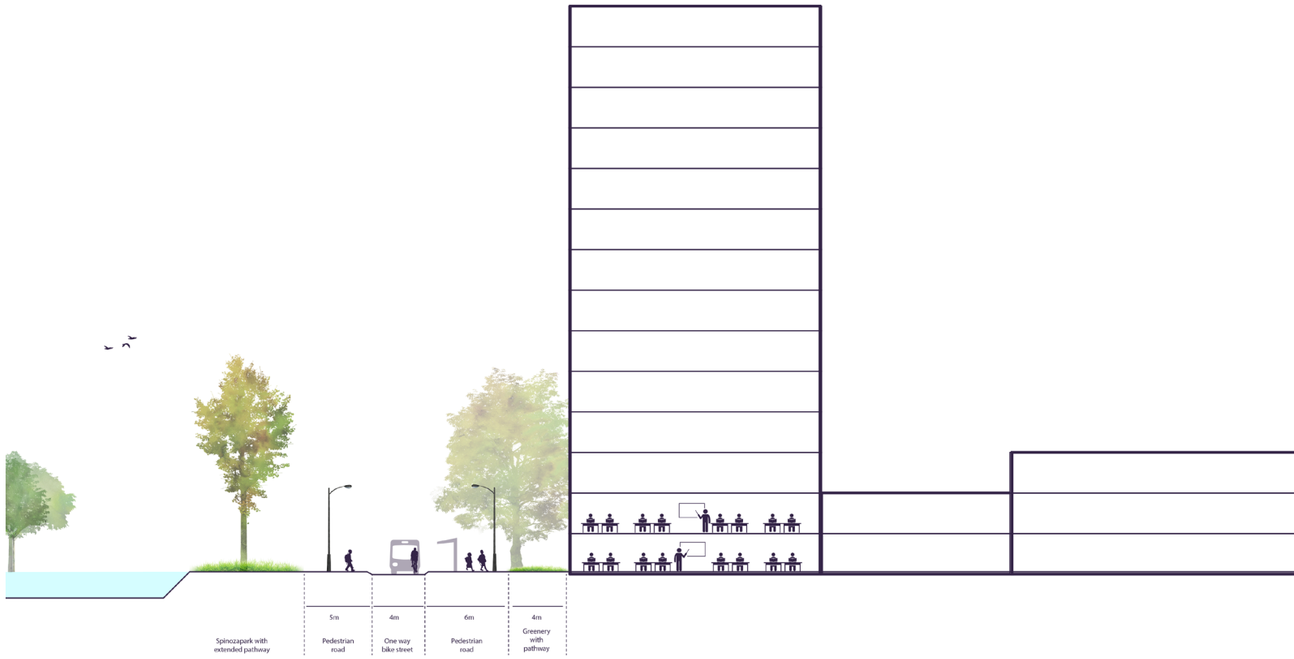
Neighbourhood streets

The bike street that is adjacent to the Spinozapark is a one way street where the bike is prioritized, public transport is allowed as well as cars and pedestrians have wide space to walk and attractive places to stay along it.
To ensure cars driving proper speed, traffic calming is stimulated through road material that slows down cars.
The pedestrian network continues over the traffic road, including zebracrossing signs to prioritise slow traffic.
Children from Lombardijen get classes in elementary school to cycle and learn about traffic rules. For those the bike street is proposed: to have a road where they can cycle and are prioritized in traffic. There are safe edges adjacent to the bike street, implying ground floor or beveled edges.
By adding a variety of attractive vegetation, biodiversity can be increased which can spark interest of children to explore insects and plant types.

Bike street Spinozapark

Neighbourhood streets





References

Social spaces near the bike street. St. Mary Churchyard Park. Source image: Pinterest

Benches surrounded by variety of vegetation

Bike lane. Car is guest. Source image: Pinterest

Comfortable place to stay. Source image: Straatbeeld

Water permeable paving that slows down traffic before and after pedestrian crossings. Source: Pinterest

Neighbourhood street

Neighbourhood streets

The neighbourhood street transforms into a street with spaces for activities while keeping it accessible for the car to bring the streets closer to the parents and children's needs. In these type of streets there are a variety of types of places inbetween. Places where children can play, hilly places where older children can sit and and have a place to stay within the street, as well as spots for neighbours to gather together for a barbeque or picnic, potentially enhancing the social cohesion and more connection between neighbours.

There is a variety of vegetation within the streets, trees, plants as well as space for facade gardens on the front side of the homes.

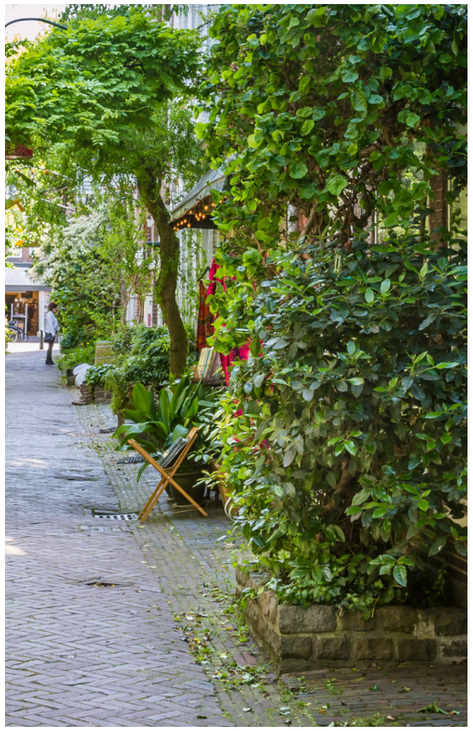
There is also a play box where children can borrow objects to play, as research shows that the individual objects and play elements are very important due to the need for informal play, which is why space is important to facilitate this within regular neighbourhood streets.
While most streets within this type are essential for the neighbourhood's traffic access and are, together with the bike street, the neighbourhood's traffic veins to leave the neighbourhood, there are also some streets within this type that are less important for car drivers.
An example for this is the Racinestraat. Here the street itself is not an important corridor to leave the neighbourhood and has the potential to change to a living street, which can be seen below.

References

Living street Antwerp, Belgium.
Source image: citiesforplay.com

Places to stay.
Source image: Hosper

Play objects available at the speelkistje.
Source image: wijkie.nl



Facade gardens, Haarlem. Source image: woonbewust.nl

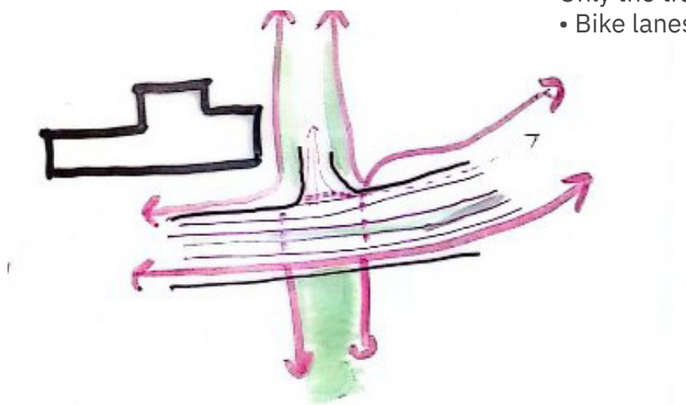
Narrowed car roads that make crossing easy and slows down the speed of the car.

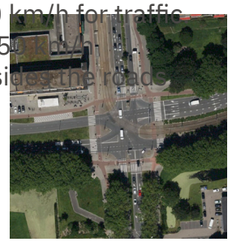
Traffic corridor Spinozaweg

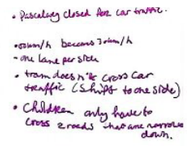
Neighbourhood streets

Spinozaweg is an excessively wide road that creates a barrier between the north and south side of Lombardijen. To minimize the perceived unsafety and barrier, the following interventions are proposed mostly from the perspective of the parent, as they currently perceive crossing this road dangerous and uncomfortable.

Pascalweg X Spinozaweg







If this changes, it could also change the radius of children's independent mobility:

• Tramline with green shifts to the north side of the street profile to not intersect with cars.
• the crossing will become narrowed down. the new intervention is safer and easier for pedestrians to cross
• Maximum speed is 30 km/h for traffic. Only the tram remains 50 km/h
• Bike lanes remain besides the road.

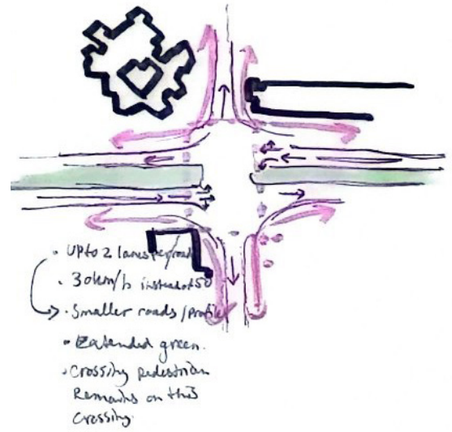
Spinozaweg

Important for crossings is recognisability. the threshold barrier should be low while clear and having a sign that one is about to cross the road.
Making the crossing easier to cross can be through narrowing the road, making this crossing smaller for the pedestrian.
For bigger traffic interventions, it is not always possible to narrow current roads. By decreasing traffic speed from 50 km/h to 30 km/h and cutting down on the amount of lanes where pedestrian crossings are located, the threshold can be decreased. Making the sub-streets turn to one way streets or not available from the main traffic road makes it possbile to decrease the amount of lanes necessary at the traffic light crossings. By doing this the residents, parents and children specifically, only have to cross 2 roads instead of the previous multiple roads.
Next to this the Pascalweg (road on the south side of the image) that cuts the Spinozapark in two, will be removed and therefore not available for cars.
By shifting the tram, that is making a turn within this crossing, to one side of the street, there is no intersection between the car and tram anymore, which is beneficial for the traffic flow. the road on the north side is available for the tram, however not anymore for the cars.

