

The Gender Reveal of Space

*A spatial strategic framework for a more gender inclusive planning
and design of public spaces in the Netherlands*



Based on the artwork Werkgroep 1995-1997 from Wiebke Siem

Colophon

MSc Urbanism Thesis

Title: The Gender Reveal of Space

Subtitle: A spatial strategic framework for a more gender inclusive design and planning of public space in the Netherlands

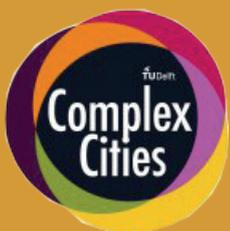
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“Women are supposed to be very calm generally: but women feel just as men feel; they need exercise for their faculties, and a field for their efforts, as much as their brothers do; they suffer from too rigid a restraint, to absolute a stagnation, precisely as men would suffer; and it is narrow-minded in their more privileged fellow-creatures to say that they ought to confine themselves to making puddings and knitting stockings, to playing on the piano and embroidering bags. It is thoughtless to condemn them, or laugh at them, if they seek to do more or learn more than custom has pronounced necessary for their sex.”

— Charlotte Brontë

“Representation of the world, like the world itself, is the work of men; they describe it from their own point of view, which they confuse with the absolute truth”

- Simone de Beauvoir

“Dat de problemen ook met onze manier van wonen te maken hebben blijft onzichtbaar, omdat muren niet kunnen bewegen en wij ons wonen niet kunnen veranderen”

- Vrouwen Bouwen & Wonen 1983

Introduction

Gender inequality is still in 2022 a well discussed topic. Think about public discourse in newspapers (Traditionele rolverdeling in huishoudens is hardnekkig, 2020), protests (#metoo, Take back the night, etc.), podcasts (Psychology in Seattle, 2022; man, man, man de podcast, 2021; Damn, Honey, 2019) and movies (Je ne suis pas un homme facile, hidden figures, on the basis of sex). Lesser publicly discussed, especially nowadays in the Dutch context, is if and how space is gendered (Beebeejaun, 2017). Therefore this master thesis will dive deeper into discourse on gender inequality, how this inequality manifests itself in space, how women experience space and how spatial planners and designers could contribute to more gender equal public places.

This projects aims to develop a strategic framework that planners and designer can use to design and plan more gender equal public places in the Netherlands (although the local context should always be taken into account). The strategic framework tries to take into account the needs of women, but also acknowledges the intersectionality between gender and race, class, income and so on. By analysing literature and stakeholders in a local (Dutch) context, and by doing qualitative and quantitative research, a strategic framework will be formulated. The framework will then be used for a design of the earlier analysed location.

Motivation

My motivation for this project derives from both personal experience, as well as a general interest in the topic. My general interest in gender equality probably started at high school, by reading books such as Jane Eyre and The Help, watching movies such as The Mona Lisa smile, but also by talking about what the future would look like. Would we want to have kids? Would we want to marry? What kind of job would we like to have and how many days per week would we like to work? How would my own parents and the parents of friends do this?

Going to university only increased this interest. I took 'China Studies' as subject for my minor and one of the courses was called Sociology of Modern China. It dealt with topics such as how 'the family' changed under communism, the effect of the one-child policy on empowering women and how laws changed partner relations. I really loved it, the discussions we held during the course and the literature I had to read. So I decided to read more, books such as 'I myself am a woman', 'Kim Jiyong, Born 1982', 'Damn, Honey' and many more.

At the same time, I experienced for the first time what it meant to live on my own. I had to do all things my parents used to do for me, like grocery shopping, washing, cooking, etc. Me and my friends experienced harassment in public transport, while cycling and walking. When I went home late at night, I would send a text to the other person that I am home. During COVID me and

my flatmates were too intimidated to use the outdoor gym, because it was always just crowded with groups of shirtless men. At a urbanist design company I know, the boss did not want to show in a presentation that the office existed of nearly only females, because she thought the client would take the plan less serious.

Yes, it is getting better, but we still have these theories, ways of thinking and all already designed neighborhoods, streets, transport systems, playgrounds, parks, squares etc. that have been designed thoughtfully or unthoughtfully from the viewpoint of males. Even in the Netherlands.

Dictionary

Gender:

Refers to the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women (WHO | What Do We Mean by “Sex” and “Gender”?, 2017).

Gender Equality:

Gender equality is the state in which one’s ability to access rights, resources, facilities, and opportunities is not defined by their gender (Gender Equality, n.d.).

Gender Mainstreaming:

The integration of a gender perspective into the preparation, design, implementation, monitoring and evaluation of policies, regulatory measures and spending programs, with a view to promoting equality between women and men, and combating discrimination (What Is Gender Mainstreaming, n.d.).

Governance:

The political guidance and decision-making processes that combine the public and the private spheres (Wotha, 2013).

Intersectionality

The interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage (What Is Intersectionality and Why Is It Important?, 2018).

Policy:

A set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party (Policy, n.d.).

Spatial Justice:

Spatial justice as such is not a substitute or alternative to social, economic, or other forms of justice but rather a way of looking at justice from a critical spatial perspective (Lonetto, 2013).

Strategic Framework:

A strategic framework is an urban planning approach that guides the implementation of strategies, composed of goals and actions, outlining the configuration, collaboration and steps required for the implementation (Defining the Planning Framework | Urban Regeneration, n.d.).

36 Questions

36 Question I asked myself or that were asked to me during my master thesis. Before your read any further, what is your answer to them now?

1. What does it mean to be a women?
2. What does it mean to be a men?
3. What is urban planning?
4. Can urban planning be good or bad in itself?
5. What is gender?
6. Is urban planning gendered?
7. What inspires you?
8. Have you read any books about gender equality?
9. Are men not also oppressed?
10. Are you a feminist?
11. What does it mean to be a 'feminist'?
12. Do you listen to music with ear-buds in public spaces?
13. Did you ever use ear-buds so that no one would talk to you?
14. Were you ever harassed in public space?
15. Did a friend ever ask you to text when you would arrive home?
16. Did you ever go to a public place on your own?
17. At which locations is it accepted to be alone as a women?
18. What will your future look like?
19. Do you ever use public bathrooms?
20. Does menstruation limit you?
21. How to change society?
22. Can we all ever be equal?
23. How can a women be equal to men without being like a men?
24. Can society change?
25. Can you change?
26. How do you handle negative comments on your thesis?
27. Do you have an equal share of household responsibilities in your relationship?
28. What are social norms for women?
29. What are social norms for men?
30. Why do you only focus on women?
31. Why don't you do your thesis in India, there the problem is way worse?
32. Is this actually a problem?
33. Women already are equal right?
34. Do you think there is a relation between capitalism, socialism, communism and feminism?
35. What do you think future cities look like?
36. Why 36 questions?

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Problem Field

Problem Field

Women make up for 49,58% of the total world population (World Sex Ratio 2021 - StatisticsTimes.Com, n.d.) and at this moment 8.8 million of them are living in the Netherlands (Statistiek, 2022) (CBS, 2022). Many of those 8.8 million women are being marginalized every day. The severity of gender inequality depends on the societal norms and values. These norms then affect the economic opportunities for women, violence against women, laws and regulations, the decision making process of planners and designers and therefore the inclusivity of space itself. Each of these elements of the problem field are interrelated and together form the general problem of gender exclusive public space.

Society

We are all part of (multiple) cultural groups and we are all socialised according to the norms and values of that cultural group. That means that we have a common set of experience, signs and symbols that 'we', from that same group, can understand (Relph, 1976).

Although it is biology that separates people into male and female (sex), it is society that gives men particular masculine roles (engaging in politics), rights (voting) and duties (military service) and female certain female roles (raising children), rights (protection against violence) and duties (obedience to her husband). Almost everywhere in the world women have been disadvantaged, at least since the Agricultural Revolution (Harari, 2015). There are theories that claim that Prehistoric societies were matriarchal, meaning that they were civilly ruled by women. However, patriarchy has been the norm in almost all agricultural and industrial societies (Bamberger, 2006; de Beauvoir, 2015; Harari, 2015).

Chinese oracle bones dating back to

1200 BC, show that the birth of a girl was seen as unlucky (Harari, 2015). When Christianity made its appearance around 300 AD in Western-Europe, so did the view that women, as descendant of Eve, were intellectually and emotionally inferior to men (Erler and Kowaleski, 1988). Women were the property of the men in the family by law. The legal remedy for rape was then the transfer of ownership, meaning that the rapist was required to pay the bride price to the women's father or brother, upon which she became the rapists property (Deuternonomy 22:28-9) (Harari, 2015).

The Victorian social norms at the time included strict boundaries between classes and a firm etiquette designed to protect the purity of high status white women. Women were constantly exposed to 'temptation', and once fallen, a women was doomed. A solution for these fallen women was proposed by many (including Charles Dickens) namely to emigrate to the colonies and marry one of the many surplus settlers, as so to be restored to respectability (Kern, 2019). The position of women in

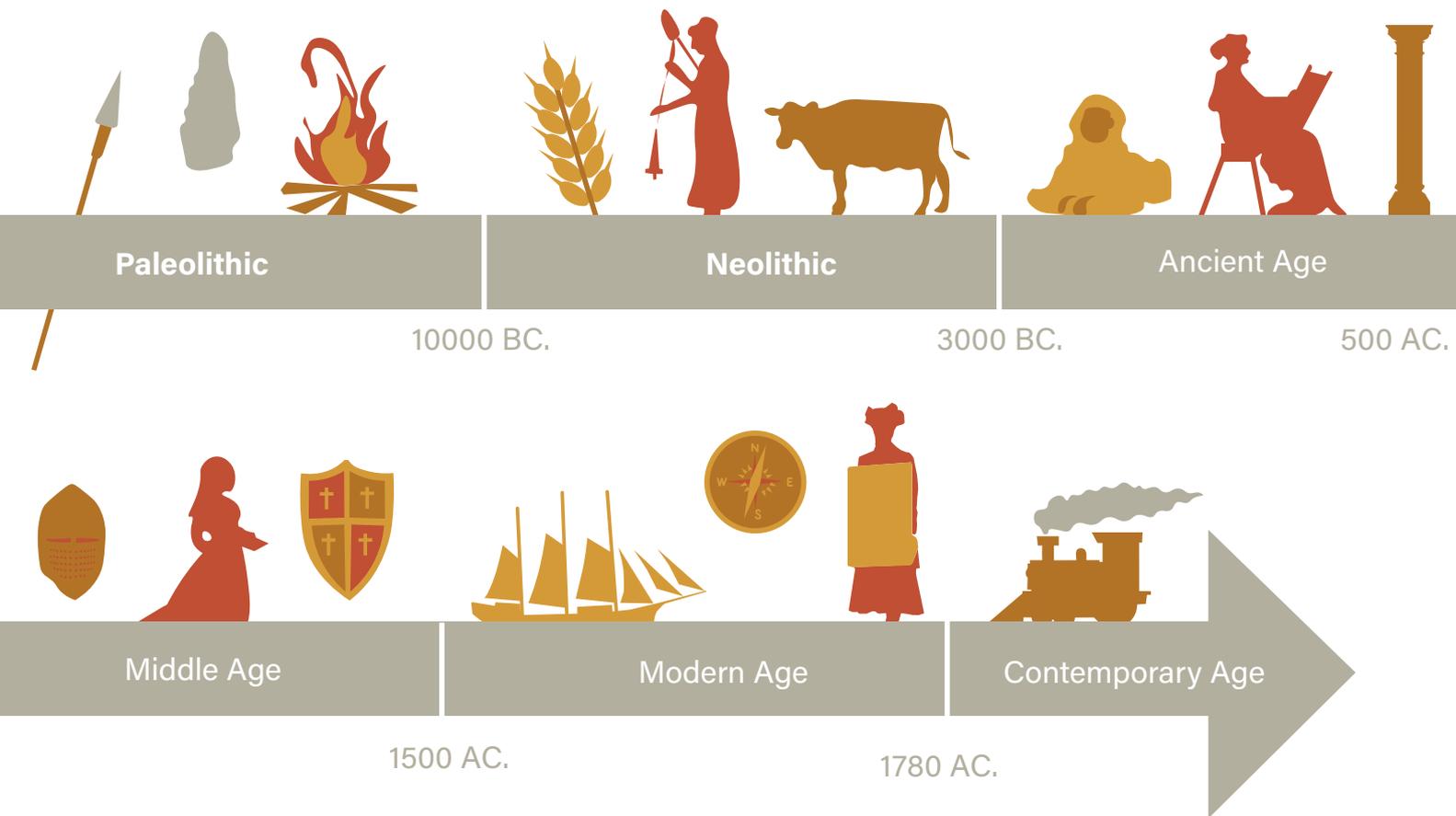


Image 1: Women through the ages - Source: *Author*

society slowly changed when women received voting rights and right for education (Harari, 2015). However, the general concept of women being at home doing domestic work and taking care of their husband was still present in the 1950s, 1960s and 1970s. In the Netherlands there was an action-non-capability law until 1956. This meant that married women were not allowed to have their own bank account, work and travel without their husband permission (Bussemaker, 1992).

Today, women have equal legal status and political rights, however the gender gap is still significant (Harari, 2015).

Recognizing a child as female is the reason she will be brought up to expect and accept that as her role (Perez, 2019). Women are expected to negotiate their way through the world, without collectively challenging asymmetries in power or even manifestations of rampant chauvinism (Sanchez de Madariaga and Roberts, 2013).

Economic Position

The strong relation between feminism, economy and space, was first 'discovered' by the Material Feminists around 1850 (Hayden, 1980). The Material Feminists created detailed utopian schemes and home and community designs where housework and childcare was collective and socialized. The Material Feminists concluded that the only way they could enter the workforce, be equal to men and have intellectual development would be through new social spatial arrangements (Kern, 2019).

For a long time, paid labour was coded as masculine and unpaid household labour was coded as feminine. The coding of these types of labour aligns with the idea of what is public and what is private space. Hereby the man's place of paid work was the public space and the woman's space of unpaid work was the private space (LaFrombois, 2017; Sweet and Ortiz Escalante, 2010). The unity of work and family in one place of medieval and pre-industrial societies enabled women to procure for themselves a certain measure of autonomy including economic independence. According to Boccia (2013), this was lost again as one of the side effects of industrialization. The industrial revolution enforced the spatial separation between living and working. It tied women to the private domain of the home and the productive dimension it had once had, disappeared (Boccia, 2013). However, according to de Beauvoir (1949), one of the consequences of the industrial revolution was that women entered the labour force and thereby gained

economic dependency (de Beauvoir, 1949). Probably both viewpoints are correct, it both separated living from working as it empowered women. The result, however, was the same; the bourgeoisie clung to its old values where the family solidly guaranteed private property and insisted that the woman's place should be in the home as her emancipation becomes a threat (de Beauvoir, 1949).

During the first feminist wave (1890-1920), women protested for the right to vote, to be accepted in universities and to be able to perform paid work. As a result, women can vote, go to university and it is no longer the case that only men perform paid labour and women unpaid labour. The female employment rate in the Netherlands is currently 68% (Statistiek, 2022). Still, women work generally more part-time than men (Statistiek, 2022). The main reason for this is that women take care of the household chores and care for children and elderly (Statistiek, 2022). Some women decide not to work part-time, but stop working altogether. There is a relatively large dropout from the workforce of women aged 25 and above (Statistiek, 2022). 30 Percent of women quit working all together, whereas only 3 percent of men do (Boccia, 2013).

Next to that, public life is organized in such a way that it is experienced as uncomfortable by working women or women interested in entering the job market, because it is clear that public time schedules affect not only the quality of life, but also equality between men and women in their access to

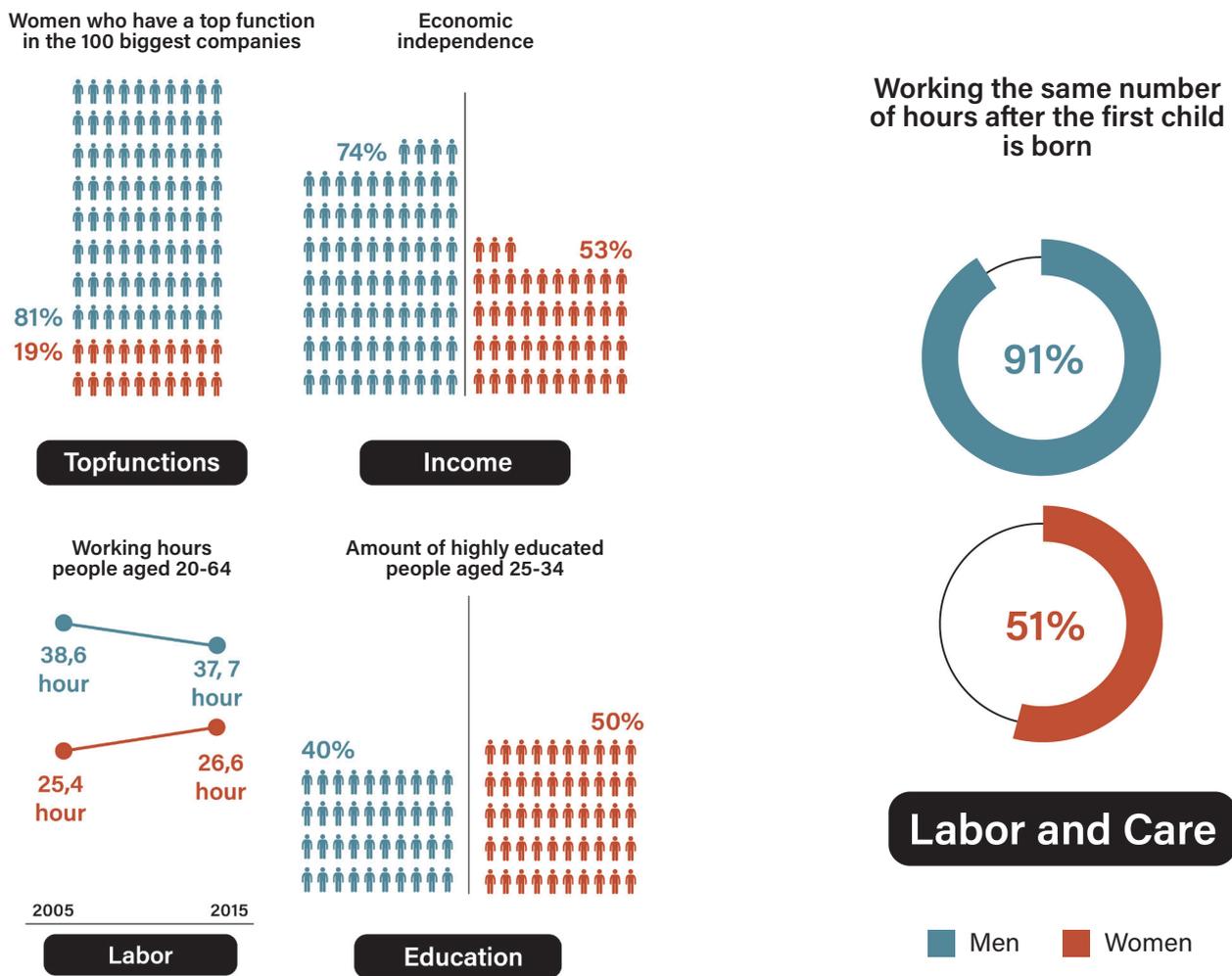


Image 2: Distribution labour, education and income amongst men and women - Source: CBS, 2016.

public goods such as work, as well as the possibility of young people to have a job and to have children (Boccia, 2013). Also, jobs that are usually done by women are less valued and less paid (Harari, 2015; Perez, 2019). Even when women have the same job as a men they still earn 13 percent less (Vrouwen verdienen nog altijd minder dan mannen, maar loonkloof slinkt, 2022).

Not only do women get paid less, they also work longer hours than men, because the unpaid work is still mostly done by the women. Studies show that as men and women move in together,

the women spends relatively more time doing the housework than the man, regardless of their employment. So women are undervalued not only in terms of time, but also in terms of cash, women have less access to financial status (Perez, 2019).



Image 3: Women on the street of Tilburg - Source: <https://universonline.nl/nieuws/2021/12/06/vrouwen-die-zich-onveilig-voelen-in-de-straten-van-tilburg/>

Violence

Public harassment exists in a continuum of possible events, beginning when customary civility among strangers is abrogated and ending with the transition to violent crimes, like assault, rape and murder (Gardner, 1995).

Although public harassment against men by women does also happen, few women have practiced gender-specific public harassment toward strange men with anything like the same sense of freedom, entitlement, and righteousness that men exhibit (Gardner, 1995). Next to that, two out of three women in the Netherlands has to deal with street harassment (67 percent), while this is one out of three for men. The percentage of street harassments increases even further for big cities like Amsterdam, Rotterdam, Den Haag

and Utrecht where it is 77 percent for women (CBS, 2022). Street harassment includes pinching, slapping, hitting, shouted remarks, vulgarity, insults, ogling and stalking (Gardner, 1995). Groping or other sexual inappropriate behaviour is not uncommon at places like public transport or drinking streets (Ceccato, 2017).

Despite many campaigns, for example that of Noelle Zarges, who made a photo series of women who feel unsafe on the streets of Tilburg, or the Just Don't Do It campaign of Uche Esomonu distributing 300 posters for a safer transit environment, violations against women continues to be a problem. It is the fear of unwanted interaction that pushes women to have different coping mechanism

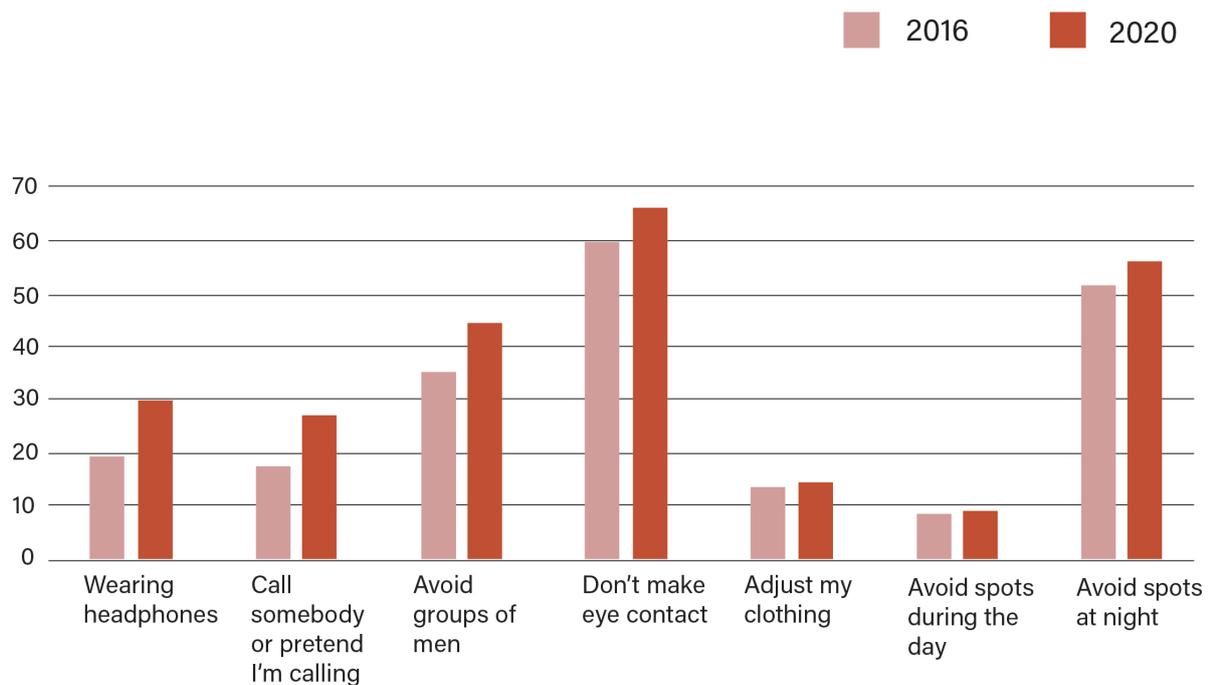


Image 4: Coping strategies street harassment - Source: *Zicht op leefbaarheid - Tien essays over leefbaarheid in Rotterdamse wijken* by Erik Snel, Roy Geurs and Matthieu Permentier

for avoiding public violence and the most used technique is avoiding certain spots. They take different routes, travel on different hours, only to avoid victimization and unsafe places (Ceccato, 2017). It is fear of potential unwanted interactions that limits the access of women to urban space (Beebeejaun, 2017).

Interestingly, women are more likely to experience violence at the hands of people they know, in private spaces including their homes or offices than in public spaces. Therefore women's safety should not only be thought of in the planning and design of public spaces like streets and parks, but also in the planning of, for example, women shelters, support groups and creating emergency networks (Sweet and Ortiz Escalante, 2010). The disconnection

between fear and crime statistics is referred to by researchers as the 'paradox of women's fear'. There are multiple explanations to this paradox. Firstly, sexual assault is grossly under-reported. Secondly, the assault mostly committed against women in public space is rape, while for men it is 'only' robbery. Thirdly, girls and women are socialized to fear cities, night-time and strangers. Ever since a young age it has been told to women to be careful with stranger and to not cycle alone after dark (Kern, 2019).



Image 5: Exhibition Vienna: Who owns public space? - Source: *Jackowska and Novas Ferradás (2022)*

Space

In 1991, two feminist engineers, Jutta Kleedorfer and Eva Kail who worked at the city of Vienna's urban planning office, organized an exhibition with the aim of understanding gender bias in urban design. It was the first time that traffic and pedestrian data was segregated by gender and it revealed the unanticipated disparities between women and men in public space (Hunt, 2019; Jackowska and Novas Ferradás, 2022). After this exhibition more and more research was performed on gender inequality in public space, discovering relations between gender and: pedestrian/ bike usage, public transport infrastructure, connectivity of spaces, lighting, benches, outdoor gyms, parks, playgrounds, transportation nodes, zoning, safety, facilities, well-being of public transport

users and so on ("Even in 'Australia's Safest City', Women Feel Unsafe in Bustling Areas," 2019; LaFrombois, 2017; Jackowska and Novas Ferradás, 2022; Perez, 2019; Sanchez de Madariaga and Roberts, 2013). These solutions were divided into three categories: safety, accessibility and inclusivity. All the separate solutions are combined in a so called 'pattern book' that is complimentary to the thesis. However, these solutions that were found and used in one location cannot simply be copied, as they require an adaptation process to the culture, linguistic differences, political situations and power structures (Jackowska and Novas Ferradás, 2022).

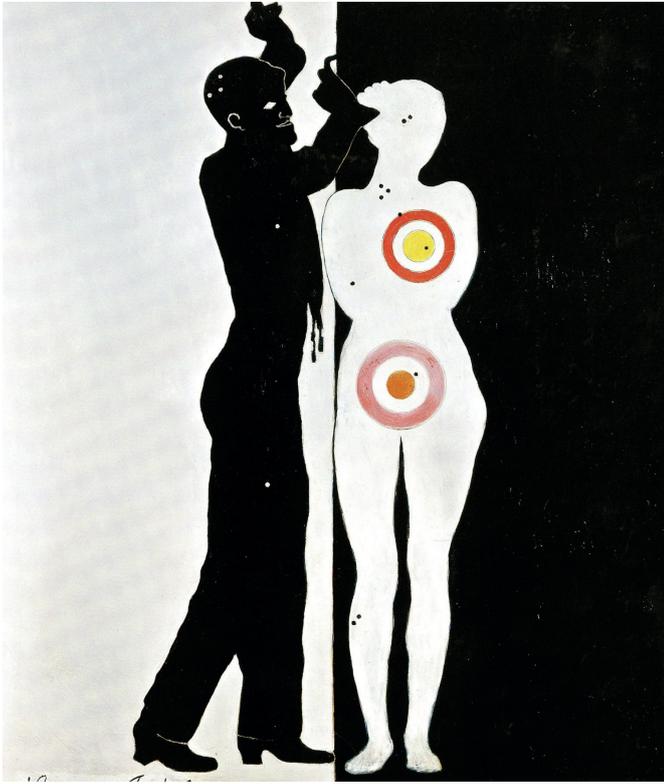


Image 6: La Nuit espagnole (The Spanish Night)
- Source: <https://www.moma.org/audio/playlist/37/599>

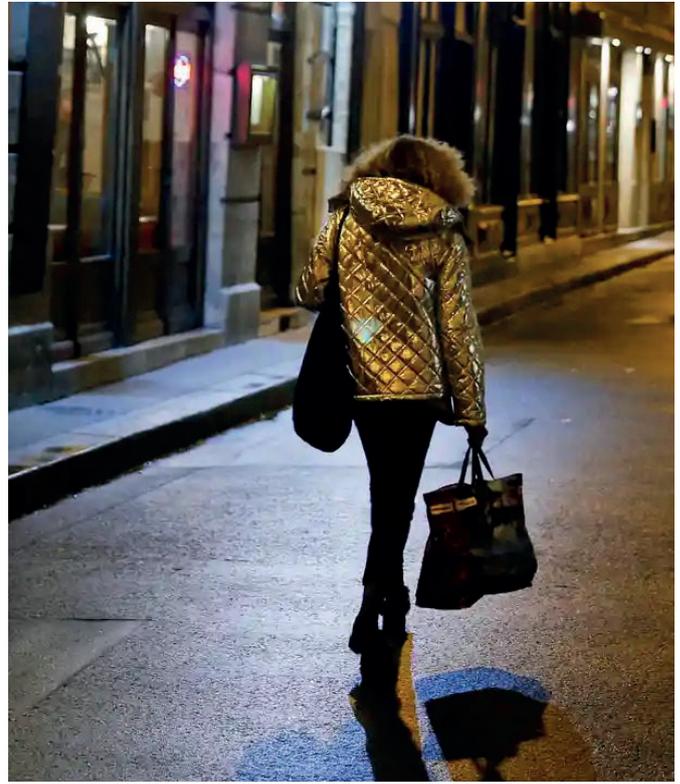


Image 7: Tell us: how does it feel to be alone in a public space at night? - Source: *The Guardian* (2021)

Unsafe space

As previously mentioned, women adapt their routes to avoid victimization and unsafe places (Ceccato, 2017). Places that are generally seen as dangerous are isolated and dark bus stops, unpopulated stations, drinking streets, dark corners, areas with a bad reputation, buildings that are vacant and parks. Summarizing, such dangerous places all have low visibility. Already in the 1960s, Jane Jacobs found the underlying importance of sidewalks: reclaiming pedestrian activity on the streets increased the feeling of safety. (Jackowska and Novas Ferradás, 2022).

More recently, theories on CPTED have been put into practice. CPTED (Crime Prevention Through Environmental Design) has the following elements: natural surveillance (eyes on the street), fostering territoriality, maintenance of public areas, reducing areas of conflict, controlling access and promoting alternative routes (Crime Prevention Through Environmental Design (CPTED) | Avans Hogeschool, n.d.; Sweet and Ortiz Escalante, 2010).

But is this enough? Kern (2019) suggests that CPTED relies on 'rather mechanistic understanding of space and fear, assuming that fear will follow rational trajectory and decrease when safety improvements are made.' We can't detach the social world from the built environment, and therefore feminist planners have promoted three alternative ways to create safer and inclusive spaces; the adoption of women's safety audits; the creation of more spaces of refuge, empowerment and discursive freedom; and more recently, incorporating gender considerations in community safety plans.

Education for public officials and decision-makers about gender violence is also key; the inclusion of more women at all decision-making levels and research on gendered constructions of behaviour and relationships is important to be able to expose all types of gender violence (Sweet and Ortiz Escalante, 2010).

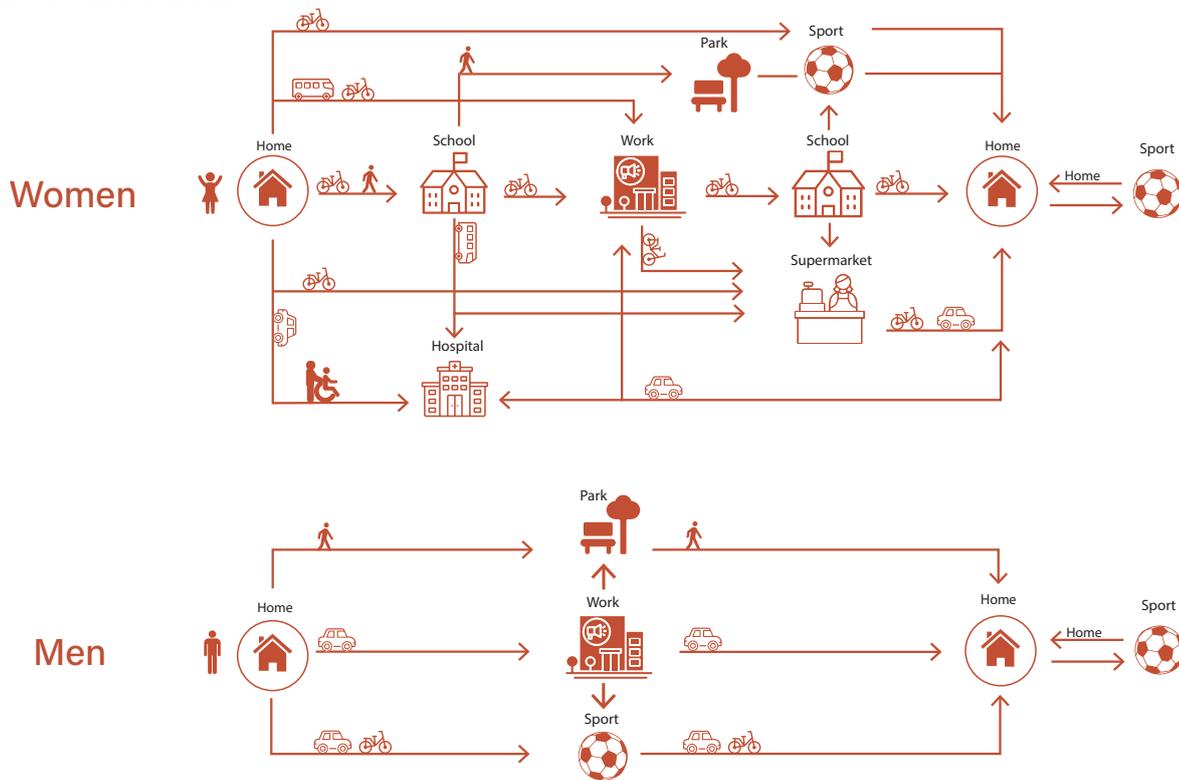


Image 8: Travel patterns women and men - Source: Author

Inaccessible Space

Inaccessibility manifests itself on different levels. For example on street level, the width of many sidewalks has been determined by a single person walking, however a person with a large stroller, a pack of disposable nappies, a shopping bag and a small child requires a lot more width than that single person (Jackowska and Ferradas, 2022).

Also many sidewalks have high and sharp edges making it difficult to cross with a stroller (Hoornaert, 2022). Trams, buses and trains are usually higher than platform level or have stairs, small aisles and a lacking level access. When traveling with a stroller filled with shopping's, the women is often dependent on strangers who are willing to help to move around (Jackowska and Ferradas, 2022). This then demotivates women to use public transport therefore limiting the access to the city.

But also on neighborhood or city level, women accessibility to the city is limited. For example, women are usually more dependent on public

transport than men. However, public transport is designed by men for men, namely in a radial way, transferring people from home to their jobs. Therefore women are more poorly served by it (Kern, 2019; Perez, 2019). This results in many transfers when a woman first needs to bring her child to school, then goes to work and then wants to visit her mother. Public transport is also a service where women often pay a something called a 'pink tax' A pink tax is a similar service whereby women pay more than men (Kern, 2019). Childcare is rarely close to employment centers. When childcare is inaccessible, women are severely constrained by the difficult decision between not staying at home or paying for child care in lost wages or lost time (Sandercock and Forsyth, 1992). To make the city more gender inclusive it first needs to be more accessible.



Images 9: What the hack - Source: <https://tjitskehartstra.com>



Image 10: A dirty protest against public toilet closures - Source: <https://www.kentlive.news/news/kent-news/dirty-protest-against-public-toilet-2795879>

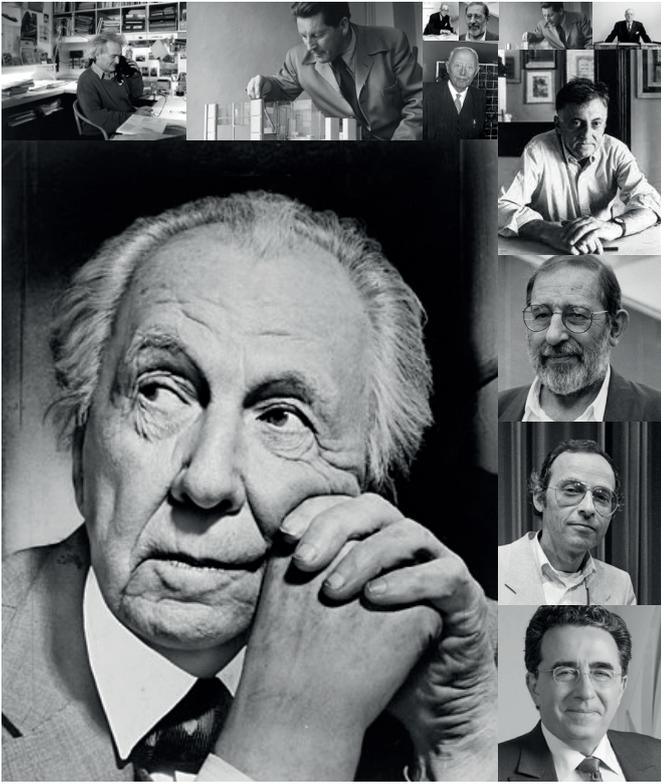
Exclusive space

In this specific case, *inclusiveness* in public space is about meeting everyone's needs. Women need to urinate more frequently than men, therefore it is important to be able to go to the toilet. Women get bladder and urinary tract infections from holding in their urine; other suffer from dehydration or chronic constipation (Perez, 2017). Sufficient public and well-maintained toilets provide opportunities for women to spend greater amounts of time walking or moving within the city (Beebeejaun, 2017). Nursing mothers' rooms or comfortable benches could increase women use of public space.

Next to that, children's needs in public space are also gendered (Karsten, 2003). Compared to boys, especially girls aged 9 to 12 do not spend as much time on playgrounds (Vienna, Milota Sidorova, n.d.; Karsten, 2003). That is because usually parks and playgrounds only facilitate sports like basketball or football that take place in that single large open spaces and therefore are mostly used only by boys (Perez, 2017; Municipality of Vienna, n.d.). Boys are

highly visible users of public playground space, and they control much larger spaces for longer durations. Boys' more frequent presence, duration and visibility mean that they more often acquire the status of a resident. At the same time girls' activities result in many small groups clustered around specific popular games or ways of playing. They do not need much space for these activities and often girls play in relatively hidden corners of the playgrounds. For girls, it is difficult to become a 'resident' without challenging traditional gender divides (Karsten, 2003).

It is important to recognize that these needs are not only gendered, but intersectional and defined by social background, ethnicity and religion. For example, for example, a study in Brooklyn found that Muslim women are more likely to consider public spaces hospitable when they would notice mixed ethnic groups, families and other women wearing a headscarf (Beebeejaun, 2017).



Images 11: Collage of famous male and female architects - Source: *Multiple, see bibliography images*

Planning and Design

When searching for 'famous architects' on Google, you will find a broad overview of male architects and only scarcely female ones. The reason for this is that for a long time the planning and design world was dominated by males (Sanchez de Madariaga and Roberts, 2013).

As the female employment rate went up between 1970-1990, so did the need of women to speak about their experience and wishes within the built environment. They organised themselves within local authorities, in women's committees and offices, momentarily highlighting the ways in which planning departments should consider and respond to the needs of women (Horwood, 2022). During the late 1990s and early 2000s the

focus shifted more towards gender mainstreaming, trying to implement a gender perspective into every part of the organization (Horwood, 2022). Today, more and more women are entering these professions, thereby suggesting that gender inequality is no longer an issue.