Crossings

Bierens de Haanweg X Spinozaweg

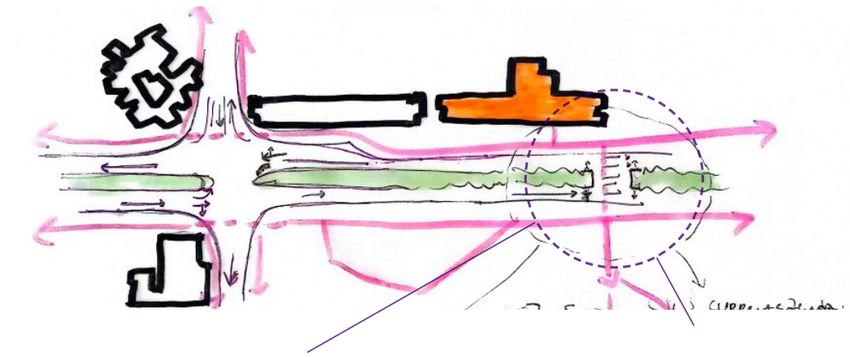
The new situation for the Bierens de Haanweg that crosses main traffic corridor Spinozaweg proposes up to two lanes per road at the crossings, 30 km/h instead of the current 50 km/h. Smaller roads which is possible due to the decrease in traffic speed. The current little green berm between the roads will be extended and have vegetation, making it more enclosed and comfortable to wait inbetween the roads.



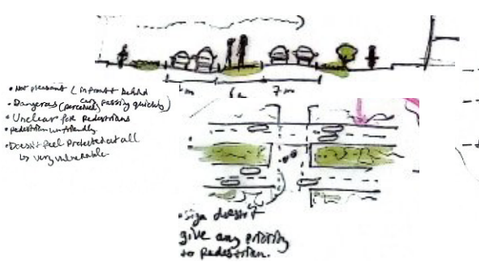
Crossings

Bierens de Haanweg X Spinozaweg

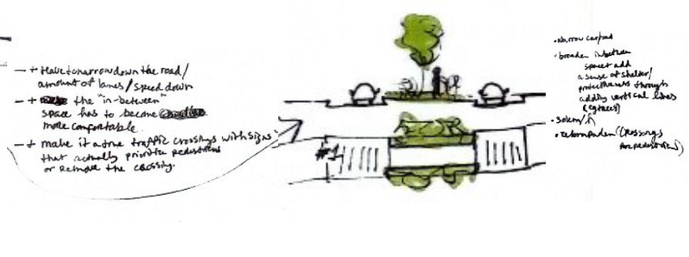
Shifting pedestrian crossing to less smaller crossings



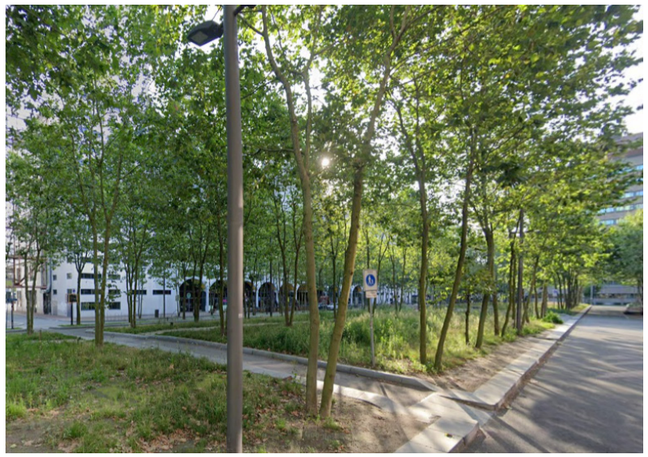
Current situation:



Potential solution:



References



Wider space inbetween car road crossings. Trees to make the wait between crossings more comfortable through the sense of shelter as well as lighting for visibility. Torenallee, Eindhoven. Design by West 8. Source image: Google Maps

Pedestrian crossing. Place de la Porte-de-Passy, Paris. Source image: wikimedia

Tram remains in greenery while the car lanes are narrowed down to decrease the traffic speed. Karlsruhe, Germany.

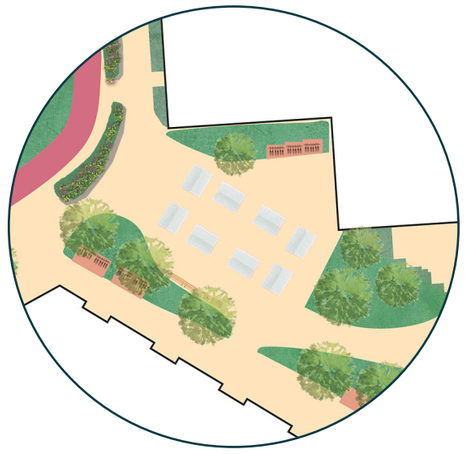
Square

Market Square

As the income in Lombardijen is generally low, a small market where one can both buy healthy products for those low on budget can be an outcome. This market is a place where one can either sell products, or exchange items with each other. It is next to the school, and knowing that there is support of mothers around the market with two elementary schoolss (close to) adjacent to it that also facilitate community of mothers, it can be valuable for them to have the opportunity to get some healthy essentials around the corner.

This could also break the barrier of the community being inside the school most of the time, as it could shift the mothers towards the public space, increasing both the chances of social encounters with others, which could increase the social cohesion as well as increase the perceived social safety with more people in Lombardijen on the streets.
Families and mothers themselves can also be the ones participating on the market for selling or exchanging products or, when sufficient support, with showing their talent (in music, art, etc.).

The market can take place regularly, twice to three times a week. It is a way of getting people out of buildings to have more support within the public space to increase both perceived social safety as well as increase social cohesion, increase health (through affordable food as well as being outside) and providing the opportunity to either sell items to increase the financial situation or exchange items that could also connect new people.



Top view

Phasing

Neighbourhood street

Below a phasing example is shown of the neighbourhood courtyards and the transition from the current situation towards the proposed situation of 2075.

Current

Source street view image: Google maps

- Parking hofje
- Pedestrian road goes around the parking hofje for safety reasons

2035

- Added greenery
- some parking spaces transform into informal gathering spaces.
- Decreased parking spaces shift towards the street just outside of the hofjes

2050

- Added greenery
- Most space within the hofjes have become for the people: a place to gather. Including sub-places to gather with less people or more enclosed.
- A fourth of the cars still remain in the hofje.
- Low frequency cars

2075

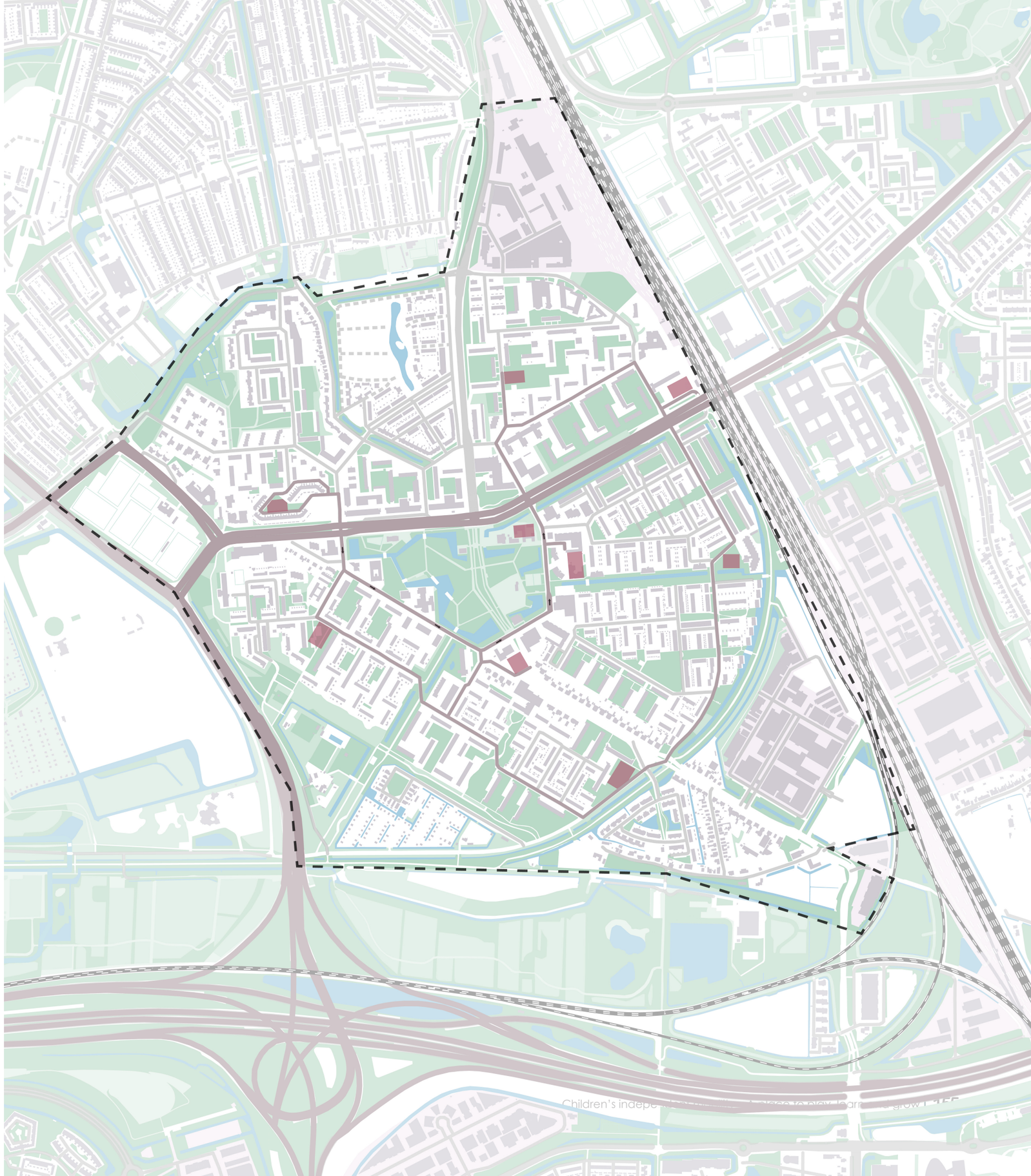
- New generation
- Car free
- An actual informal playground with paving, greenery, height differences within greenery, added vegetation.
- Vegetation varies per hofje for recognisability of place

Mobility in time

To ensure a safe and liveable neighbourhood, a shift in prioritised transport modes is needed: from car oriented to slow traffic oriented. Therefore in the envisioned future, a change from personal vehicles to shared vehicles is proposed and expected. Shared mobility creates more space spatially. Shared vehicles need only 1/10-1/15 of cars currently used.

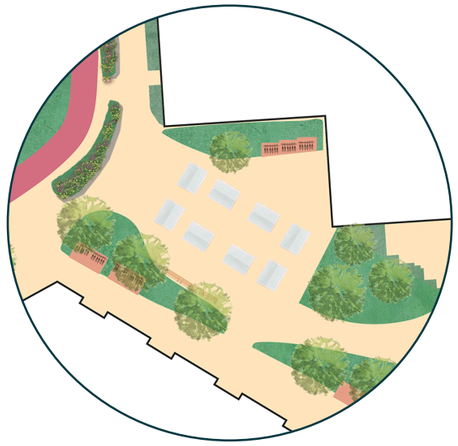
For Lombardijen this is a change from 8500 personal use cars to not more than 850 cars. For Lombardijen, however, a marge of 10% personal cars are added since it is common that some households have their own company that involves reaching different places in the country.

Spatially this can be divided in multiple places, e.g. parking clusters of 9 to 10 mobility hubs to make sure the walking radius to/from car is within a radius of 400m (6 min walk)



Timeline

Bike street



Road near school transforms to market square

Traffic network

2024 | 2035 | 2050 | 2075

Re-enforcing places to stay and biodiverse planting

Child friendly network

Shifting parking places

Mobility hubs fully executed

Conclusion chapter

Family friendly Lombardijen

How can a child friendly network be implemented in the sub-urban neighbourhood Lombardijen, Rotterdam?

Through addressing themes essential to a family friendly neighbourhood, a direction has been paved for the design. This is of value during the spatial analysis phase. For Lombardijen there were general design challenges brought to light and an approach to deal with this before specifically focusing on family friendliness and the child friendly network.
In Lombardijen specifically it is highly important to adapt to the needs of perceived safety, both regarding traffic as it's currently dominant and perceived dangerous with the many cars within the public space as well as social safety, as through time many incidents happen over and over again, often -but not limited to- happening out of sight and at night.

This asks for radical changes. The vision of 2075 for a family friendly neighbourhood creates a timeline for the future, meaning that changes do not have to be implemented drastically. The child friendly network is safe, joyful, green, and a connects the neighbourhood and the most fun and essential facilities. For Lombardijen four types of neighbourhood streets are proposed to distinguish between types of places. By zooming in, specific interventions can be proposed that enhance liveability, decrease anonymity, create a safe neighbourhood and give the space back to families and other residents.

Multifunctional (play) elements.
Adelaide, Australia. Source image: Landezine

#5 Conclusion

How can a child friendly network facilitate to the needs of a family friendly city, where 7-12 year old children can independently go from A to B safely?

A child friendly network can facilitate to the needs of a family friendly city where 7-12 year old children can independently go from A to B safely. Children play anywhere in the public space. Their life consist mainly of play and school. However, many public space designs overlook children as users. Parents experience this in Lombardijen, as most parents address safety issues in regards of both traffic and social safety. This currently shortens the distance that children are allowed to walk independently. By addressing themes essential to a family friendly neighbourhood, a direction has been paved for the design.

Children 7 to 12 years old are interested in play that does not require a playground and involves space as well as loose objects to facilitate play, known as informal play, with the move radius being between 300 to 400 meter. Nature adds value to this.
Creating safe and attractive spaces for girl type play within the public space is important and often neglected, as often designing for certain age ranges of children is dedicated to boy type of play.

Needs of families as a whole are translated into seven main themes: Safety, inclusive public space (places for boy type play and girl type play as well as adult and child), playful city, mobile city,(perceived) proximity of essential facilities, social cohesion and learning experiences.

Play is important as it fosters cognitive, physical and social developments. During play, safety is in general one of the key beliefs of parents that should be provided for children. On long term, there are multiple benefits for children of going to school by bike or by foot over going by car regarding gaining cognitive abilities, developing awareness and recognizing situations and potential dangers.
The vicious circle of bringing children by car, which enhances the danger for other children going by bike or foot in traffic, should be discouraged to make it safer.

For the public space to become part of a child friendly network, space to move freely and independently as children is essential. To increase independent mobility, it is important to recognise parents and caretakers as the ones that can allow and restrict movement of children. Therefore, it is important to create spaces and roads that decrease the sense of unsafety of both parents and children, which may imply that a shift of priority in mobility types has to be made. Parents restrict their child to freely move when parents perceive places as unsafe, may it be in relation to traffic, social or environmental safety. Adapting to both the needs of parents and of children in this aspect is essential.

A route for children is a safe but challenging, small-scale and fun path with varied (play) areas to make it fun and attractive and to encourage encounters. It is a walking route but also contains play elements, space to play, stay and encourage playful walking.

Places to learn from and in the public space is important. Low key interactions with traffic and people increases the awareness, helping children to assess situations.

In the slow traffic networks and its facilities, the movement and behaviour that is possible for the vulnerable group should become the norm.

For 7 year olds it's still difficult to understand time and speed of traffic approaching, as well as complex (traffic) situations. Therefore it is important that routes that intersect with vehicles, crossings, are not too complicated and car speed is not excessive. By the age of around six to seven, children start to gain awareness and judge situations as either

Conclusion

safe or dangerous. Traffic calming is important near schools, for both traffic safety as well as an having an attractive zone to walk and cycle to school.

A child friendly route for children is not only about walk and play. Along a children's route there are facilities for children and a suitable, small-scale residential typology to ensure eyes on the street and decrease anonymity for increased perceived safety, for a (socially) safe area. Next to a safe network, the children's route should provide challenges, as it helps children to develop awareness and cautiousness.

Spatial characteristics of a child friendly network are essentially related to safe and healthy, comfortable and convenient, inspirational and educational interventions. This to enhance the liveability of a place. Main focus is the safe, accessible and continuous pedestrian infrastructure, places to stay, play, provide a comfortable climate, that is interesting, beautiful, joyful and educational as well as green areas to promote physical and mental well-being, reliable transit options and facilities.

In Lombardijen specifically it is highly important to adapt to the needs of perceived safety, both regarding traffic as well as social safety. This asks for urgent changes. By creating a vision, a long term plan can be proposed. The child friendly network is safe, joyful, green, and a connects the neighbourhood and the most fun and essential facilities. Next to that, a foundation for safe neighbourhood streets are proposed to ensure a general increased safety, walkability and social cohesion level.

While a child friendly network is valuable to create liveable and walkable paths to different facilities and homes, it is important to recognise that having a stable foundation for the whole neighbourhood is more valuable and comprehensive in the end. If the neighbourhood is perceived safe in general, parents are more likely to let their child walk outside independently. Therefore, addressing the neighbourhood streets in general is even more beneficial than only a route. However, a child friendly route is a kickstart to realize a liveable neighbourhood on the long term.

On an adventure. Slachthuisplein, Den Haag.
Source image: Sylva.la

#6 Reflection

1. What is the relation between your graduation project topic, your master track (A, U, BT, LA, MBE), and your master programme (MSc AUBS)?

Cities for Families of Tomorrow focuses on the perceived urban space and safety of parents and children. The challenge is to meet the needs of parents (for both themselves and for their children) as well as the needs of children. Getting a better understanding of the different sociological and psychological perspectives, a translation can be made of what this implies for the public space and its potential design implications. The studio, the Design of the Urban Fabrics, focuses on making the intangible, tangible and practical, through spatial analyses and a thorough understanding of the issue at stake. Urbanism is often associated with social matters combined with design solutions, where this project certainly fits within.
Besides, Urbanism in itself is a multi-disciplinary field in itself, as it crosses the borders of sociology, traffic engineering, environmental engineering and landscape architecture. However, as an Urbanist it is essential to recognize that we only know a piece of the various fields -apart from our own- and that we therefore should understand the importance of integral work to learn more from each expertise, to eventually facilitate for those we design for. I personally believe that Urbanists, because of their pieces of knowledge in different fields, can become excellent mediators to bridge the gap between different fields by looking via the different lenses and jargon per field. Therefore it is essential to be open to different fields and people, including residents themselves. The thesis aims to bridge the gap between parents, children, literature, urban space and practice by combining multiple fields as well.

2. How did your research influence your design/recommendations and how did the design/recommendations influence your research?

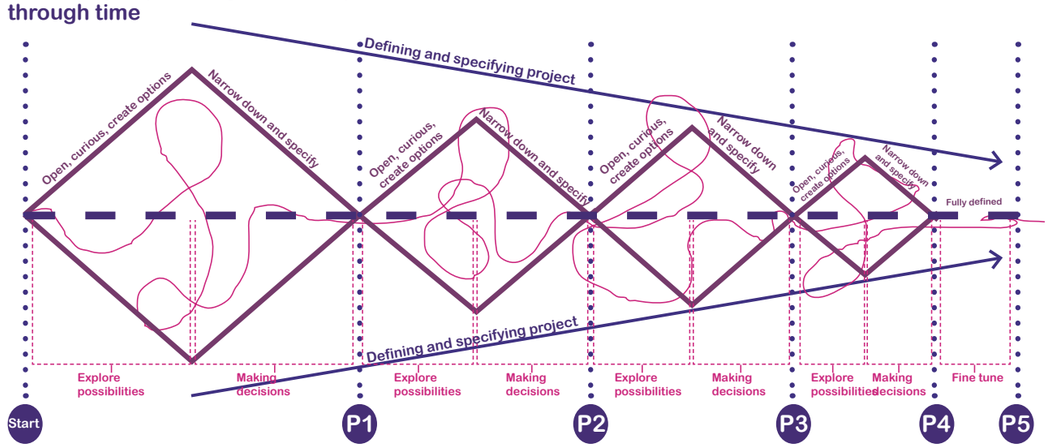
The connection between research and design is an ongoing loop. The research influenced the design in various ways. The literature provided a basis and a direction to further explore certain aspects, both in design as well as in further research. One example is the need for informal play that is seen in literature, as well as the seemingly lack of public space for girl type play and the fact that children mostly play outside of a designed playground. This influenced the design by shifting away from the commonly known playgrounds and focus more on creating inclusive public spaces.