Although there is no longer a numerical male dominance, there is still a male dominance in the theories, standers and ideologies used to guide planners (Sandercock and Forsyth, 1992). Next to that, there are still very few women in the higher ranks of planning and design agencies (Sandercock and Forsyth, 1992). Also in academical institutions there are relatively fewer, women than men in high functions (Akinyemi and Bruh, 2021). Women are

Women in Architecture The pipeline

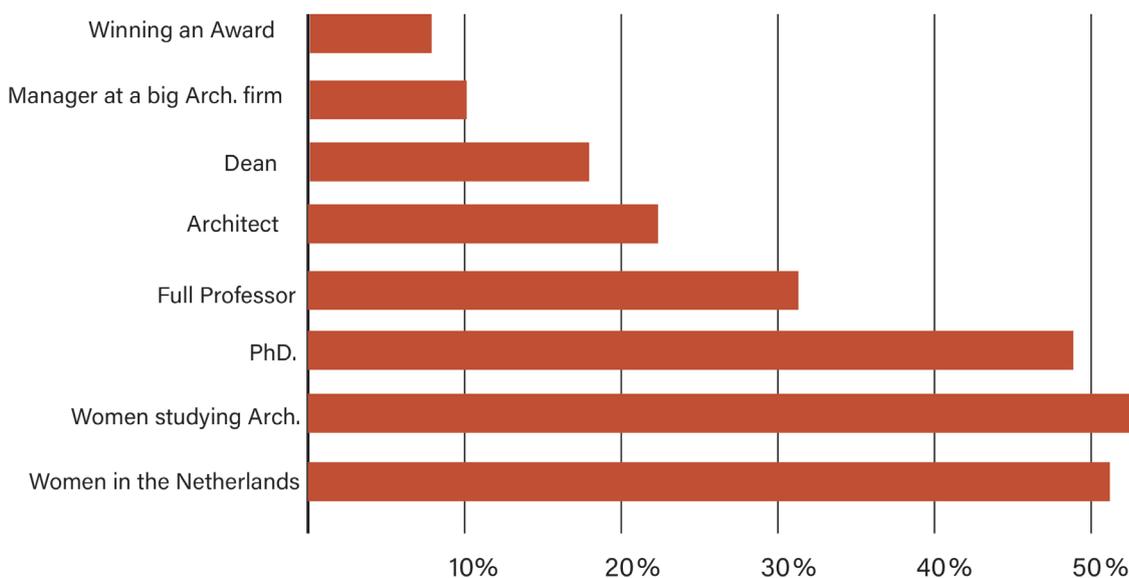


Image 12: Women in Architecture and Education - Source: *Emancipatie in de steigers - vrouwen in de architectuur, 2021 ; Feiten en cijfers, 2022*

usually concentrated in human services and social planning, professional areas with small and vulnerable budgets and relatively little prestige and power compared to development control, metropolitan strategy of transportation planning (Sandercock and Forsyth, 1992). Planning and design have a very big pedagogic and ethical role of contributing to social-spatial justice and many do not see how 'rights' are gendered (Beebeejaun, 2017).

Planning is partly done by governmental institutions, and although an equal share of women and men in these decision-making institutions would not guarantee gender-sensitive urban development, men and women should have equal opportunities to participate in democratic decision making (Wotha, 2013). A tool for spatial

justice is equal participation, but women (especially from diverse groups) participate at much lower rates than men (Parker, 2011). Since participation in the process of governance needs voluntary commitment from most of the participating actors, there is a free time restrictions bar on women for full participation, since women are time poorer due to the division of labour (Wotha, 2013). Next to that, women are socialized to not speak out or to speak up for their own needs, they are socialized to go unnoticed, which affects women's inclinations to take up public roles (Kern, 2019). Professional jargon and argumentative speaking styles that are used can alienate, confuse or render women speechless (Sandercock and Forsyth, 1992).



Image 13: Utrecht, Congres Stichting Vrouwen Bouwen en Wonen "Buiten Gewoon Veilig"; Gertje Segond von Branchet (VROM) tijdens rede- Source: <http://proxy.handle.net/10648/ad5c1664-d0b4-102d-bcf8-003048976d84>

The Dutch context

The Netherlands has always had a strong governmental tradition in spatial planning. This increased especially after the Second World War (1945). The period between 1945-1965 was characterized by standardization due to a large housing shortage and the development of norms and regulations that formed the essence of planning policies, leading to the National Building Act (1965) (Tummers, 2013; Van der Heijden et al., 2007). This resulted in monofunctional neighborhoods with only single family houses, built by "all knowing" urban planners and architects. The second feminist wave (1968) shook up society. During the 80's and 90's, female volunteers organized themselves, forming local women's advisory committees for housing (VAC). While organizing women as 'experts

in the domestic sphere', its aim was to optimize housing design for everyday use. From early on, the movement was called VBW (women building living/vrouwen bouwen wonen) (Tummers, 2013). During that same time (1974-1978), departments called Women Studies arose at universities. Also at the TU Delft, 'women studies' was introduced as a course (de Mare and Vos, 2022). Heidi de Mare, women scientist at TU Delft, even claimed "There isn't any civil service that doesn't have a women's group, no rapport appears and no theme day is organized without women's point of view being represented" (de Mare and Vos, 2022).

The focus changed. The 1990s were characterized by decentralization which started with the closing of the VROM department (ministry of Housing,



Image 14: Zaha Hadid, Beth Gali, Laura Thermes, samen met organisatoren Susanne Komossa (docent architectuur) en Anna Vos (docent bij Vrouwenstudies) bij een planbespreking voor het ontwerpvak 'Proloog tot Zichtbaarheid' in 1987 - Source: <https://www.archined.nl/2021/02/veertig-jaar-na-vrouwenstudies-een-post-feministisch-tijdperk/>

Spatial planning and Environment) in 2010 (the VROM was introduced in 1982). Spatial planning then became the responsibility of the Ministry of Infrastructure and Environment (Infrastructuur en Waterstaat) while housing was assigned to Internal Affairs (Binnenlandse Zaken) (Tummers, 2013). The centrally coordinated 'emancipation policy' by the VROM was then reduced to part of the work-package of a Secretary of State, the national and regional emancipation agencies closed and budgets and subsidies were cut. This, combined with substantial cuts in local authority expenditure, hollowed out the (social) planning system (Horwood, 2022). The remaining VBW network re-oriented itself towards European programs such as Gender Mainstreaming and the ESF program 'Daily Routines' (Tummers, 2013).

In the Netherlands, policies at the national level are seen as gender-neutral. It is therefore presupposed that needs and claims of men and women are not gender-specific and do not conflict (Verloo and Roggeband, 1996). During the emplacement of the VROM (1992), a method for systematically evaluating the effects of policies on gender equality was designed, it was named the 'Gender Impact Assessment' (GIA). The GIA was designed as a systematic and comprehensive analysis of potential effects of new government policies on the gender relations in Dutch society (Tummers, 2013; Verloo and Roggeband, 1996). On the basis of the design and the theoretical framework, various policy reports have been analysed on subjects such as chronic illness, labour and social security, outdoor recreation, and family

VROM = Ministerie van Volksverhuizing, Ruimtelijke Ordening en Milieubeheer

SEIROV = The 'Emancipation' section of the Dutch National Institute of Spatial Planning and Housing (NEROV)

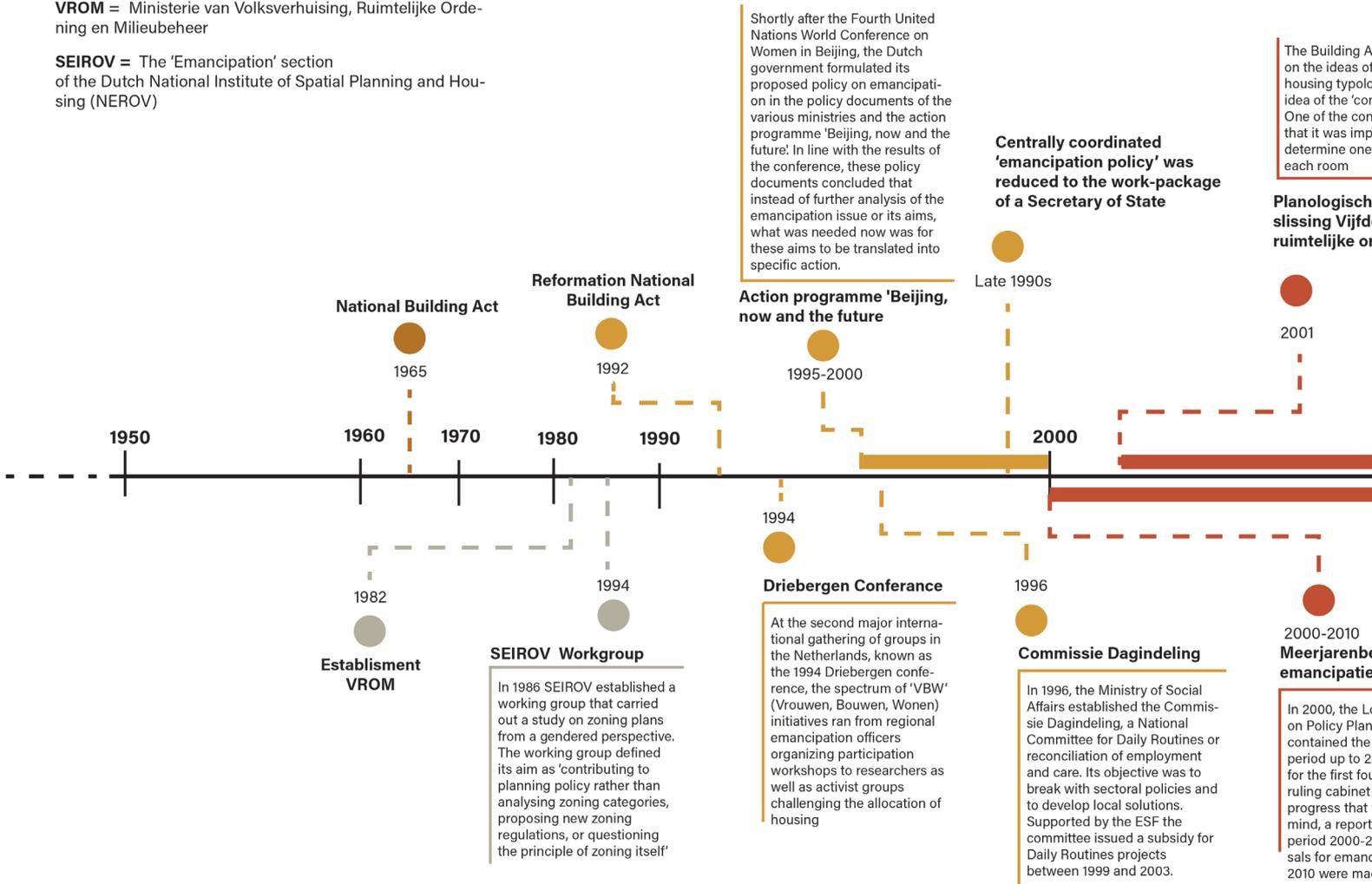


Image 15: Timeline gender governance in the Netherlands- Source: Author

policies (Verloo and Roggeband 1994). This assessment focused not on the difference between men and women, but on the unequal power relation between women and men. The three structures that were identified as central to the operation of those unequal relations were: gendered division of labour, organization of intimacy and the organization of citizenship (Bacchi et al., 2005). Spatial pilot planning projects were launched between 1999-2003 by the name of ESF-3 Dagindeling (Daily Routines)(Koninkrijksrelaties, n.d.-b; Tummers, 2013). A few examples of pilot planning projects in this program include: child friendly service centers in rural and industrial areas, culture house, tailor-made door to door transport at an

affordable price, a group decision room format facilitation exchange between social and spatial/technical decision and manuals for urban designers (Tummers, 2013). These projects were partly successful. The fifth national vision document for spatial planning (Vijfde Nota) (2001) dedicated one of its sections to combining care and paid employment, and included some statistical data about emancipation trends. However, due to changes in government, the 'Vijfde Nota' was never discussed in parliament (Tummers, 2013). A National Key Planning Decision (PKB), combining the main elements of the Vijfde Nota with policy documents from the agriculture and transport departments, was approved in 2005

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**de Kernbe-
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The GIA is designed as a systematic and comprehensive analysis of existing and future inequalities and how these can be influenced. While the GIA its full form in spatial planning policies, there are interesting instances of a reduced 'quick scan' version applied to plans as well as to policy documents.

The Building Act was based on the ideas of flexibility of housing typology and the idea of the 'compact city' One of the conclusions was that it was important not to determine one single use for each room

Gender Impact Assessment (GIA)



2005



2005



**Projectteam
Dagindeling ESF-3 2005**

The Dutch component of the European Social Fund for the local social capital priorities Daily Routines program. Most projects in the Daily Routines program primarily addressed social policies and time schedules there was also a small group of diverse spatial projects in the Netherlands

Abolishing VROM



2010



2010

2010-now

Tasks delegation

The VROM no longer exists and its tasks delegated to other departments, gender initiatives suffer from a lack of information, and the dispersal of networks and knowledge. In the Netherlands, after the political goals shifted towards privatization, decentralization and individualization, planning and housing laws changed. In general, there was no gender-equal representation in decision-making which led to this transition. In some instances, the position of residents and the diversification of households has been enhanced or better articulated through the participation of feminist planners.

**Subsidy gender- en
LHBTI-equality Projects**



2017-2022



2015

2020

leidsplan

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and emancipation was no longer mentioned as one of its goals, nor is it today (Tummers, 2013).

Today, there is a legal target for female representation on boards and councils for companies (Princen et al., 2017). Princen states that this legal target is necessary because 'until now, the business community has not sufficiently shown that it is capable of achieving diversity in management and supervision on its own' (Princen et al., 2017). However, similar regulations in the (semi-)public sector are absent. The government assumes the gender-neutrality of policies, but this is often closer to myth than to reality. And

because government policies are not gender-neutral, they may have unintended, unforeseen negative effects on the gender relations in a society and on space (Verloof and Roggeband, 1996). Local planning authorities have an obligation to protect vulnerable groups. Today they recommend to take gender into account, however they usually provide no example of how to do this. Without the visibility of women-specific, feminist, gender and diversity sensitive processes and projects, it is difficult to promote these. This is especially the case under the existing financial conditions and the threat of what may be socio-political backlash (Zibell et al., 2016).

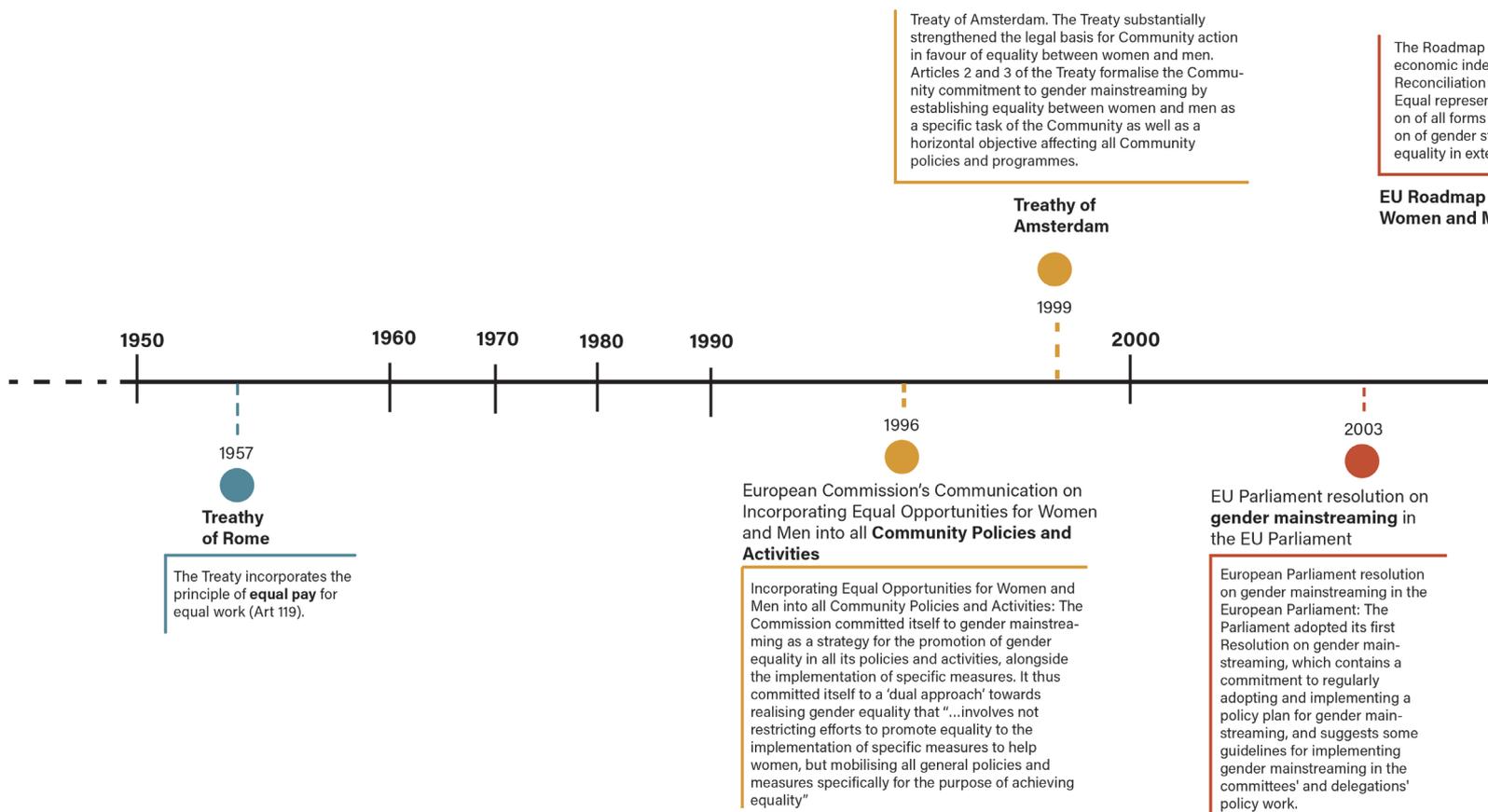
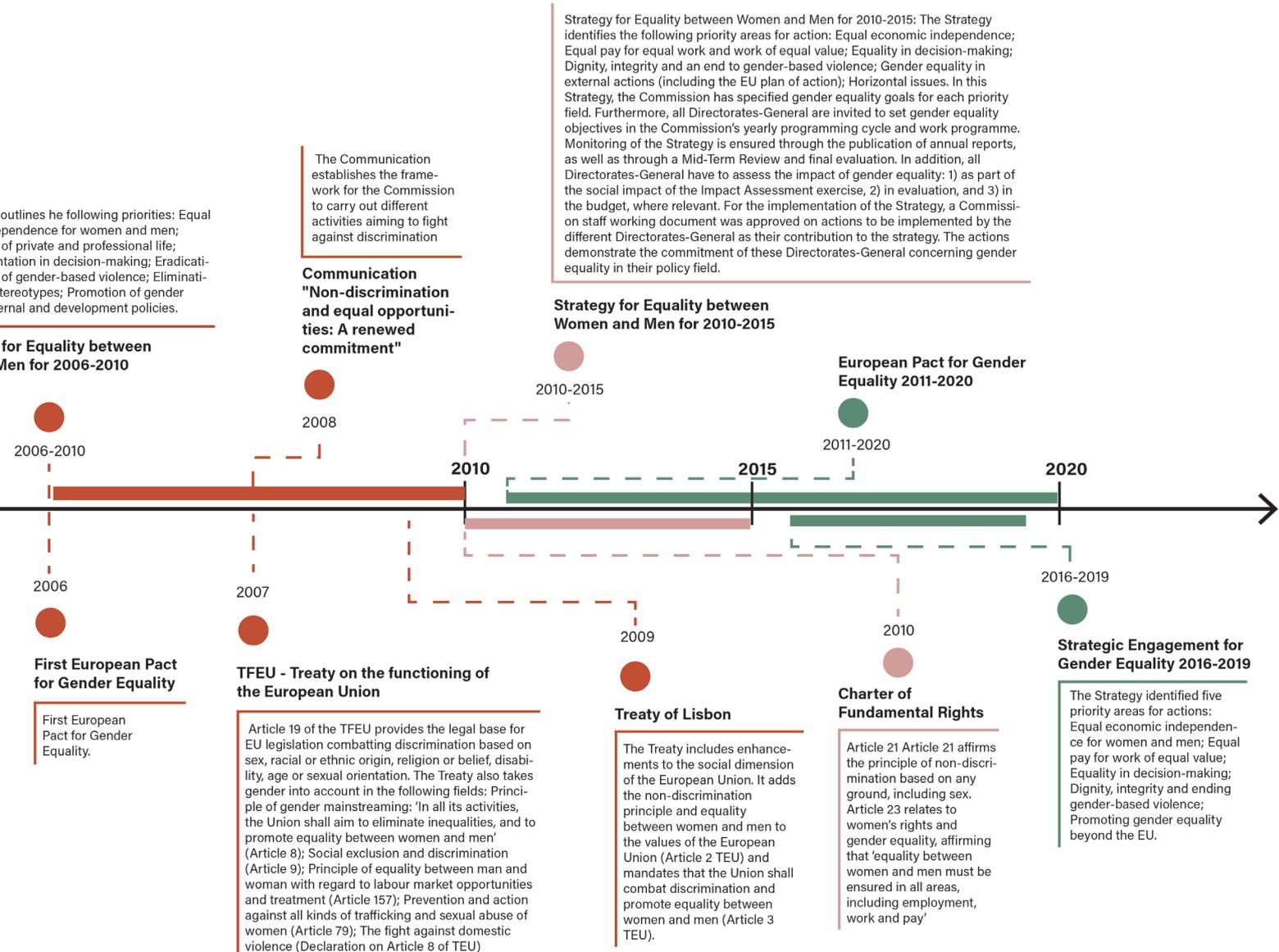


Image 16: Timeline gender governance Europe - Source: Author

The European context

The European Union (EU) was formed in 1958 by six countries including the Netherlands. However, before the existence of the EU, on March 25th, 1957, a treaty was signed in Rome establishing the European Economic Community (EEC) and the European Atomic Energy Community (EAEC) (History of the EU, n.d.; What Is Gender Mainstreaming, n.d.). This treaty included the principle of equal pay for equal work and was the first step towards gender sensitive governance and planning. More treaties followed in the late 1990's and 2000's, the most important being the treaty of

Amsterdam in 1997. This treaty set the framework for gender mainstreaming in public policy for all the states in the European Union (Roberts, 2022). They used a dual approach towards realizing gender equality (What Is Gender Mainstreaming, n.d.). This approach involved mainstreaming a gender perspective in all policies, while also implementing specific measures to eliminate, prevent or remedy gender inequalities. Examples of requirements are: a European-wide horizontal priority to integrate equality objectives into all programming objectives, adopting and implementing a policy plan for gender



mainstreaming, and suggests some guidelines for implementing gender mainstreaming in the committees' and delegations' policy work, a legal base for EU legislation combating discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation, strategies and a roadmap to equality (What Is Gender Mainstreaming, n.d.).

Although the European Union has many gender equal policies installed, it can be questioned whether or not they are implementable at a local level. In the evaluation of the German EU

district development program URBAN II, it became obvious that the objective of gender mainstreaming was not integrated into local programs and measures. Instead of integrating this objective into programs and measures, it was dealt with by including women's representatives in working groups and boards (Wotha, 2013).

Problem statement

Many of the currently existing neighborhoods are designed and planned by males who designed from their own perspective, in essence going to work in the morning and coming back in the evening (Hunt, 2019). Female designers and planners were socially and even lawfully not accepted until recently.

Although it is no longer the case that women only do the unpaid work in the private sphere (LaFrombois, 2017) and planning and designing are only done by males, it is still the case that male dominance is present in the theories, standards and ideologies that are used to guide planners and designers (Sandercock and Forsyth, 1992). Next to that, there are still very few women in the higher ranks of planning and design agencies (Sandercock and Forsyth, 1992). Also the rate of female participation (especially by women from diverse groups) in municipal decision making is generally lower than that of men (Parker, 2011), because women lack more often free time, are socialized to not speak out, to speak up for their own needs or there is an absence of

personal leadership amongst women (Sandercock and Forsyth, 1992; Wotha, 2013).

Without women sharing their diverse experience of everyday life and being listened to, public space becomes exclusive, unsafe and inaccessible, because their female body, their unpaid care burden and male violence against them is not taken fully into account (Perez, 2019).

Although policies and programs were installed in the Netherlands between 1990 and 2010 that tried to target planning professionals and institutes to include the everyday life of women in policies and urban planning, they either faded into the background due to the decentralisation of the government (Tummers, 2013) or they were not implemented at all (Wotha, 2013). Therefore there is currently no coherent strategy to strive for gender inclusive design and planning of public space in the Netherlands. Currently, however, it is seen as the responsibility of many separated departments.

How can a city be just, how can public space be inclusive, when it is/was not designed and planned taking into account the gendered everyday experience of this public space? How will public space become inclusive when there are no strategies or guidelines on how to design and plan gender inclusive public space in the Netherlands?

Relevance

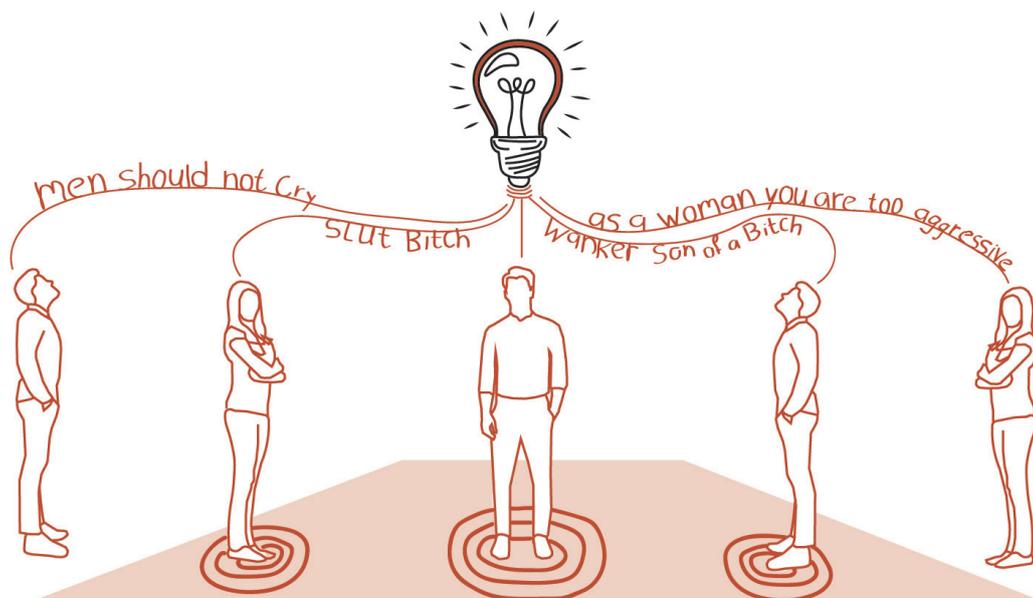


Image 18: Problem field - Source: Author

Societal Relevance

“The fact is that worth is a matter of opinion, and opinion is informed by culture. And if that culture is as male-biased as ours is, it can’t help but be biased against women. By default” (Perez, 2019). Societies and cultures impose norms and values on all of us that then affect our thoughts and behaviour. Urban planning mirrors this social construction and affects the relationships between changes in decision-making processes in urban spatial planning and their impact on the implementation of gender-aware urban planning (Tummers, 2013). Therefore, the planning and design of public space is gendered in a way that one is not always aware of (Perez, 2019).

This is felt all through society, by mothers, gay people, working women, little children and people with a migration background. Between 2005 and 2022, the political goals in the Netherlands shifted towards privatization, decentralization and

individualization, allocating more and more responsibilities towards the municipalities and therefore no longer including gender-aware guidelines in design and planning assessments (Tummers, 2013).

With gender no longer being an active issue on the planning agenda in the Netherlands, it is important to create awareness, to address the urban planning gender gap and challenge gender equality in space. Because sustainability is not deliverable without a change in the relationship between the sexes with regard to equal access to and equitable distribution of resources. Any society that dispenses on a long-term basis with part of its human resources by, for example, failing to involve these individuals in economic and political decision processes, can scarcely be called sustainable (Boccia, 2013).

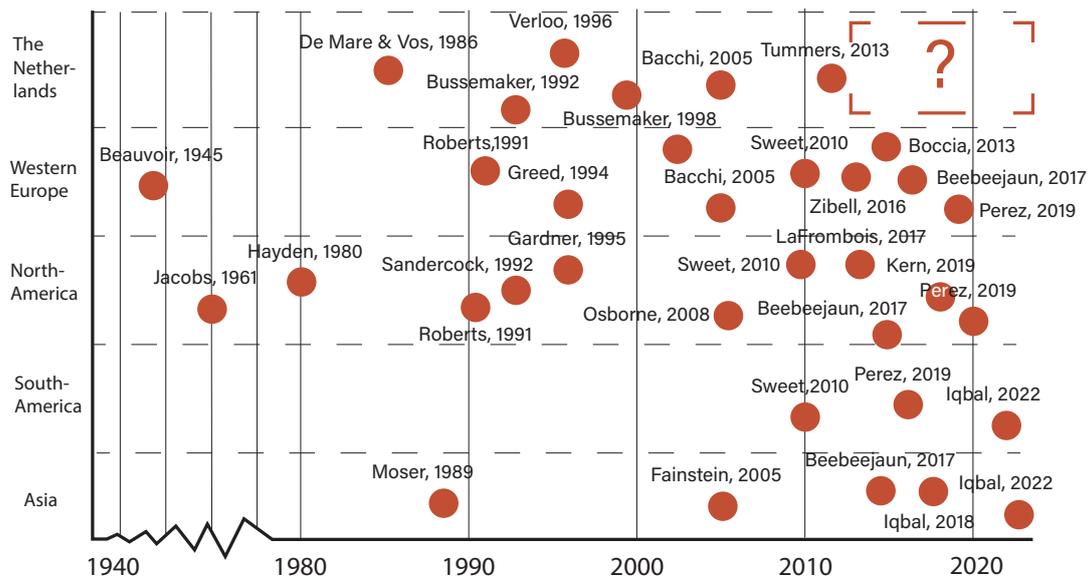


Image 19: Diagram with location and date of all sources found and used during the thesis - Source: Author

Scientific Relevance

While this research is closely related to social studies, it does also have a strong relation with spacial and planning studies.

Currently there are two scientific gaps in the field of gender sensitive planning and design. Although there has been written a lot on the topic of gender inclusive planning and design, there is nearly no present-day scientific research about gender equality in public space in the Netherlands. Most of the research focusses on countries other than the Netherlands (for example in India, the United States of America or Spain), or was written more than ten years ago and therefore their relevance could be questioned (see image 19).

The second gap is the lack of a coherent framework. While multiple articles provide in-depth analysis of gender inclusive planning and design and others propose a wide variety of solutions, there is a lack of coherent,

overarching frameworks. Therefore, this thesis will add to the scientific discourse by providing an overarching strategic framework, based on research about current gender equalities that are present in public spaces in the Netherlands.



Research Approach

Research Aim

Literature on gender inequality has been profoundly present ever since the 1970s. The awareness and understanding of the problems and solution handed by the literature at plan and design level is lacking. Therefore the aim of this research is to be able to present a strategic framework for gender inclusive public space. Although gender inequality is not something that can simply be solved by design and planning, it can help those who are negatively influenced by it. Eva Kiel, a Vienna based urban planner who specialized in gender mainstreaming in city design, stated: 'You can't influence the share of unpaid work by architecture, but you can support it. We would hope it would support 50%

of men as well- but statistics show it is still more women doing that work' (Hunt, 2019). Therefore, saying that we can't change society, but we can try to accommodate women who are currently overlooked in the design and planning of public spaces. By creating more recognition and consciousness of the gender biases that currently coexist in the city and by creating a strategic framework supported by different approaches and guidelines, planners, policy makers and designers could be enabled to undertake more gender inclusive forms of interventions in public space (Beebeejaun, 2017; Fainstein, 2005).

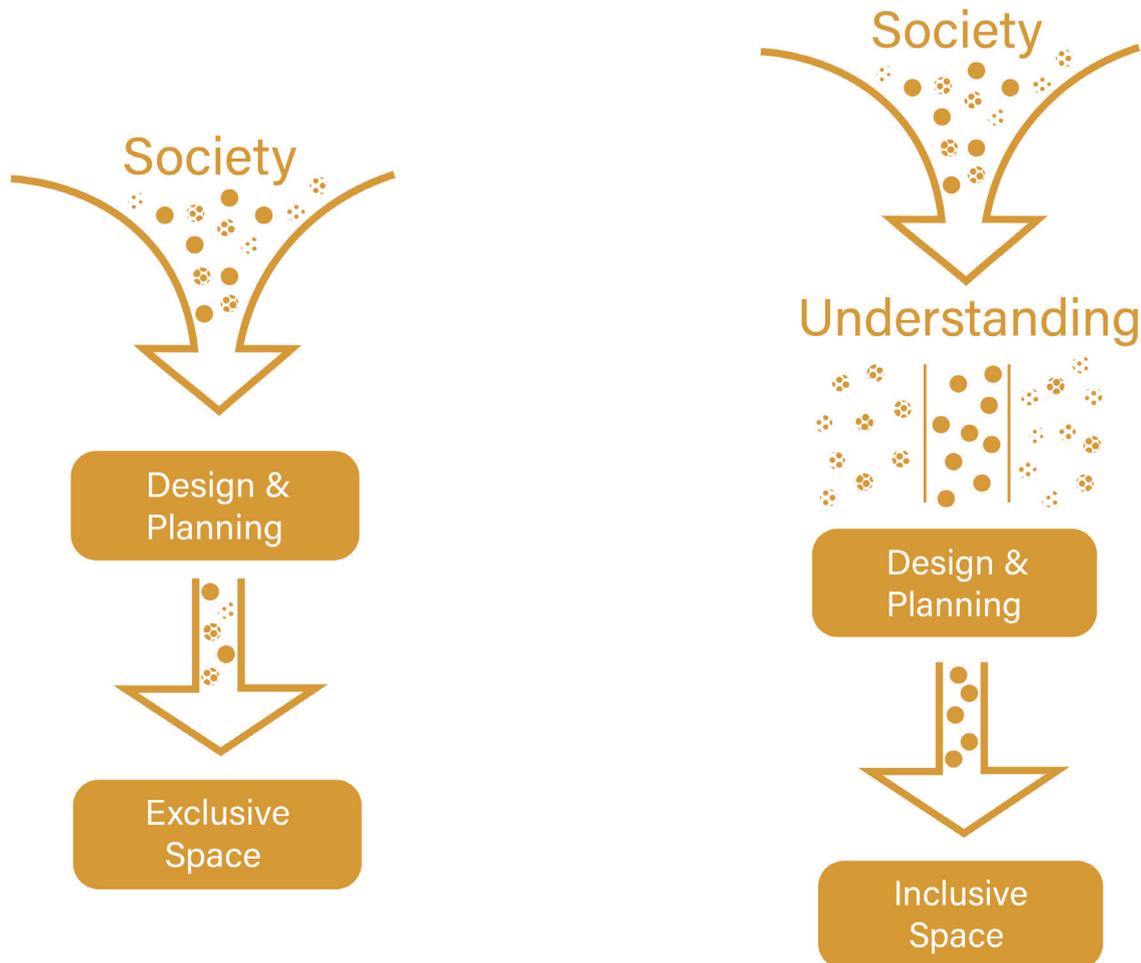


Image 20: Research aim - Source: Author

Theoretical framework

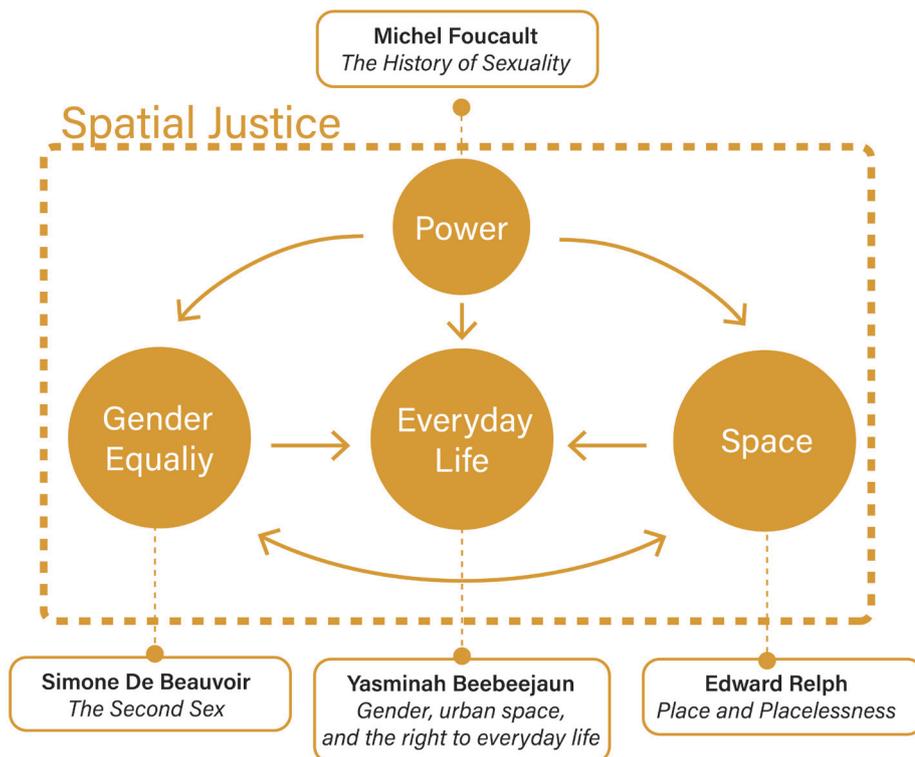


Image 21: Theoretical framework - Source: Author

In the theoretical framework, multiple theories on subjects that are touched upon in this thesis will be explained in more detail, revealing their interrelations. The theories are not limited to space and gender, but also about what keeps this relationship in place (power, the effect it has everyday life and how everyday life is powerful in itself). The theories will be explained one by one, explaining its relation with gender inequality in public space.

Power

According to Foucault (1972), power is fundamentally connected to knowledge. The two cannot be seen as separate concepts, but one single concept called power/knowledge (Fruhling, n.d.). Power is immanent in all social relations

and all social relations are relations of power, whether in family or in the hierarchies of government and other institutions (Mambrol, 2016). Those in power (for example governments and boards) define to a large extent the agenda, they chose what viewpoints are accepted within the organization or messaged outward from the organization (Fruhling, n.d.).

Furthermore, those in power decide what viewpoints are included or excluded from the domain of "truth" and "knowledge" within a specific context. Systems of power are all justified and upheld by a complex web of beliefs generally accepted as "truth" or as "knowledge" by various ranks and roles within any particular context (Fruhling, n.d.). In other words, power both creates and suppresses knowledge (Mambrol,

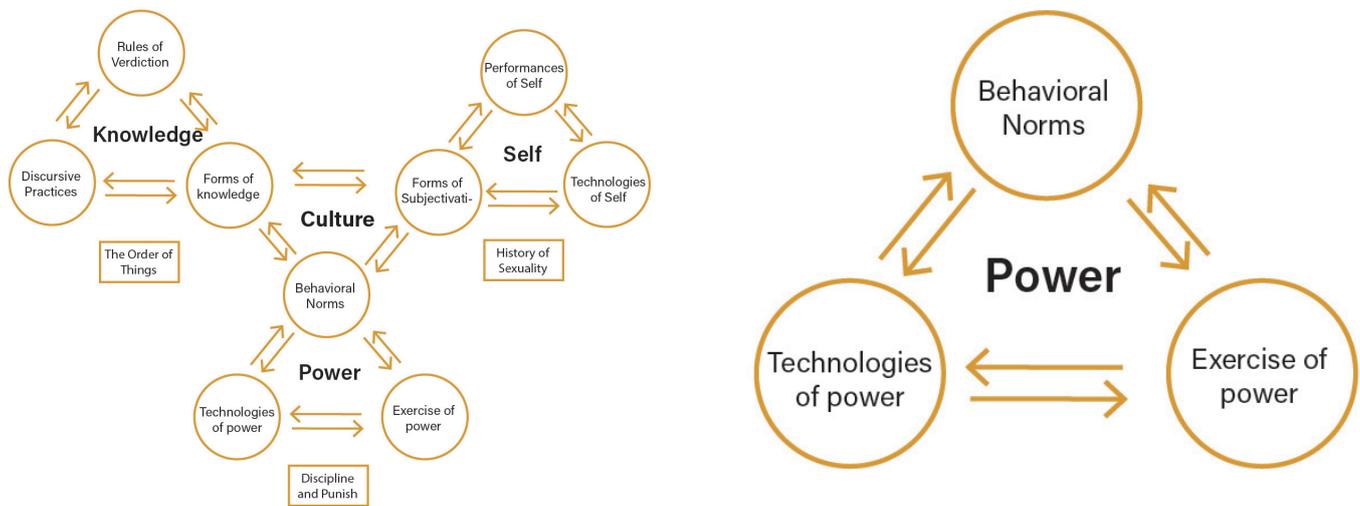


Image 22: Power according to Foucault- Source: *Author based on CriticalTheory on Reddit*

2016).

Therefore, it is important to recognize that relations between the sexes in the private sphere are not natural relations, but power relations that have acquired their specific form in connection with and under the influence of a specific form of society (de Mare and Vos, 2022).

Spatial Justice

“Questions of justice cannot be seen independently from the urban condition, not only because most of the world’s population lives in cities, but above all because the city condenses the manifold tensions and contradictions that infuse modern life” (Soja, 2010).

What this citation implies is that there

are no value-free solutions for urban problems. All decisions in space are political and therefore must involve a choice, negotiation and friction (TU Delft, 2017). Spatial justice is socially constructed and evolves over time (Soja, 2010). Spatial justice is such that it is not a substitute or alternative to social, economic, or other forms of justice but rather a way of looking at justice from a critical spatial perspective (Lonetto, 2013). Justice has a consequential geography, a spatial expression that is more than just a background reflection or a set of physical attributes to be mapped (Soja, 2010).

Bissett (2015) proposed a framework as a method of defining elements of ‘spatial justice’ (see image 22). The elements she proposed were; theory, politics, planning, practice and reality. Each

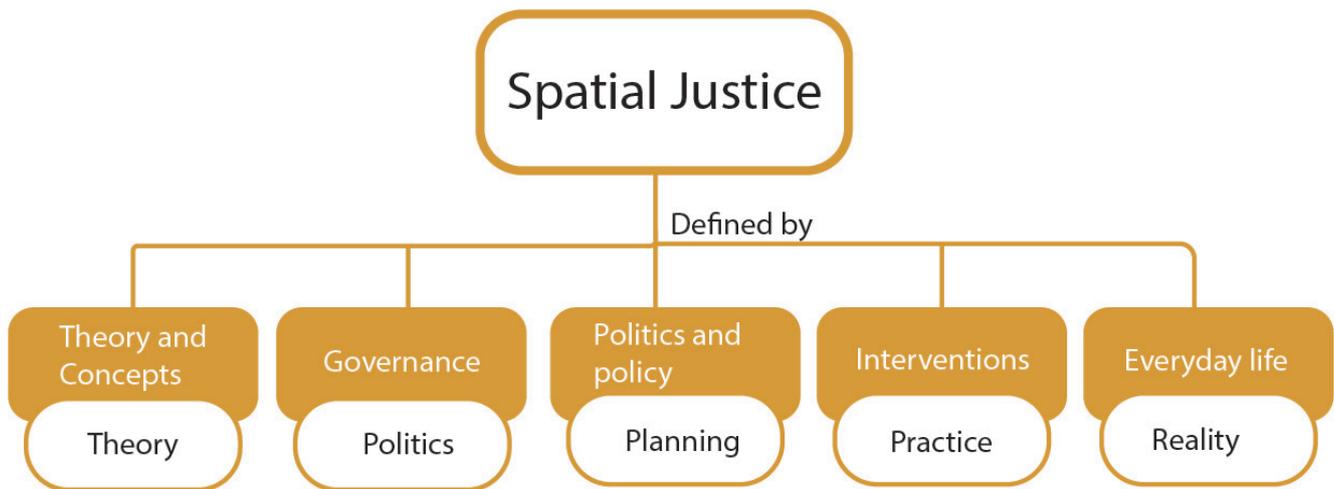


Image 23: Spatial Justice Framework- Source: *Author based on Bissett (2015)*

element affects the next one, theoretical concepts are being translated into politics and policies, which then guide spatial planning. The outcome of the spatial intervention may be experienced as measurable consequences (Bissett, 2015).

Space

According to Relph (1976), space is amorphous and intangible and not an entity that can be directly described and analysed. He distinguishes five types of spaces: pragmatic or primitive, perceptual, existential, architectural and planning and cognitive. The 'existential' or lived space is seen as especially relevant to the phenomenological understanding of space.

The existential space describes the inner structure of space as it appears to us in our concrete experiences of the world as member of a cultural group (Relph, 1976). This understanding goes beyond just language, it is also about patterns and structures of space.

A very clear example is that of the Omarakama, a tribe that lives on an island near Papua New Guinea. The village plan of this tribe is arranged in concentric rings around a central public plaza (see image 24). The inner ring consists of yam storage houses which are sacred and the outer ring consists of huts of the married couples, the most profane. Women mostly use the profane space while the public and sacred space is used especially by men. This is an example of how unselfconscious social beliefs and values are embedded

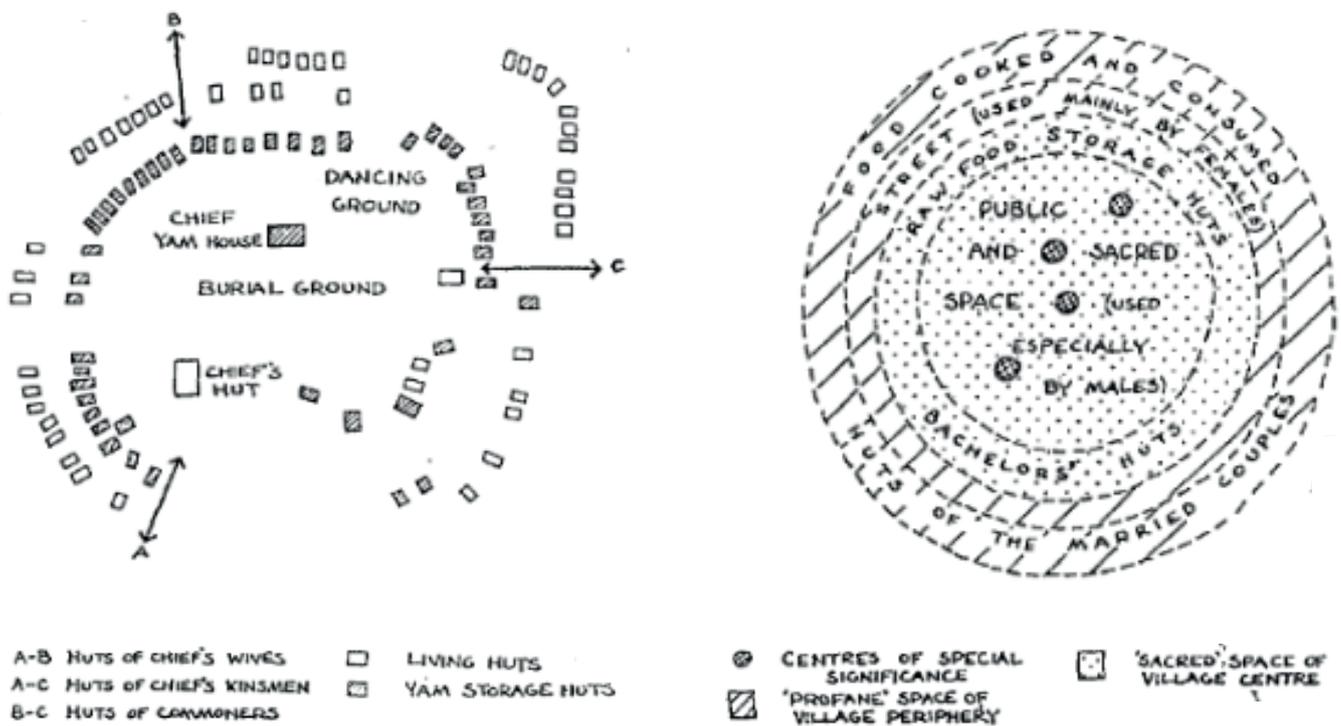


Image 24: The spatial structure of Omarakama village, illustrating the 'lived' or 'existential' space - Source: *Relph (1976)*

in spatial elements: the yam was sacred and was therefore placed in the middle of the village, whereas the mundane task like living and cooking took place on the outside (Relph, 1976).

tendency to take the front row seats, and that if there was some kind of gate, that men would guard it as to protect the women. Women preferred more secluded sitting spaces.

To translate that to a more western situation, it has been assumed that the female member of the household stayed at home and provides all domestic functions of the household, while the male member of the household works outside of the home for a wage that supports the household (LaFrombois, 2017).

It is also visible in how we use space, women are usually seen as the 'weaker' sex and therefore they need to be defended. Whyte (1980) discovered, while doing research on public spaces in New York, that men showed a

Everyday life

Everyday life, when discussed in literature, usually means people's daily routines. However, according to Lefebvre, everyday life encompasses more. It extends to concerns with the effect of "banal and meaningless life" but still positions everyday life as "the site of authentic experience, of self, of the body and of engagement with others" (Beebeejaun, 2017). In contrast with Lefebvre, de Certeau (1988) claims that ordinary people are not passive and submissive but active and can manipulate the environments around them through everyday actions, thereby saying that everyday life has power.

According to Beebeejaun (2017), some urbanists think that de Certeau over-romanticizes the liberating potential of individual action. De Certeau simplifies the operation of power as visible primarily through top-down planning visions. He emphasizes on the importance of walking, those who walk within the city are "ordinary practitioners", that in contrast with the planner, urbanist and cartographer (de Certeau, 1988).

Planning visions pretend that space is static, while in reality space is dynamic. Instead of a vision of the city as a coherent knowable space, the walker is able to temporarily, at least, take over the spaces she or he moves through and gives them their own meanings, by connection space with past memories and present emotions. Rather than operating within fixed or static space, the walker dynamically inhabits it,

shaping its qualities (Beebeejaun, 2017).

Everyday life can show light on the numerous spaces where women's rights are denied or removed, claimed or asserted and how women experiences can directly influence ".their use and perception of the urban environment" which can be understood as different to men's everyday life (Beebeejaun, 2017).

Gender Equality

What does it mean to be a woman? Can a woman be totally equal to a men? De Beauvoir (1949) answered these and more question in 'the second Sex', arguing for female liberation, because 'one is not born, but rather becomes, woman.' She claims that when a woman imitates being a man, when she dresses like a man, talks like a man, walks like a man, she will be seen as woman who tries to be a man, never as a man himself. She will devalue herself sexually and socially because society has incorporated sexual values. When a woman refuses to confine herself to her role as female, she does so as to not mutilate herself; it would be a mutilation to repudiate her sex. As de Beauvoir (1949) argues further, humanity is male, and men define women, not in herself but in relation to himself: she is not considered an autonomous being. Men and women are often described by differences, women being seen as 'the Other' (de Mare and Vos, 2022).

Lawmakers, priest and writers have all gone to great lengths to prove that it was the will of either god or nature that



Image 25: Gender equality - Source: <https://chiaraghigliazza.com/>, edited by author

women are of a subordinate condition (de Beauvoir, 1949). It is hard for women to unite, to protest against being forced into this subordinate being. Women have no common past, no history, no religion of their own, and unlike for example the proletariat, they have no solidarity of labour or interest (de Beauvoir, 1949).

According to de Beauvoir, the rights that were given to women were more of a symbolic agitation. Women have won only what men have been willing to concede to them. They have taken nothing. They have received. Men may think that there is no longer a social hierarchy between the sexes and that on the whole women is an equal. However, he will apply concrete inequality and even allow himself to disavow abstract equality.

Therefore the question on how gender equality can be realized remains, because women physically differ from men. However, according to Bronte "women feel just as men feel; they need exercise for their faculties, and a field for their efforts, as much as their brothers do; they suffer from too rigid a restraint, to absolute a stagnation, precisely as men would suffer; and it is narrow-minded in their more privileged fellow-creatures to say that they ought to confine themselves to making puddings and knitting stockings, to playing on the piano and embroidering bags" (Bronte, 1847).

Conceptual Framework

The conceptual framework is derived and defined by the literature review and by the understanding of different theoretical notions mentioned in the theoretical framework.

Public Space

As discussed in the theoretical framework, there are multiple layers of space according to Relph (1974). Public space is something that is both part of the 'existential space' (the inner structure of how space appears to us) as well as the 'architectural or planning space.' The term 'public space' itself has multiple definitions, because it has been studied within different disciplines. However, there are key dimensions that are used to define public space, namely: ownership, management, accessibility and inclusiveness (Lee, 2022). While in planning discourse, the definition of public space is space that is owned by the government. When looking at public space from an existential viewpoint, this definition is not sufficient, first of all because ownership and operation can be mixed. Even when a space is publicly owned, this does not guarantee that it possesses the essential qualities of a public space and therefore will be recognized as such (De Magalhaes, 2010). Public space, according to the Ministry of Housing, is 'all freely accessible space,' therefore not focusing on ownership but on accessibility. Orum and Neal (2010), define public space as 'all areas that are open and accessible to all members of the public in a society in principle, though not necessarily in practice'(Lee, 2022). When public space is 'owned' by the inhabitants. When that

public space is freely accessible to all. Could this public space then be called inclusive ?



Image 26: Public space - Source: Author

Society - Norms & values

A society is a large group of people who live together in an organized way and in a particular social system (Society, n.d.). They occupy a particular territory and share a culture. People can be part of multiple cultures within one society. Culture can be defined as a set of certain learned behaviours and beliefs (norms and values) that characterize a group of people (Society vs. Culture Concepts & Examples | How Is Society Different From Culture?, n.d.). Although a society is composed of multiple cultures, there usually is one overarching culture, for example 'Dutch culture' or 'Japanese culture.' Based on the norms and values of this culture, laws and institutions are formed. According to Roberts (2013), gender can be understood as a 'structure of social relations' whose attention is on the relationship between bodies and is focused around the reproductive arena in its broadest sense. With reproduction she means 'the entire means by which

society ensures it continuity, thereby referring to aspects of work, care and culture'(Roberts, 2013). Because often the norms and values are deeply rooted in the fabric of society, it is hard for individuals and groups to change the social structures they operate within. Therefore, acknowledgment of the existing current social construction of gender needs to be made.



Image 27: Society - Source: Author

Planning - Policies

Although many articles that were read during the literature review describe 'gender-inclusive planning,' 'diversity planning' or 'gender planning theory,' none explain what planning means and what it comprises. According to Paleo (2009) planning is about interconnecting different social, economic, spatial and environmental layers and therefore transforming 'knowledge into action' (Paleo, 2009). There are many different facets of planning, of which spatial planning and governance are the most encompassing. Governance is a decision-making process that combines the public and the private spheres. It is a self-regulation system of institutions and inter-relationships steering economic and social processes beyond the formal structure (Wotha, 2013). This 'steering' is done through policies and

regulations. The task of spatial planning is to analyze different demands, conflicts and opportunities at certain spatial level, and based on analytical findings, to identify concepts, solutions and strategies for planning and design implementation. Spatial planning is then bound to policies formulated by the government through governance.



Image 28: Planning - Source: Author

Design - Design

As spatial design is about shaping the built environment, it also influences the humans that use the streets, houses and squares. Designs can try to include or exclude certain groups, a famous example being that of New York urban planner Robert Moses. He designed bridges between New York City and Long Island that were built just high enough that cars could pass, just too low for buses to pass. Thereby excluding people who couldn't afford to buy a car from going to the beach (Caro, 1975). An example of inclusion is Superkilen, a urban space that wedged through one of the most ethnically diverse and socially challenged neighborhoods in Copenhagen. The urban space has a collection of different objects like neon signs from Qatar and exercise gear from Los Angeles and items from 60 different countries the people inhabiting

the area surrounding it originate from (Superkilen / Topotek 1 + BIG Architects + Superflex, 2012). Design can also have an influence on people's behavior. Whyte (1980) performed extensive research on public space in New York, what made them work? He came up with different type of design principles that created those best-used plazas or most appreciated parks. He distinguished elements that are important for the life of social spaces, such as: sitting space, air quality, sun, wind, privacy, food, maintenance and more. Interestingly, during his social study he found a difference in the behaviour and the needs of men and women. For example he observed that " the most-used places also tend to have a higher than average proportion of women" and that "if a plaza has a markedly lower than average proportion of women, something is wrong". When looking at behaviour, men "show a

tendency to take the front row seats, and, if there is a kind of gate, men will be the guardians of it. Women tend to favour places slightly secluded. If there are double-sided benches parallel to a street, the inner side will usually have a high proportion of women; the outer, of men". So design implies future usage.

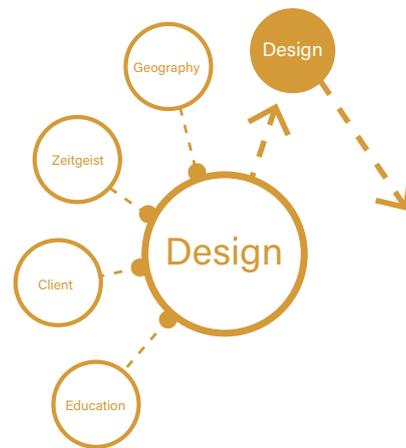


Image 29: Design - Source: Author

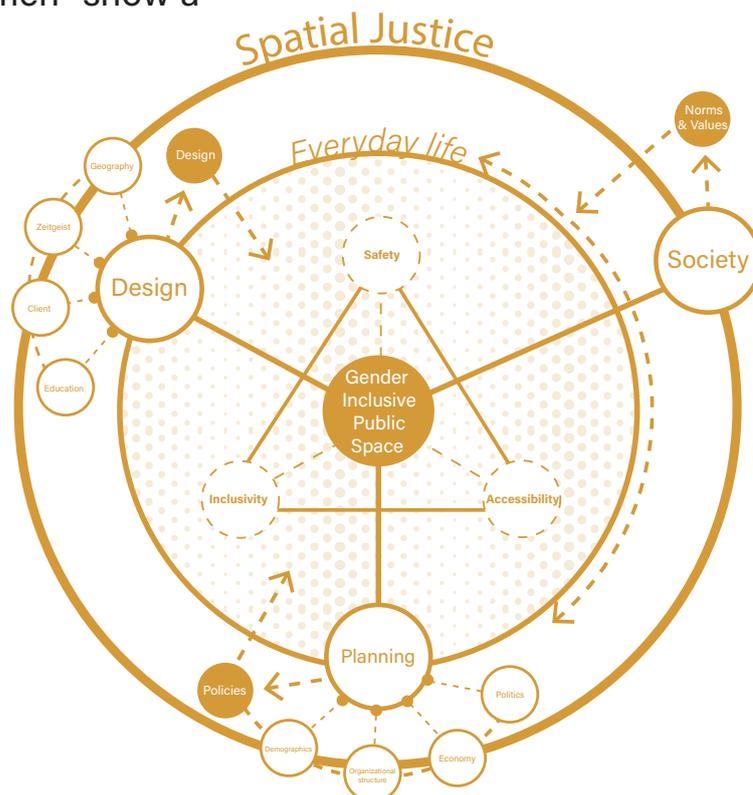


Image 30: Conceptual Framework - Source: Author

How could a strategic planning and design framework improve the gender inclusiveness of public spaces in the Netherlands?

- 1** What shapes gendered (exclusive) public space? What are its characteristics?
- 2** How does gender exclusive public space manifest itself through spatial planning and design?
- 3** What would a strategic framework look like that facilitates better understanding of gender equal public spaces by planners and designers in the Netherlands?

1

What shapes gendered (exclusive) public space? What are its characteristics?

Intended outcome

A better understanding of what forms public space. What are the current gender norms? What were previous gender norms? What is the effect of the previous gender norms on the current ones, which one are still in place? What is the history of public space? How are gender norms reflected in public space? What solutions and problems are handed through literature?

Methods

*Literature Review
Pattern Language
Case Study Analysis*

Variables



2

How does gender exclusive public space manifest itself in the Netherlands through spatial planning and design?

Intended outcome

Better understanding about gendered public space in the Netherlands and how it is influenced by design and planning. What are the spatial manifestations of gendered public space in the Netherlands? What design principles were used? What are design solutions for the problems encountered? What are the current policies that influence gendered public space?

Methods

*Literature Review
Case study
Pattern Language*

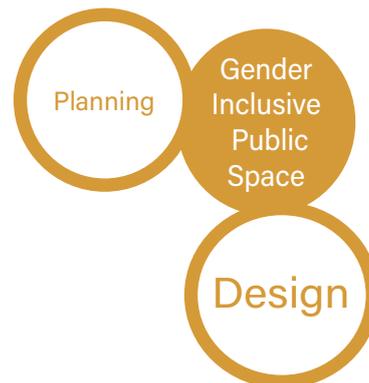
Qualitative analysis

- *Participant Observation*
- *Interviews*
- *Transect Walk*

Quantitative analysis

- *Data Mapping*
- *Participant Observation*
- *Questionnaire*

Variables



3 What would a strategic framework look like that facilitates better understanding of gender equal public spaces by planners and designers in the Netherlands?

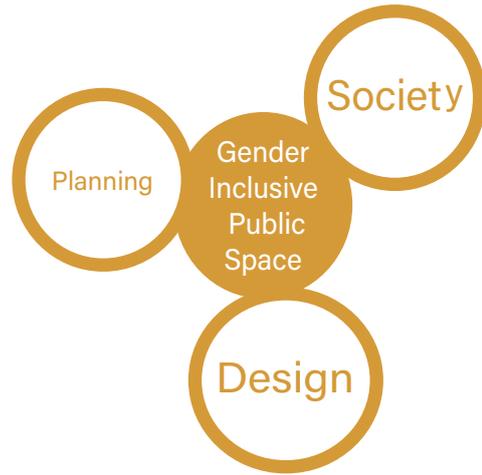
Intended outcome

Better knowledge about spatial intervention that could improve gender equal public spaces and how to communicate that with planners and designers via a strategic framework.

Methods

Literature Review
Pattern Language
Qualitative Analysis
Quantitative Analysis
Secondary Data
Design

Variables



Methodology

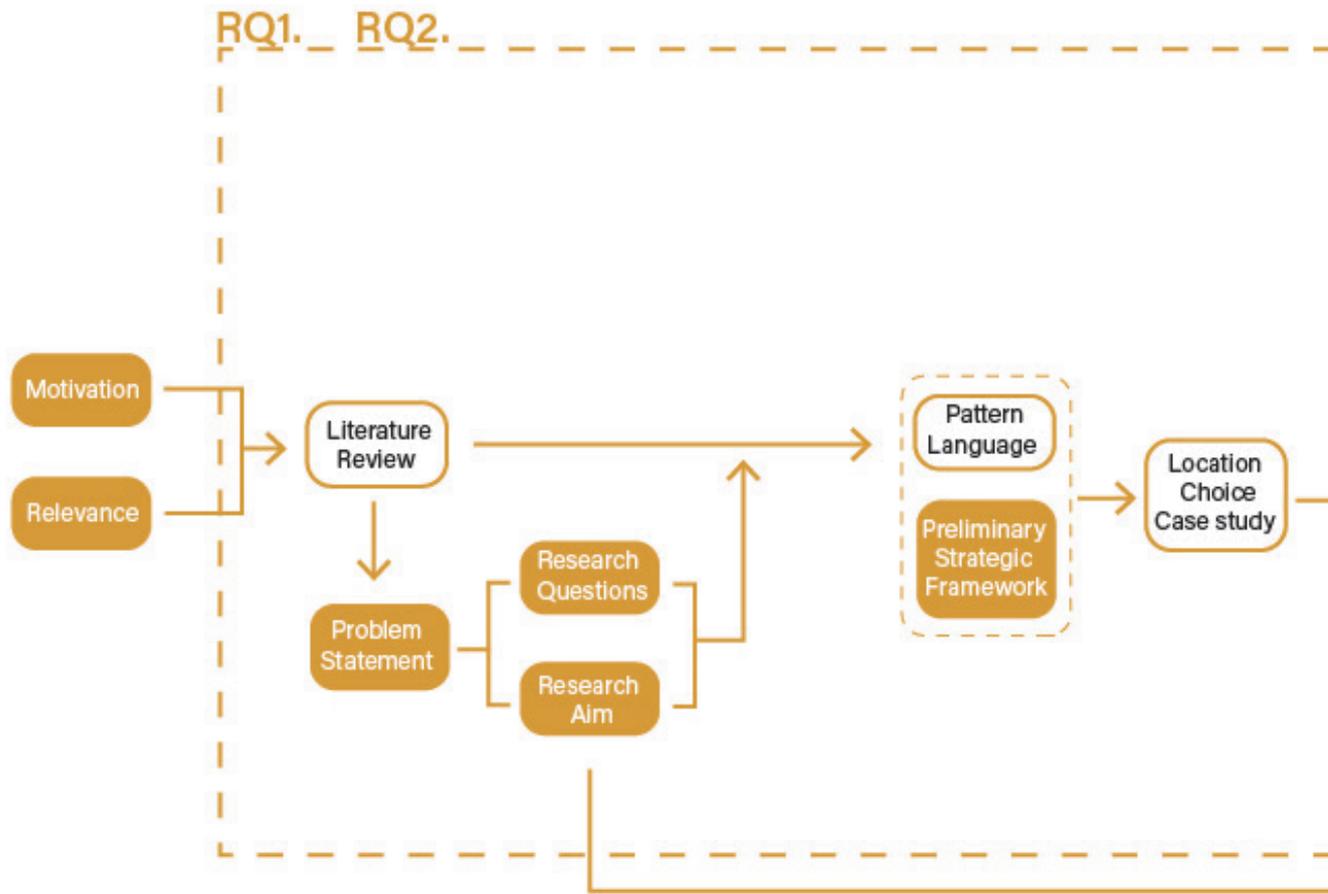


Image 31: Methodology - Source: Author

Literature Review RQ. 1 RQ. 2 RQ. 3

In different research fields (for example criminology, urban planning, sociology and geography) a lot has been written about the subject of gender, public space and planning (& design) (Ceccato, 2017). Therefore it is useful to summarize and evaluate the available literature.

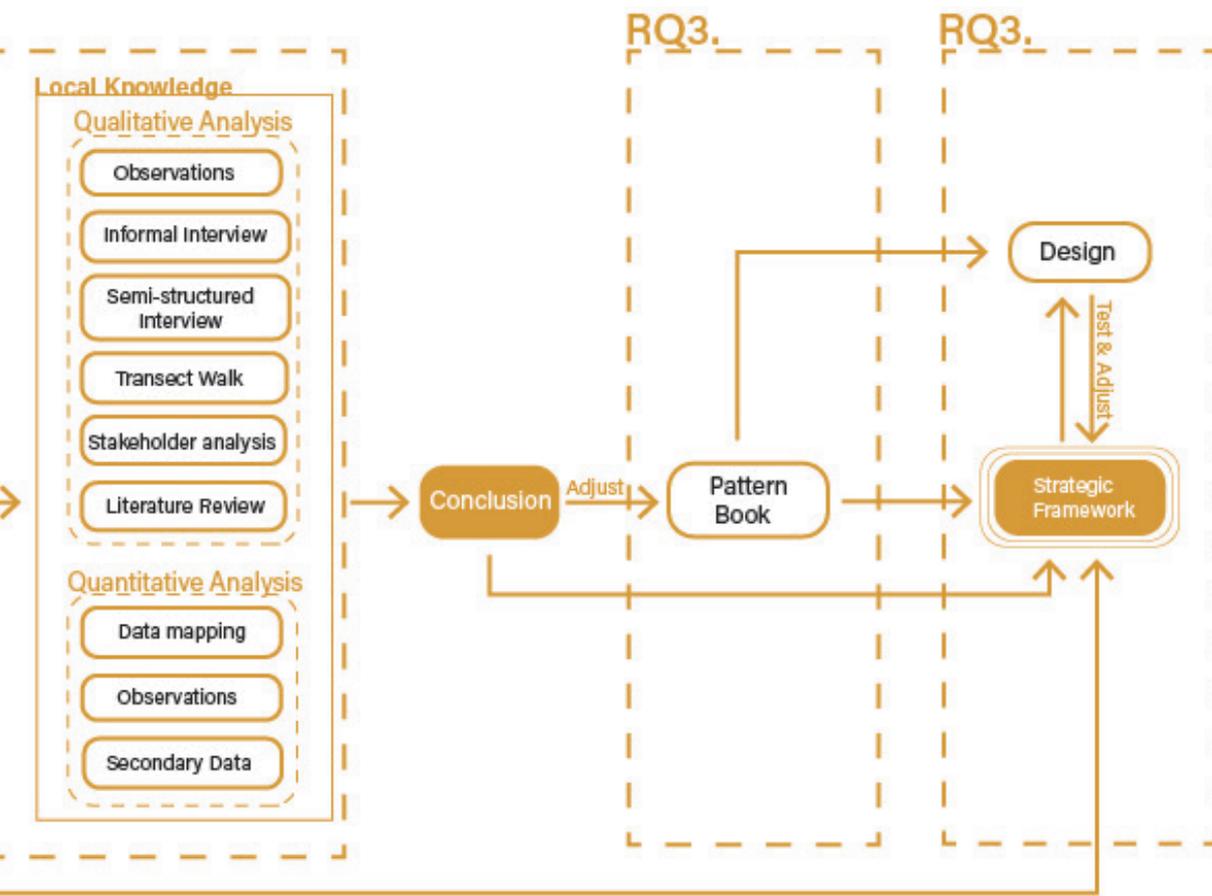
Use: Exposing current problems, solutions and knowledge gaps to form a foundation for the research.

How: Read literature that is available on the specific subject of 'gender planning', 'a feminist city', 'gender mainstreaming' and 'women in public space'

Pattern Language RQ. 1 RQ. 2 RQ. 3

Pattern language is a technique that was created by Christopher Alexander. He wrote a book with 253 patterns that together formed a language. A pattern describes a problem in a compact way and then provides a solution. The goal was to give 'normal', non-professional people a way to design and work with others, a common 'language'(Alexander et al., 1977).

Use: The pattern language is the spatial (design) summary of the literature study, and is a step in the process towards the strategic framework.



How: Create patterns based on literature, this is a summary of all the problems and solutions handed by the literature. Based on this summary, a categorization can be made to form the basis of the strategic framework.

Case Study RQ. 1 RQ. 2

A case study is a research approach that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences (Crowe et al., 2011).

Use: A case study on one specific location helps to translate the pattern language in the strategic framework. Since the pattern language are general problems/solutions, a case study in the Netherlands helps separating applicable from non-applicable patterns, to thereby help with 'designing' a strategic framework in the Netherlands.

How: Focusing on one location and performing in-depth analysis on this location (see qualitative and quantitative analysis methods)

Qualitative Analysis

RQ. 2

RQ. 3

Qualitative research is about collecting and analyzing non-numerical data and is commonly used in the humanities and social sciences, for example anthropology and sociology (Bhandari, 2020). In this thesis, multiple qualitative analysis methods will be used, namely:

Observations

Observing can be done both qualitatively as quantitatively. Qualitative observations refer to the observation of what has been seen, heard or encountered in field notes (Bhandari, 2020)

Use: Gathering information about who uses certain spaces? When do they use it? How do they use it? What kind of activities take place in what spaces? Observing gives you a better understanding between space and people.

How: Pick multiple spots in the neighborhood. Write down the observed behavior. Go back to the same spots multiple times.

Informal interview

Informal interviews are interviews that one has not prepared for, for example, having a talk when meeting someone on the street. It is possible to ask questions, but you don't have them prepared.

Use: Informal interviews are essential

for gathering subjective information in a very informal, low-key manner. In that way it is possible to get a better understanding of someone's personal experience.

How: Have informal talks with people in the neighborhood. Try to remember what they said and write it down.

Semi-Structured Interview

During a semi-structured interview, some questions are prepared for. However, there is the flexibility to divert and therefore to allow new ideas to be brought up during the interview as a result of what the interviewee says (Knott et al., 2022).

Use: Contrary to the informal interview, this interview needs to be prepared for and will take a bit more time. It also requires some skills from the interviewer as to get answers they need. Like informal interview, semi-structured interview are a way of understanding personal experience and opinions of people.

How: Prepare questions to ask to people on the street, if possible ask to record, take notes or remember as much as possible.

Transect Walk

A transect walk is a tool for describing and showing the location and distribution of resources, features, landscape, main land uses along a given transect (Tool Name: Transect Walk, n.d.).

Use: The transect walk can be used for identifying and explaining the cause and effect relationship between topography and human experience. It can help identifying problems and possibilities perceived by different groups in relation to the areas along the transect.

How: Find three to four people who are willing to walk with you through the neighborhood. Prepare in advance a route based on data mapping and observations. Send the participants the route and ask them if they would like to add another point on the map. Find a specific date on which at least two are able to come and walk the route. More than two people would be nice for sharing experiences, however everybody should have the opportunity to talk and the interviewer needs to be able to hear what's being said.

Stakeholder Analysis

A stakeholder analysis is an analysis on who is involved in the case, which people have a 'stake.' However, it also addresses the tasks that are required from individual stakeholders, as well as identifying which tasks will require a combination of stakeholders to be able to address (Rezikalla, 2020).

Use: The stakeholder analysis will be performed to see who needs to do which tasks in order to execute or to complement the strategic framework.

How: Through a literature review and interviews, an overview of the specific stakeholders, their role and how they influence the strategic framework can be made.

Quantitative Analysis

RQ. 2

RQ. 3

Quantitative research is the process of collecting and analyzing numerical data (Bhandari, 2020a). Multiple quantitative methods are used during this thesis, namely:

Data Mapping

Data mapping concerns connecting numbers to space. It can give insights in relation between certain phenomena (health, poverty, etc.) and space. A program that is commonly used for spatial data analysis is GIS (Geographic Information System). This enables analyzing separated data sets in relation to the spatial domain.

Use: To be able to fully understand the case study location, data mapping will be performed. This allows to discover relationships and therefore supports well-informed conclusions.

How: Find relevant datasets created by the municipality of Rotterdam or PDOK (opensource geodata).

Observations

As said before, observations can also be quantitative.

Use: In that case, questions such as: how many women are here present? How many children play here? How many boys? How many girls? It gives an impression on who uses what kind of spaces.

How: Chose multiple place to observe and come back to this place multiple times. Keep field notes.

Secondary Data

Secondary data is data that is collected by someone other than the primary user. This could include data that is collected by government departments, organizational records and data that was originally collected for other research purposes (Secondary Data - Meaning, Its Advantages and Disadvantages, n.d.). This method is time-saving, however the data rarely fits within the framework of the specific research.

Use: This method helps to make the primary data collection more specific and creates a better understanding of the problem.

How: In multiple cases, secondary data will be used in this thesis. One such case is the bi-annual questionnaire that is distributed by the municipality of Rotterdam, segregated by gender. Other examples include previous research on health, sport and safety in Beverwaard.

Design

RQ. 3

Design is a method that can be used for multiple purposes, for example to explore or to test certain ideas or as a starting point for an open discussion.

Use: Design will be used in the last phase of the project, as a way of testing the strategic framework and to give an example of how public space could be improved.

How: Implement the framework in a redesign of the neighborhood to see if problems arise and to give an example.