The design phase also influenced the research. For instance, later within the project during field work which was supposed to be for the indicators for the design, I found the value of social control in relation to the perceived safety parents can experience for their children, as one of the mothers shared how she could rely on their neighbourhood police officer because she knows that her child is being watched by him and knows that her child is both safe and is not around people or children with bad intentions. That was a moment to go back to literature and learn more about it. In itself, social control could have a negative meaning, however when reading how it is beneficial for the perceived safety of parents it can actually provide more independent freedom for children if the need of parents is taking care of: knowing that their child is supervised even without their presence. Therefore, getting a better understanding of the perception of the actual residents and specifically the parents and children through various conversations and workshops has been very valuable. It was the intention for these conversations and workshop to learn about Lombardijen and how children and parents perceive it so a suitable design could be proposed, but in practice it was also helpful to look back on certain topics that were unexplored at the time.

3. How do you assess the value of your way of working (your approach, your used methods, used methodology)?

This research uses a multi-method approach to gain data. Objective data is gained through literature, spatial analysis and research by design. Subjective data is gained through informal interviews and a workshop with mothers as well as gaining insights through booklets filled in by children about the neighbourhood and their experiences within Lombardijen.
While it can be challenging to process qualitative data, it was highly valuable to obtain it since there were overlapping aspects between the objective and subjective data. For instance, regarding crossing certain streets and the perceived danger of the car. The extra value was gaining an insight in the life of families in Lombardijen, as it is helpful to understand and learn from the variety of cultures and how they maintain a strong community, as well as how they perceive their neighbourhood and reflect that by how they raise their children.
The multi-method approach used within the project was highly valuable. From the stance of learning social aspects and how families perceive their public space. The challenge was to combine these methods to achieve a comprehensive outcome. While this was challenging and part of the data is qualitative and not objective, it can be assessed that some outcomes within the research are not transferable, while other subjective data is confirmed by objective data.
Previously I expected the process of the project to be mostly about divergence and convergence of data and making choices within the project (see image next page top). Later on, with the multiple methods used, I would eventually propose a less structured version of the previously envisioned process. Learning from people as well as organising events to gain data (workshops, brainstorm, informal interviews) requires multiple ongoing process within the project's process. Therefore this project itself didn't have one process, it has multiple processes at the same time that influence each other when new data comes to the surface.

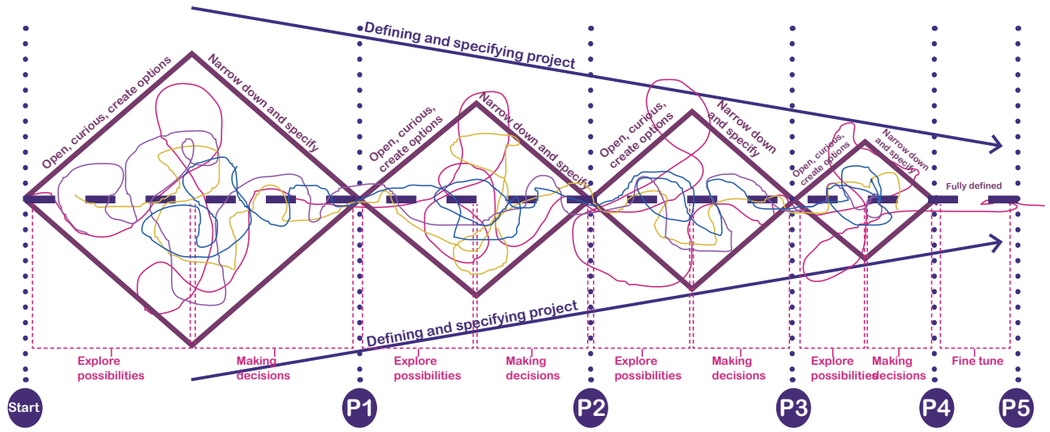
Previously expected graduation process through time



Previously expected graduation process through time (image by author). Diagram inspired by van Dooren (2013) combined with author's perception of graduation process.

LEGEND
- Process of thesis scope
- Core of project/guiding theme
- The mind's process

Graduation process through time



LEGEND
- Process of thesis scope
- Core of project/guiding theme
- Sub-processes intertwined with the project (methods, sketches, literature studies)

Top right: Previously expected graduation process through time (image by author). Diagram inspired by van Dooren (2013) combined with author's previous perception of graduation process.

Bottom right: Graduation process through time.
(image by author) Diagram inspired by van Dooren (2013) combined with author's perception of graduation process. The multiple lines show the different processes that are linked to each other, from design sketches to organisatory processes for the workshops.

4. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

Ethical challenges and project limitations
An ethical challenge/dilemma was relating to the financial challenging low-income residents. It is not uncommon that proposing new interventions in neighbourhoods relate to an increase in costs, which could lead to pushing out residents that would not be able to afford living in the same neighbourhood.
Cultural differences are intertwined with the way children are raised. Therefore it has been essential to talk with different mothers to learn about their values and norms.
Also the workshop with parents had its limitations. The knowledge gap for the implementation of Lombardijen was learning from fathers, those who are actively using the car within the neighbourhood and their perception on independent mobility of children.
The most valuable assessment would be to ask parents (and regarding cultural aspects this would mostly consider mothers) if the proposed interventions would provide confidence to let their child walk and play within the neighbourhood on their own, as well as cross certain streets. This would also be interesting to ask children, which I hope to do during an upcoming workshop with around 55 children from group 8 of the elementary school soon after P4, as well as walk with them through the neighbourhood.
Making changes drastically on the short term within a social context might not be viable for any of the (current) residents. Therefore I incorporated the feedback by making a vision on and phasing interventions towards the vision date.

Academic
It is a clear challenge for Urbanists to bridge the gap between literature and practice, especially regarding less tangible fields like sociology and psychology. There is currently a lack in the understanding of family friendly cities, and going beyond just child friendly cities that might neglect the fact that parents have a say in the freedom of movement of children. Therefore this project is relevant both professionally in the field (how to translate information to practice) and scientifically. Through aiming for a better understanding, comprehensive and thorough findings can be made to eventually propose an urban design that meets the needs of parent and child. The independent mobility of children is of importance for children, children that are growing up, parents and society as a whole. Think of wellbeing, positive daily habits that can lead to less healthcare costs on longer term.
A change in environment can consequent in a change in life, also in time, and can ripple outwards in a higher level of impact. Therefore this project is of importance within a larger social framework as well.

Scientific relevance
This thesis project focuses on the different perceptions of the urban realm, both from the perspective of the parents and that of children. The scientific relevance and the knowledge gap is what the parent-child perception means and implies for the design of the public space. It is about the paradigm of the values and perspective of the parent, aiming for efficiency for themselves and safety for their child, and the values and perspective of the child, which leans towards play, adventure, learning.

Societal relevance
Families are seen as the glue within societies. Aiming for a family friendly neighbourhood and city finds its societal relevance beyond adapting to families, as it also ensuring safe and accessible public spaces for independent child mobility is not only about the well-being of children but overall building healthier, more inclusive, and sustainable communities, neighbourhoods and cities. It addresses quality of life, perceived liveability and prioritizes vulnerable target groups within the public space.

5. How do you assess the value of the transferability of your project results?

The various methods used and combined to get towards the seven main themes are a combination of objective and subjective data. The most challenging with a multi-method approach is streamlining the outcome. The seven themes are the outcomes of the various methods combined as a whole, whereas the seven themes can be used and directly applied in different urban environments, making it transferable in different locations. However, it might not adapt to villages and the countryside, as it is more difficult to have support for the variety of facilities often needed in families' daily life. It is also important to recognise that the transferability is limited to smaller scale interventions like the neighbourhood as this design adapts to the walk radius of children, and might face challenges when applied for bigger networks or in highly dense places. It can therefore also be implemented in pre-war neighbourhoods, although proposed interventions might already be implemented in some pre-war neighbourhoods, like the proximity of facilities through a mix of functions. A challenge of implementing the proposed interventions in neighbourhoods where industries are situated.

6. How did the field work affect the thesis and alter your perception?

The field work shaped the thesis in various ways. It helped shaping the location focus of the project, the importance of certain locations over others as a consequence of the response of the informal interviews.

For, me, as a consequence of the conversations, the connection specifically with elementary school de Catamaran, I recognize that this perception is subjective.
Therefore, as a follow up, it is more comprehensive to do the workshop at various elementary schools within Lombardijen and with multiple parents. Since we had contacts at one elementary school and a limited amount of time, we were able to learn from that specific elementary school. However, one school is not representative for all of Lombardijen although it did give an indication of challenging areas as well as social issues going on in the neighbourhood.

Next to the mentioned insights, it was also inspiring to learn about existing communities that frequently gather together and become a strong independent group on its own. There were various stories that stuck. From the mother that aspires to become a driving instructor and currently teaches residents of all ages how to ride a bike, the mother that just divorced and now is left with a young child to take care of to the ambitious mother that strives to be the modern mother that secretly wants to become famous with her drawings as an artist. Also knowing from data that most residents in the location have a low income, it was connected when one of the mothers tried to sell clothing to others within the community during the visit.

7. What are aspects you intentionally left out?

In the past I've focused on a playful city within the urban environment. For this thesis I chose to shift away from a playful city as a main objective and look at the bigger picture. Although it is undeniable that play is the number one thing children do, this project focuses on making this possible in the first place and maintaining that focus. I intentionally left out the side paths one could take within the topic of play (concept of play personalities, in-depth analysis on the types of play), and kept it more general so that aspects less known to me could be explored like more traffic oriented interventions. Despite of this, I did focus on the girl type and boy type play as, from what I've learned in the past, this is scarcely mentioned in urbanism and hadn't learned about it as much as during this thesis. It could be said that this project is an actual response or follow up of the playful city proposed at the time.

8. What changed in perspective during the project when relating to the previous playful city?

During research and projects, new insights can arise. At the time, I chose the statement of what is still currently done by urbanists as a consequence of gained insights from literature: a car free place is child friendly. In this thesis it was my starting point of critique: car free cannot equal child friendly in the long run. When focusing on a specific target group, interventions could affect others on a bigger scale. For instance, residents and parents also go from A to B daily and while it could enhance the liveability within the neighbourhood to remove the main vehicle drastically, it could make daily travel more difficult and perhaps more expensive than using the car as main vehicle (looking at the current costs of public transport which doesn't adapt to the vision of the urbanists that propose car free interventions), especially when looking into a location that deals with financial challenges. Also taking into account the parents' share in the freedom of children was an aspect that became important. At the time, I read one sentence about the influence of parents. It was a bit odd to me that this wasn't explored within the urban realm yet as far as I found data on it at the time. Therefore I assumed it was difficult to enhance social interactions, rules, boundaries within families as an urbanist in a spatial context. However, the topic intrigued me and it is interesting knowing that, to an extent, this assumption does not have to be an incontrovertible truth.

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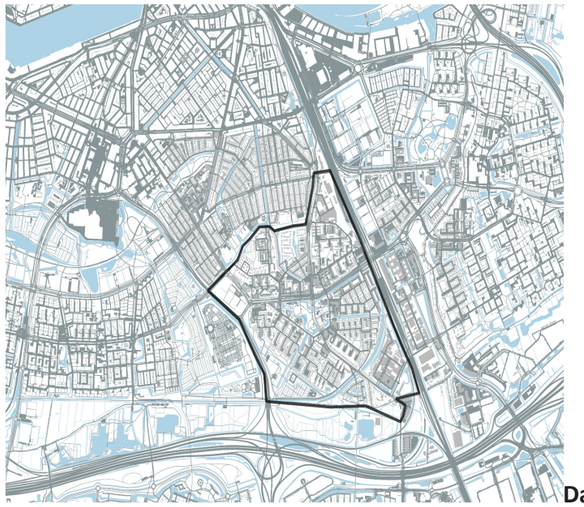
Appendix

Appendix #0
Field work - form



Date:…….

Time:……**(it is light/dark outside)**

Location:……

Weather conditions:……..

Guidelines – Waar op letten tijdens locatiebezoek

General

What is your impression of the location?.....

What makes it like this?.....

What is **opvallend** in this area?.....

Would you want to grow up here? Why (not)?.....

What makes the locations (un)attractive?.....

☐ Attractive location

☐ Joyful places to play in area

☐ Sufficient maintenance in area (ground, green, street furniture, buildings)

☐ There are green areas, trees or nature around

Social (safety)

☐ Eyes on the street

☐ Clean

☐ Free of blind spots? (bushes, corners etc.)

☐ (Sufficient) lighting

There is a **mix of functions/monotone functions** in this area

This area feels **too open/too closed**

There is a lot of **kijkgroen-empty space/designed space**

Would you let your 7-year old on their own in this location?.....

Traffic (safety & accessibility)

Safety

☐ People can cross safely (clear crossings)

☐ There are sufficient locations to cross the road safely

This street fits best for**: car/bike/foot/micro mobility**

Car oriented/slow traffic oriented

Cars drive **too fast/too slow** compared to the maximum speed

Cars should drive **more slow/sufficient speed** in this area

How can traffic safety be improved in this area?.....

What place in this area appears dangerous for children? Why?.....

Accessibility

<u>Cars</u>

☐ People can easily drive out of the neighbourhood in this area

☐ People can reach the motorway easily (in +- 3 turns)

The bottleneck is:……

<u>Slow traffic</u>

☐ People can easily go from A to B in this area

It is **easy/difficult** to reach the bus/tram/metro/train from here

What barriers are there in and around the area?.....

People

Amount of people here: …….

What are the hotspots for parents?.....

What are the hotspots for children?.....

Appendix #0
Interviews

- welke waarde biedt het Spinozapark voor u?
    - voelt u zich veilig in het park? waarom/
    niet?
    - wat mist er?
    - hoe zou het beter kunnen? Als u de mogelijkheid had om iets te veranderen in het park, welke veranderingen zou u willen zien?

- hoe vindt u het om rond te lopen door de wijk? (fijn/niet fijn/neutraal) wanneer loopt u rond de wijk? Loopt u weleens rond de wijk met uw kinderen? Als u de mogelijkheid had om iets te veranderen in uw wijk, welke veranderingen zou u willen zien?

- zou u uw kinderen alleen buiten laten spelen? (welke leeftijd+ waar+waarom/ niet)
- met andere kinderen buiten spelen? Of moet er altijd een ouder/volwassen de ogen op straat hebben?
- wanneer mag u kind wel of niet buiten spelen?
- wat zou nodig zijn om uw kind (vaker) alleen buiten te laten spelen?

- fietst u weleens door de wijk?
- als ja: hoe vindt u het om te fietsen door de wijk?
- als nee: zou u weleens door de wijk willen fietsen?

- verkeersveiligheid
    - zijn er plekken waar u het eng vindt om over te steken? (zo ja, waar is dit?)
    - wat maakt het eng om over te steken?
    - wat zou nodig zijn hier om veilig over te kunnen steken?

- Welke verkeersregels zijn voor u heel belangrijk voor uw kinderen om te weten?

- Sociale veiligheid
    - welke plekken voelen onveilig aan?
    - Waardoor komt dat?
    - Wat zou nodig zijn om deze plekken veiliger te maken?

- overlast

- Gaat u weleens met het openbaar vervoer? (waarom wel/niet?) (waarheen) (ook naar het werk?)

Bij ouders van kinderen 7-12 jaar:
- hoe ziet uw dag eruit? (huis, school, werk, school, huis?) (als van toepassing: waar werkt u?)

- hoe ziet uw dag van uw kinderen er uit?
    - tijdens en na schooldag (en erna)
    - in het weekend (+ wat doen jullie samen met de kinderen in het weekend?)
    - doen ze aan sport/muziek/iets anders buiten school?
- hoe reizen uw kinderen naar school? Lopend/met de auto/met de fiets?
- laat u uw kinderen onafhankelijk naar school gaan? Vertrouwt u uw kinderen om alleen en veilig naar school te laten gaan? Of alleen met een ouder?
- naar welke andere plekken gaan uw kinderen regelmatig? Hoe reizen uw kinderen naar deze plekken?

Appendix #0
Interviews

- waar spelen uw kinderen?
    - ook weleens bij de speeltuin? (zo ja, weet u welke/welke juist niet?) hoe komen uw kinderen naar de speeltuin?
    - ook de speeltuin in het Spinozapark?
- laat u uw kinderen op straat spelen? Met wie? Wanneer?

ID:

WAAROM DIT BOEKJE?

Hoi! Wij zijn Claudia en Sari en we willen graag wat meer weten over de wijk waar jij in woont. Wij zijn ook benieuwd naar wat jij leuk vindt om te doen buiten en met wie. Daarom vragen we je om dit boekje in te vullen. Ook willen we graag over enkele weken samen de wijk in. Jouw antwoorden in dit boekje zullen ons helpen om van tevoren een beslissing te maken over waar in de wijk we samen kunnen lopen.

Dit boekje is een soort dagboek met allemaal opdrachten. De opdrachten kun je maken op verschillende dagen, maar je mag het ook allemaal in een keer invullen. Elke opdracht duurt ongeveer 5 minuten.

Je mag de opdrachten maken zoals je wilt en alles wat je doet is goed. Jij weet het beste wat je leuk vindt aan Lombardijen en wat je daar allemaal doet. Je mag in het boekje tekenen en schrijven.

Als je vragen hebt, kun je die aan de juf of meester op school vragen.

Groetjes, Claudia en Sari

ID:

DIT IS CLAUDIA

Claudia is 26 jaar oud

Claudia is jarig op 22 oktober

Claudia is geboren in Dirksland (Nederland)

Claudia is een meisje/jongen/_____

Claudia woont in Hillesluis (Rotterdam)

Claudia woont hier al 1 jaar

Dit is Sari

Dit is Claudia

ID:

Opdracht 1

DIT BEN IK

Ik ben _____ jaar oud

Ik ben jarig op _____

Ik ben geboren in _____

Ik ben een meisje/jongen/_____

Ik woon in _____

Ik woon hier al _____

Ik woon thuis samen met mijn:

_____

_____

_____

_____

_____

ID:

Opdracht 2

DIT IS MIJN HUIS

Vertel over jouw huis en waar je woont in de buurt.

Dit is mijn huis

foto/tekening

ID:

Wat ik leuk vind aan mijn straat

Wat ik minder leuk vind aan mijn straat

ID:

Deze spellen speel ik graag buiten

Ik doe dit alleen/samen met:

_____

_____

_____

Opdracht 3

DIT VIND IK LEUK

ID:

Vertel wat voor activiteiten jij leuk vindt om te doen in de wijk.

Ik ga naar buiten om te ...