Methods

Research Questions

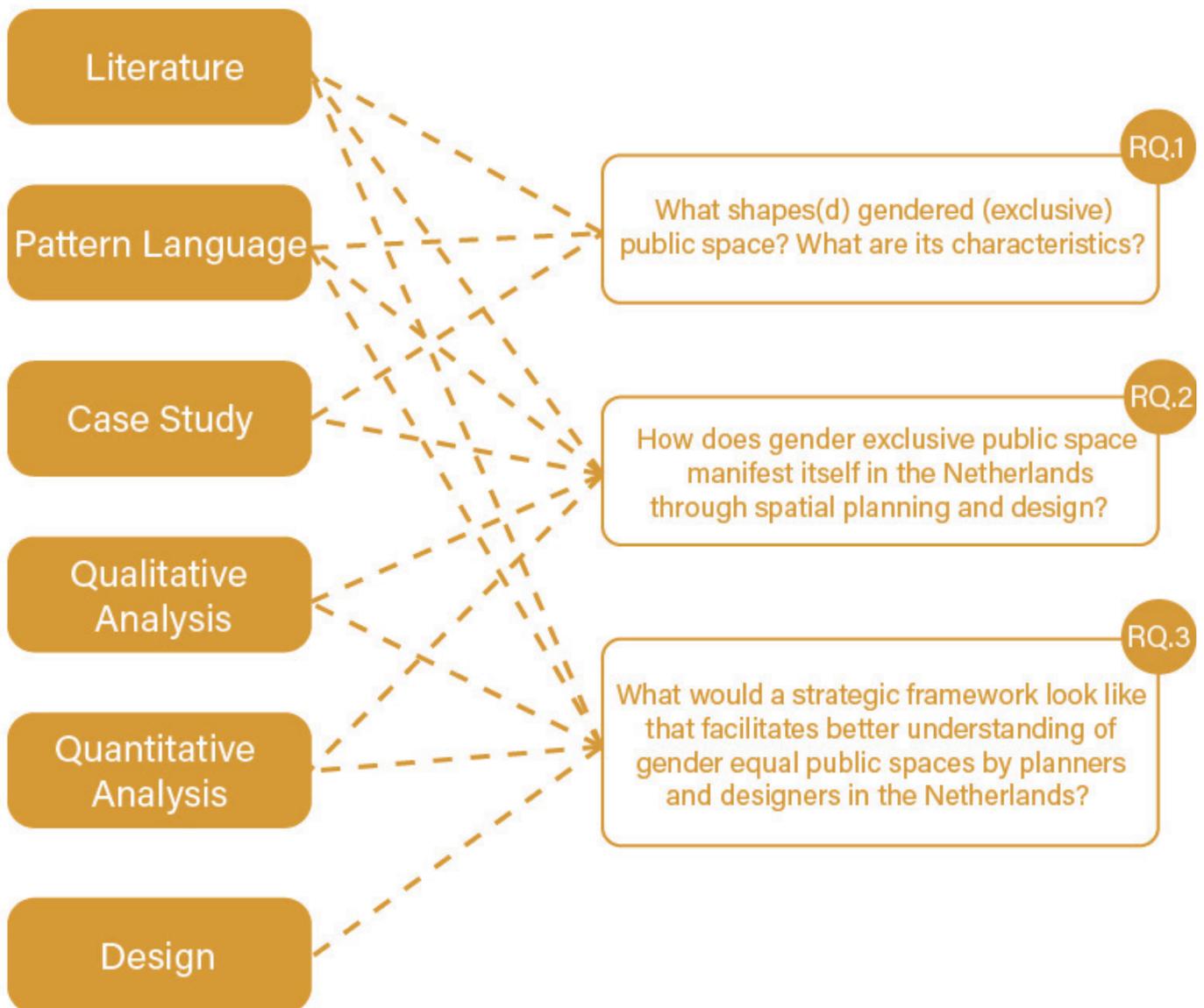


Image 32: Methods and Research Questions - Source: *Author*

Planning

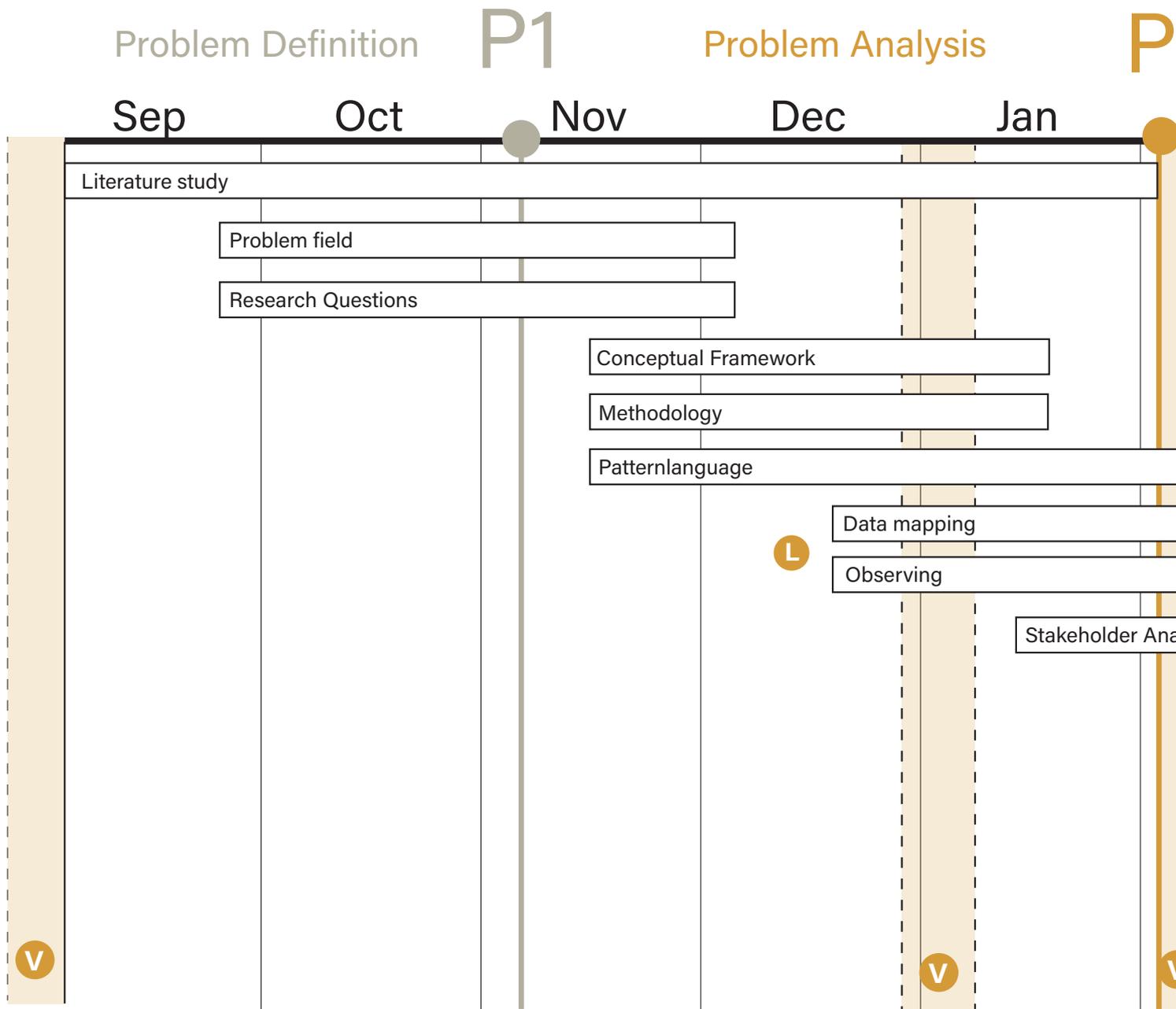
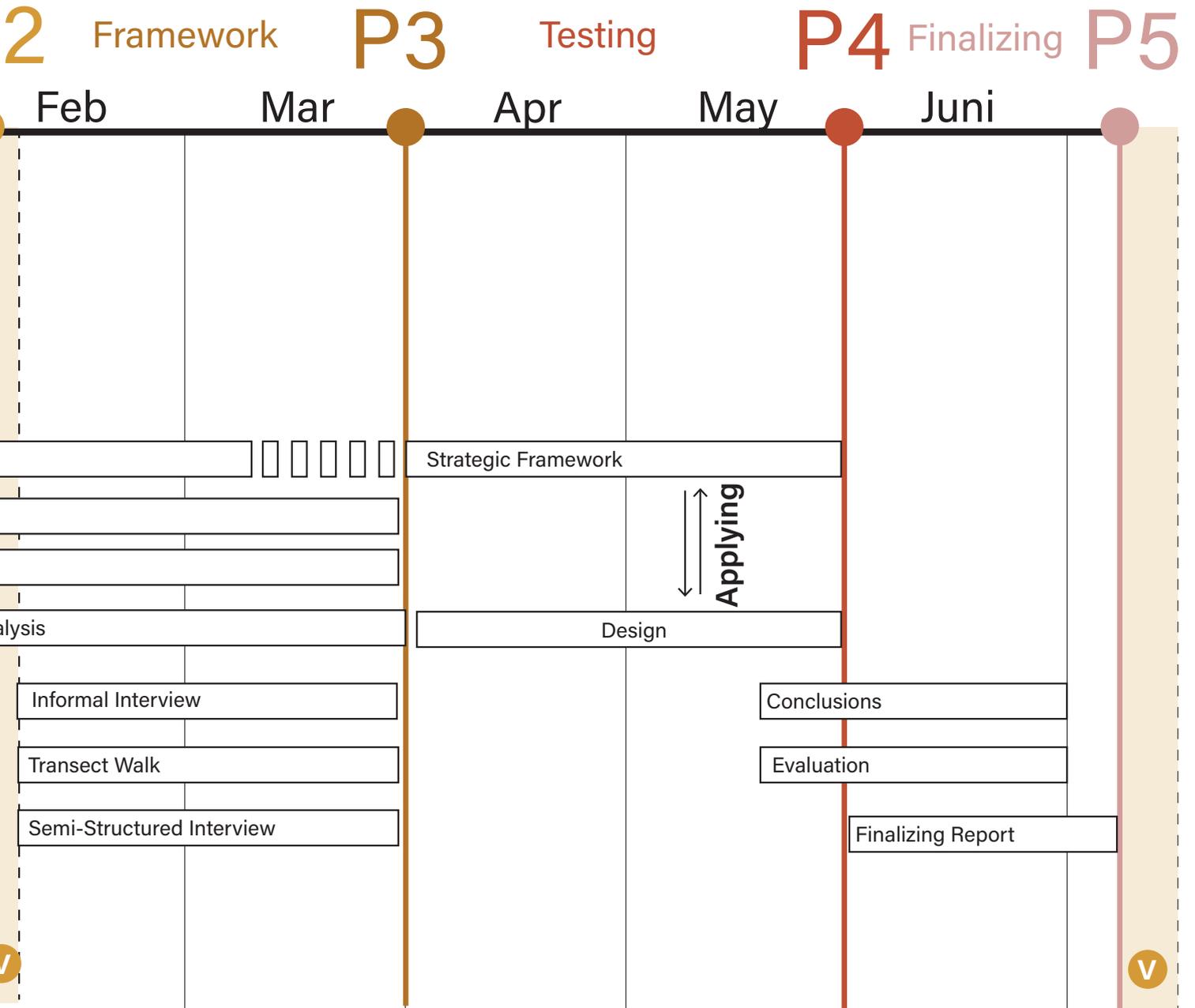
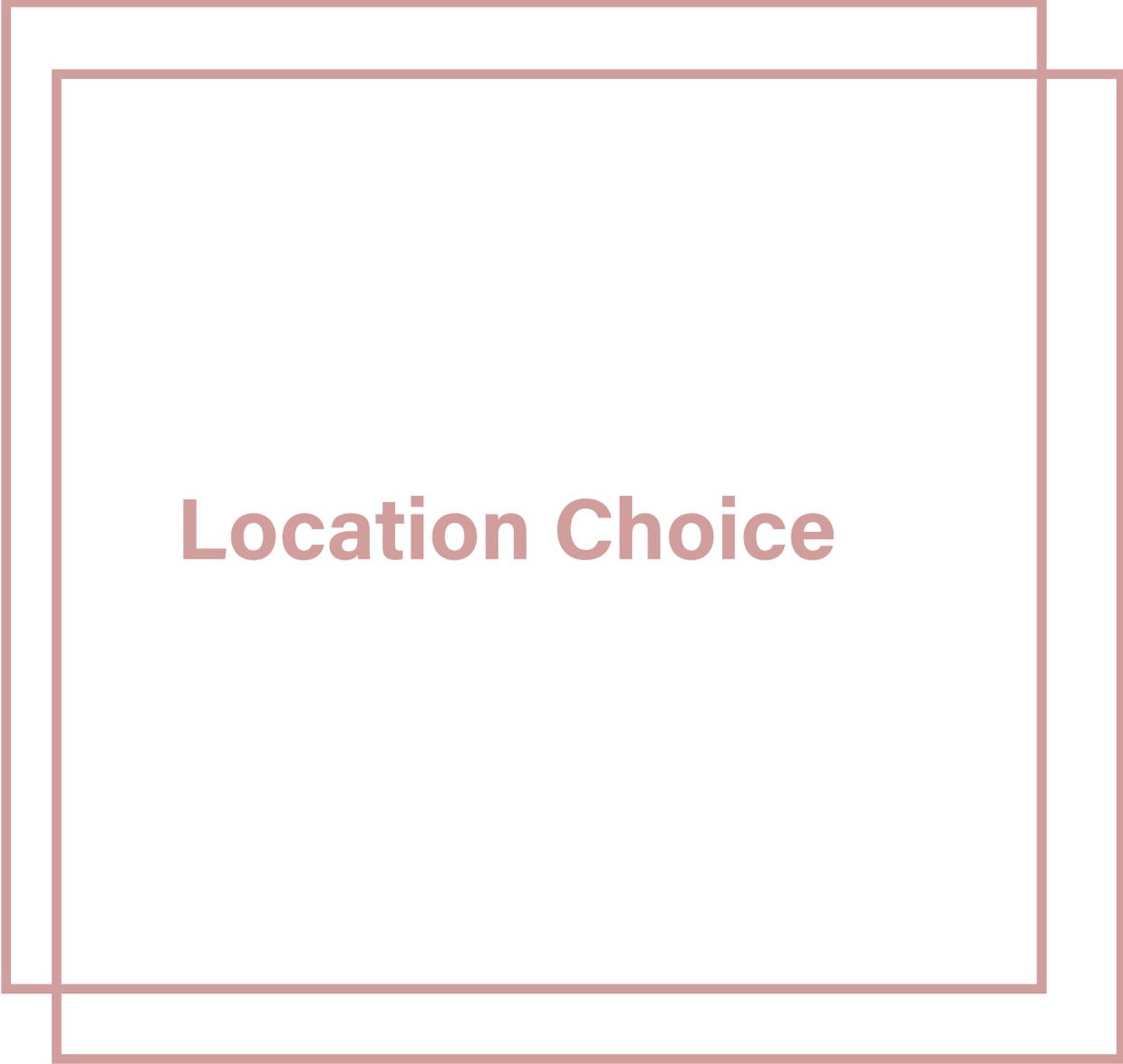


Image 33: Planning - Source: *Author*

L Location choice

V Vacation

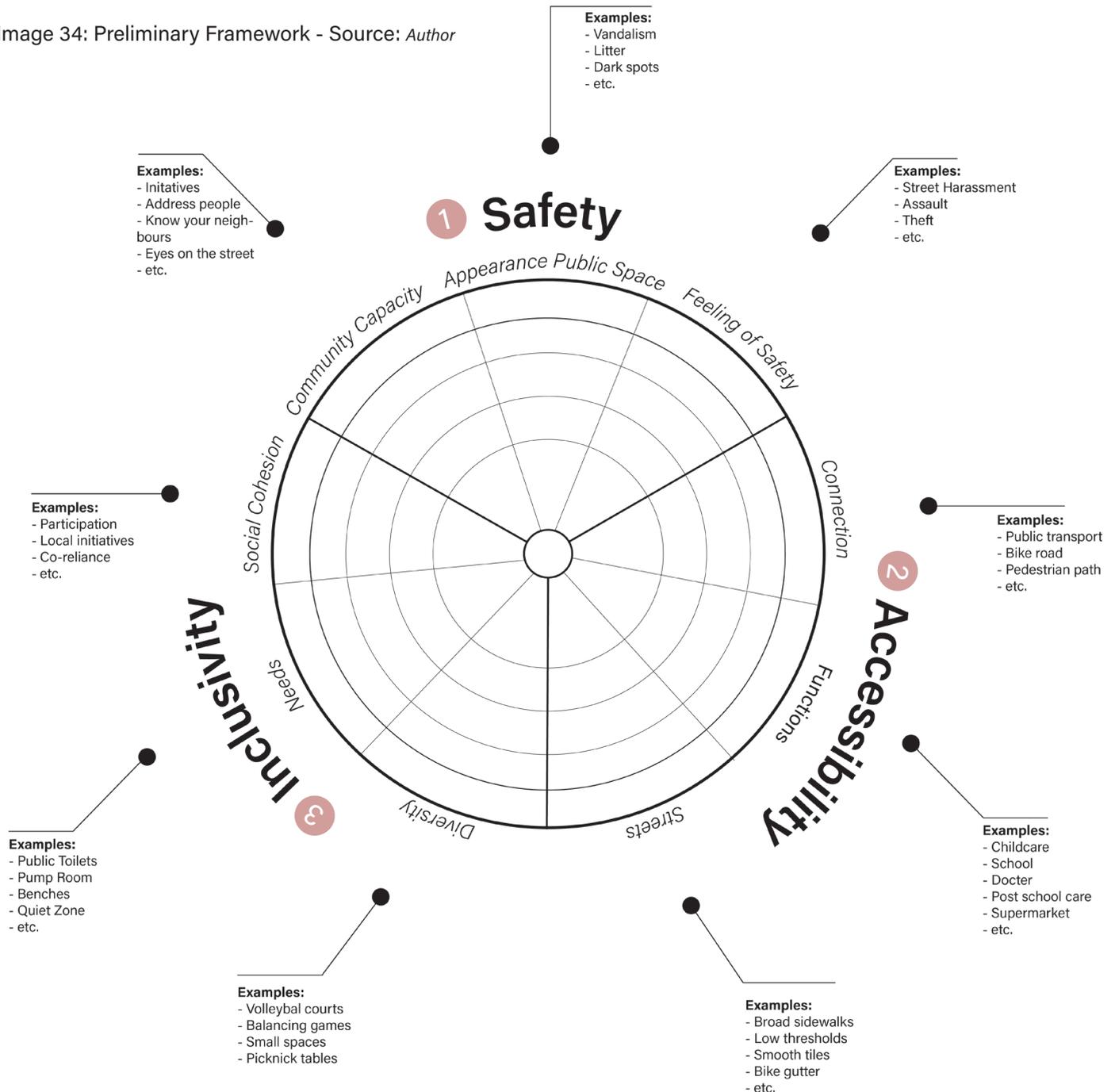




Location Choice

Preliminary Framework

Image 34: Preliminary Framework - Source: Author



The framework

After the literature review, multiple patterns were made that together formed the first version of the pattern book. A cluster of patterns formed certain categories and sub-categories. The preliminary framework is based on these categories of patterns. That is why it is still broad, since some themes or problems that were handed by literature may or may not be present

in the Dutch context. The main area of interest for the case study was chosen to be Rotterdam. In order to form a complete and cohesive framework, a specific neighborhood in Rotterdam was selected. Therefore, five neighborhoods in Rotterdam that scored generally low on the 'wijkprofielen' (neighborhood profiles) of the municipality were preselected.

Location

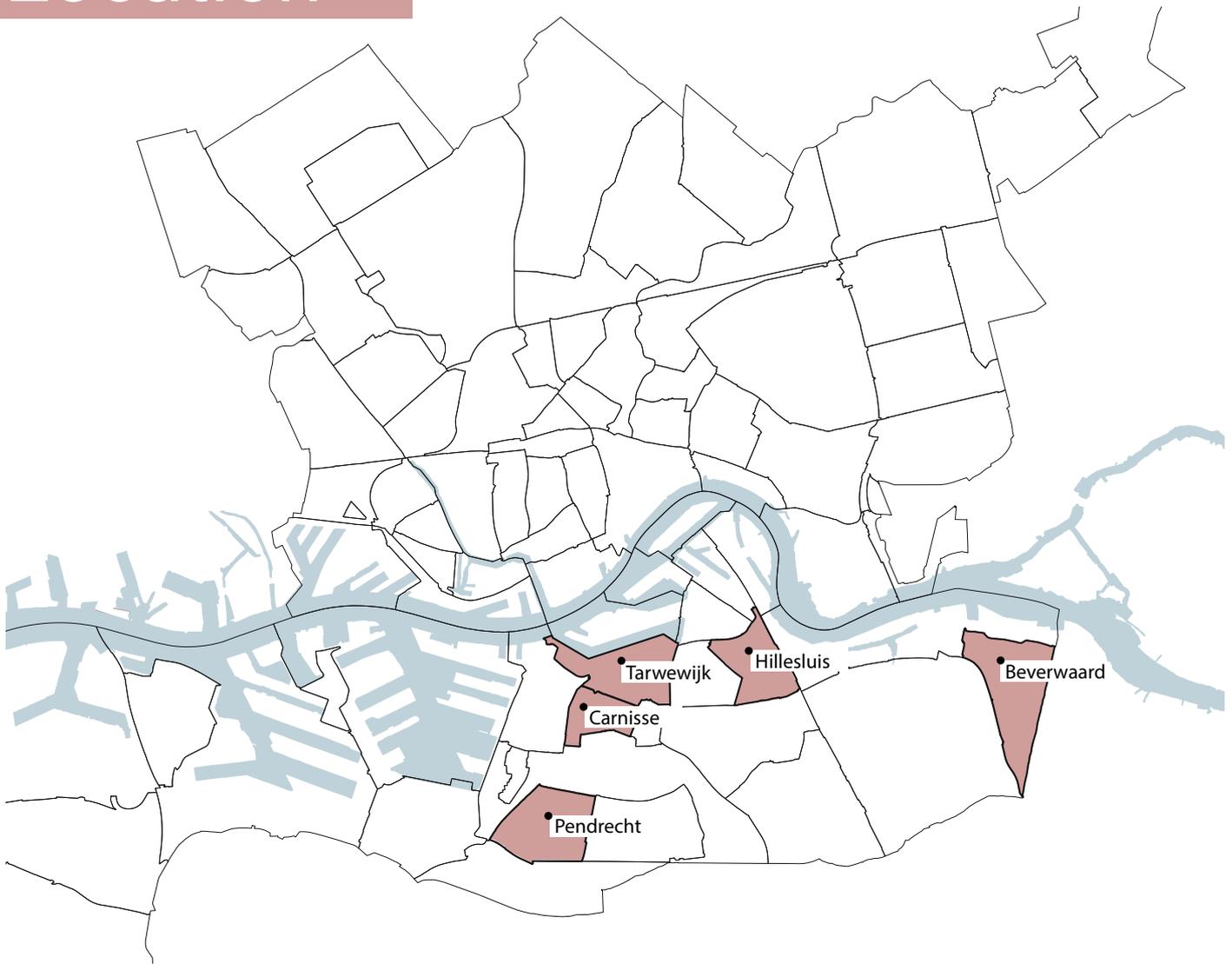


Image 35: Selected neighborhoods - Source: *Author*

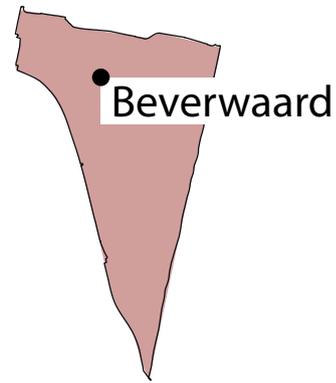
Rotterdam

For this research a city was chosen rather than a village. Women have often been seen as a problem for the modern city and as a danger in industrial cities. The countryside, along with the expanding suburbs, provides a suitable retreat for middle and upper classes families and most importantly offers safety and respectability for women (Kern, 2019). However, at the same time, the cities environment could support women's double days of paid and unpaid work, because of all amenities such as childcare, grocery shops, work

and hospitals are closer by than in the suburbs and villages (Kern, 2019). The city is the place of contradictions. In the Netherlands, four cities are referred to as 'big cities', namely: Amsterdam, Rotterdam, Den Haag and Utrecht. In the end Rotterdam was chosen, because of personal connections with the city and its favorable location with respect to Delft.

Beverwaard

Beverwaard was built around 1980 and has many green and blue spaces and playgrounds. It has a cauliflower structure and a tram that runs through the neighborhood. There are mainly single family houses.



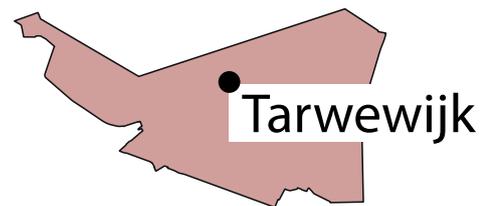
Hillesluis

Hillesluis consists out of four residential areas. These areas are often characterized by narrow and densely built-up streets, interspersed with green zones. A lot of renovation and new construction has been carried out in recent years.



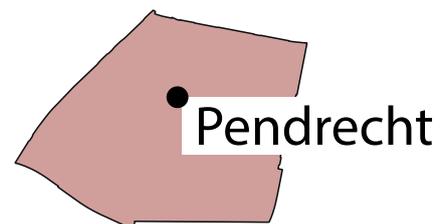
Tarwewijk

Tarwewijk is a relatively old neighborhood. The inhabitants are young, one fourth of the inhabitants is younger than 25 years old. The neighborhood is quite central, close to the city center. It contains many porch houses and small single family houses.



Pendrecht

Pendrecht is a neighborhoods that was built after the World War II. It has a spacious layout, broad roads and many green spaces and therefore sometimes called a garden city. However, the houses are small, outdated and there is no diversity in housing types.



Carnisse

Carnisse is a neighborhood in the prewar district of Charloise. On the southern edge of the district, the Zuiderpark forms a beautiful green 'backyard'. The densely built-up area contains many small porch houses, which are especially popular by people who buy their first house.



Assessment



Legend

- Extremely low - 0-69
- Low - 70-89
- Average - 90-109

Score

B	76
H	83
C	60
P	90
T	87

Image 36: 'Samenredzaamheid' -
Source: A <https://wijkprofiel.rotterdam.nl/nl/2022/rotterdam>



Legend

- Extremely low - 0-69
- Low - 70-89
- Average - 90-109

Score

B	51
H	46
C	62
P	83
T	58

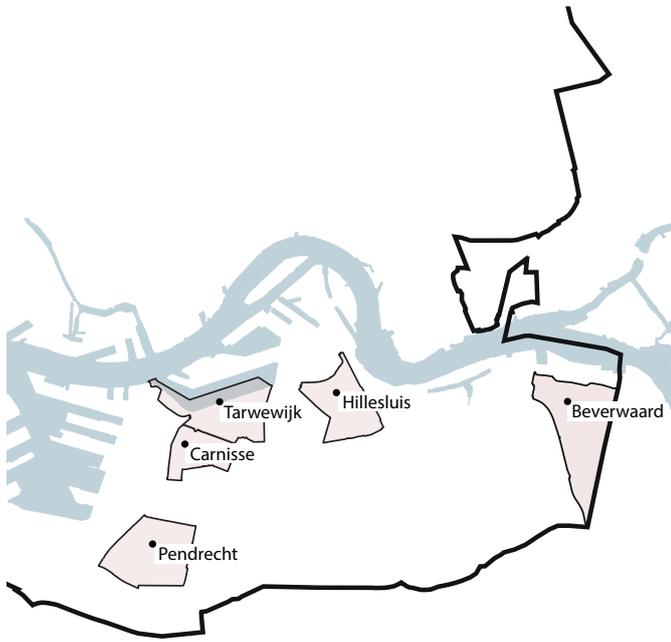
Image 37: 'Openbare ruimte' -
Source: A <https://wijkprofiel.rotterdam.nl/nl/2022/rotterdam>

Community Capacity

Community capacity considers the capacity of communities to identify priorities and opportunities and to foster and sustain positive neighborhood change (Chaskin, 1998). Examples include addressing someone on littering or the misplacing of waste, or organizing an informal meeting group. The score was derived from the municipality of Rotterdam, where each neighborhood was scored based on questionnaires. A neighborhood can score between 0-180 and everything that is below 89 is seen as below the average of Rotterdam. Nearly all selected neighborhoods score below average.

Appearance Public space

The physical and social conditions of the neighborhood influence the perceived safety of that neighborhood. Analyses of crime data from the US and Sweden both show that women and men respond to similar environmental conditions differently, with women tending to be more sensitive than men to signs of social disorder, graffiti and unkempt and abandoned buildings (Perez, 2017). All neighborhoods apart Pendrecht scored low, with Beverwaard and Hillesluis having the lowest score.



Legend

- Extremely low - 0-69
- Low - 70-89
- Average - 90-109

Score

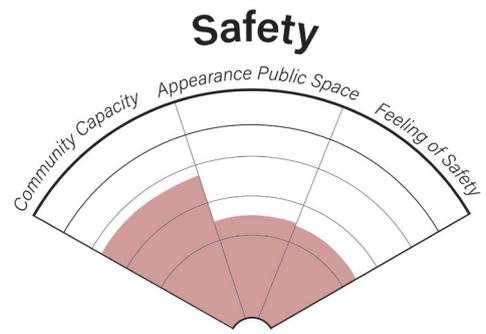
B	48
H	36
C	40
P	65
T	46

Image 38: 'Veiligheidsbeleving' - Source: A <https://wijkprofiel.rotterdam.nl/nl/2022/rotterdam>

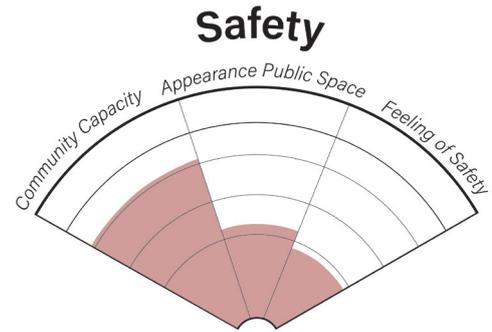
Feeling of Safety

Women are often scared in public spaces. In fact, they are around twice as likely to be scared as men (Perez, 2017). The feeling of safety is influenced by visibility, appearance of public space, previous experience, time of the day, and many other factors. The feeling of safety is also intersectional with age, ability, race and other factors, since they also shape different perceptions and experiences surrounding fear and safety (Parker, 2011). All neighborhoods are perceived as unsafe by the inhabitants, with Hillesluis and Carnisse scoring the lowest.

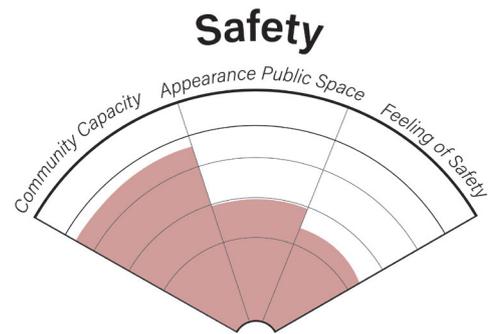
Beverwaard



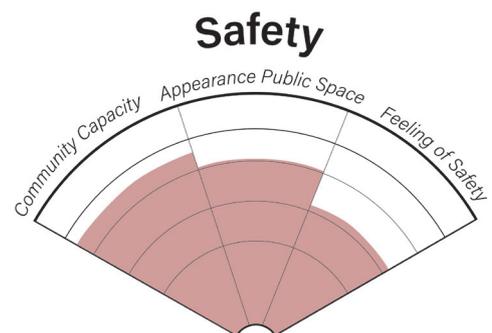
Hillesluis



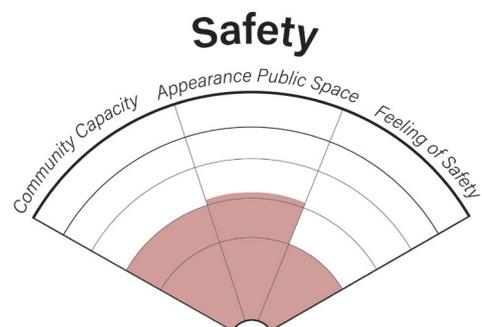
Tarwewijk



Pendrecht



Carnisse



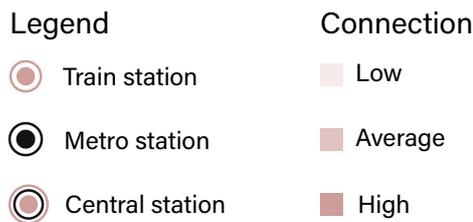
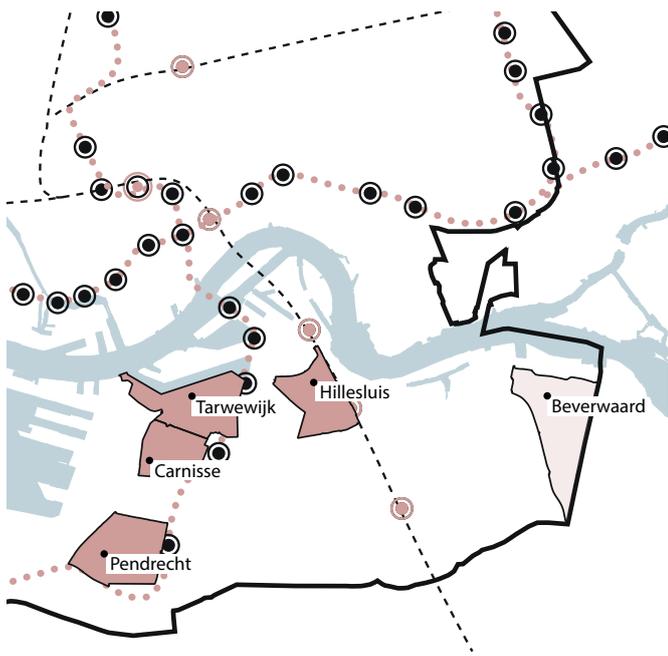


Image 39: Public transport Stops
Source: Author

Connection

In most households, even nowadays, women carry the main household responsibilities such as shopping, cooking, cleaning, laundering, caring for children and other dependent relatives (Madariaga and Roberts, 2013). Since women have less access to cars, they are usually dependent on public transport. The fastest mode of transport in Rotterdam is the metro (RET). Pendrecht, Tarwewijk and Carnisse have very close access to the metro system. Hillesluis is a five minutes' walk away from the train station Rotterdam South. Only Beverwaard has a very poor connection.

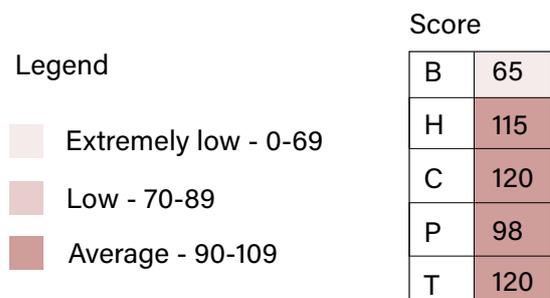
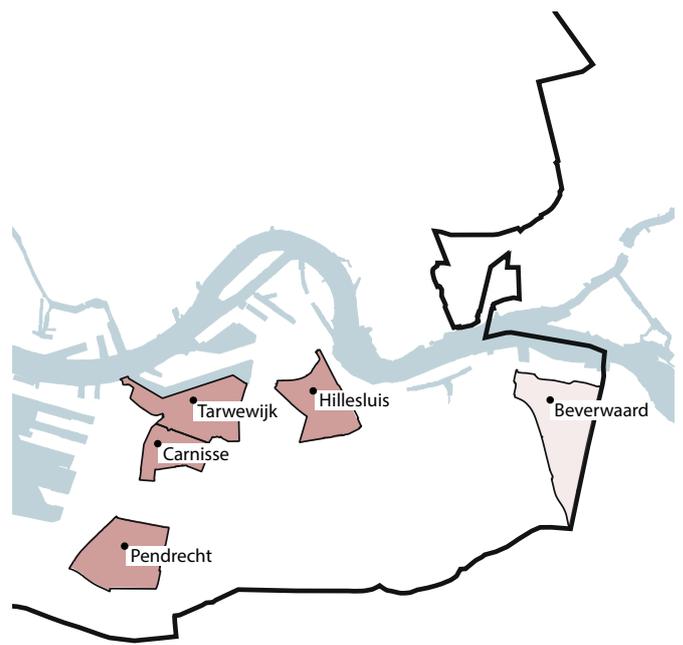
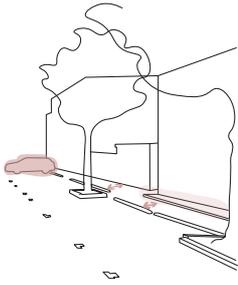


Image 40: 'Voorzieningen' -
Source: A <https://wijkprofiel.rotterdam.nl/nl/2022/rotterdam>

Functions

Zoning laws are based on and prioritize the needs of a bread winning heterosexual married man who goes off to work in the morning and comes home to the suburbs in the evening (Perez, 2017). Monofunctional neighborhoods increase the time women have to spend on transportation. The proximity of services such as supermarket, post offices and childcare are important to have close by. All neighborhoods apart from Beverwaard have a high level of amenities.

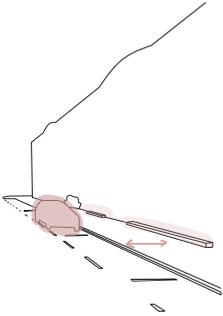
Beverwaard



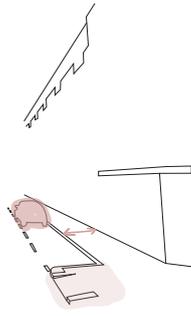
Tarwewijk



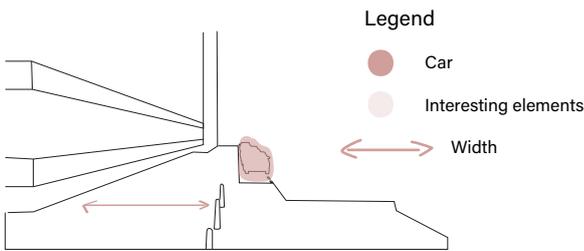
Hillesluis



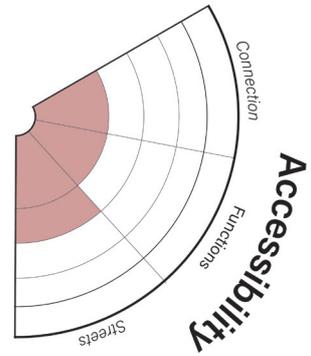
Carnisse



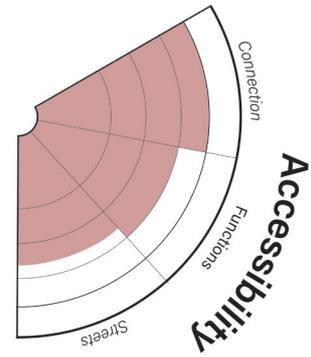
Pendrecht



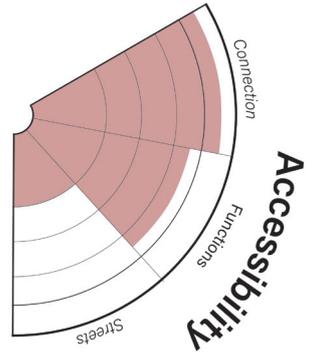
Beverwaard



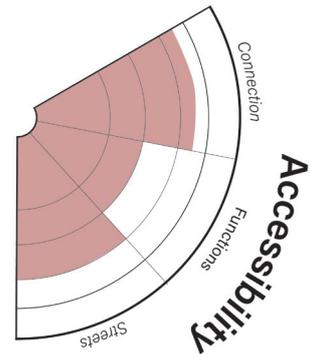
Hillesluis



Tarwewijk



Pendrecht



Carnisse

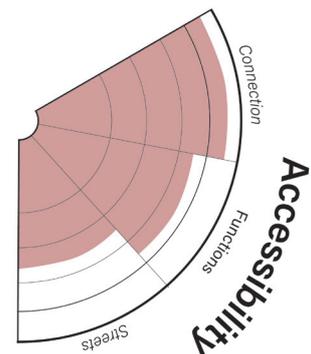
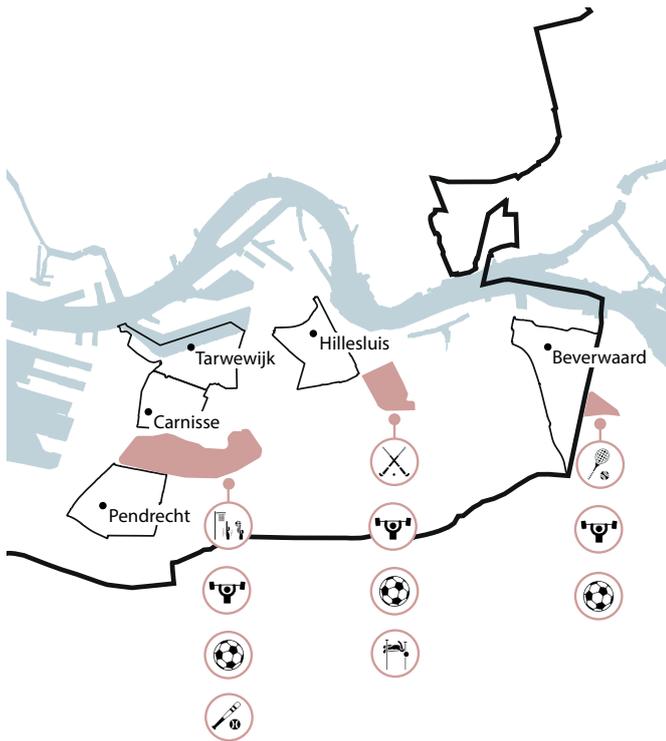


Image 41: Quick analysis street
Source: Author

Streets

Sidewalks, plinths and traffic lights, amongst other things, influence the accessibility of the street. For example, many sidewalks have high and sharp edges making them difficult to cross with a stroller, walker or grocery trolley (Hoornaert, 2022). Carnisse, Pendrecht and Hillesluis have wide pavements, while in Beverwaard there is often no pavement at all. In Tarwewijk the pavement is sometimes so narrow that not even one person can walk there.



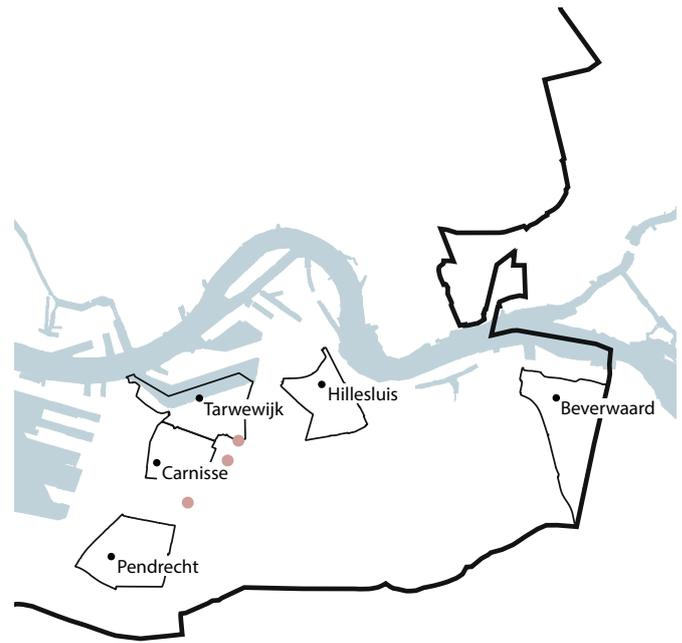
Legend

- Athletics
- Soccer
- Fitness
- Tennis
- Field Hockey
- Baseball
- Netball

Image 42: Diversity of sport facilities
Source: *Author*

Diversity

Compared to boys, especially girls aged 9-12 do not spend as much time in parks and on playgrounds (WPS prague, 2017). That is because usually parks and playgrounds only facilitate sports like basketball or football, that take place in a single large open space and therefore are mostly used only by boys. At the same time girls and women prefer games like volleyball, badminton, dancing etc. (Perez, 2017; Municipality of Vienna, n.d.). Tarwewijk, Carnisse, Hillesluis and Pendrecht are all relatively close towards a big diverse sport cluster. Only Beverwaard has limited options.



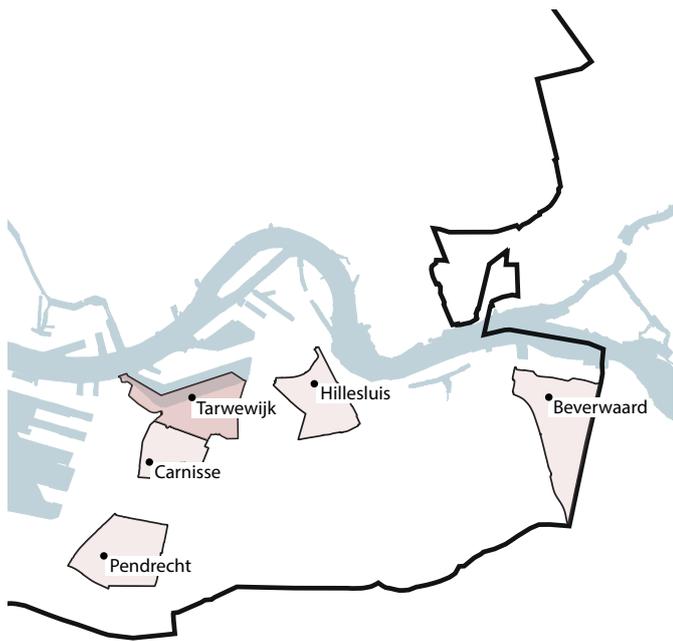
Legend

- Public toilet

Image 43: Public toilets
Source: *Author*

Needs

Access to toilets outside the home is important to women, particularly because women need to urinate more frequently than men. Women get bladder and urinary tract infections from holding in their urine; and may suffer from dehydration or chronic constipation (Perez, 2017). Access to toilets is just one of the needs of women that is often ignored. In Rotterdam, public toilets are lacking or only concentrated in city centers.



Legend

- Extremely low - 0-69
- Low - 70-89
- Average - 90-109

Score

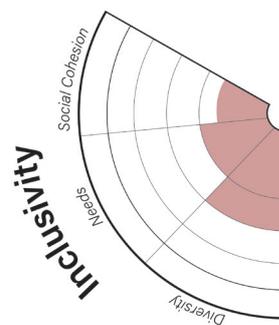
B	20
H	36
C	20
P	31
T	70

Image 44: 'Kwaliteit van het leven' - Source: A <https://wijkprofiel.rotterdam.nl/nl/2022/rotterdam>

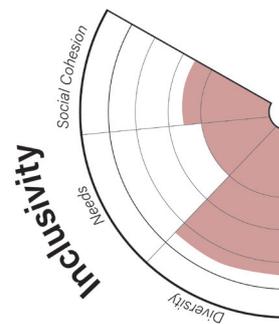
Social Cohesion

Social cohesion is important for women, to lessen the care burden and to have an informal support network at hand. For example, children don't necessarily need childcare after a certain age, because everybody is watching or because they can stay at a neighbor. In all the selected neighborhoods, the social cohesion was scored by the inhabitants as low or very low, especially in Beverwaard and Carnisse.