Ik doe dit alleen/samen met:

_____

_____

ID:

Opdracht 4

SPORTEN

Welke sporten doe je? _____

Waar doe je dit? _____

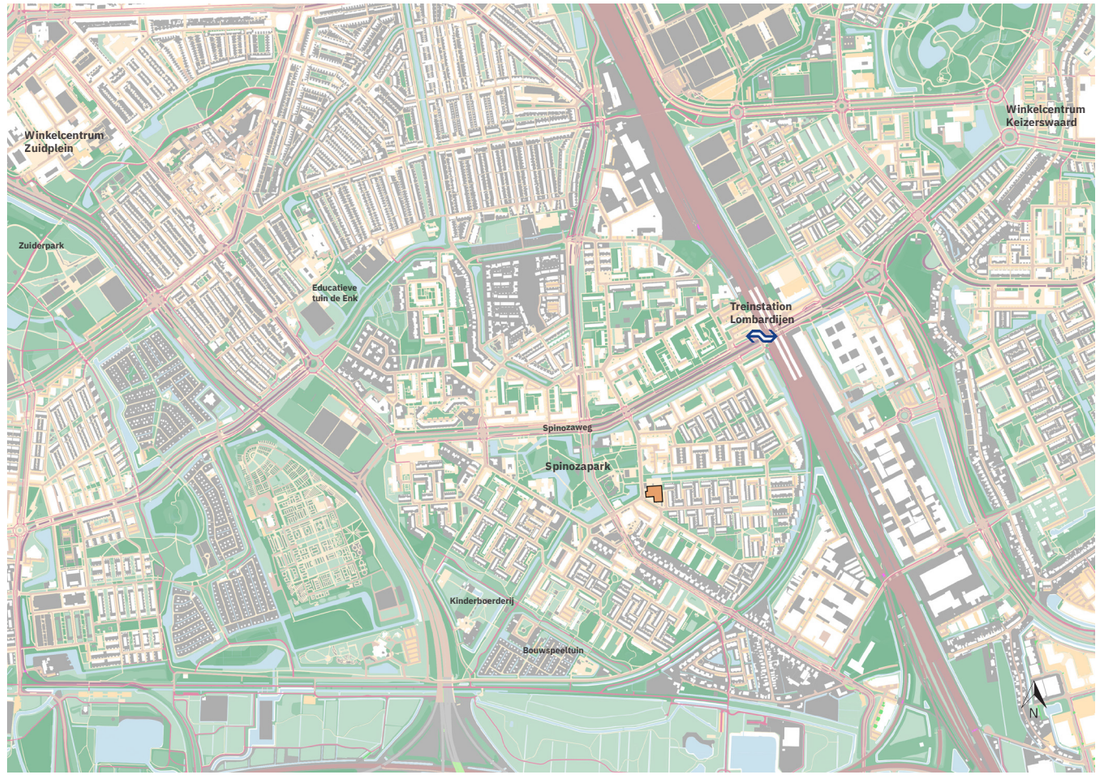
Hoe vaak in de week doe je dat? _____

Teken hier je lievelingssport

ID:

Welke sporten doe je samen met je ouders of zussen/broers?

Als je kon kiezen, welke sport zou je samen met je ouders of zussen/broers willen doen?



ID:

Vouw dit grote papier open om de kaart van Lombardijen te bekijken.

Gebruik dit grote plattegrond voor de volgende opdrachten.

ID:

Opdracht 5

MIJN THUIS-SCHOOL ROUTE

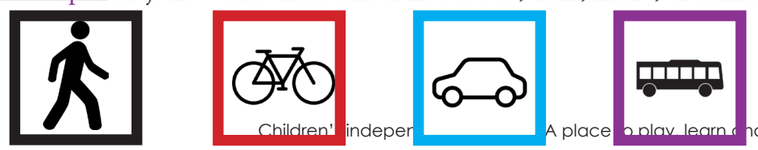
Bekijk het voorbeeld hiernaast. — — — — — — — — — — →

1) Teken een stip ● op de grote plattegrond om aan te geven waar jij woont.

2) Teken op de grote plattegrond de route die je volgt van huis naar de school.

Ga je lopend, met de fiets, met de auto, of met het openbaar vervoer naar school?

Teken je route van huis naar school met een:
zwarte potlood of pen als je het vaakst naar school loopt.
rode potlood of pen als je het vaakst naar school met de fiets komt.
blauwe potlood of pen als je het vaakst naar school met de auto komt.
paarse potlood of pen als je het vaakst naar school met de bus, tram, metro, of trein komt.



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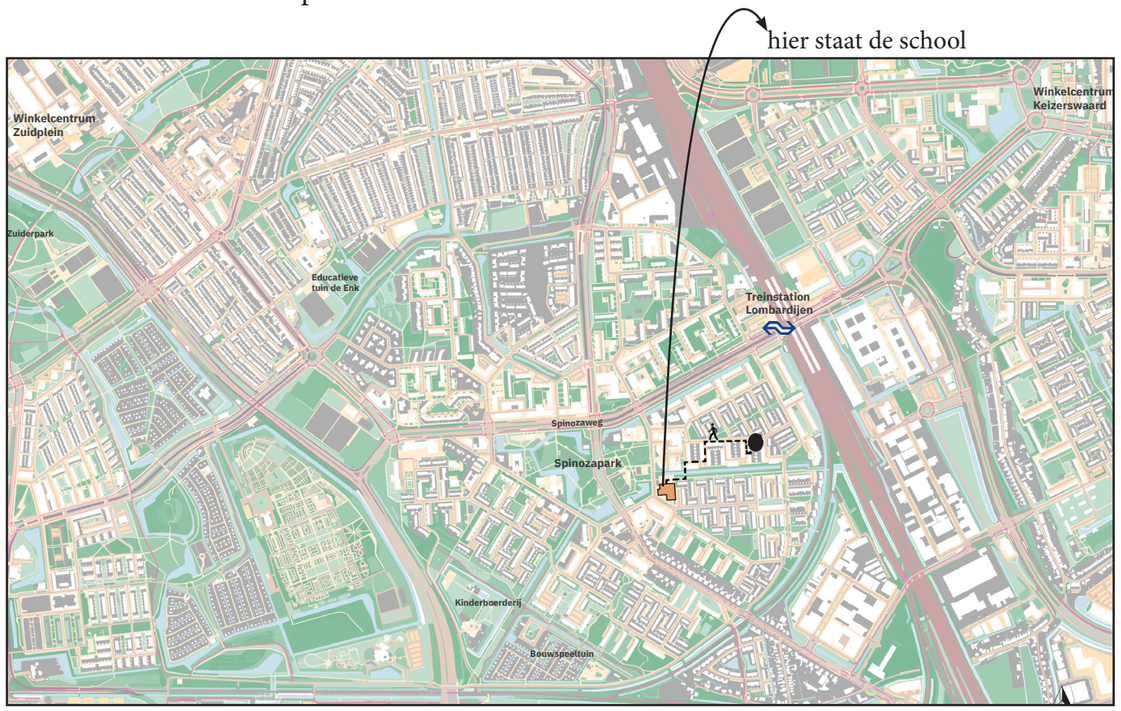
Een voorbeeld voor Opdracht 5:



Als je met de bus, metro, tram of trein komt, mag je ook de haltes tekenen waar je op- en uitstapt.

ID:

Hoe kun je daar het beste mee omgaan?

Oplossingen die je kan bedenken voor gevaarlijke verkeerssituaties:

Opdracht 6

MIJN THUIS-SCHOOL ROUTE

ID:

Situaties die ik op de route van huis naar school gevaarlijk vind

Waarom zijn deze situaties gevaarlijk?

Omdat...

Opdracht 7

MIJN WIJK

ID:

1) Teken een X op plekken op de grote plattegrond waar je vaak komt in je wijk.

2) Plak groene stickers op de grote plattegrond op plekken die je leuk vindt.

3) Plak rode stickers op de grote plattegrond op plekken die je niet leuk vindt.

Waarop ben jij trots in jouw wijk?

Opdracht 8

DIT WEET IK

Op de vorige bladzijde heb je aangegeven op welke plekken in de wijk jij vaker komt en of je deze plekken leuk vindt of niet. Hier mag je uitleggen waarom je deze plekken leuk vond of juist niet.

Wat weet je nog meer over deze plekken?

Leuke plek omdat:

Leuke plek omdat:

Leuke plek omdat:

ID:

Groene en rode stickers om aan te geven wat je leuk vindt en wat niet

ID:

Wat weet je nog meer over deze plekken?

Minder leuke plek omdat:

Minder leuke plek omdat:

Minder leuke plek omdat:

ID:

WAT IK WIL VERTELLEN

Wat is nog belangrijk om te weten over Lombardijen?

Hier kun je alles schrijven of tekenen wat je wilt. Het kan gaan over iets wat je hebt benoemd in het boekje en je verder wilt uitleggen, wat je van dit boekje vond of iets heel anders.

ID:

Bedankt voor het invullen van dit boekje!

Wij hopen dat je het leuk vond om dit boekje in te vullen.

Vergeet niet om na de vakantie je boekje naar school mee te nemen.

Op woensdag 29 mei gaan we samen de wijk in en gaan we jouw antwoorden in dit boekje bespreken.