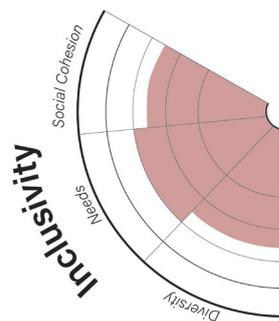
Beverwaard



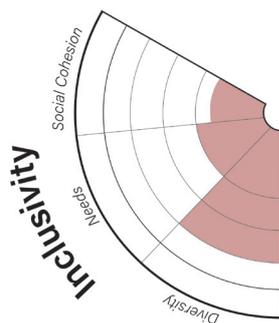
Hillesluis



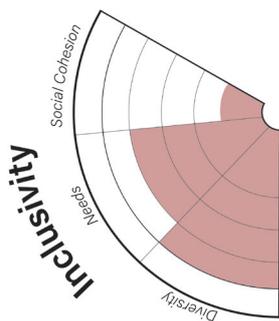
Tarwewijk



Pendrecht



Carnisse



Choice

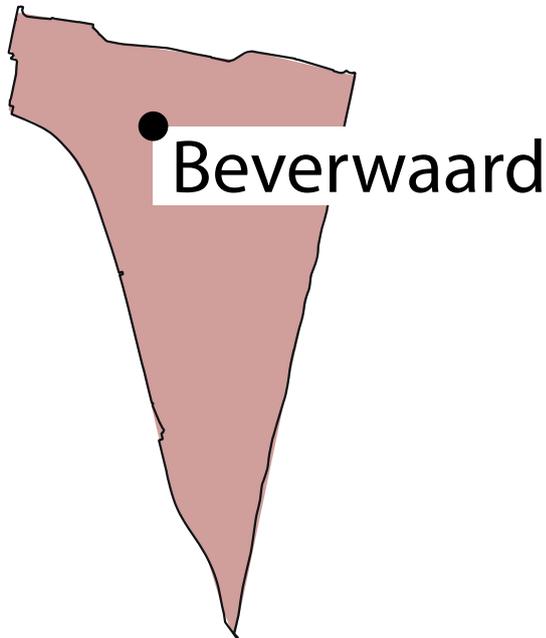


Image 45: Streetview Beverwaard
Source: <https://www.google.com/maps/place/Beverwaard>

To choose a location, five neighborhoods in Rotterdam were scored based on the preliminary framework. Although nearly all neighborhoods scored quite low, Beverwaard scored the lowest of the five and was therefore chosen to be the case study location.

Especially Beverwaards relatively poor connection with the rest of the city, its low social cohesion, its lack of amenities and its street scape, make it interesting to analyze what could be improved to make its public space more gender inclusive. Additionally it allows

to see what patterns could be added or removed from the framework. It also tells how the design and planning of space has been managed in the past and how it is currently managed.

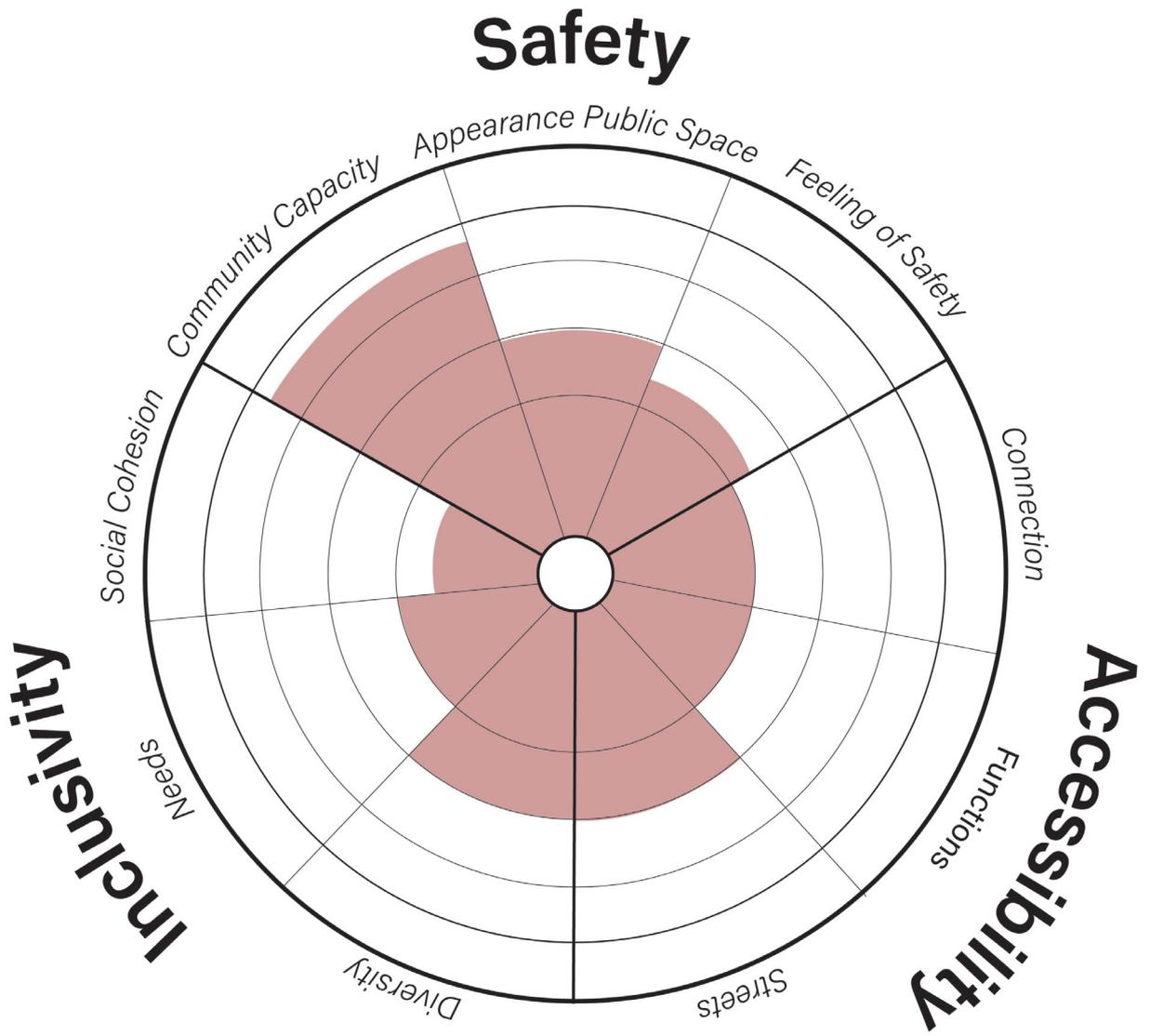


Image 46: Beverwaards score for each element of the framework
 Source: Author



Planning Research

Introduction

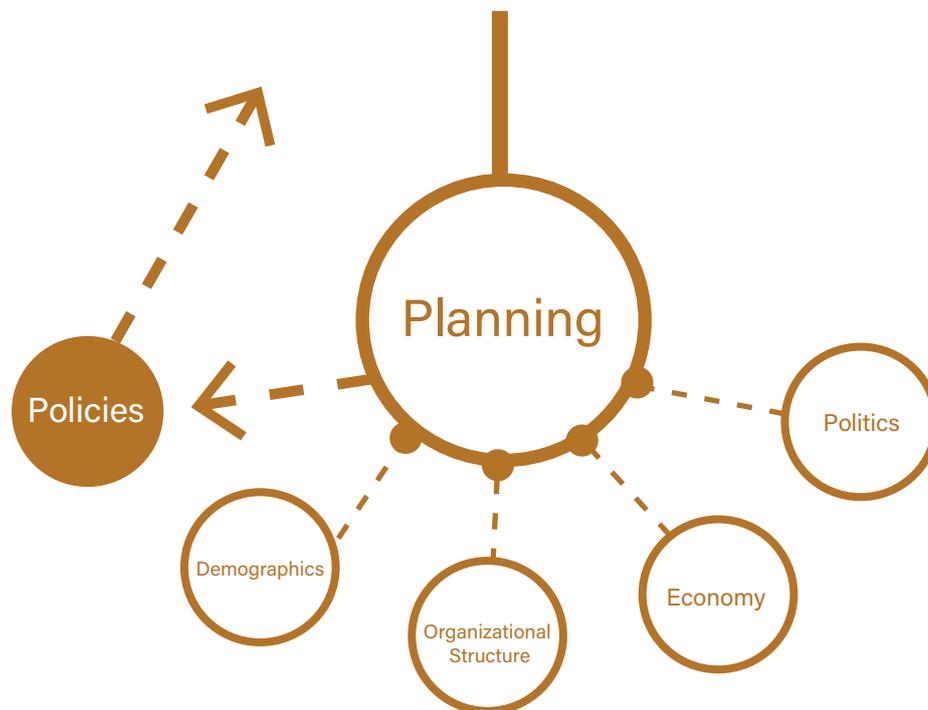


Image 47: Part of the conceptual framework - Source: Author

Planning

Beverwaard scored the lowest of the five neighborhoods on the preliminary framework. Therefore, the elements that influenced the gender exclusive planning of Beverwaard will be analyzed. What made the planning of the Beverwaard possible? What went wrong?

The elements that are assessed are: demographics, organizational structure, economy and politics. Each element is compared with the current situation (2022), to see what impact the element could have on gender inclusive planning today. Very important to add is that the

elements are interconnected, making the assessment of the planning process extremely complicated.

All elements have an impact on the planning of public space. However, multiple elements are not easy to "change", for example, the economy or politics, but also organizational structures will only change slowly. Still, it is important to understand the relation between these elements and the gender inclusiveness of public space in the Netherlands.

Inhabitants

Inhabitants by age

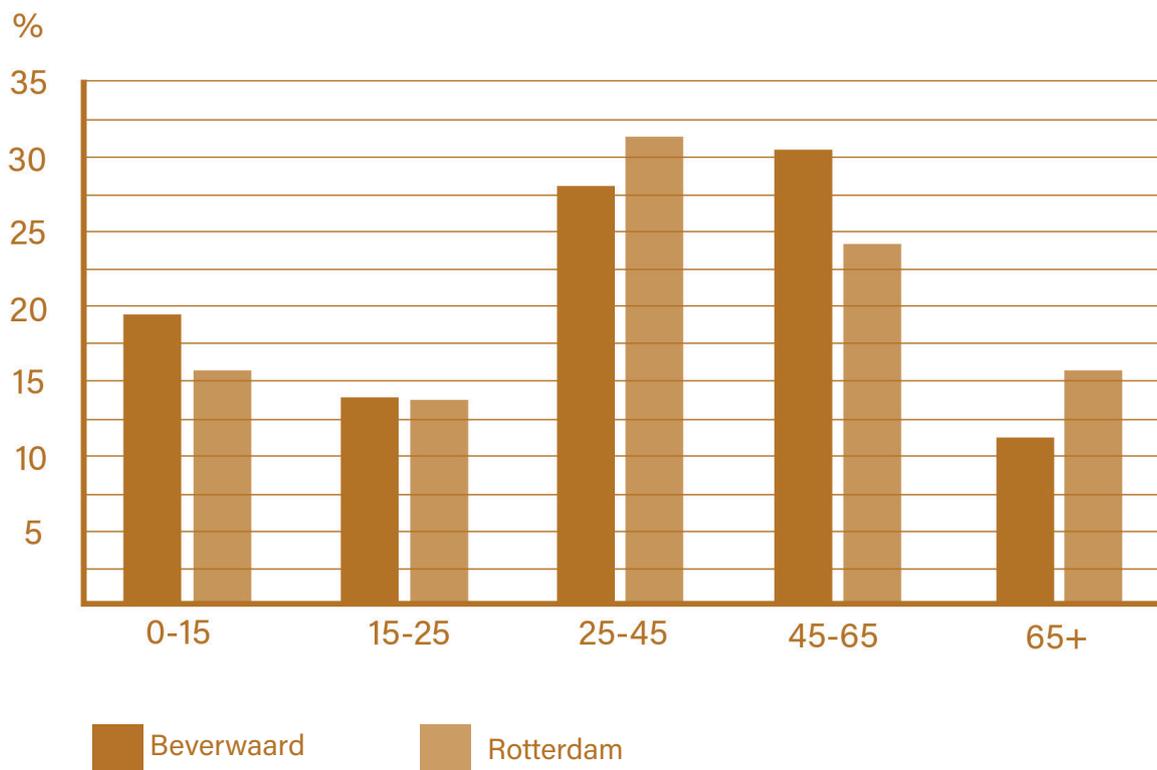


Image 48: Inhabitants by age 2019 - Source: CBS (2019)

Age & Background

1978

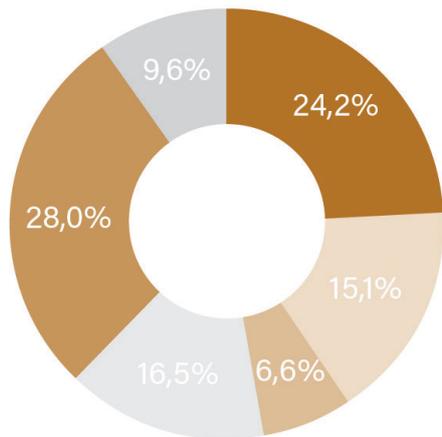
The neighborhood of Beverwaard was built between 1978-1990 and exists mainly in high-density single-family houses (54%) (2022 | Wijkprofiel Rotterdam, n.d.). This is reflected in the demographic situation of Beverwaard. Demographic numbers from 1996 show that the amount of families with children in Beverwaard (53%) is much higher than in IJsselmonde (27%), the district Beverwaard is part of. Furthermore, the percentage is lower than that of Rotterdam in general (31%) (van den Hoek et al., 1996).

2019

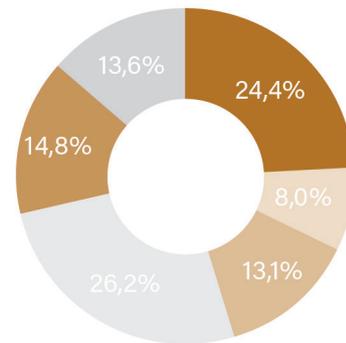
Currently, we still see, compared to the average of Rotterdam, a high amount children between 0-15 (in 1996 26,4% of its inhabitant were aged 0-14). This suggests that the neighborhood is still favored by families, which could be explained by the design of the neighborhood, with its many playgrounds and family houses. Also a relatively high amount of people between 45-65 live in Beverwaard. These are probably inhabitants who started living in Beverwaard when their kids were small and never moved out. The amount of elderly is a little bit lower than the average in Rotterdam.

Migration background

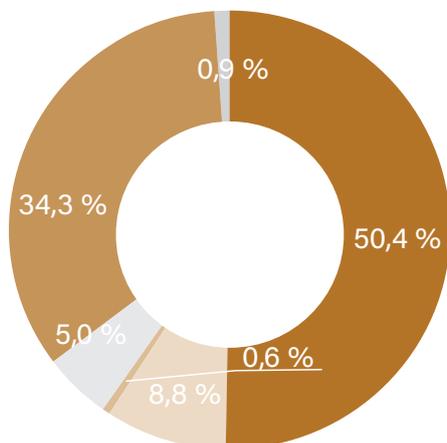
Beverwaard - 2019



Rotterdam - 2019



Beverwaard - 1996



Rotterdam - 1996

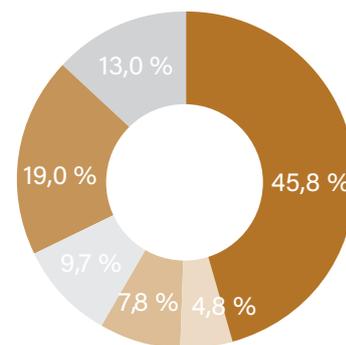


Image 49: Migration background - Source: CBS (2019) and van den Hoek et al.(1996)

1996

When looking at the demographic numbers from 1996, it can be seen that Beverwaard has a relatively high number of people with a migration background from Suriname and the Antilles. A reason for this is that Suriname became independent in 1975, which caused many Surinamese people to emigrate to the Netherlands during the period between 1970-1990 (Suriname 45 jaar onafhankelijk, 2020). During this time, the Municipality of Rotterdam introduced its 'spreading policies'. The municipality decided that in certain neighborhoods, where the

population of immigrants was lower than 16%, migrants should be assigned a house (Bolt, 2004). One of these neighborhoods was Beverwaard.

2019

Currently, thirty-five percent of the inhabitants of Beverwaard were born in the Netherlands, and so were their parents. Most people in Beverwaard have a migration background (65%) of which 10 percent are from Europe and 55 percent from other countries, mostly Suriname (28%) and the Antilles (16%). This suggests that some families who were assigned a house didn't move.

Education Level

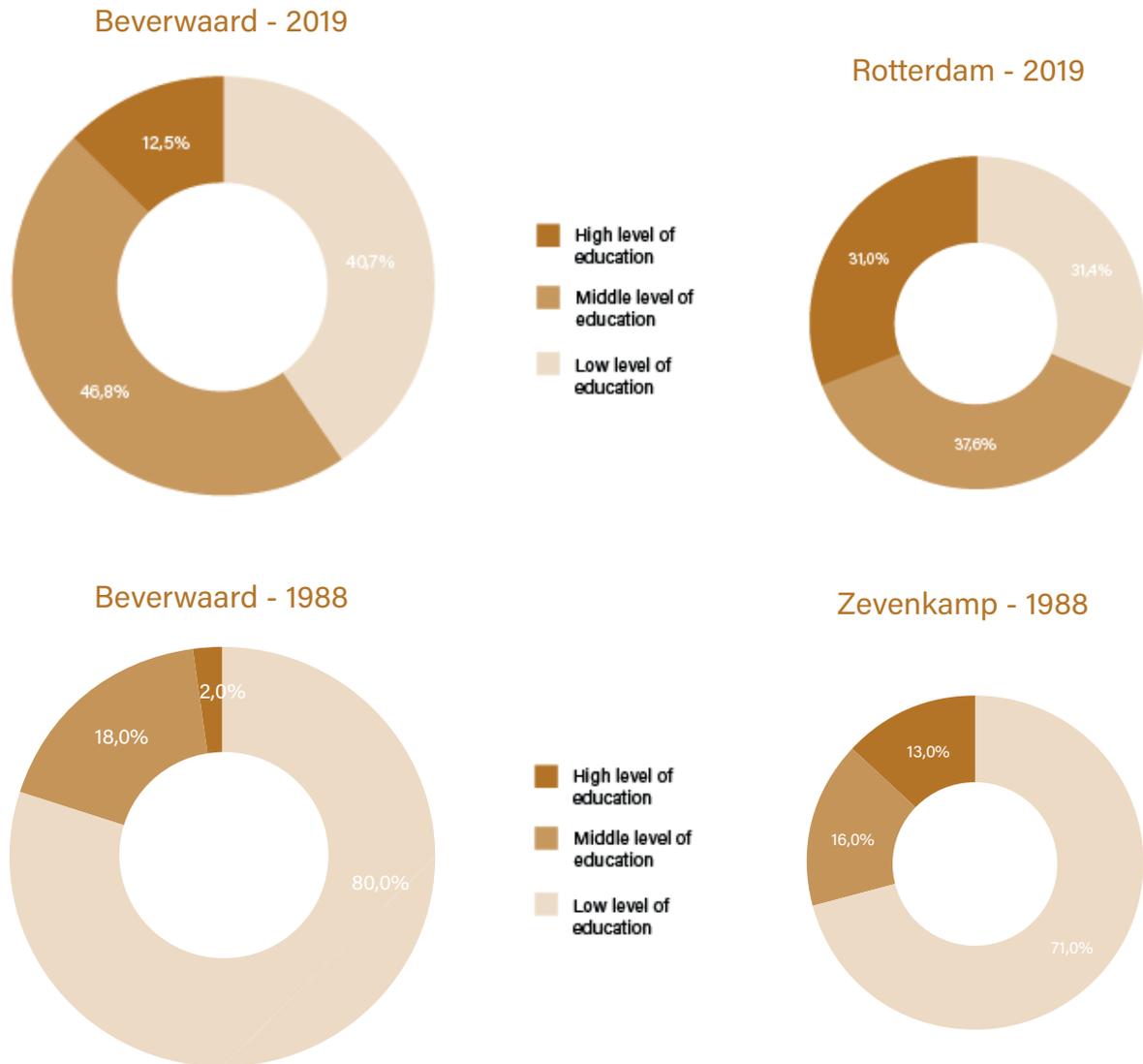


Image 50: Education Level - Source: CBS (2019) and Reelick (1988)

1988

Looking at historical numbers from 1988 very few people who lived in Beverwaard had completed a high level of education (2% compared to 13% in Zevenkamp, a neighborhood in Rotterdam built around the same time). While the neighborhood was planned for middle-class families, very soon after it was built, people with a 'social indication' (sociale indicatie) and migrants were offered a house in Beverwaard.

2019

Over the years, the reputation of

Beverwaard worsened, with multiple accidents, including a shooting in 2018 and knifings in 2018 and 2021. Therefore, it may not be the most appealing neighborhood. This, together with the fact that currently, 44% of the housing stock in Beverwaard is social housing, may be the reason that a relatively low amount of inhabitants live here with a high education. One is only eligible for social housing when his/her income is below a certain amount. Since people with higher education tend to have a higher income, 44% of the housing is probably not eligible for them (2022 | Wijkprofiel Rotterdam, n.d.).

Marital status

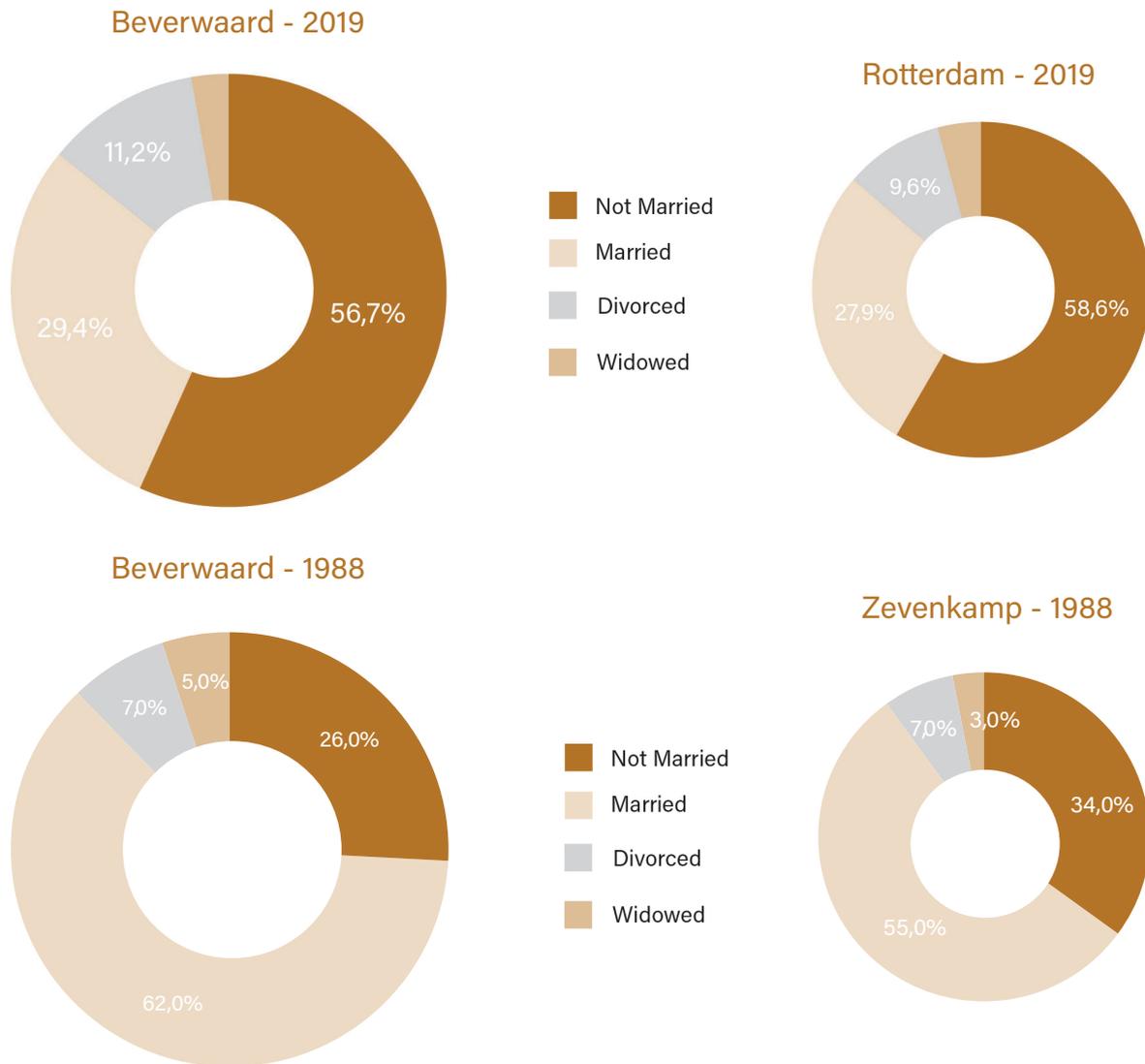


Image 51: Marital Status - Source: CBS (2019) and Reelick (1988)

1988

From statistics on marital status in Beverwaard, it can be noticed that the number of married people differed drastically between 1988 and 2019. However, this does not mean that the amount of couples has decreased, but it is more likely that today it is more socially acceptable to live together without being married.

2019

When comparing the numbers on Rotterdam with Beverwaard little difference can be seen. Only the amount of divorced people is a little bit higher than the average in Rotterdam.

Literature notes that there are relatively many one-parent families living in Beverwaard (van den Hoek et al., 1996). Single motherhood is considerably more common among Surinamese and Antillean second-generation women than among other groups. Single mothers are a typical feature of the so-called "Caribbean family system" (Kleinepier & de Valk, 2014). There is a shelter for women, single mothers and women with children in Beverwaard. These (young) women (with their children) get a place to stay and they are offered help finishing school, finding a job and are offered daycare for the children.

Organizational Structure

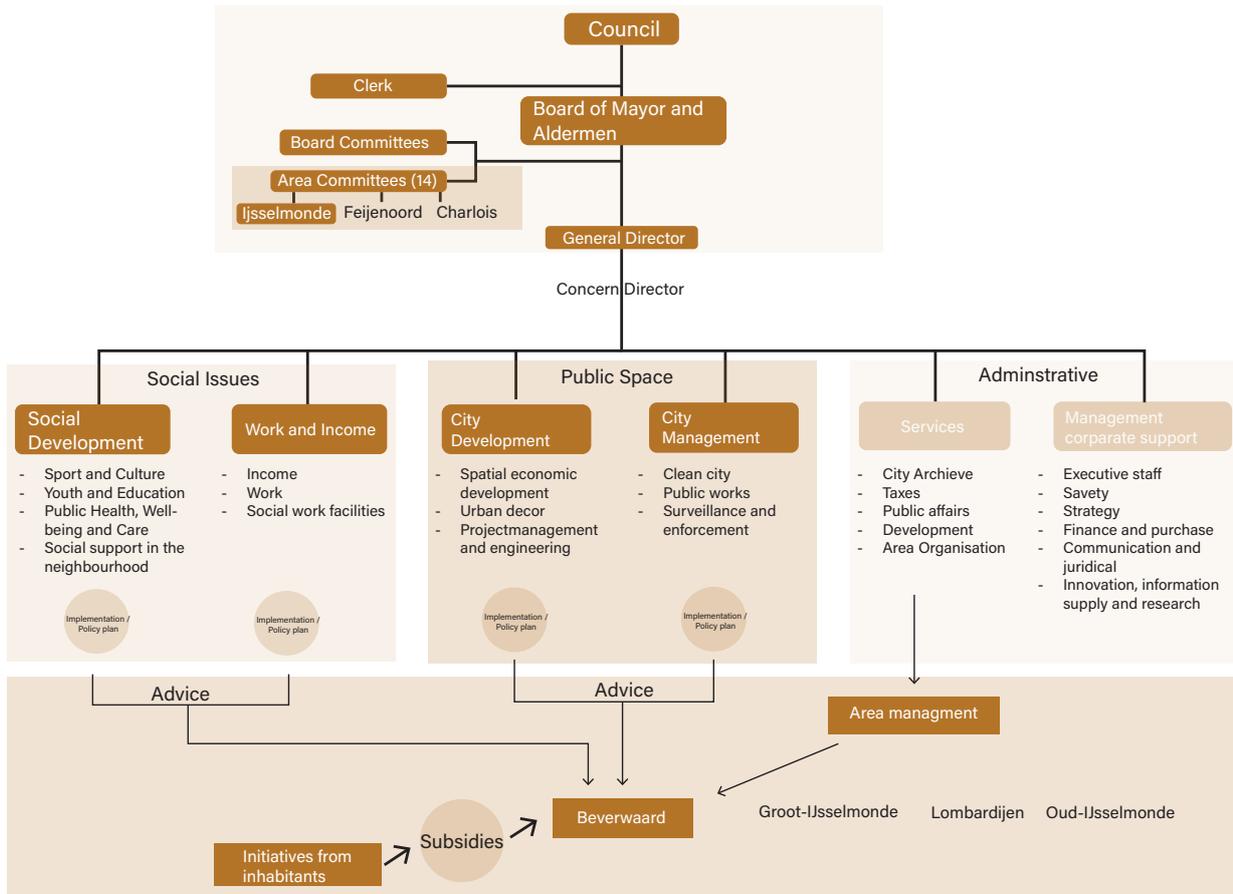


Image 52: Municipality structure - Source: Authors

Municipal Structure

While Beverwaard was designed by multiple design companies, it was the municipality that established the design framework. Because no information could be found on how the municipality of Rotterdam was organized in 1978, the current structure is used in the analysis. This is a limitation of the research.

The municipality of Rotterdam consists of many departments, each with its functions. There is a division between the “political department” and the “functional department”. The political department includes the elected council, whose job includes writing

policies and checking the board of the Mayor and Aldermen (Gemeenteraad, n.d.). The functional department is tasked to create new plans. The functional department can be separated into three sub-departments: social, public space and administrative (each having its sub-departments as visible in image 52). All departments influence the appearance and experience of public space, but in the end, the departments of City Development and City Management are responsible for the direct appearance.

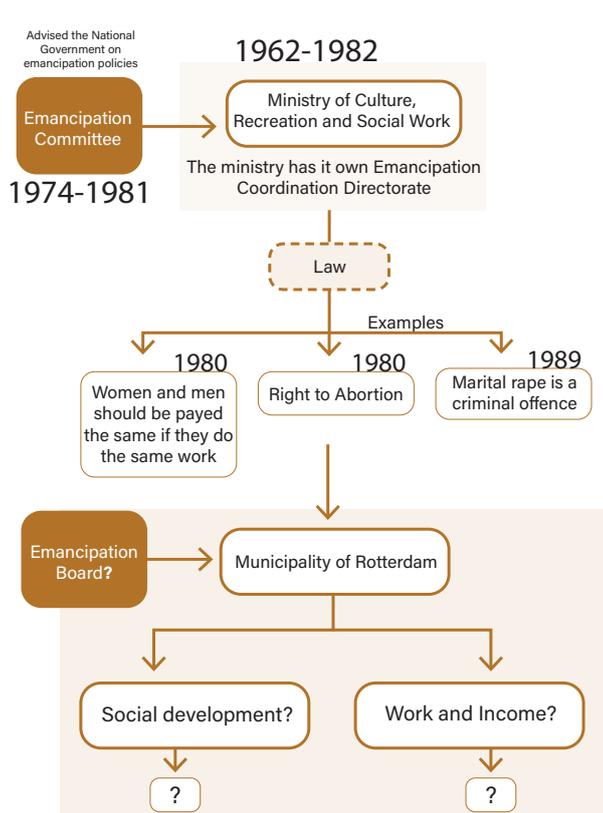


Image 53: Municipality structure social gender inclusivity 1978- Source: CBS, 2019

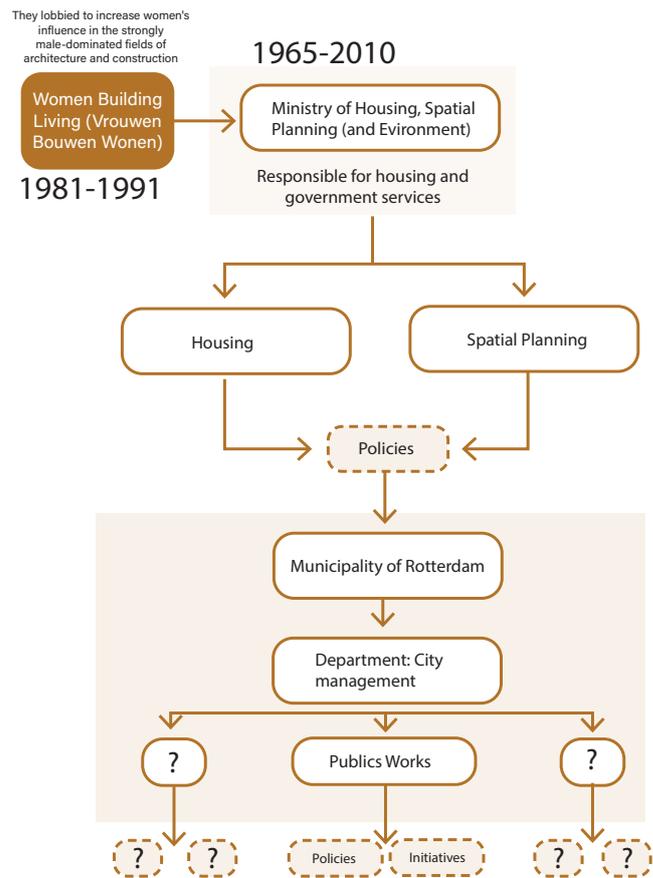


Image 54: Municipality structure spatial gender inclusivity 1978 - Source: CBS, 2019

Social and Spatial Municipal Structure 1978

The first emancipatory government advisory body was established in 1974 and was called the Emancipatiekommissie (EK). It advised the Dutch National Government on forming coherent emancipation policies between 1974-1981.

After the abolishment of the EK, the Emancipation Board was established. The tasks of this board were the same as the EK, advising the municipality on birth control pills, working part-time and so on (Schreuder & Teeuwen, 1993). Multiple laws and policies were changed during this period. On a

municipal level, little is known about the existence of an emancipation council. However, according to Mare (1986): "There is no governmental department without a women's group, ..."

Women also started to form networks and non-profit organizations, trying to improve the position of women in the built environment (Amsterdam, 2021). This network was also active in Rotterdam, however, it is unclear what effect they had on local initiatives and policies.

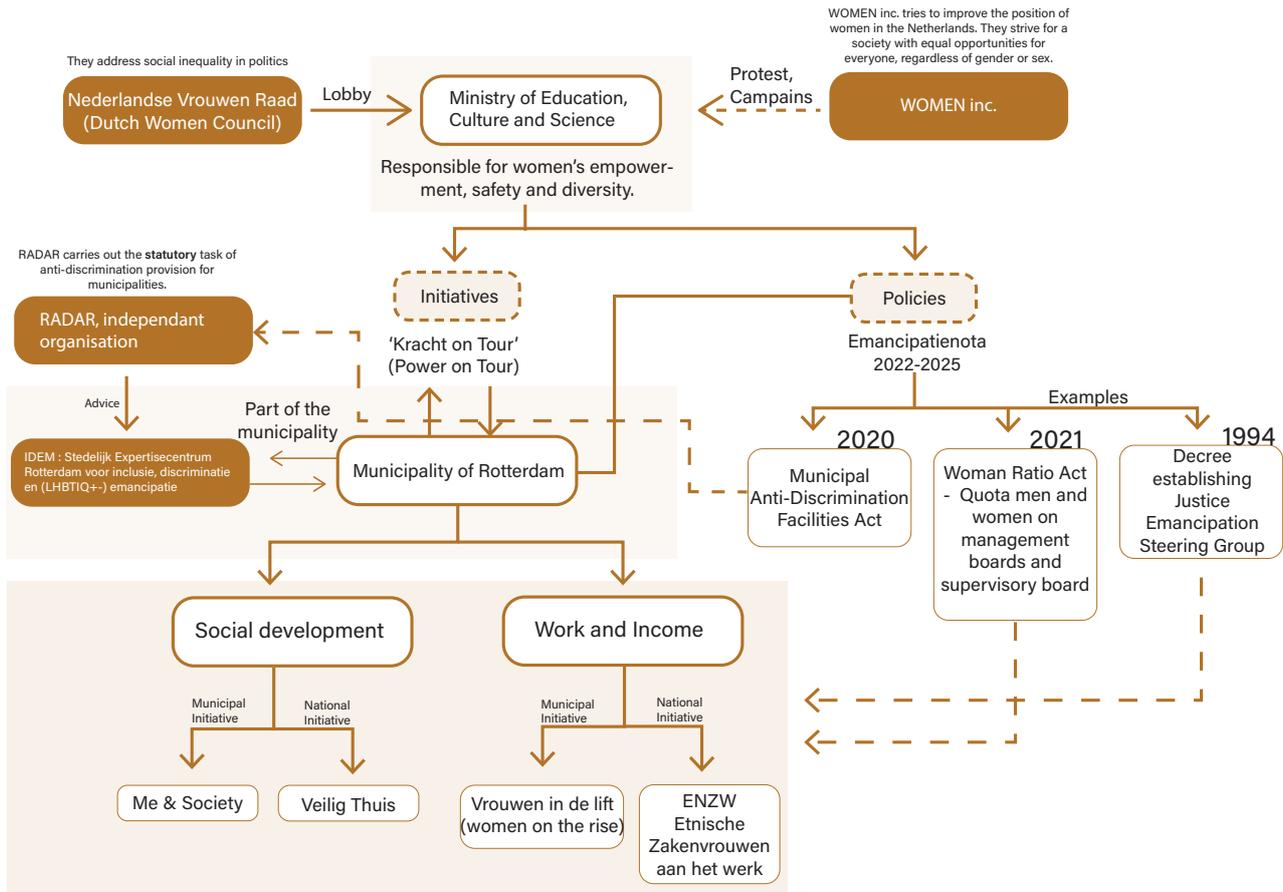


Image 55: Municipality structure social gender inclusivity - Source: Author

Social Municipal Structure 2022

Gender inequality is mainly seen as a societal problem. Therefore, the responsible ministry in the Netherlands for gender equality, or as they formulate it 'women's empowerment, safety and diversity' is the Ministry of Education, Culture and Science. Multiple organizations lobby, such as the Nederlandse Vrouwen Raad or WOMEN Inc for gender equality. While there are official governmental advisory boards for education, culture, and technology, there is not one for 'women empowerment'

However, the government does enact

certain gender policies, for example the Anti-discrimination facilities act. Furthermore, the government introduces gender equality action programs such as 'kracht on tour', supporting women to find a job. The municipality has its initiatives that mostly focus either on the emancipation of women through counseling, legal assistance and the increasing of skills or on violence victims. These initiatives actively engage citizens. The municipality is advised by an independent organization, IDEM, whose job it is to connect initiatives and to provide expertise on inclusivity, discrimination and emancipation.

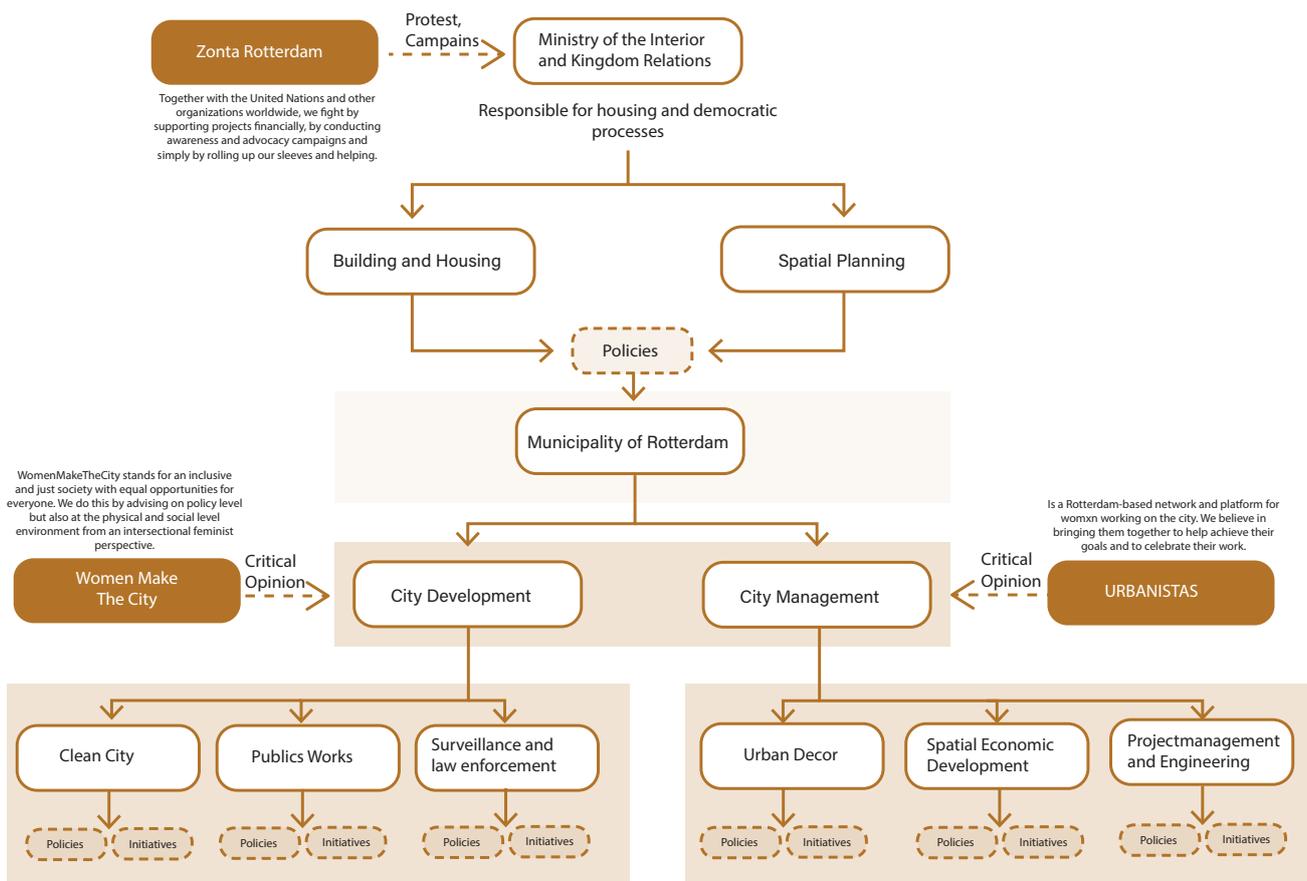


Image 56: Municipality structure spatial gender inclusivity - Source: CBS, 2019

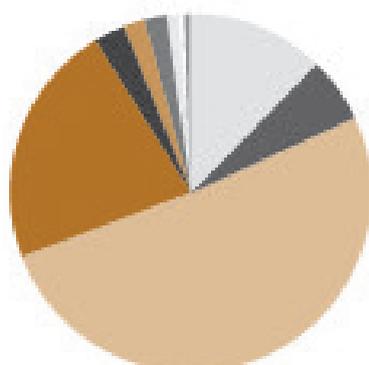
Spatial Municipal Structure 2022

The organization chart in image 56 represents the flow of decision-making on spatial issues in the Netherlands and Rotterdam. It is, just like that of the whole municipality and that of social governance, a very complicated model. The main responsibility for public space lies at the Ministry of Interior and Kingdom Relations. This ministry is responsible for 'housing and democratic processes' and exists in six departments, two of which are related to space: living and building (wonen en bouwen) and spatial planning (Rijksvastgoed beheer).