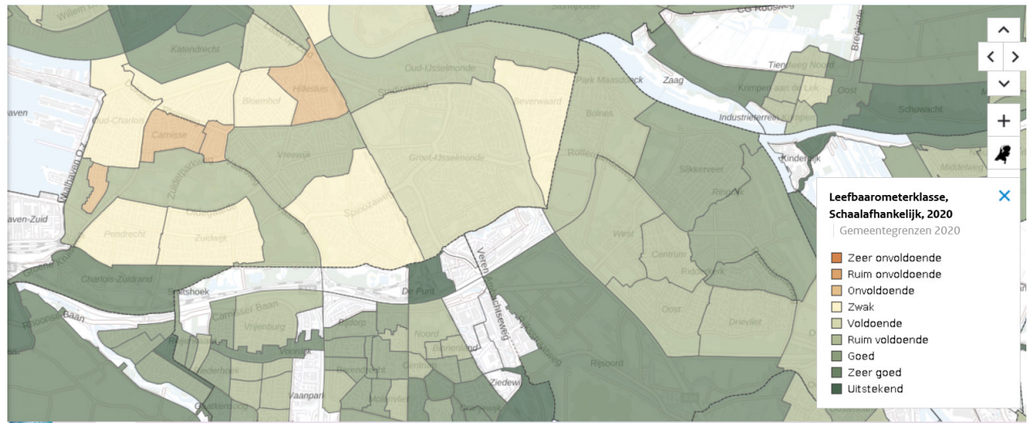
Independent versus independent mobility

	Research	Independent		Guided mobility			Other
		By foot	By bike	By foot	By bike	Car	
CROW	Van der Houwen, Goossen & Veling (2003)	15%	21%	18%	28%	15%	3%
SWOV	Hoekstra, Mesken & Vlakveld (2010)	15%	20%	16%	27%	12%	10%
SWOV	Hoekstra & Mesken (2010)	12%	20%	23%	25%	15%	5%
CROW	Metz & De Haan (2013)	14%	17%	16%	20%	30%	3%
SWOV	XTNT (2014)	8%	16%	13%	22%	12%	1%

Research on mobility type per child. Distinguishes are made between foot, bike, car and independent versus mobility accompanied by parents. (Source data: SWOV, 2019)

*The five researches had different age target groups, mostly between 4 and 12 years old

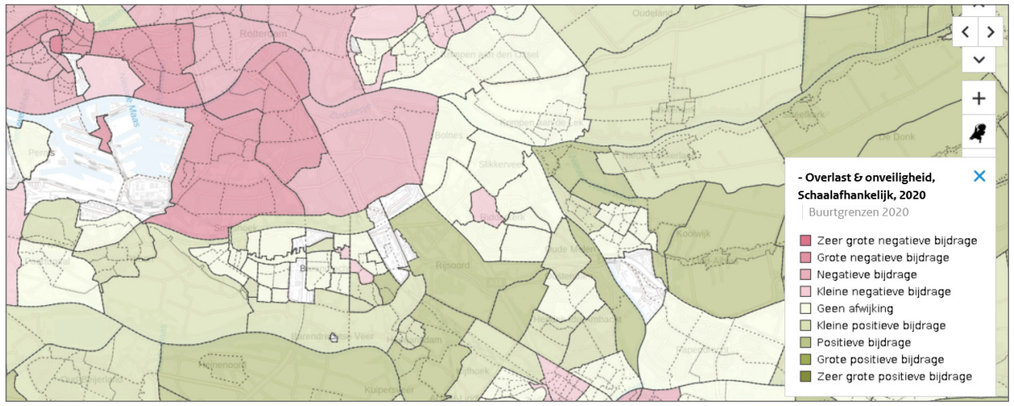
Leefbarometer Lombardijen
Algemeen



* Filter in de tabel op gemeente, wijk of buurt door in het veld te typen. Beweeg de tabel naar rechts om alle Leefbaarheidsontwikkeling kolommen te zien.

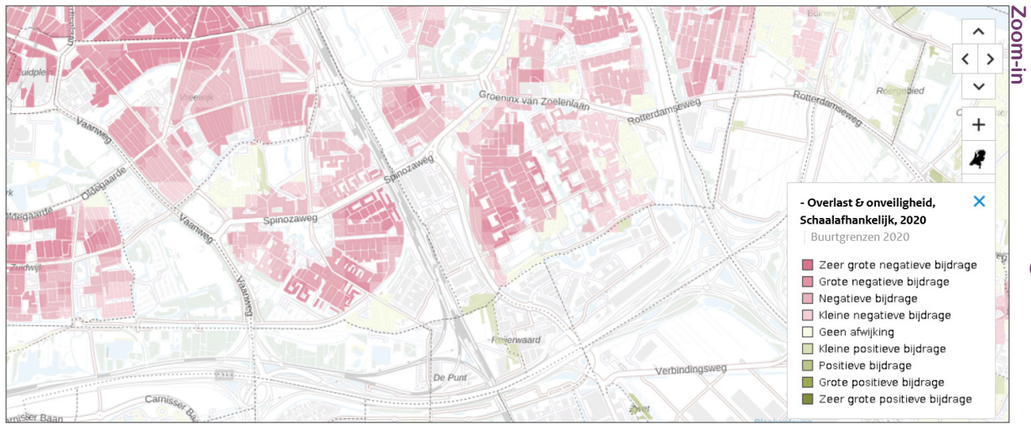
Buurt	Leefbaarheidssituatie						
lomb	2002	2008	2012	2014	2016	2018	2020
Lombardijen	Voldoende	Zwak	Zwak	Zwak	Zwak	Zwak	Zwak

Overlast en onveiligheid

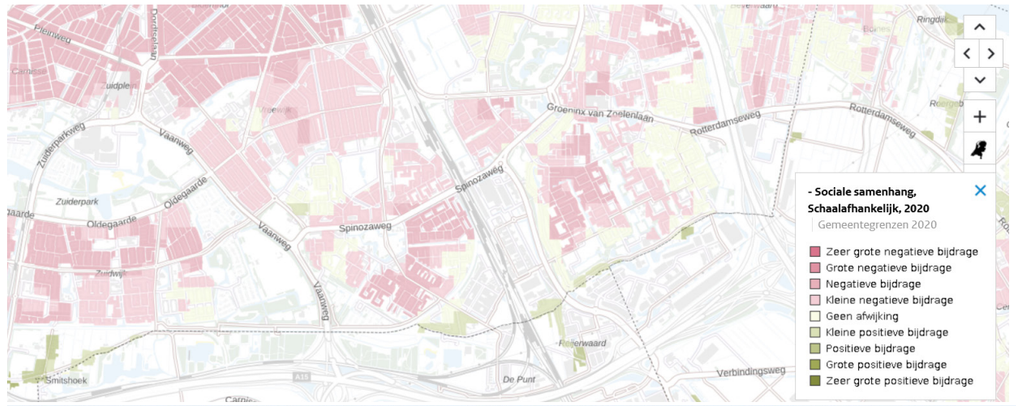


Overlast en onveiligheid

Zoom-in

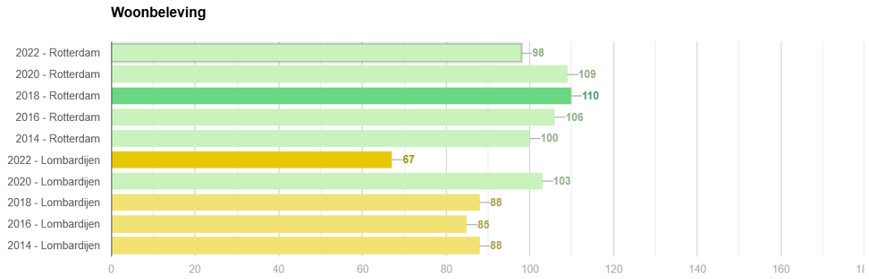


Social Cohesion

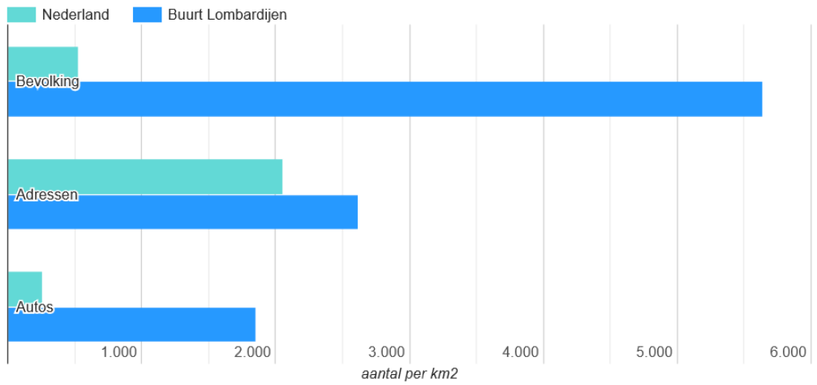


Facilities - sufficient

Perceived live quality: Rotterdam X Lombardijen



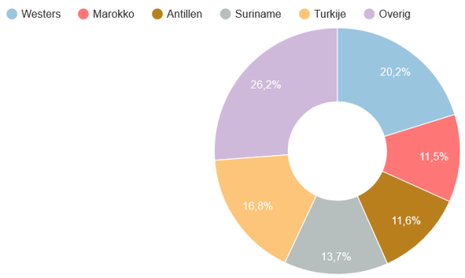
Density per km2



Omgeving: dichtheid van de bevolking-, adressen- en personenauto's per km2 oppervlakte in Nederland en de buurt Lombardijen voor 2023.

- Extremely high density compared to average NL
- High amount of cars compared to average NL