At the municipal level, public space is planned and designed by City Management and City Development, which then again could be split up into multiple sub-divisions. City Development is responsible for spatial and economic matters, whereas City Management is responsible for maintaining public space. Interest groups are mainly focused on informing or connecting women. However, no agency focuses on gender and space and that actually influences the municipal level.

Politics

Rotterdam 1978



Rotterdam 2019

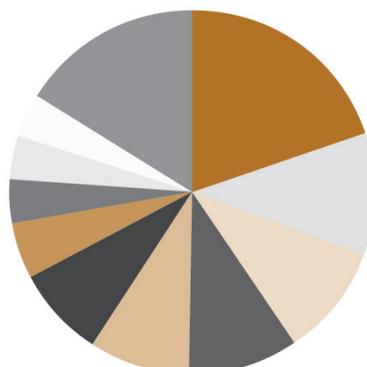


Image 57: Voting results 1978 -
Source: Gemeenter Rotterdam (2022)

Image 58: Voting results 2019 -
Source: Gemeenter Rotterdam (2022)

Elections

Taking decisions is done through multiple layers of the governmental system (national, regional or municipal). Each governmental layer has its elections, where inhabitants can vote on a party that represents their opinion the most. The task of the municipal council is to specify what needs to be done in the municipality and to supervise the work of the Mayor and Aldermen. Therefore, the municipal council is of utmost importance in the planning (and design) of the city.

1978

Women were allowed to be elected

for municipal councils or parliament since 1917 and to vote themselves since 1919. In 1924, a royal decree was issued that compelled all women under the age of 45 working in civil service to be 'honorably' discharged the day after they were married (Juf, gaat u trouwen?, 1996). The decree was abolished in 1958.

Looking at the representation of women in the municipal council in 1974 (around the time Beverwaard was designed), one can see (image 57) that there are multiple female councilors, although still a minority. In 1962, only 4% of the



Image 59: Instalment municipal council 1974 - Source: Gemeenter Rotterdam (2022)

councilors were female. In the following years, the amount increased to 23% in 1998 (Honderd Jaar Vrouwen in de Raad, 2017).

In 1978 the PvdA (Labour Party) had nearly fifty percent of all votes. This, for example, explains why at the time Beverwaard was built, there was such a high amount of social housing as the political environment was more socially oriented.

2022

Today, 37% of the municipal council consists of females (Veiligheid,

2022). In the neighborhood council of Beverwaard, this is 50% and when looking at all senior civil servants within the municipality of Rotterdam this amount is also 50% (Bijna Net Zoveel Vrouwen Als Mannen Topambtenaar Bij Gemeenten | BNR Nieuwsradio, n.d.).

In 2019, the party Liveable Rotterdam (Leefbaar Rotterdam) was the most popular (a populist party). Their key focus is safety. They were, for example, responsible for a 'hiss ban' in 2016, trying to decrease the amount of street harassment (Twintig jaar Leefbaar Rotterdam, van tegenpartij tot vaste waarde in Rotterdam, 2021).

Economy

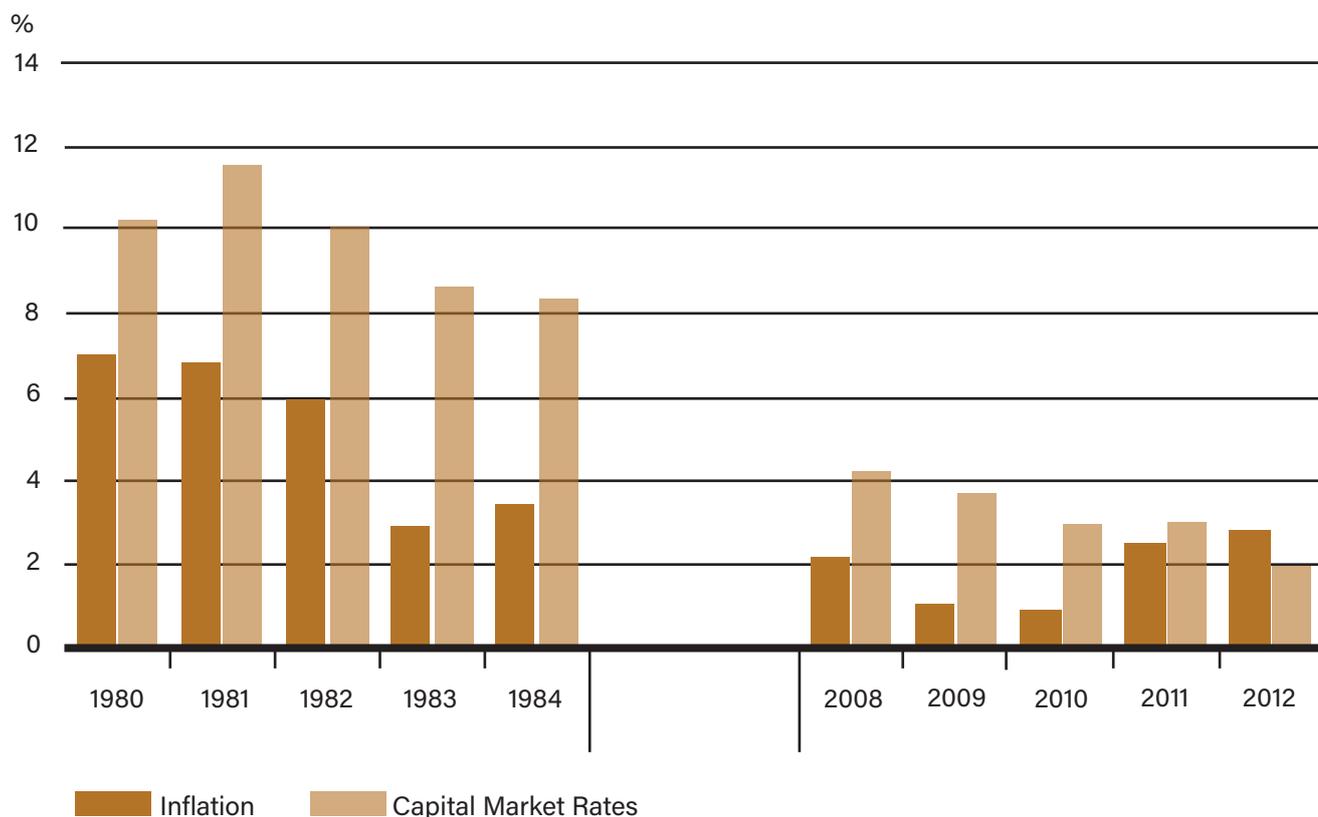


Image 60: Inflation and capital market rates in two housing crisis - Source: *De crisis in de jaren '80 vergeleken met de huidige crisis*

Housing Crisis

1978

In the Netherlands, the municipality decides whether or not an area is suitable for new construction projects and determines the conditions for the construction. When there is a shortage in the existing housing supply, the municipality can choose to change the zoning plan (Het bouwproces van nieuwe woningen, 2019). Beverwaard was built during urban decay, many families left the city center and moved to the suburbs. According to VVV IJselmonde, "the decreasing amount of inhabitants in Rotterdam meant that every additional resident that stayed in

Rotterdam helped to maintain its center functions and the associated services" (Dorren et al., 1974; Horstink, 2004). The municipality aimed to keep inhabitants of Rotterdam within Rotterdam, trying to accommodate mostly middle-class families. For that reason, the zoning plan of Beverwaard was changed in 1968.

The social housing associations played a big part in realizing the entire new neighborhood of Beverwaard. VVV IJselmonde bought the land and developed the construction of the houses. Eighty percent of the planned

housing was social housing with an average monthly rent of 325 guildens (equivalent to 484 euros), while the average net income of a person in 1976 was 601 euros a month. Therefore the rent was quite high, to begin with (Inkomens vanaf 1970, n.d.). The other twenty percent of the houses were owner-occupied properties (premiewonigen).

In 1979, Ayatolla Khomeini came to power, reducing the amount of oil exported to the West (Second Oil Crisis). The prices increased, but to keep the inflation low the central bank decided to increase the interest. People could not afford their mortgages and therefore had to sell their houses (De Huizen crisis in de Jaren Tachtig – Huizenmarkt-Zeepbel.Nl, 2011). This resulted in a collapse of the housing market in 1980. Nobody was willing to buy a house anymore (Horstink, 2004). The planners tried to solve the problem by transferring owner-occupied properties to rental properties, however, because of the high exploitation costs the rent had to be high (van den Hoek et al., 1996). This resulted in a high level of vacancy. Beverwaard did not experience a smooth start.

2022

The housing association “VVV IJsselmonde” was transferred to other social housing associations. In 1998 the housing association “WoonbronMaasoever” sold all higher segment houses. The rents were aligned with the market position of the neighborhood. Therefore, many houses became relatively cheap compared to

the rest of IJsselmonde. Much of the social housing has been sold, the former renter was willing to buy the house.

In 2008, there was another housing crisis which lasted until 2013. Housing prices decreased by 21% and many people became unemployed. Also, the housing prices in Beverwaard decreased, in 2013 the average property value in Beverwaard was 129.000. Today (2022) the average property value is 192.000, that is an increase of 49% in comparison with 2013 (Buurt Beverwaard (gemeente Rotterdam) in cijfers en grafieken (bijgewerkt 2023!), 2023).

Today there is just a big housing shortage as there was in 1978. Despite the corona crisis housing prices keep on rising, due to the large shortage. People who want to buy their first house often find it impossible to find a house they can afford. Often these people earn too much for social housing, but too little for buying a house or renting it privately (Dol & Kranenburg, 2021).

The fact that Beverwaard was solely financed and constructed by a social housing association would be in today's financial concourse not likable. Currently, social housing is limited in the amount of land holdings they are allowed to have. They are invited to negotiations when the municipality demands a certain percentage of social housing in neighborhoods (Het bouwproces van nieuwe woningen, 2019).

Research Insights

	1978		2022	
Demographics	Beverwaard was mostly inhabited by families with children. There was a relatively high percentage of people from Suriname and the Antilles.	There was a relatively high amount of single mothers living in Beverwaard.	Beverwaard is mostly inhabited by families with children. There is a relatively high percentage of people from Suriname and the Antilles.	There is a relatively high amount of single mothers living in Beverwaard.
Organizational Structure	City design and gender equality were handled by two different departments.	There was probably independent advisory board on emancipation present within the municipality.	City design and gender equality are handled by two different departments.	An independent advisory board on emancipation is present within the municipality (only social).
Politics	Women were under-represented in all levels of the municipal organization.	The Social-Democratic party (PVDA) was the largest party in Rotterdam.	Women still are under-represented in higher levels of the municipal organization.	A populist party (Leefbaar Rotterdam) is the largest party in Rotterdam.
Economy	Due to the housing crisis many houses were vacant in Beverwaard.	Vacancy was solved by relaxing the selection of tenants. Led to no social cohesion and ghettoization.	There is a housing shortage. Many people who just started with a job are not able to buy or rent a house.	Many of the social housing has been sold, people have to wait a long time before they are allowed to rent.

Image 61: Research insights - Source: *Author*

Stayed the same
 Changed

Research Insights

Image 61 is an overview of the main conclusions that were drawn during the analysis of the planning of Beverwaard. All elements that influence the planning of public space have been shortly analyzed. The conclusions are colored according to whether they stayed the same over time, or whether they have changed.

One can see that the elements of demographics and organizational structure have not changed, while the economic and political situation did change. The demographic situation is tied to the available housing typologies. In Beverwaard there are mainly

single-family houses, therefore there live mainly families (diversity). Also, policies that were issued in the past have had and still affect the inhabitants (social cohesion). While the political landscape made the construction of Beverwaard possible, they did not (gender) assess the design. A lack of feeling safe was the result (feeling of safety). Beverwaard was supposed to be for the middle class, but due to the housing crisis, many people with a low income came to live in Beverwaard. The neighborhood changed into a ghetto (appearance). Houses were privatized, but the neighborhood still has "good" and "bad" parts.



Design Research

Introduction

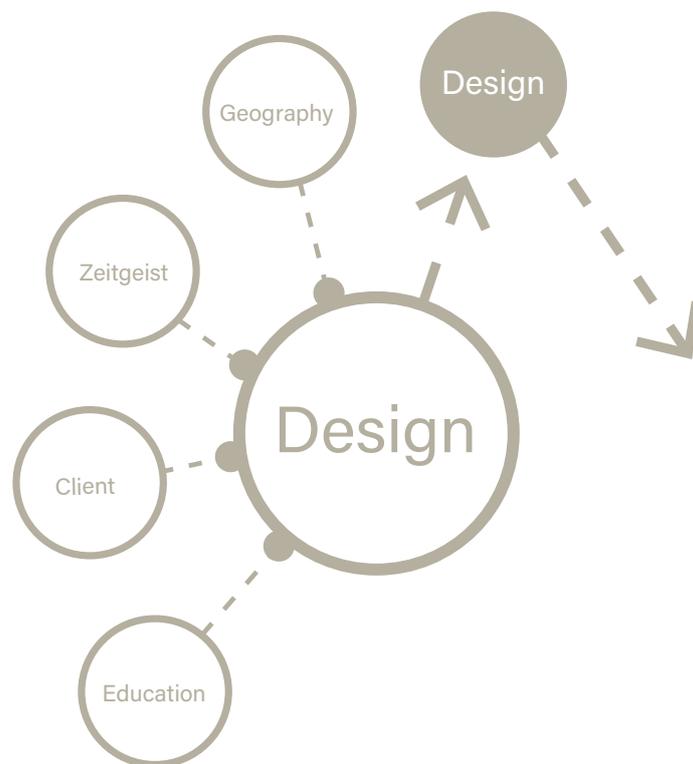


Image 62: Part of the conceptual framework - Source: *Author*

Design

Beverwaard scored the lowest of the five neighborhoods on the preliminary framework. Therefore, this chapter looks at the elements that influenced the gender exclusive design of Beverwaard. What made the design of the Beverwaard possible?

The elements that are assessed are: geography, zeitgeist, the client and education. Each element is compared with the current situation (2022), to see what impact the element could have on gender inclusive planning today. Very important to add is that the elements are interconnected, making

the assessment of the planning process extremely complicated. For example, the zeitgeist does influence the education of planners.

All elements have an impact on the planning of public space. However multiple elements are not easy to "change", for example, the geography and zeitgeist, but even changing education will take time.



Image 63: Rotterdam - Source: *Author*

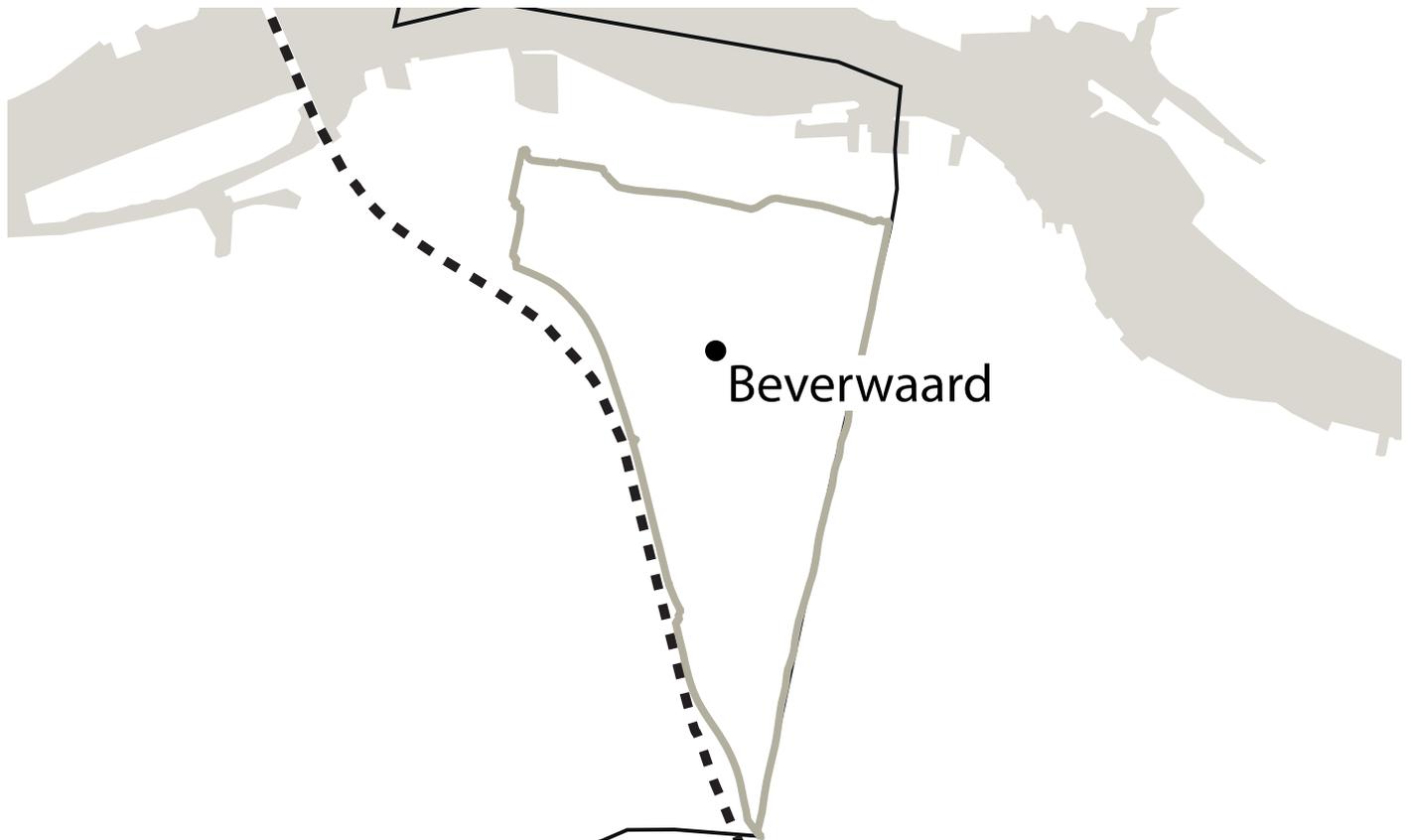
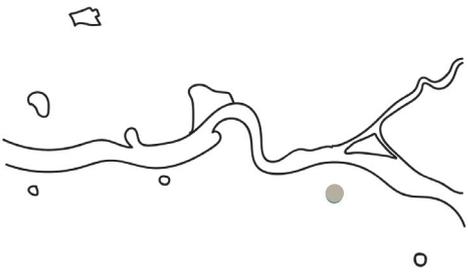
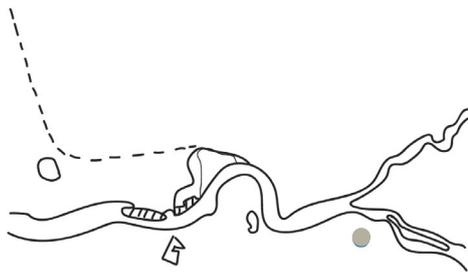


Image 64: Rotterdam through the ages - Source: *Author*

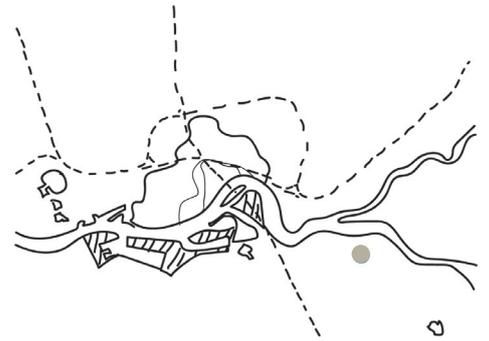
1815



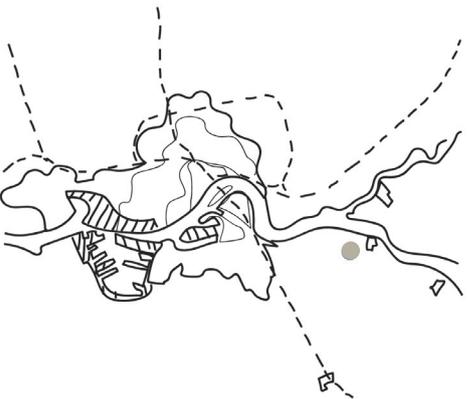
1850



1900



1930



1950



2000



Image 65: Rotterdam through the ages - Source: *Author*

Geography

To increase the understanding of how and why Beverwaard was designed, it is important to elaborate on its geography and history.

Rotterdam is named after the river de Rotte, which streams along the city. Rotterdam was given its official city rights in the year 1340 when the village had grown into a small city. At the time, it was still a city of no significant meaning. Dordrecht was the most important trading center in Holland. Just like many other Western-European cities, Rotterdam kept growing significantly in the 14th and 15th century. In the following centuries, it would take over the position of the most important trade center in the Netherlands.

During the beginning of the golden age (1600-1700), Rotterdam started building its harbors along the Maas, thereby claiming the name Watercity (the port was three times as big as the city) (De Geschiedenis van Rotterdam, n.d.). Up until this time, the city was located only on the north side of the river Maas. Only at the beginning of the 20th century, due to industrialization, the south side became inhabited (Topotijdreis, n.d.). The number of inhabitants in Rotterdam nearly doubled between 1880 and 1900 (160.000 to 315.000) (@ Stadsarchief Rotterdam, n.d.). During this period, the South of Rotterdam was mostly inhabited by workers, who worked at the harbor and at the factories that were located near the river.

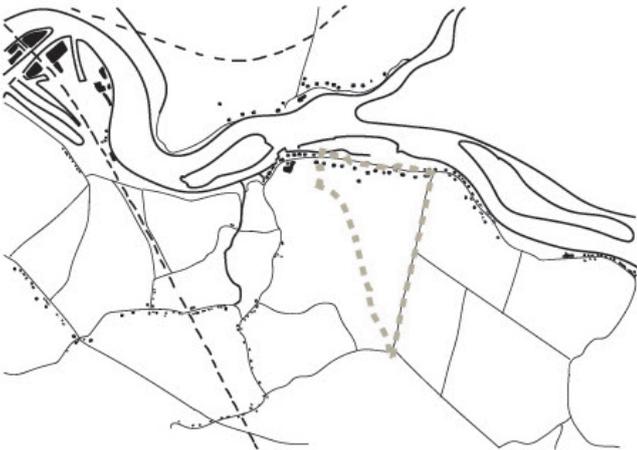
As Rotterdam became increasingly important the harbor was extended to

the south side of the city. The activity in the harbor came to a standstill during World War I (1914-1918) and World War II (1940-1945) when nearly the whole city center was bombed. Only a few buildings survived. The city was rebuilt, old buildings were demolished and the city was known as a work city, an epitome of modernity.

After World War II there was a huge housing shortage, because during the war many houses were destroyed, but no new houses were built. Rotterdam needed more houses and therefore expanded on the south and north side of the river. Examples of neighborhoods built in Rotterdam during that period are: Pendrecht (1949), Zuidwijk (1950), Lombardijen (1960) and Ommoord (1965).

While the economy flourished between 1960-1980, it came abruptly to an end with a housing crisis in 1980. The expansion of the city stopped. When the economy improved, Rotterdam redefined itself as a world harbor city and as a city of unlimited possibilities. Rotterdam defined a new high-rise policy and the building and extension of the First and Second Maasvlakte, two gigantic harbors at the edge of the city (Komossa and Martin, 2006). Rotterdam is no longer the largest harbor in the world (the largest harbors are located in China), however, it is still the largest in Europe and the 10th largest in the world.

1857



1940



1980



2000



Image 66: Rotterdam through the ages - Source: *Author*

The place where Beverwaard is currently located used to be flooded by the river the Maas. However, the area was reclaimed sometime between the 10th and 12th century. The area was then diked to make it suitable for agricultural purposes. The area was flooded (again) in 1373 and fifty years later (again) reclaimed. A new dike was built and its land was used as agricultural ground. Up until the twentieth century, few things within the landscape changed. There were multiple small villages, for example, IJsselmonde and Bolnes, in the area ("Ontstaan van de Beverwaard," 2013).

It all started with the annexation of IJsselmonde by the municipality of Rotterdam in 1941. New houses needed to be built for the inhabitants of Rotterdam. The construction of Groot IJsselmonde started in 1949 and was finished in 1961. Around the same time (1960), the highway that would form the last part of the ring (A16) was constructed. The highway would go over the water and therefore a new bridge had to be made. The landing of the bridge would be near Oud-IJsselmonde and for this reason, multiple houses had to be demolished. The bridge was finished in 1964 and broadened in 1993 ("Ontstaan van de Beverwaard," 2013).

Beverwaard was built between 1978 and 1990, although it was planned to be finished by 1982. The urban plan was designed by Drenth/Tettero and Mol/Reijenga, in cooperation with the social housing association Volkshuisvesting

IJsselmonde (Horstink, 2004). The neighborhood is located in the South-East part of Rotterdam and is part of the district of IJsselmonde. The neighborhood is located just outside the highway ring (A16) of Rotterdam, enclosed by the Maas and this highway. As a result, its inhabitants experience the neighborhood as a big village. The neighborhood consists of residential areas, canals and green areas. On the south side of Beverwaard, there currently is a tram depot and a park and ride. For a short period, there was a refugee camp. Located on the east side of Beverwaard is the village of Bolnes (part of the municipality of Ridderkerk).

Beverwaard is designed as a 'typical cauliflower neighborhood', a structure that is often experienced as a maze (Tudjman et al., 2012).

Zeitgeist



Image 67: Zeitgeist of when Beverwaard was designed - Source: Multiple, see bibliography images

1970-1980

The 1970s were turbulent times. It was the time of protest and of rising against the conventional orders of society, the church, the government, the university, and so on. Many demonstrations were peaceful, however, there are some examples of more violent ones. For example, there were multiple 'kraakers rellen' (house breaking riots), where the police and youngsters fought each other (Goedegebuure and Graaff, 2019).

Emancipation was again on the agenda, led by the action group 'De Dolle Minna's'. One of their famous slogans was 'baas in eigen buik' (boss over own belly), suggesting that women should have a choice whether or not they want to have a baby, either by abortion or by well-functioning anti-conception. They fought for many different things, including public toilets, free entry for women to every type of education and the abolishment of the double moral standard (Dolle Mina actiegroep | feminisme | Atria.nl, 2015).

Urban Design

After the Second World War, there was a big baby boom, which resulted in a nationwide housing shortage and the building of low-quality but highly efficient row houses and apartment blocks (Jaren 60 woning | Ontdek de kenmerken en eigenschappen, 2021). This was all possible due to innovative building techniques and materials such as concrete (Heerma van Voss et al., 2018). Rotterdam needed to house all these extra people and therefore expanded on the south and north side of the river. These 'new' neighborhoods were seen as an improvement of living conditions, by the slogan of 'light, air and space' (licht, lucht en ruimte).

However, in the 80s the problems present in the urban design of these neighborhoods became evident. General complaints included: during the day, nobody was in the neighborhood, the car got too much space and there was no social cohesion. Therefore, a new style was invented, named 'the cauliflower' neighborhood. This name arose from the fact that the traffic flows look like cauliflower when visualized in a diagram. This type of neighborhood is characterized by its green spaces, woonerf (pedestrian and child-friendly streets) and slow car traffic, as a reaction to the post-war 'stamp' neighborhoods (Onderzoek - Bloemkoolwijken, n.d.).

The original designers of Beverwaard criticized the garden cities, which they called 'sleep neighborhoods', which

lack 'opportunities to experience.' Citing their words: "For those in the living environment that is left behind, for the housewife and the children, there is an increasing shortage of opportunities to experience (in the garden city neighborhoods)" (Dorren et al., 1974).

The designers claimed that youth demolish public property and end up in criminal discourse, due to the lack of activities and experiences. Therefore, the designers strove to give people the opportunity to organize local initiatives, such as starting a shop or organizing a community party.

Accessibility was considered extremely important, therefore functions like schools and public transport stops were a maximum of 400 meters away from people's homes (Horstink, 2004). For other functions, such as swimming pools and the cinemas, the inhabitants were designed to rely on Groot-IJsselmonde (the district Beverwaard is part of) or the city center of Rotterdam (which should be a maximum of 45 minutes away) (Dorren et al., 1974). An important aim of the planners was to have a good public transport connection between the city center and Beverwaard. There is both a tram and bus connection.

Many of the ideas of the designers, like accessibility, diverse functions and a social network are in line with the preliminary framework.



Image 68: Zeitgeist of the past few years - Source: *Multiple, see bibliography images*

2020-Now

In December 2019 the Corona pandemic broke out in Wuhan, China and spread all over the world. In the Netherlands, the virus was first detected around February 2020 and led to various economic and societal problems. For example, people lost their jobs or got long-covid. These negative effects were spread unevenly, women, people in urban areas and refugees were affected more by the socioeconomic effects of the COVID-19 pandemic (Horckmans, 2021).

During the pandemic (2020) George Floyd, an American man of color,

dies due to police violence. A rash of protests against discrimination and police violence in America, but also worldwide, follows (Dit is het verhaal achter de Black Lives Matter-beweging, 2020).

The pandemic was finally “over” when Russia invaded Ukraine in February 2022. This led to a food shortage and rising gas prices (Markteffecten van de Russische invasie in Oekraïne, 2023). Many households could no longer afford to heat their houses since gas prices bubbled.

Urban Design

Although the planners had many ambitions, namely an accessible and vibrant neighborhood, most of these ambitions didn't work out as planned. Only a part of the neighborhood was built according to the original design: living close together in a car-free neighborhood, just as it had been in the old cities (Horstink, 2004). Due to the rise of car usage, a car-free neighborhood never was realized. The first part of the neighborhood that was realized was experienced as unsafe, cramped and cluttered. Therefore, the design was changed and the rest of the neighborhood got a more spacious layout.

Some (spatial) changes were made after the neighborhood was built completely. For example, the shopping center was renovated, the car road was extended through the neighborhood, a part of the social housing has been sold and other social houses are being renovated (van den Hoek et al., 1996). Multiple programs like; 'Beverwaard, het wonen waard' (Beverwaard, worth living in) or 'Versterken door samenwerken' (Strengthening by working together) tried to improve the neighborhood (van den Hoek et al., 1996).

However, until this day, the neighborhood is seen as "socially weak" or could be called a vulnerable neighborhood. This is probably due to the housing stock, most of the houses are relatively cheap and are therefore mostly inhabited by people with a low

income. The average income of people living in Beverwaard is 21.500 euro per year (the average in Rotterdam is 27.200 euros). 14 % Of its inhabitants has an income that is around social minimum (19.000 Euro) (Buurt Beverwaard (gemeente Rotterdam) in cijfers en grafieken (bijgewerkt 2023!), 2023). Beverwaard also has many single parents families (see chapter inhabitants). These are the groups that were especially affected by the COVID pandemic. For example, the COVID crisis hit single mothers extra hard, because it put extra pressure on work, income and social contacts (Sijtsma, 2021). Single mothers often have a more vulnerable social-economical position, resulting in social isolation and bad health. The COVID pandemic also put pressure on public space, parks and other green spaces became even more important. Cartraffic decreased and cycling and walking became even more important.

Also, the energy crisis was felt especially by those who already have financial problems. All houses in Beverwaard were built between 1978-1990. The requirements set on insulation today qualify as very moderate (woningen gebouwd tussen 1976 en 1987, n.d.). Little insulation and moderate seam and chink sealing resulted for most houses in energy label D or C (G is worst A best). One can imagine the effect on the inhabitants.

Education

1960-1980

Technical studies, who were traditionally men-dominated were not a popular choice among women. Reading the speeches that were given up until 1940, this is no surprise. The most important motto was: don't stand out as a woman and be grateful for the opportunity to study in Delft. Any openly feminist attitude was rejected (TU Delft Academic Heritage, n.d.).

Between 1955-1965 (the time that the architects and urban designers who designed Beverwaard started and finished their education), only around 3 percent of all students at the TU Delft were female (TU Delft Academic Heritage). Both designers (Jan Mol and Henk Reijenga) were influenced by the book 'The carriers and the people', which was published in 1961. The book touched upon the theory of participation in mass housing design. He thought that residents should actively participate in the design process (Stichting Architecten Research (SAR) / Archief, n.d.). This influenced movements such as structuralism.

Moving to 1970-1980, different theories popped up. New initiatives and research groups started to arise due to the growing influence of second-wave feminism. For the first time, this movement echoed in education and the academic system. What started as a seminar for activists and was about the suppression of women on the faculty, resulted in a department where the role of gender in architecture and urbanism



Image 69: Demonstration within the faculty -
Source: Weenink (2021)

was researched and questioned (veertig jaar na Vrouwenstudies, 2021). In what way did housing floor plans reaffirm conventional gender roles within the household? Why is the focus of our education on family housing? Women's studies were in the beginning met with scepticism. However, the seminars were very popular and what started as an experiment led by Anna Vos resulted in an officially separated department.

As the movement of the second feminist wave dimmed out, so did the financial support of the department. The department fell apart into separate chairs. Still today, education on gendered space is not present in the curriculum.

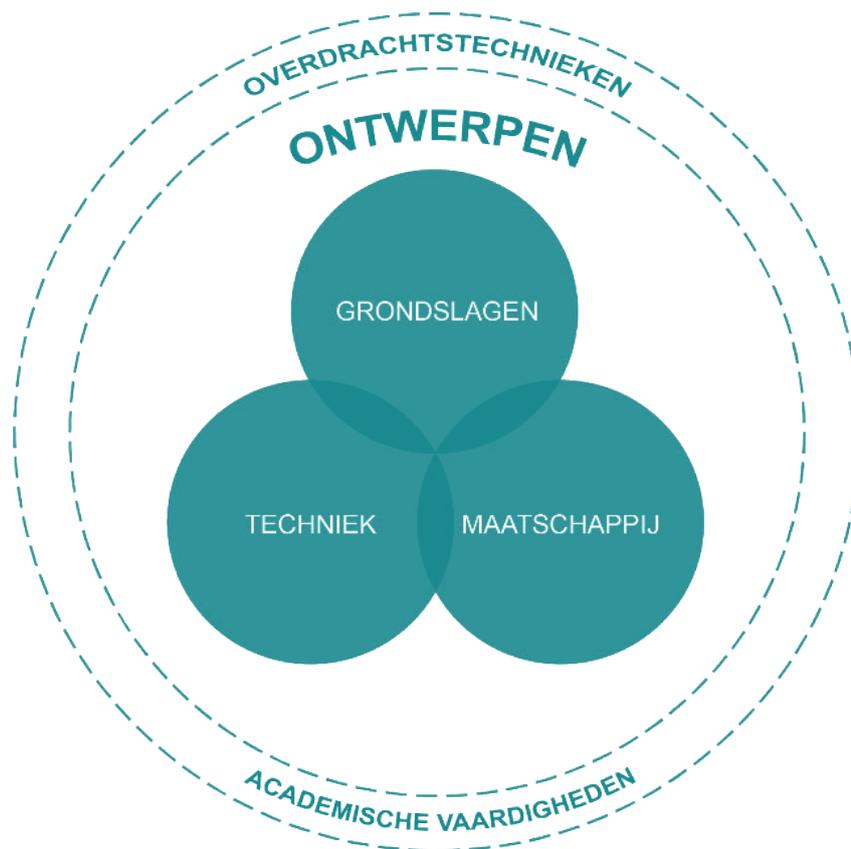


Image 70: The different learning tracks in the bachelor - Source: *Rooij & Hoekstra (2020)*

2010-2020

Times changed and the number of female students and therefore architects and urbanists rose to the level of where it is now, namely nearly fifty-fifty at universities. When we look at universities of applied sciences or post-secondary vocational education institutions this number is more in favor of men. Although the amount of women studying architecture is high, this is not represented in the number of leading female architects, theories or inspirational example projects.

The current bachelor curriculum exists of six different "learning tracks", as they call it. These tracks are design,

form study, foundations, management, technology and academic skills. They cover both the artistic, process, technical and scientific aspects of architecture and urban design (Rooij & Hoekstra, 2020). Within the foundations of the track, there is attention on the relation between societal historical events and buildings, but little to nothing is told about the societal role of women and its effects on spatial configurations.

Theories discussed in the bachelor are those of Karsten Harries, Paul Goldberger, Kenneth Frampton, Simon Unwin, Vitruvius and many more.

Client



Image 71: The Board of Mayor and Aldermen 1963 -
Source: *Stadsarchief Rotterdam*



Image 72: The Board of Mayor and Aldermen 2022-
Source: *Gemeente Rotterdam*

The municipality decides where houses are allowed to be built via the zoning plan. When the municipality owns the land, they often have a design contest. The design must meet certain requirements formulated by the municipality in a brief. If the land is owned by developers the municipality has less influence in the development of the land (*Wie beslist waar wordt gebouwd?*, 2018).

1960-80

The land Beverwaard was built on, was owned by the municipality. However, it was sold to two social housing organizations. They built most

of the houses in the neighborhood. The project developer Proper Stok built some houses for “premiekoop” (grant purchase) after they made a request at the municipality. The social housing association and the developers were the clients of the designers of Beverwaard.

2010-2020

Currently the municipality “owns” the public space. The social housing association and owners of privately bought properties are responsible for the maintenance of their property. The selling of social houses affects this ratio.

Research Insights

	1978		2022	
Geography	Beverwaard was bordered both by the highway as the river the Maas.	Beverwaard had the structure of a cauliflower, with green axis going north to south.	Beverwaard is bordered both by the highway as the river the Maas.	Beverwaard has the structure of a cauliflower, with green axis going north to south.
Zeitgeist	The design is influenced by theories popular during the designers' education.	The feminist waves did not affect the design, however the general zeitgeist was socially oriented and therefore relative gender inclusive.	The theories Beverwaard was inspired by are criticized.	Gender inclusiveness does not bring any changes in the public space.
Education	Between 1974 -1990 there was education on gender and space. The designers finished their education before this time.	There was no equal representation at the faculty of architecture.	There is no specific education on gender and space. It is part of the courses "foundations".	There is an equal representation of students, but not in higher levels.
Client	Municipality owned the land and therefore had a big influence on who and what should be built.	The social housing association and the project developers could chose the (urban) designers.	The municipality owns the public space. Other spaces are private property or of the housing association.	The design was changed the designers, because of malfunctioning.

Image 73: Research insights - Source: *Author*

Stayed the same
 Changed

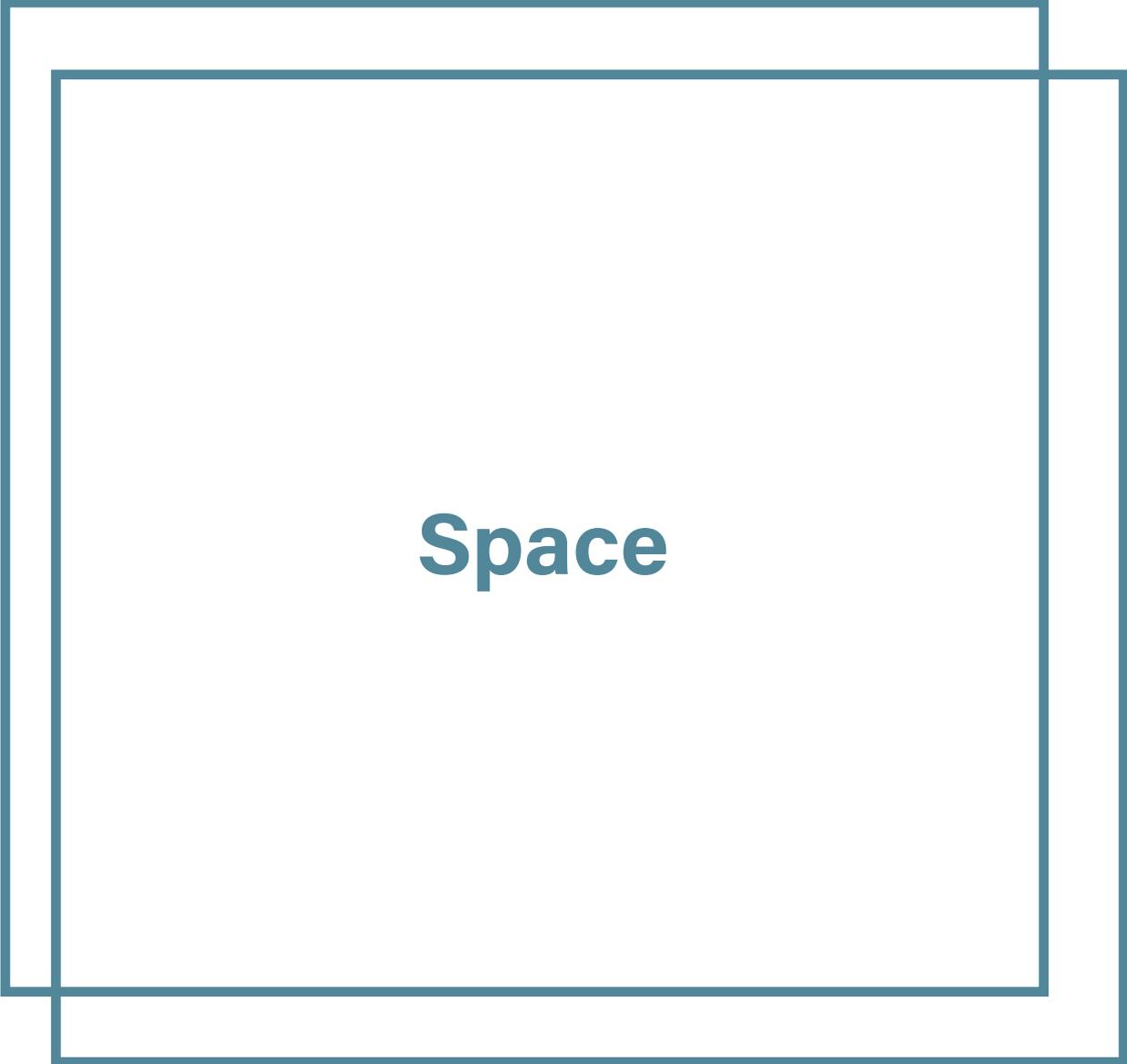
Research Insights

Image 73 presents an overview of the main conclusions that were drawn during the analysis of the design of Beverwaard. All elements that influence the design of public space have been shortly analyzed. The conclusions are colored according to whether they stayed the same over time, or whether they have changed.

One can see that only the element of geography did not change. The zeitgeist, education and the client all did. While the zeitgeist of 1978-1990 was very feminist orientated, it did not directly affect the design(ers). Namely, the designers were educated before this

time. However, they were influenced by human-based design theories, which on paper made Beverwaard very socially oriented (social cohesion and functions). The designers were not free to do as they liked, they were dependent on their client: the municipality. The municipality, where women were and still are underrepresented, formulated what should be built and for whom (needs). The location for Beverwaard was assigned by the municipality, therefore the location was already set. Since the highway and the river were already there, its bad connection to the rest of Rotterdam was a given (connection).

*See preliminary framework



Space

Introduction

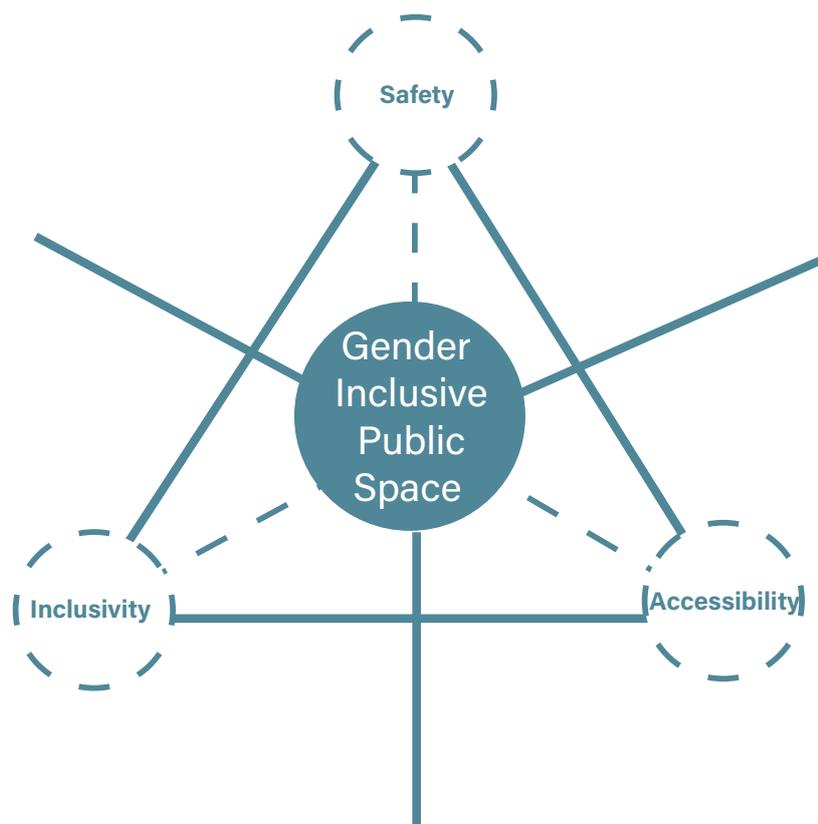


Image 74: Part of the conceptual framework - Source: Author

Space

In this chapter, multiple analyses will be done on gender inclusivity of space. Each subsection looks into a different element that forms gender inclusive public space: inclusivity, accessibility and safety. Multiple types of analysis are performed; data analysis, spatial analysis, observations, a transect walk and interviews.

The observations took place in the shopping center and a playground. Interviews were done with the project leader's subjective safety, the account holder security, a social worker, who focused on girl empowerment and the

neighborhood manager. The transect walk was done with Hans, a citizen of Beverwaard who is very active within the neighborhood.

These different methods are used to complement each other. For example, the interviews with the project leader on subjective safety gave more specific information about locations the municipality marked as problematic. The goal of each interview or observation was to see how the data matched up with the real-time experiences of experts and inhabitants.

Accessibility

Connection

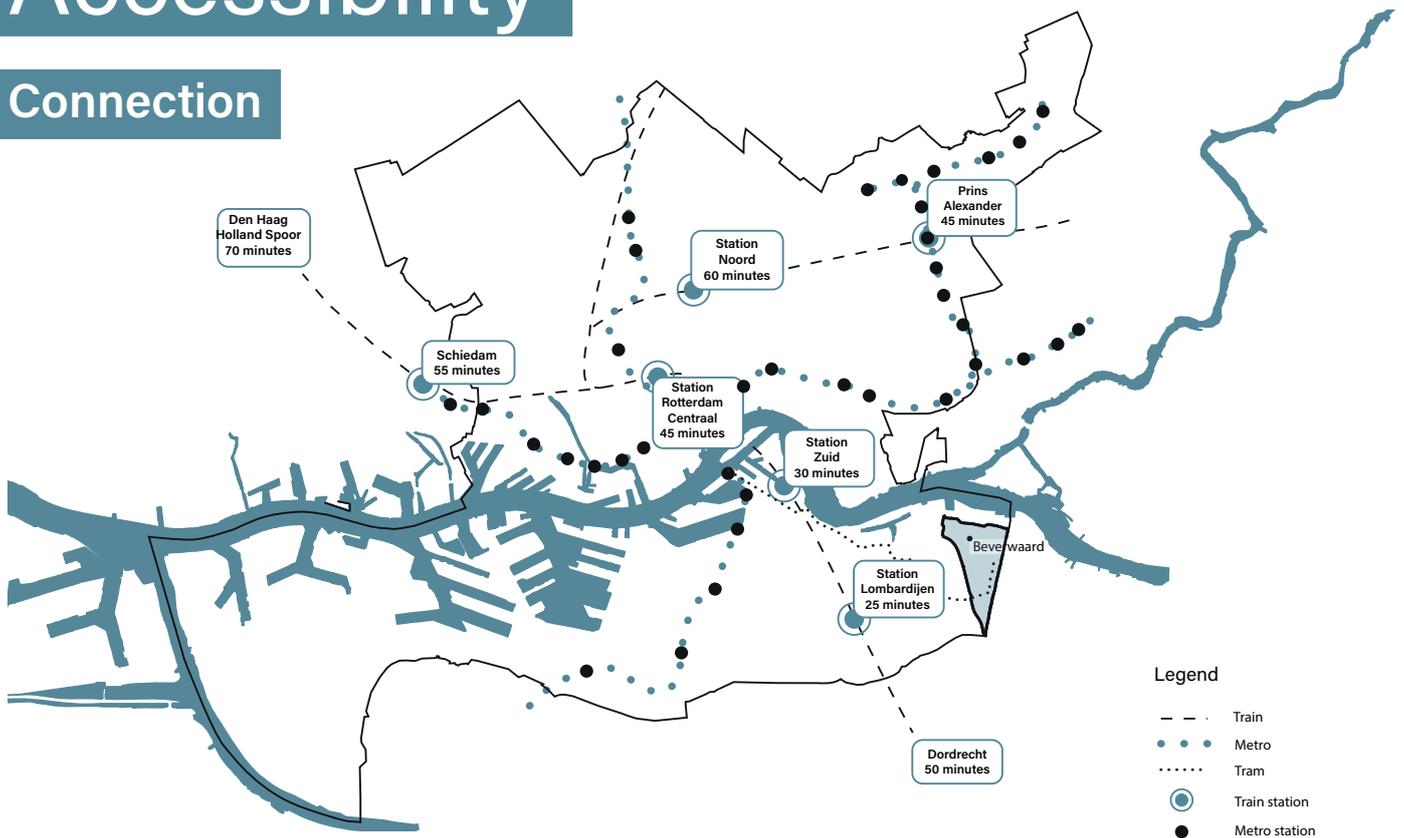


Image 75: Travel time to train stations from Beverwaard- Source: Author

Public Transport

The travel patterns of men and women differ. Generally, women are more likely to use public transport (Perez, 2017). Public transport is often designed in a radial way, transferring people from home to their jobs (Perez, 2017). However, women travel patterns are often not radial, but crisscross. Therefore, women are more likely to pay a 'pink tax' (paying more for similar services than men). In New York City, for example, women who are primary caregivers for children may be paying up to seventy six dollars per month extra on transportation costs, because they do not pay a fixed amount per kilometer, but pay per transport leg (Kern, 2019).

Rotterdam has multiple modes of public transport. There are trains

(Nederlandse Spoorwegen) as well as metros, trams and buses (Rotterdamse Elektrische Tram). The Dutch railroads are owned by the Dutch state, but the NS is a private corporation. The RET is a corporation, but its main shareholders are the municipality of Rotterdam and Den Haag and therefore it is also state owned (Stadsregio Rotterdam - Busconcessie Rotterdam Naar RET, 2011).

In Rotterdam, it is indeed the case that the train and metro (fast modes of transport) systems are radial and the trams and buses (slow modes of transport) are used to connect the inter radial points. Therefore, women have to transfer more often, resulting in longer traveling time. Next to that, when

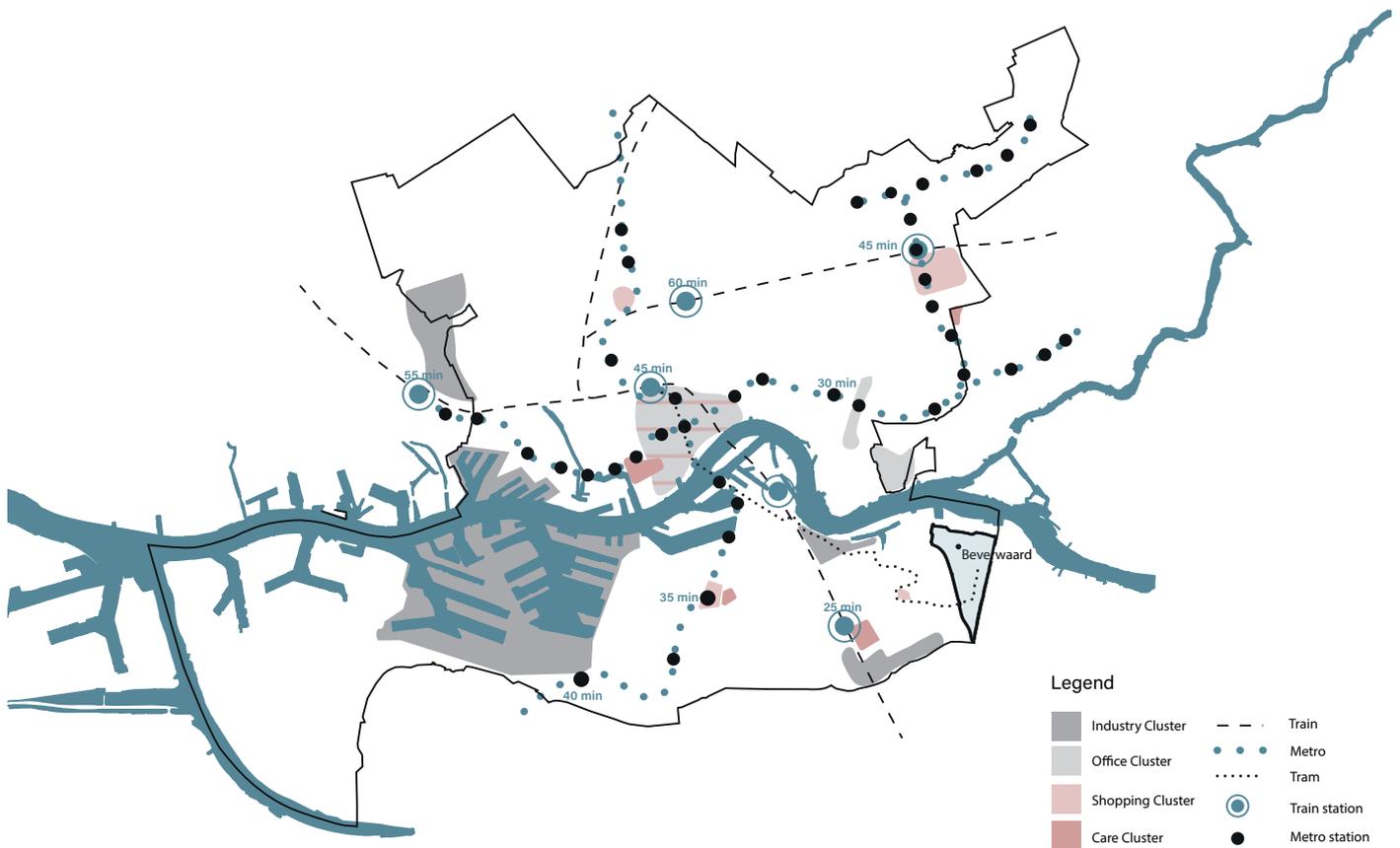


Image 76: Different cluster and its accessibility by public transport from Beverwaard- Source: Author

transferring from a bus, tram or metro to the train, one has to pay the base rate twice (OV-Chipkaart - Overstappen, 2021). When transferring from a bus to another bus within 35 minutes, one only pays the base rate once. After transferring you pay per traveled distance, however the rate for this distance is different per type of public transport (OV-Chipkaart - Overstappen, 2021). For example, if one would travel from Rotterdam Blaak Station to Rotterdam Central Station, it would cost € 2,60 by train, while with the tram it would cost €1,36.

During the planning phase of Beverwaard, the designers aimed to have 'high-quality facilities such as cinemas, high schools, etc within a maximum of 45 minutes of travel time'

and at the same time to 'minimize as much as possible the need to spend time on the move.' However, Beverwaard is located on the outskirts of Rotterdam and there is neither direct metro nor train connection. There is a tram that runs to Rotterdam Central Station (40 minutes), a bus that will runs to the metro station Kralingse Zoom (25 minutes) and a bus that runs to Rotterdam Lombardijen Station, from where one can travel in any other direction. Traveling to shopping, caring or office clusters can take a lot of time, because traveling by public transport from Beverwaard to anywhere therefore nearly automatically means that you will have to transfer (see image 76). The long travel distance in combination with the required transfer can demotivate women to travel at all.

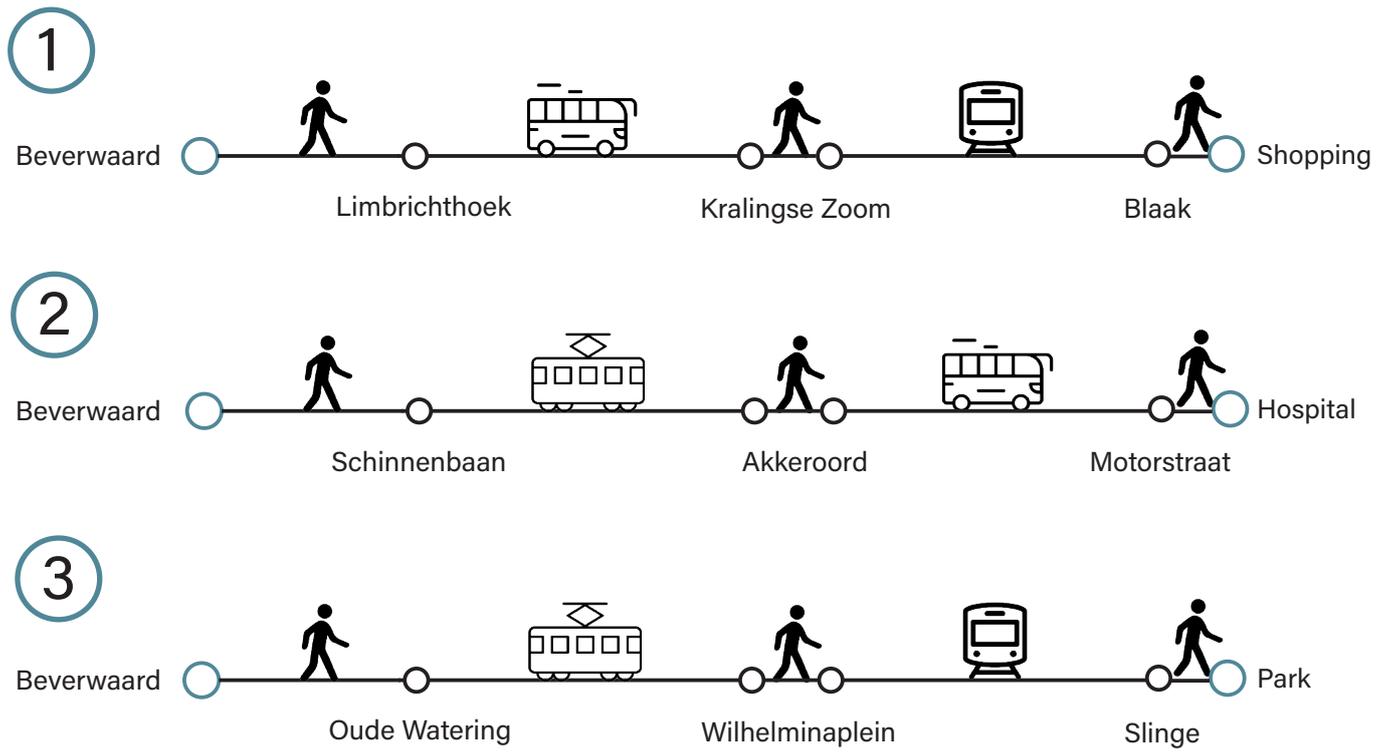


Image 77: Example travel patterns to the city center, a hospital and a big park - Source: *Author*



Image 78: Routes on the map - Source: *Author*

1



Limbrichthoek

2



Schinnenbaan

3



Oude Watering



Kralingse Zoom



Akkeroord



Wilhelminaplein



Blaak



Motorstraat



Slinge



Image 79: Transportation hubs - Source: Google streetview

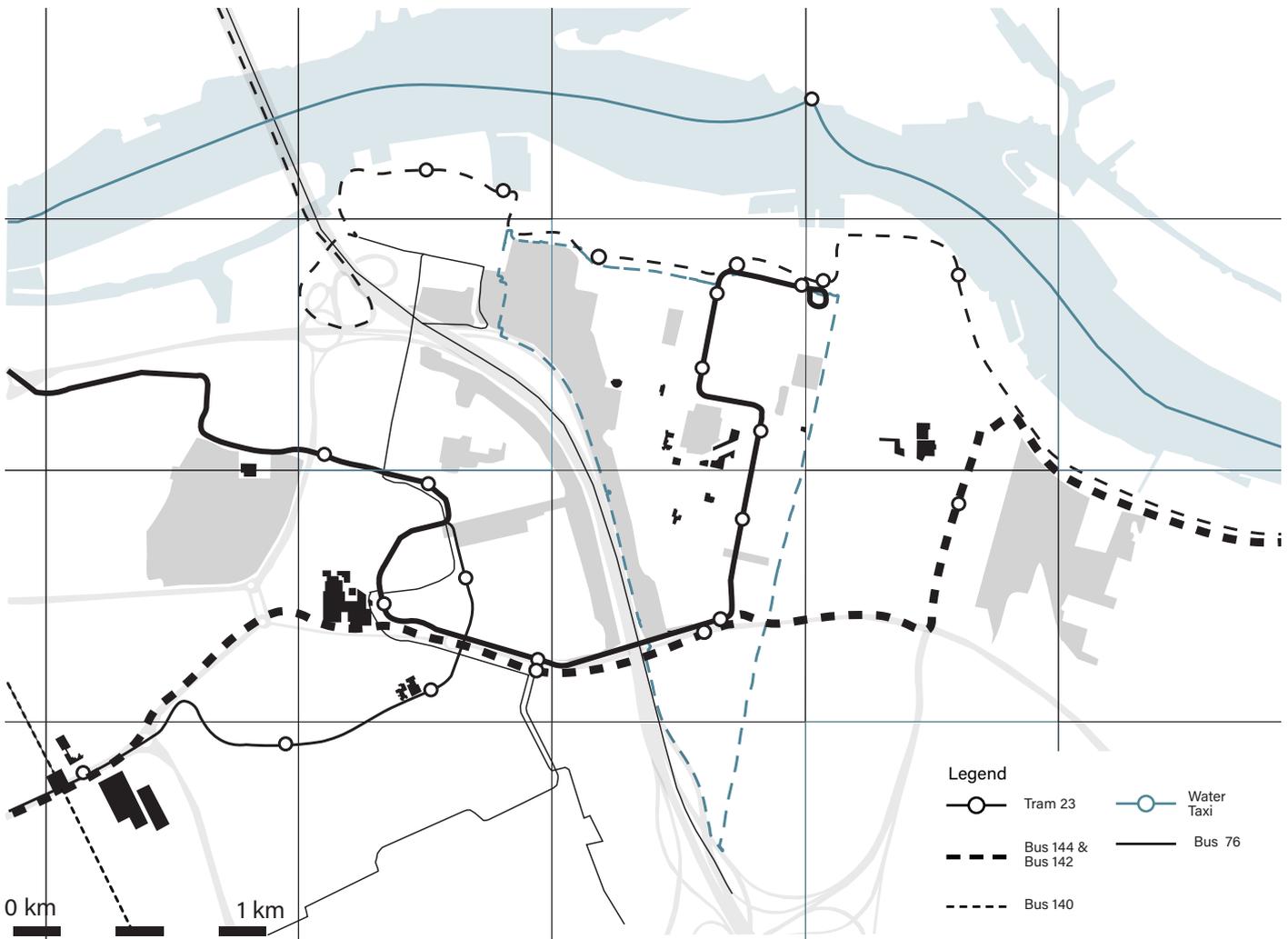


Image 80: Public transport routes - Source: Author

Public Transport

Due to the cauliflower-structure of the neighborhood, the tram runs through the center of the neighborhood. Because of the scale of the neighborhood, all houses are within a five minutes walk away from tram stops. One of the eight tram stops is isolated from the car road and only accessible via a pedestrian path. On the edge of the neighborhood there are also two different bus lines. These are further away than a five minutes' walk from some parts of the neighborhood, but both of them can be reached with the tram.

All of the tram stops and most of the

bus stops are wheelchair (and stroller) accessible, having a raised platform with a small slope.

The tram schedule is flexible in the sense that the first trams leave at the Beverwaardseweg at 5:36 and the last tram leaves at 23:38. They serve those who have a "normal 9 to 5" job well, but single parent families, teenagers or jobs with different time schedules are not taken into account. For example, when you are a teenager who wants to go out in the city center on a Friday, there is no way for your to get back after midnight. The only other options are cycling half an hour or taking a taxi which is expensive.

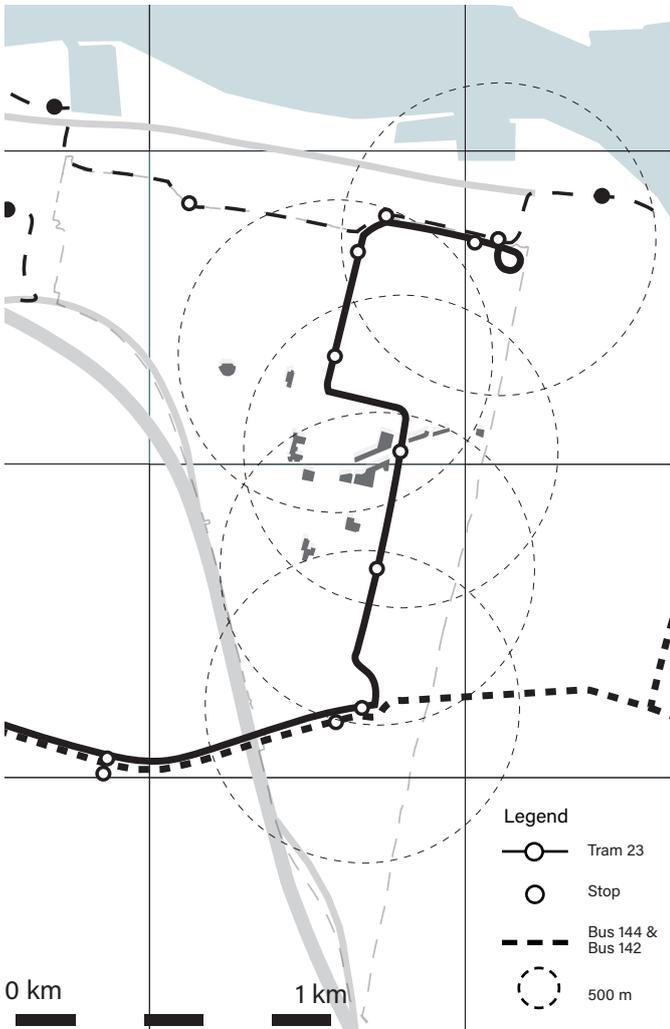


Image 81: Public transport Beverwaard -
Source: Author

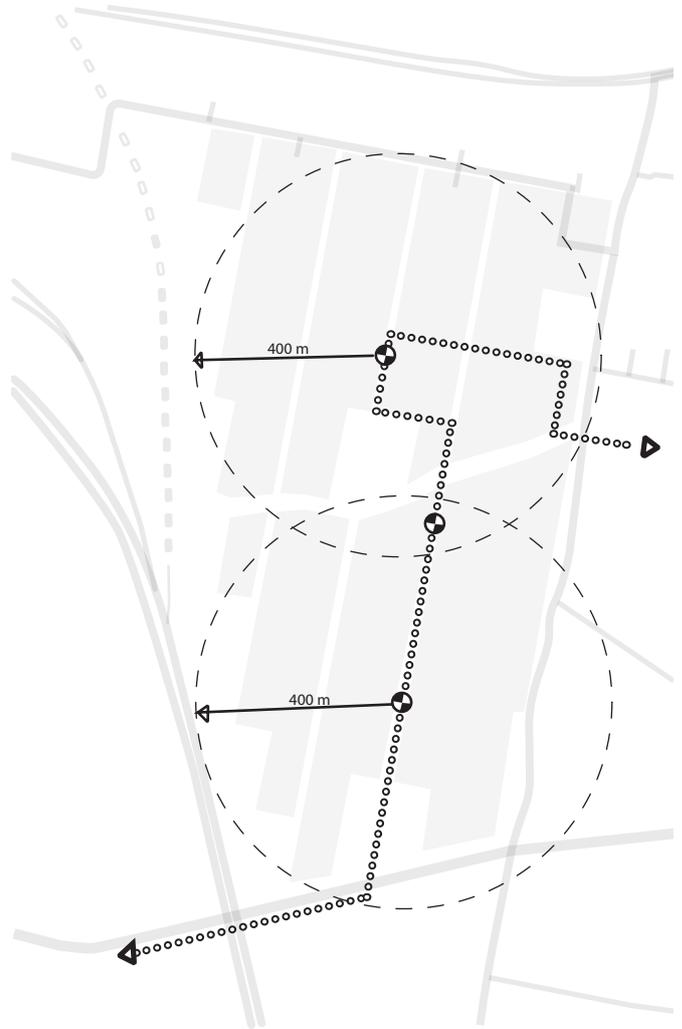


Image 82: Original public transport plan -
Source: Dorren et al. (1974)



Source: Author

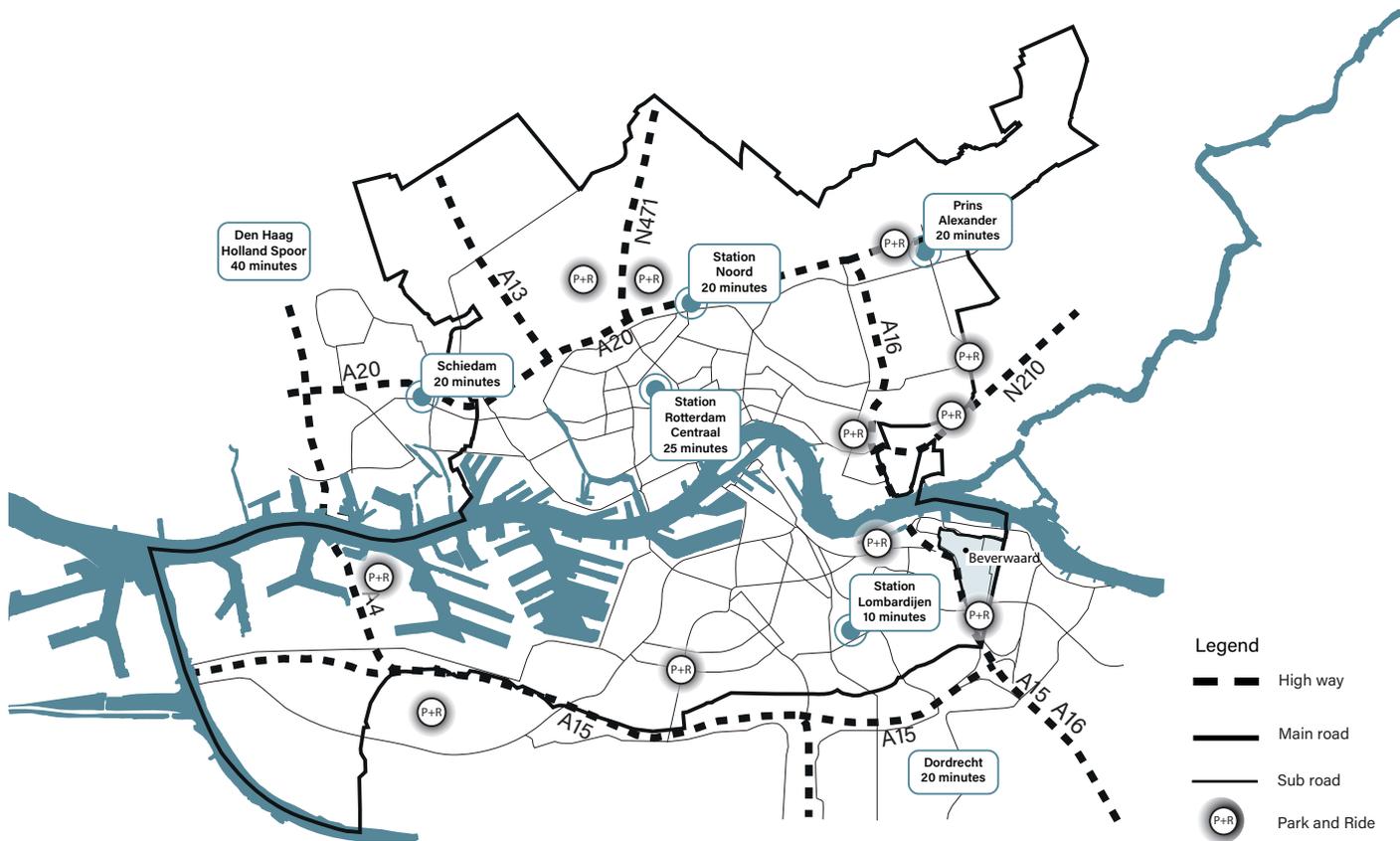


Image 83: Car infrastructure city wide - Source: Author

Car mobility - City

Whereas women use the public transport more frequently, men use the car more frequently (Jackowska and Novas Ferradás, 2022). As the urban infrastructure was designed to accommodate the movement and work patterns for men (Kern, 2019), women's needs were less taken into account. The dominance of the car, together with social dangers, render urban public space as unattractive and dangerous for children, who spend less time playing outside and need to be chaperoned more often (Karsten, 2003).

When looking at the larger network of car roads, Beverwaard is very well

situated. It is located right next to the highway A16, connecting it directly to Dordrecht and Belgium. This highway, together with the A4, A20 and the A15 (other main roads), forms the ring road around Rotterdam. As a result, it can be noticed that travel times are significantly longer by public transport than by car.

Since the highway was built before Beverwaard was even planned, the connection from Beverwaard to the highway looks inefficient. There are two ways to enter the highway: one on the south side, near Bolnes and one on the north side via an intersection.

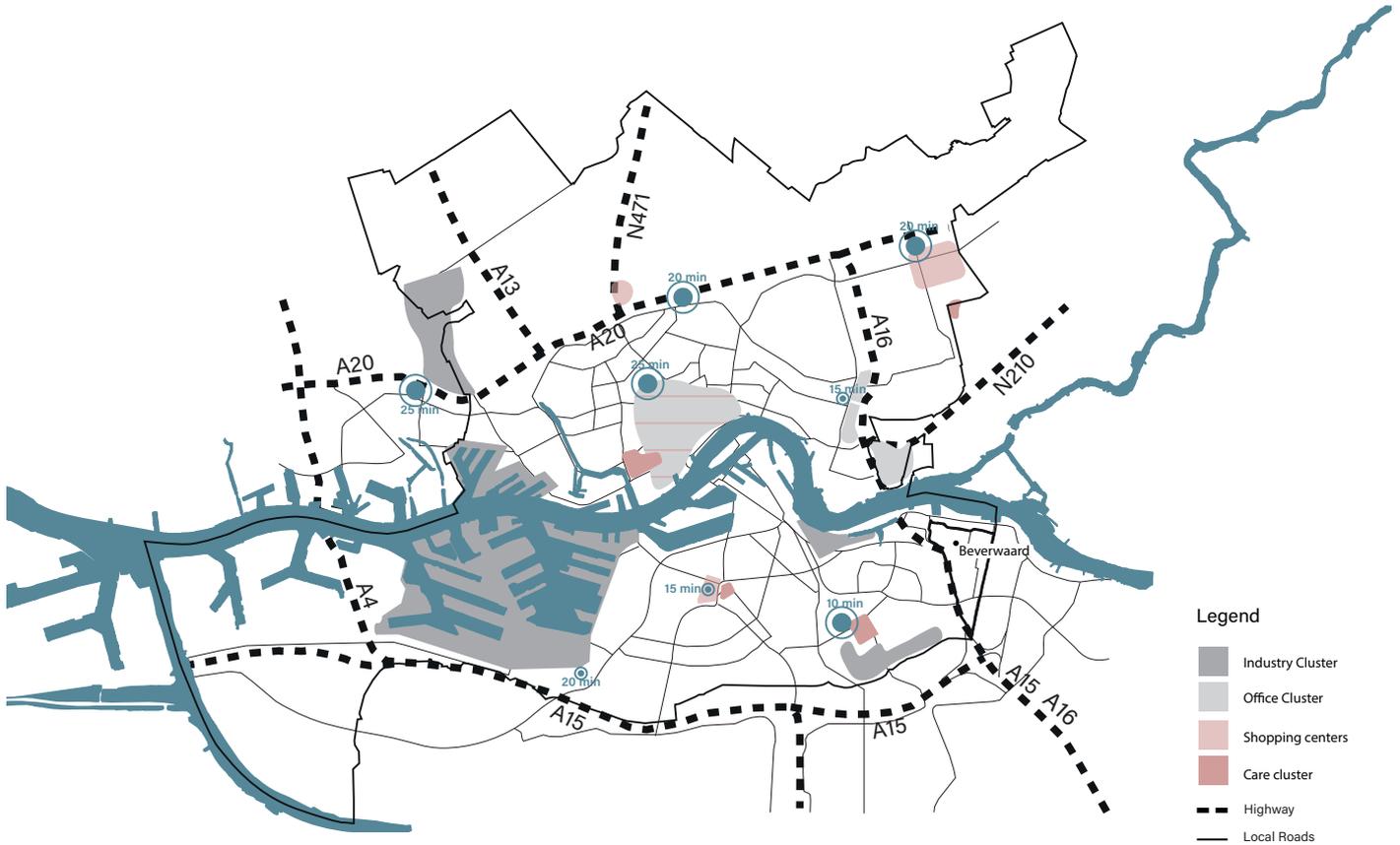


Image 84: Clusters accessibility by car - Source: Author

Current policies by the municipality of Rotterdam try to stimulate limited amounts of cars entering the city center. Therefore, paid parking is the norm within the city. To stimulate people to not enter the city by car, there are multiple park and ride (P+R) locations at the edge of the city. One of such P+R locations is on the south side of Beverwaard, next to the tram depot.

Some women that were interviewed expressed their reluctance to this trend, since this would mean difficulty with going the market at Zuidplein. They used to travel there by car, since public transport to Zuidplein included many

transfers. Both interviewees were older and would have to carry groceries, therefore they preferred going by car.



Image 85: Car structure Beverwaard - Source: <https://www.ret.nl/home/reizen/dienstregeling/tram>

Car mobility - Neighborhood

Beverwaard was planned well aware of the negative impact of the car. Therefore, many streets are car-free, the speed limit is 30 km/h and there are many speed bumps to limit driving speed (Horstink, 2004). Also the shape of the neighborhood is that of a cauliflower (experienced as a maze by many). This divides the traffic flows into many smaller traffic flows that are not connected with each other. The only people driving in the street, would live in that street, therefore there would be less car traffic. However, what the planners did not foresee was the drastic growth of car over the years. This is mostly visible in the street scape.

The original idea for the design of the neighborhood was that 'parking in the street would be limited, but that people would park in private yards' (Dorren et al., 1974). However, car parking could not be solved only in private yards, therefore many of the cars still ended up on the streets and in the courtyards that were planned as playgrounds for children.

33% of Dutch households does not own a car (especially low-income groups don't own a car) and with the knowledge that usage is also gender unequally used, the role of the car in Beverwaard could be discussed (Witte et al., 2022).