Cultural background



What the neighbourhood says

There's always a lack of parking near the school

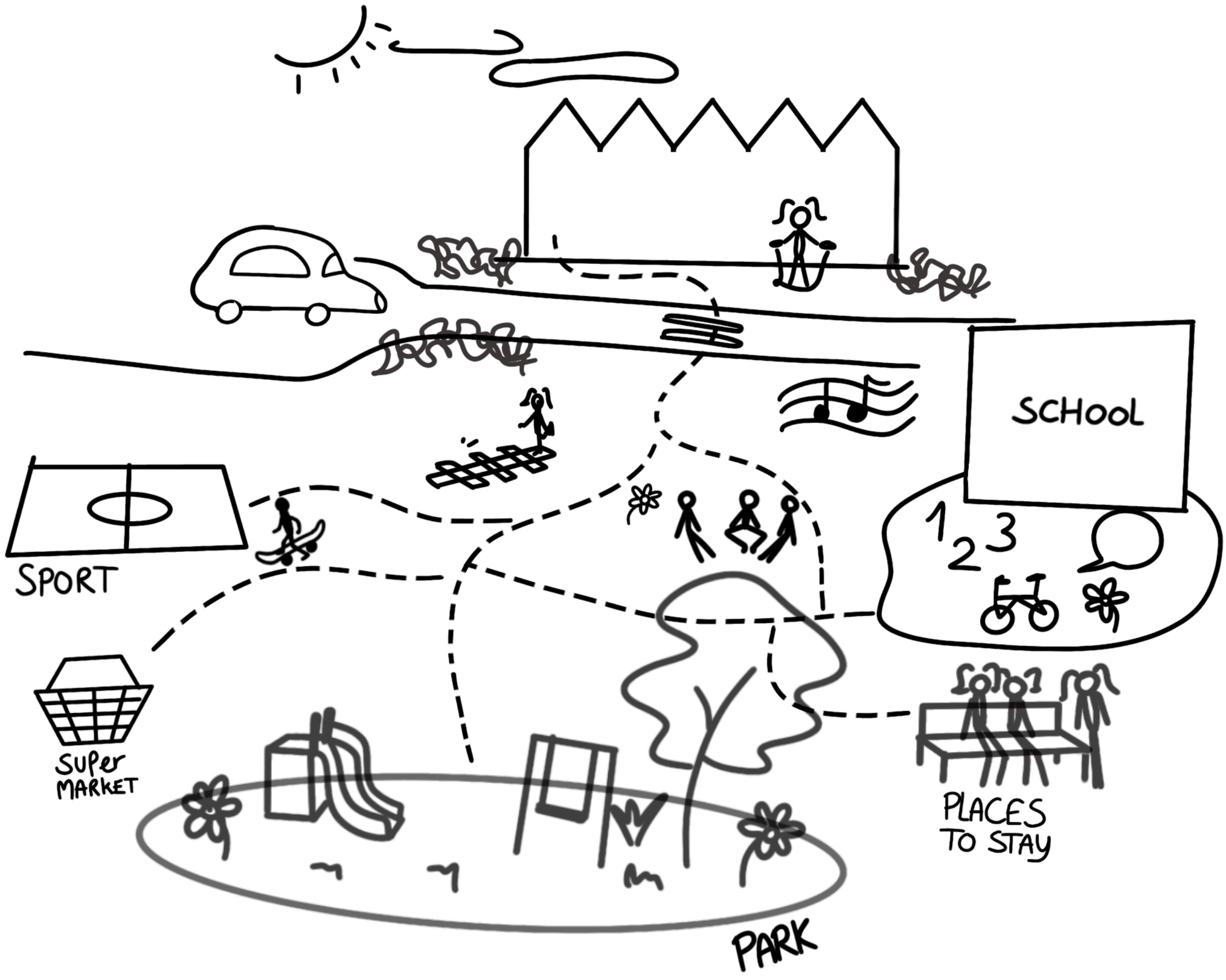
The Spinozaweg is difficult to cross

If my child wants to play somewhere we go there together

Some 14 year-olds turned over a car last evening. Without a reason. Just for fun

I don't want my child to get involved with those drugs users

Even children living near school by 20 meter, the parents will bring them by car

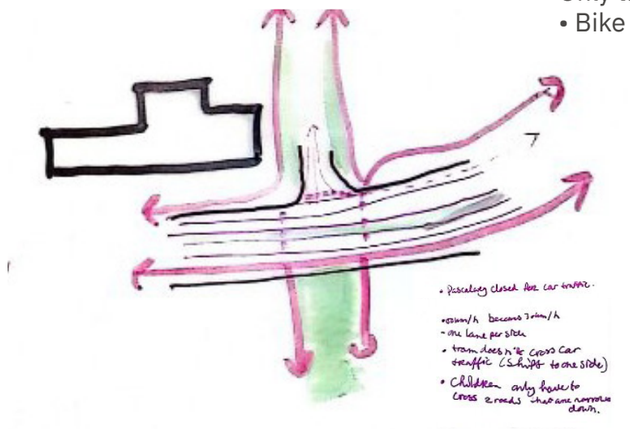

SCHOOL
1 2 3
SPORT
SUPER MARKET
PARK
PLACES TO STAY

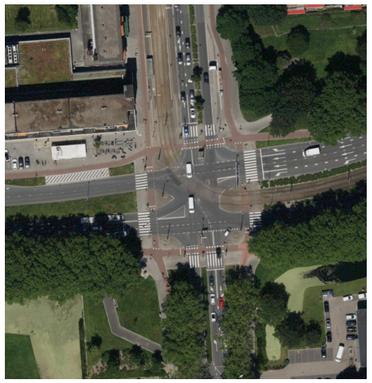
Traffic corridor Spinozaweg

Neighbourhood streets

Spinozaweg is an excessively wide road that creates a barrier between the north and south side of Lombardijen. To minimize the perceived unsafety and barrier, the following interventions are proposed mostly from the perspective of the parent, as they currently perceive crossing this road dangerous and uncomfortable.

Pascalweg X Spinozaweg





If this changes, it could also change the radius of children's independent mobility:

• Tramline with green shifts to the north side of the street profile to not intersect with cars.
• the crossing will become narrowed down. the new intervention is safer and easier for pedestrians to cross
• Maximum speed is 30 km/h for traffic. Only the tram remains 50 km/h
• Bike lanes remain besides the roads

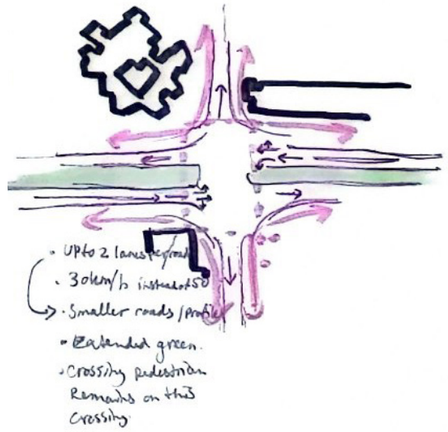
Spinozaweg

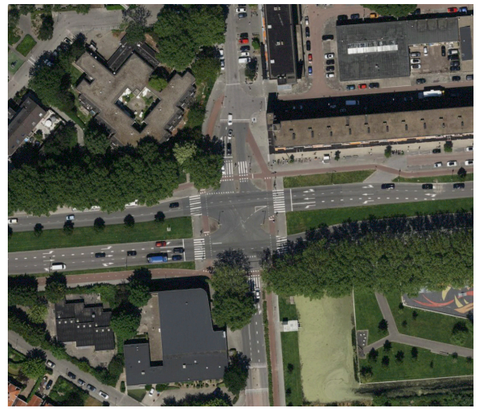
Important for crossings is recognisability. the threshold barrier should be low while clear and having a sign that one is about to cross the road.
Making the crossing easier to cross can be through narrowing the road, making this crossing smaller for the pedestrian.
For bigger traffic interventions, it is not always possible to narrow current roads. By decreasing traffic speed from 50 km/h to 30 km/h and cutting down on the amount of lanes where pedestrian crossings are located, the threshold can be decreased. Making the sub-streets turn to one way streets or not available from the main traffic road makes it possbile to decrease the amount of lanes necessary at the traffic light crossings. By doing this the residents, parents and children specifically, only have to cross 2 roads instead of the previous multiple roads.
Next to this the Pascalweg (road on the south side of the image) that cuts the Spinozapark in two, will be removed and therefore not available for cars.
By shifting the tram, that is making a turn within this crossing, to one side of the street, there is no intersection between the car and tram anymore, which is beneficial for the traffic flow. the road on the north side is available for the tram, however not anymore for the cars.

Crossings

Bierens de Haanweg X Spinozaweg

The new situation for the Bierens de Haanweg that crosses main traffic corridor Spinozaweg proposes up to two lanes per road at the crossings, 30 km/h instead of the current 50 km/h. Smaller roads which is possible due to the decrease in traffic speed. The current little green berm between the roads will be extended and have vegetation, making it more enclosed and comfortable to wait inbetween the roads.

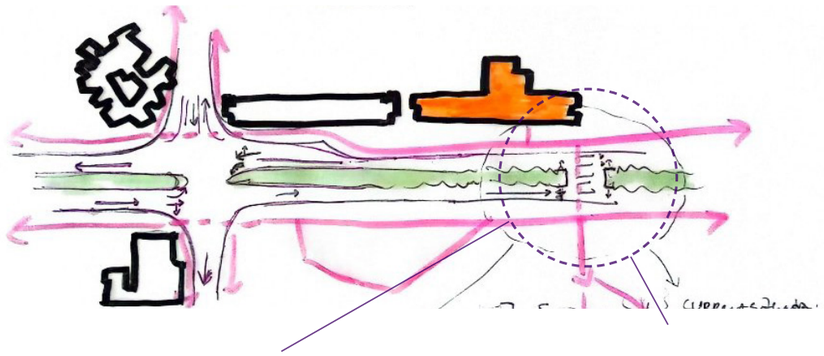




Crossings

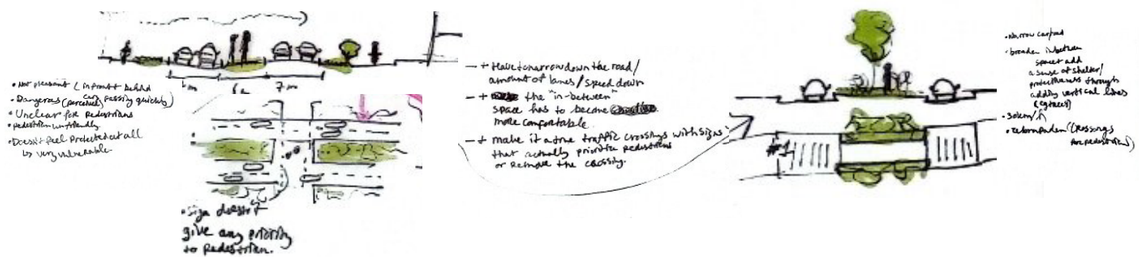
Bierens de Haanweg X Spinozaweg

Shifting pedestrian crossing to less smaller crossings



Current situation:

Potential solution:



Report
Cities for Families of Tomorrow - Children's independent mobility in Lombardijen – A place to play, learn and grow

Claudia Engel

Mentors
Prof.dr.ir. Machiel van Dorst - Urban Studies
ir. Rients Dijkstra - Urban Design

Delft University of Technology
Faculty of Architecture and the Built Environment

20th of June, 2024

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