Image 86: Car structure Beverwaard -
Source: Author

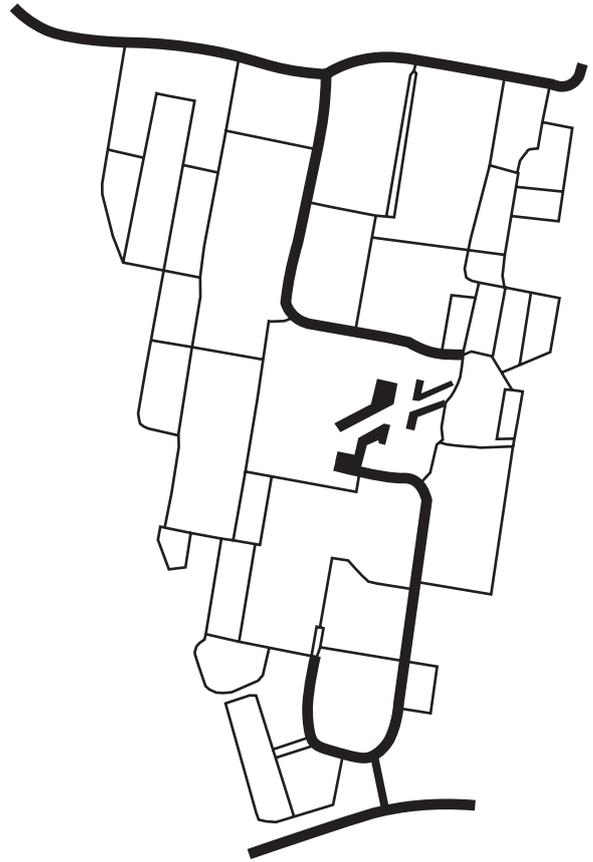


Image 87: Original Car structure -
Source: De Boer (2017)



Source: Author

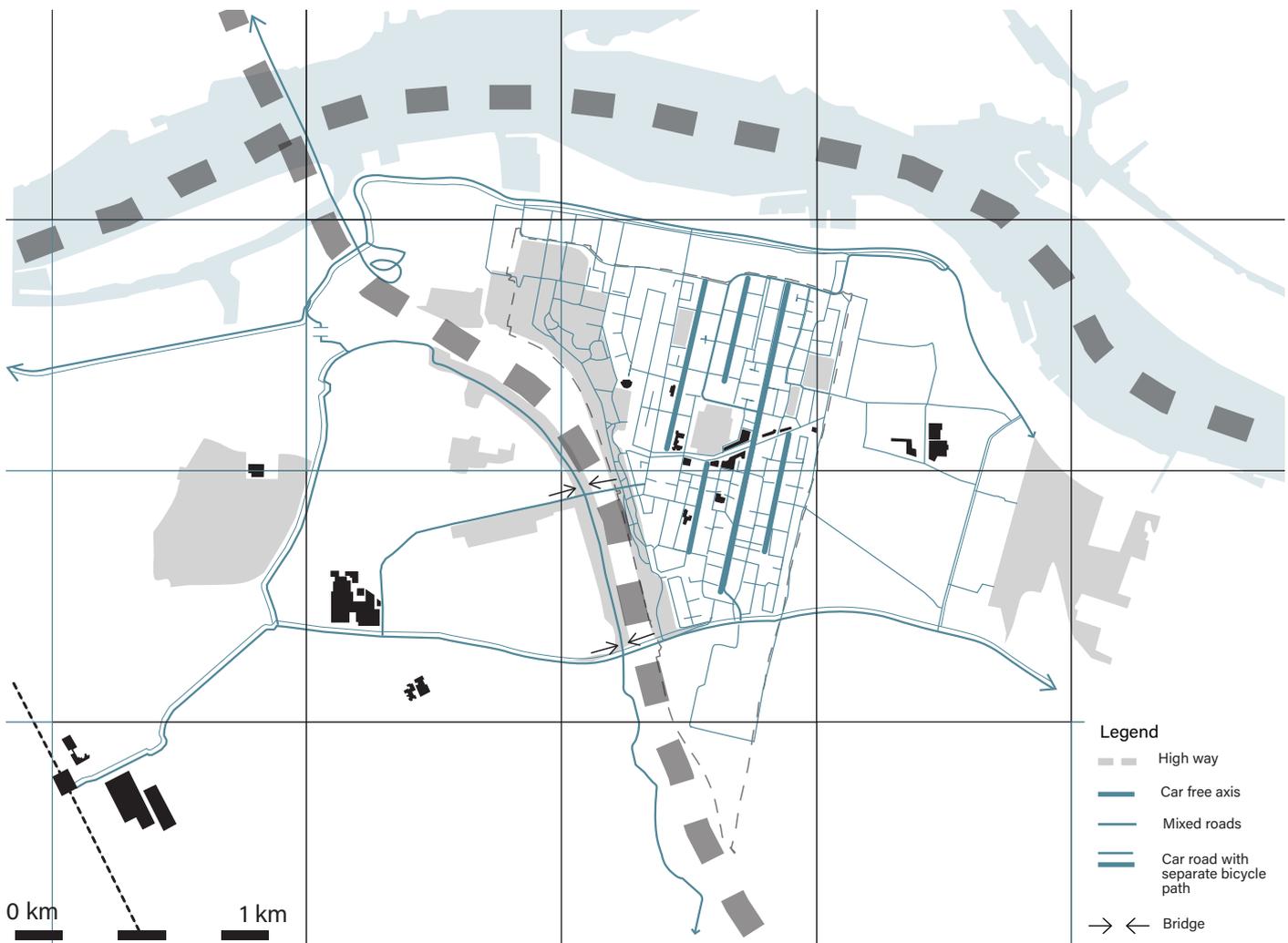


Image 89: Type of bicycle paths- Source: *Author*

Bicycle

Although worldwide it is questioned whether women use the bicycle more often than men and therefore investing in cycle infrastructure favors men's needs (Webinar, 2022), it is known that in the Netherlands women use bicycles more frequent than men (Statistiek, n.d.). The bicycle is especially handy when you have to make different stops, which is often the case in women's everyday life. In Beverwaard, the bicycle network is a dense network within the neighborhood.

Along the main roads and in the parks, there are separated bicycle roads. These are the spots with little to no

social control. Within the neighborhood itself, certain streets are dedicated to pedestrians and cyclists only. These streets are mostly in north-south direction, leading alongside or through the neighborhood center. They have a green character, but since houses are located next to them, these cycle/pedestrian paths have a secure feeling. Interestingly, during multiple field observations the paths were barely used when used it was usually someone who was taking their dog for a walk. All the other streets in the neighborhood are both used by cars and bicycles.



Image 90: Bicycle infrastructure- Source: *Author*

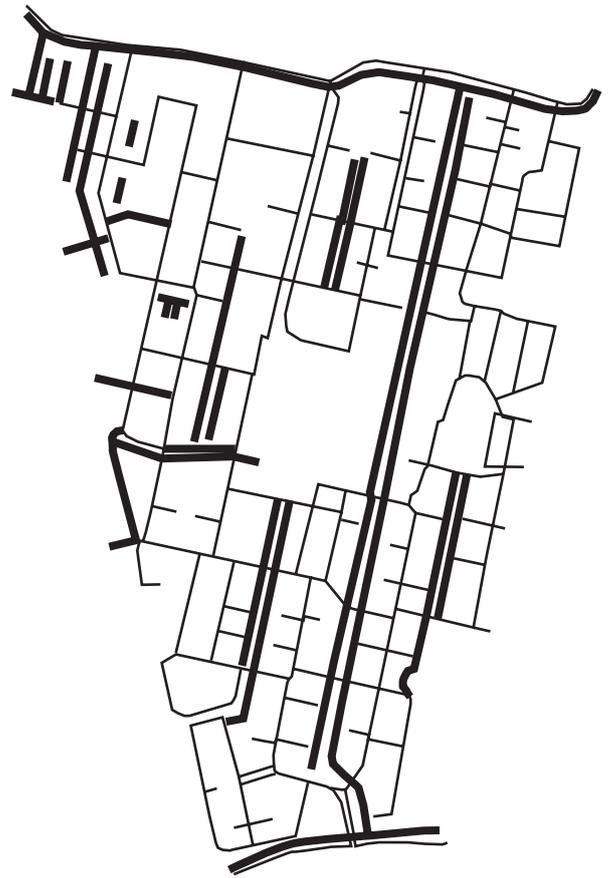
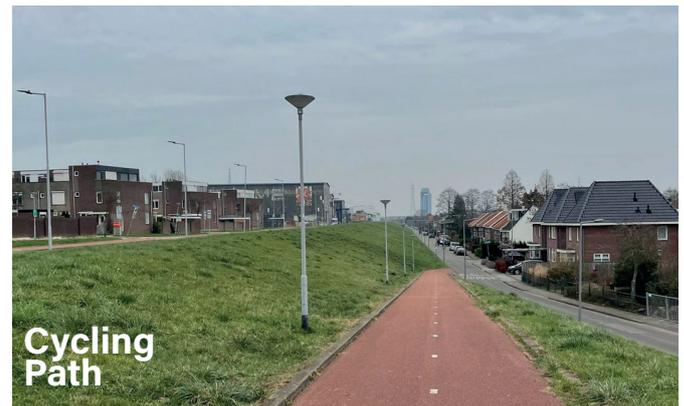
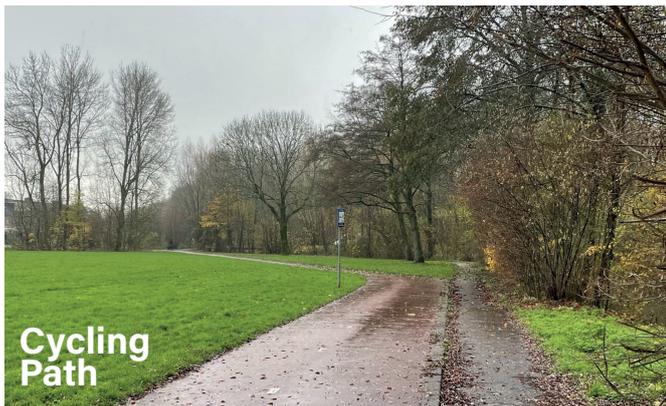


Image 91: Original plan bicycle structure- Source: *Dorren et al. (1974)*



Source: *Author*

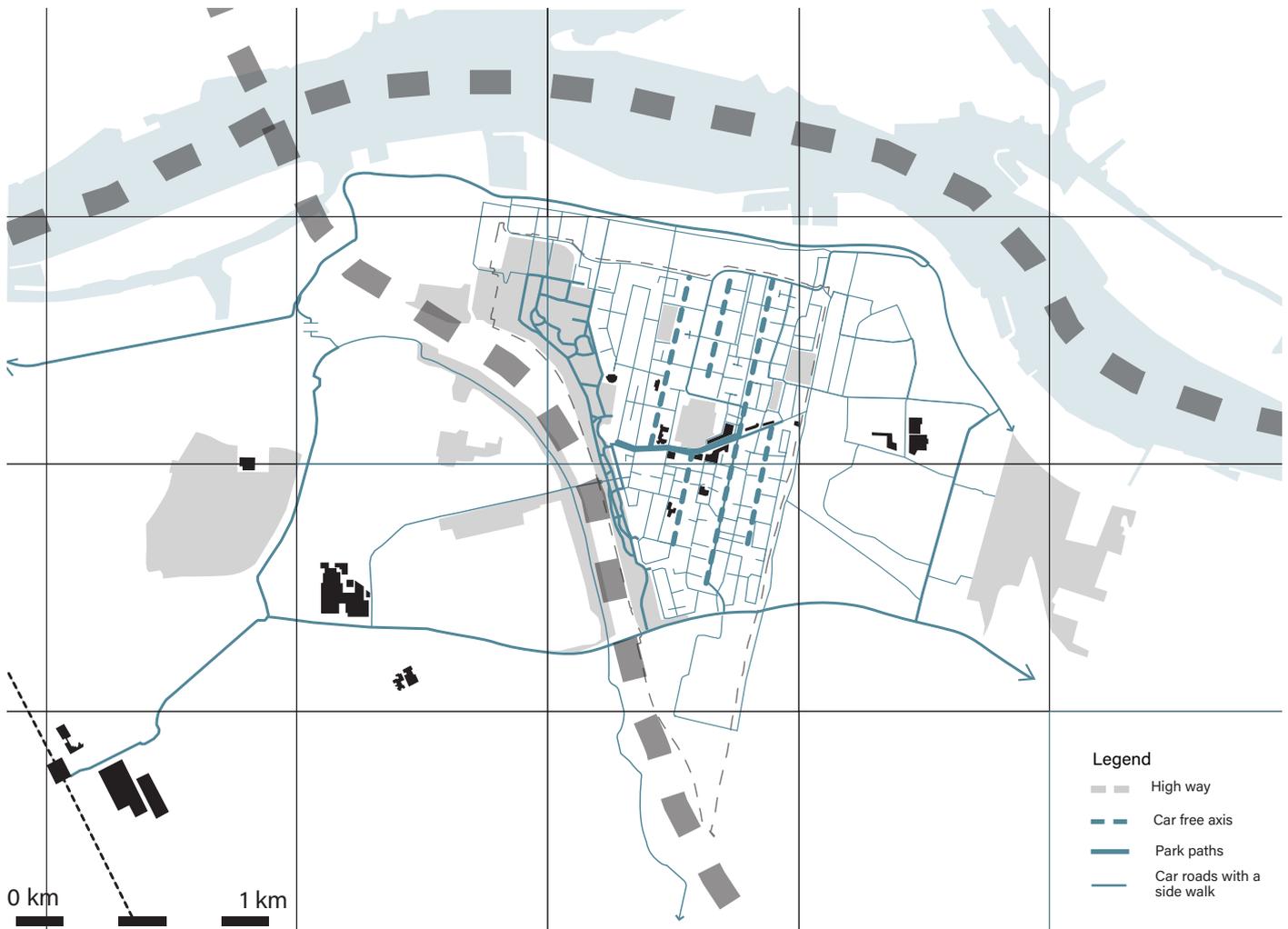


Image 92: Walking paths- Source: *Author*

Walkability

Research shows that in most countries women walk significantly more than men (Kern, 2019). Given that women generally walk more, they also walk further and longer than men. Also in the Netherlands, women walk more often and further than men (Statistiek, n.d.). Walking is usually done within the own neighborhood, since the average walking distance per person is 1.5 kilometer per day.

As said before, Beverwaard was designed as a very pedestrian friendly neighborhood. With its car-free roads, many small parks, green avenues and houses along those avenues for social

surveillance, it feels like a very pleasant walkable place.

However, the edge of Beverwaard is exactly where all this pleasantry stops. Pedestrian paths that are connected to any other parts of Rotterdam are scarce. Many women shop at Keizerswaard (shopping center), however the route to the other shopping center is not easy and pleasant to walk, since there is quite the a slope and the area is desolated. Therefore, many women go either by car or by public transport. Bolnes is better accessible for pedestrians and therefore also used by many.



Image 93: Walking paths Beverwaard -
Source: Author

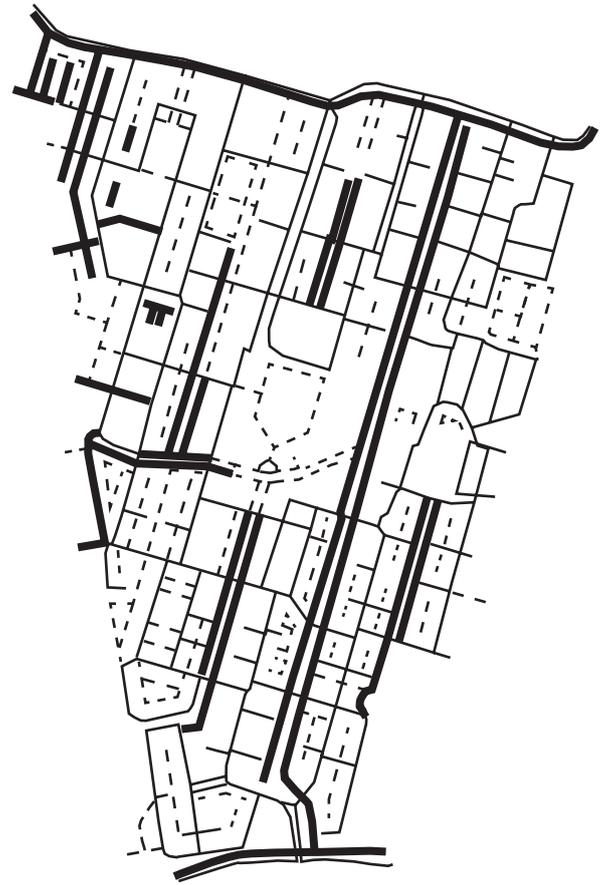


Image 94: Original plan walking paths-
Source: De Boer (2017)



Source: Author

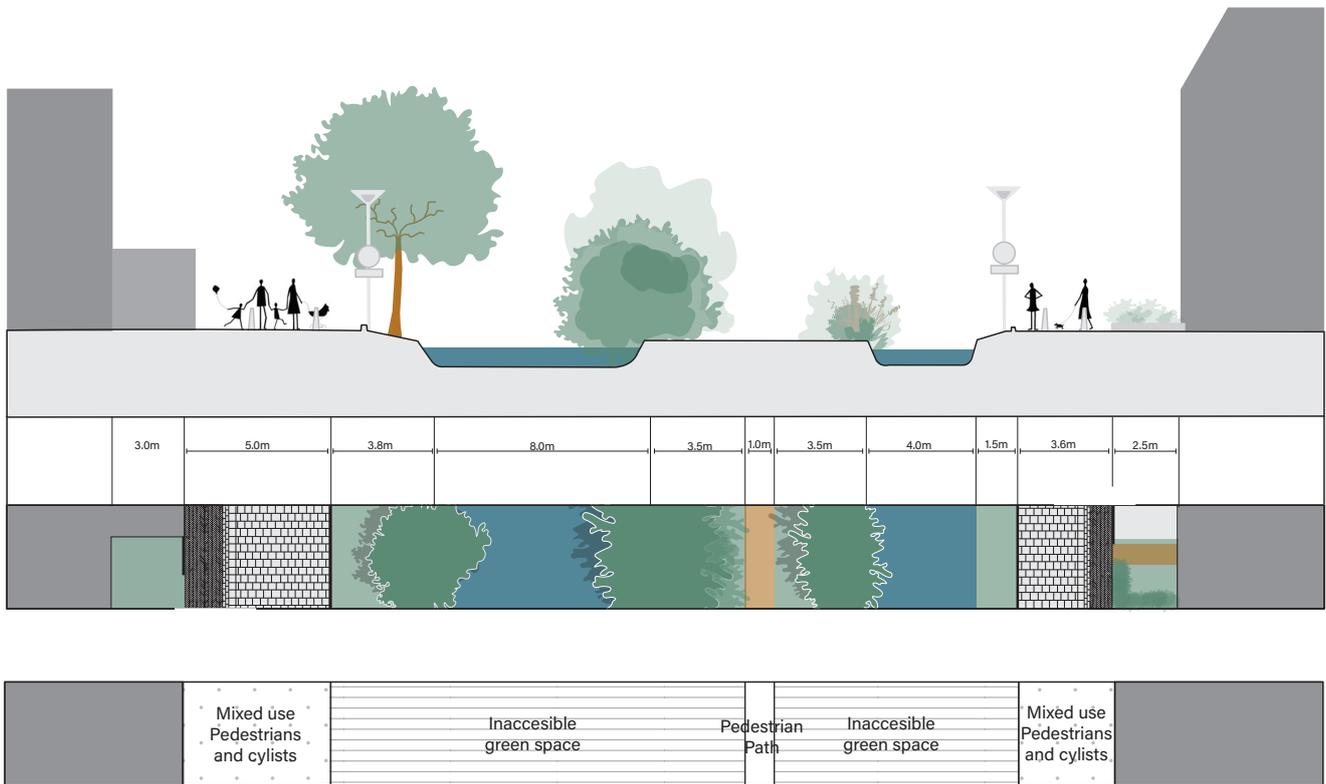


Image 95: Section Molecatensingel Beverwaard - Source: *Author*

Sections

Streets, and especially pavements, have been much discussed in feminist urban design literature. According to some feminists, it is best to have no sidewalk on the street, in order to prevent “elderly people and women with children having to go up and down sidewalks all the time. Next to that children will have more space to play” (de Mare and Vos, 1986). As going up and down is uncomfortable, so is walking on a sidewalk that is too small. The width of pavements has been determined by a single “normal” person, not someone with a large stroller, a shopping bag and a small child waking alongside (Jackowska and Novas

Ferradás, 2022). Streets are important, because they provide a space of micro-politics. Daily acts on public sidewalks legitimize those who warrant basic respect and more fundamentally those who comprise the public body and have a right to the city (Beebeejaun, 2017).

The designers of Beverwaard could not really decide whether or not they wanted to have a pavements. Therefore some streets have a pavement, but five meters ahead, it end. The pedestrian/cycling axis (section A) consequently doesn't have a separated pedestrian path, the tiles give a suggestion as to where to walk as a pedestrian and

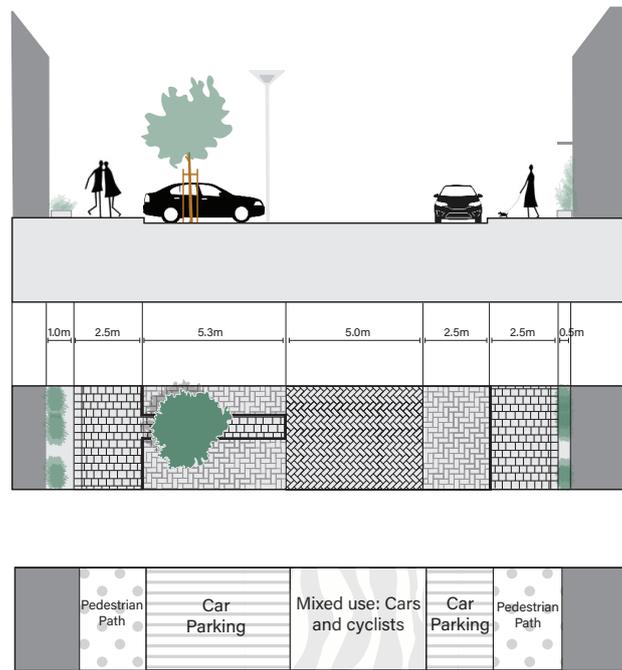


Image 96: Section Tongelaarweg Beverwaard - Source: *Author*

where to cycle. Inhabitants, however, often park their cars on the axis in order to load and unload groceries. Since the street is quite broad and not intensely used, this is not seen as a problem by the inhabitants.

Most of the main car roads do have a pavement (section B), these are different in nature. While some are broad, others are impassable mainly due to parked cars, but also trees, tree roots, plant pots and so on. While walking through the neighborhood with someone in a mobility scooter, the author often had to walk on the car road because the pavement was inaccessible for the

scooter. Therefore, both of us had to walk on the road with a car behind us waiting to be able to pass us. Not a very nice experience.

While having no sidewalk (no bump) has its advantages, it only works if there is enough space to walk beside a car and in Beverwaard, this is definitely not the case.

Functions

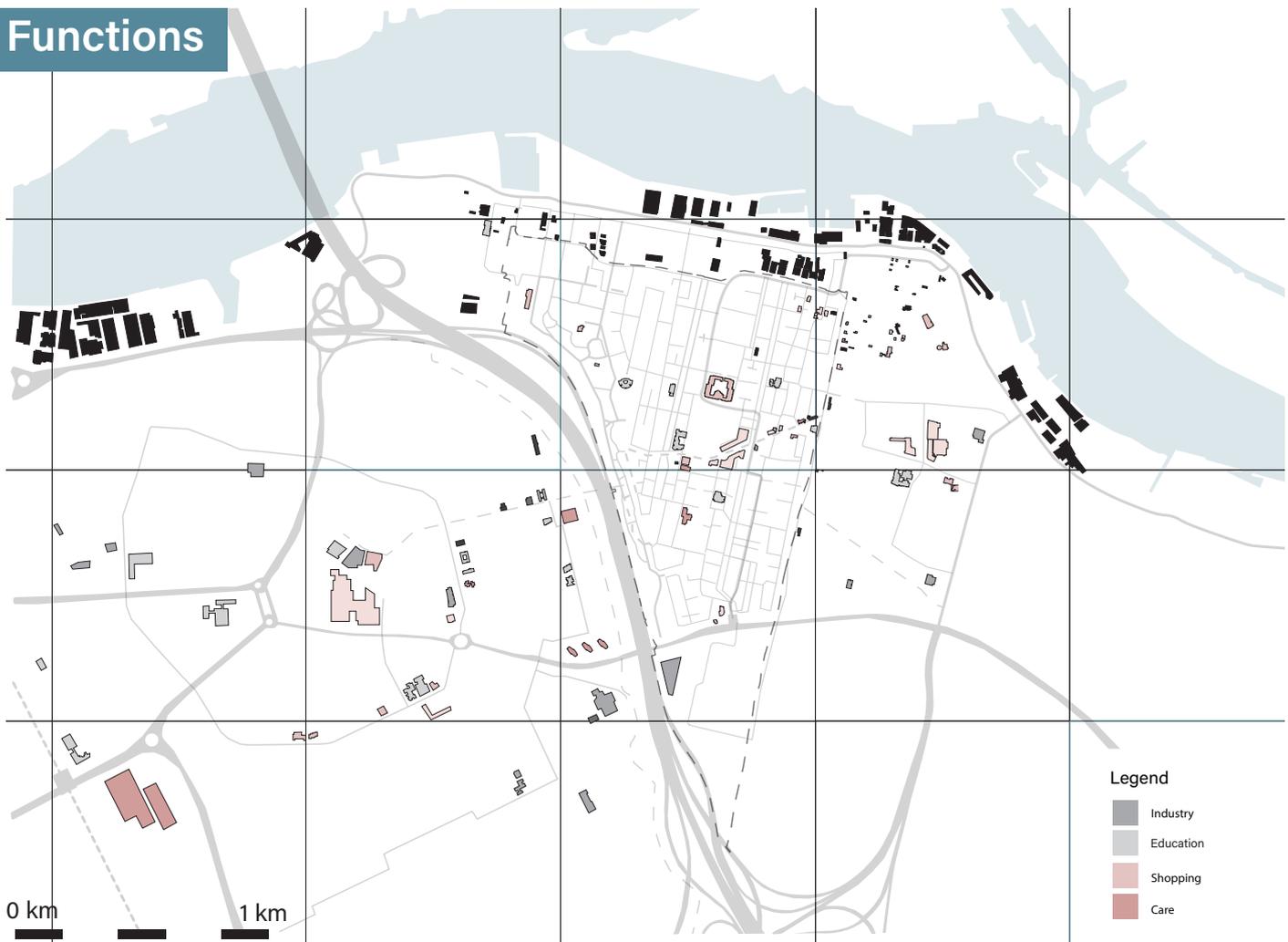


Image 97: Location facilities- Source: Author

Walkability Functions

Since very often women have less access to the car, it is important to have important basic services such as childcare, supermarkets and post offices on a walking distance. The neighborhood of Beverwaard is quite small and very mono-functional. Because of the size of the neighborhood, the shopping center, daycare centers, schools and playgrounds are very close by. However, the shopping center in Beverwaard includes only very basic functions. Therefore, inhabitants are dependent on the shopping center Keizerswaard for other shops. Keizerwaard, however, is not on walking distance (30 minutes).

The same applies to swimming pools, clothing stores, cinemas and higher educational facilities.

The general amount of facilities (baker, drug stores, butchers, etc.) within 300 meters (5 minutes walking) is relatively low in Beverwaard compared to elsewhere in the city of Rotterdam. This is partly due to the fact Beverwaard has a limited amount of inhabitants, therefore functions are located a bit further away than is usual the case in big cities.

Next to shops on the North side of Beverwaard, some small and big industries are located near the water.

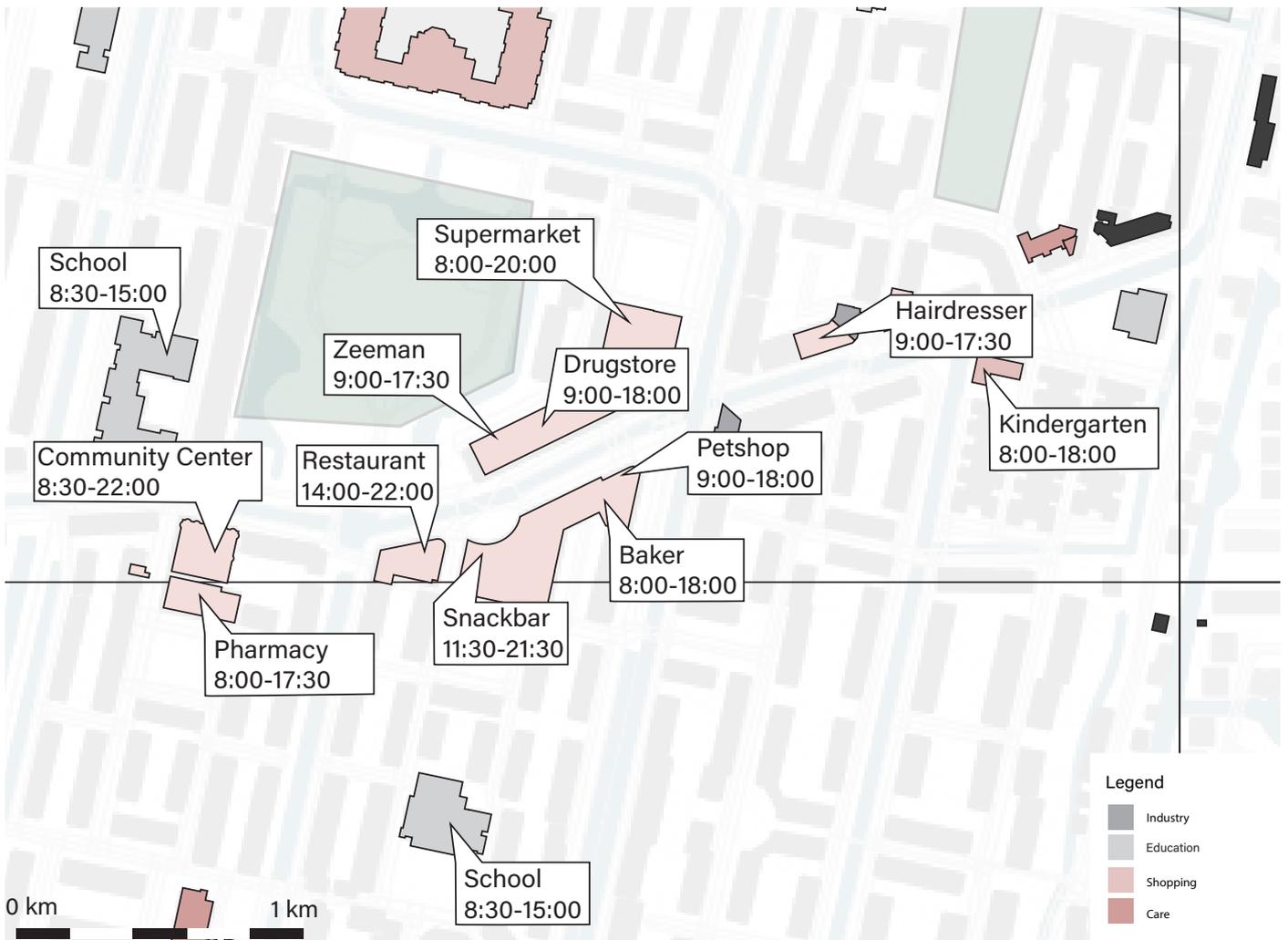


Image 98: Closing times different facilities- Source: Author

Closing times

Since women often have a double jobs of a regular paid job and that of unpaid care, opening and closing times can be a big annoyance. Especially since almost all shops close around 18:00, while an average working day is from 9:00- 17:30. This means that unless your job is close by, it is impossible to get yourself some cough syrup or birth control pills, since the shops are closed before you are back home.

In many cases schools have after-school programs that are subsidized by the government if nee

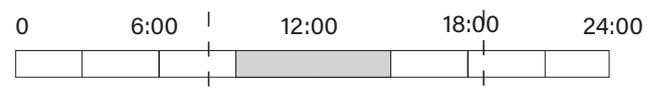
Average workday



Opening times Shops



Opening times Primary Schools



Opening times Supermarkt



Image 99: Closing times different facilities- Source: Author

Conclusion

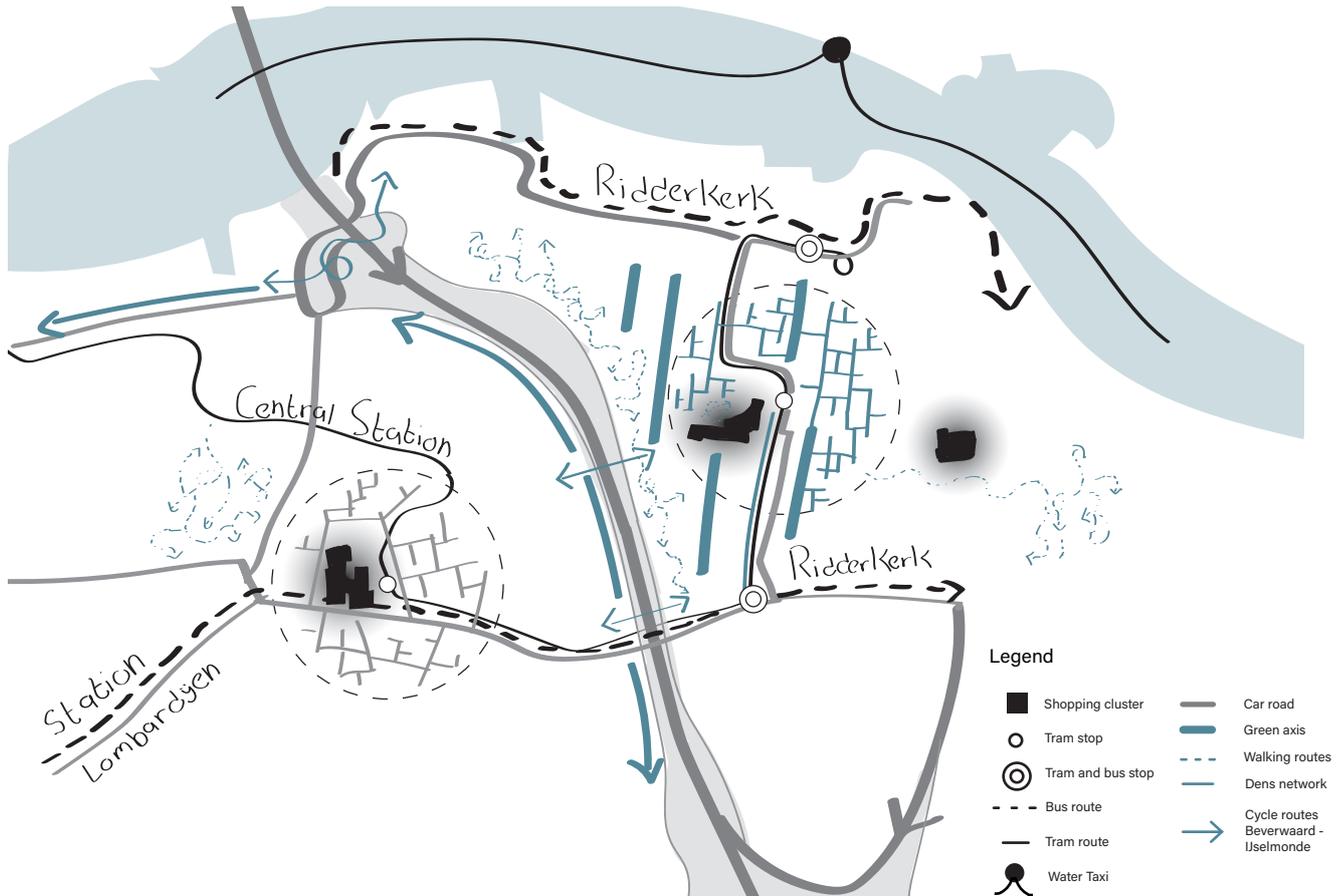
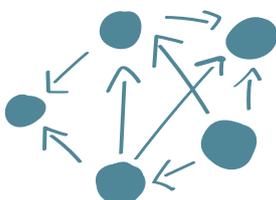


Image 100: Summary Accessibility - Source: Author

Connection

While the network within Beverwaard is dens. It doesn't extend beyond the neighborhood borders. Therefore cycling to functions that are beyond the neighborhood take more time and the routes are not attractive. Public transport is orientated toward the city center while Rotterdam-South, Zuidplein is a way more important place for people from Beverwaard is in chase of shopping (transferring). Next to that, because of the tram route, transferring to a faster mode of public transfer takes a while. Therefore it takes a very long time to get anywhere in Beverwaard.



Functions

In the neighborhood, there is a strong division of functions. There is one shopping center where almost all important functions (day-care, primary schools, supermarket, drugstore and a general practitioner) are present. This shopping center is very walkable. Problematic however is the accessibility of other functions that are not present in the neighborhood. As is the opening/closing times of the shops.



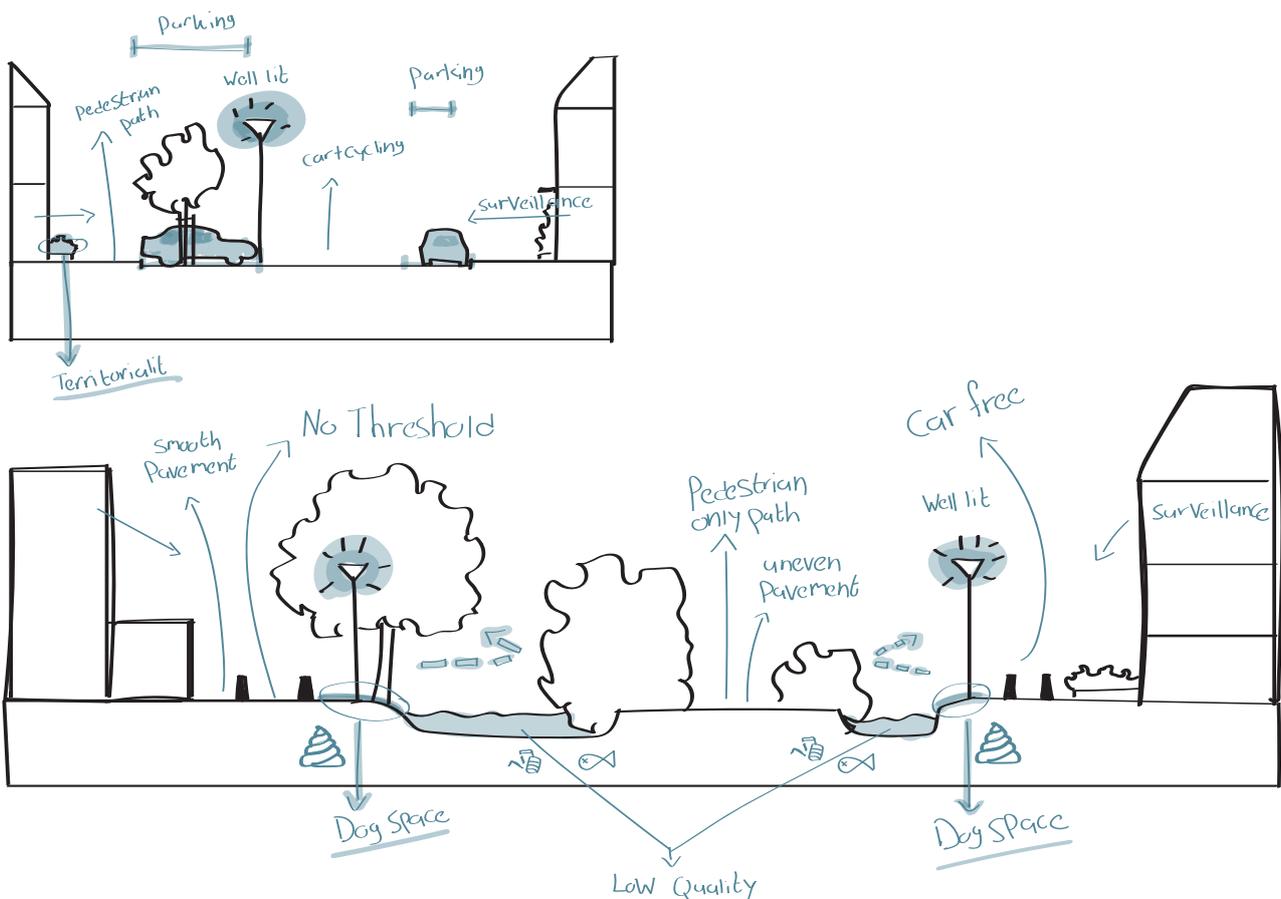
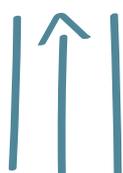


Image 101: Summary Accessibility - Source: Author

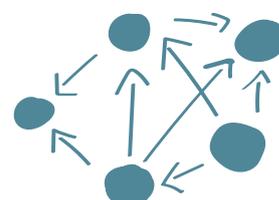
Streets

While Beverwaard was designed pedestrian/cyclist friendly, due to the parked cars the neighborhood is partly no longer experienced as such. The green axis is very wide, but there are often cars parked or driving on them. Some streets don't have pavement, so you are forced to walk on the road, but the street itself is too narrow to walk next to the car. Many pavements have a ramp, but these ramps are often placed illogical, leading to inefficiency. Generally, people drive slowly in the streets due to the many car bumps.



Connection

Within the neighborhood there is an extensive network of walking and cycling routes, which helps to safely transport kids from home to school and therefore kids can walk alone from a younger age, giving the caretaker, in many cases women, more time and flexibility. Public transport stops are elevated, have a sign that indicates how long they have to wait, are well lit and are centrally placed within the neighborhood. Therefore make it easy to use with a trolley, buggy or walker and ensures a feeling of safety.



Inclusivity

Diversity

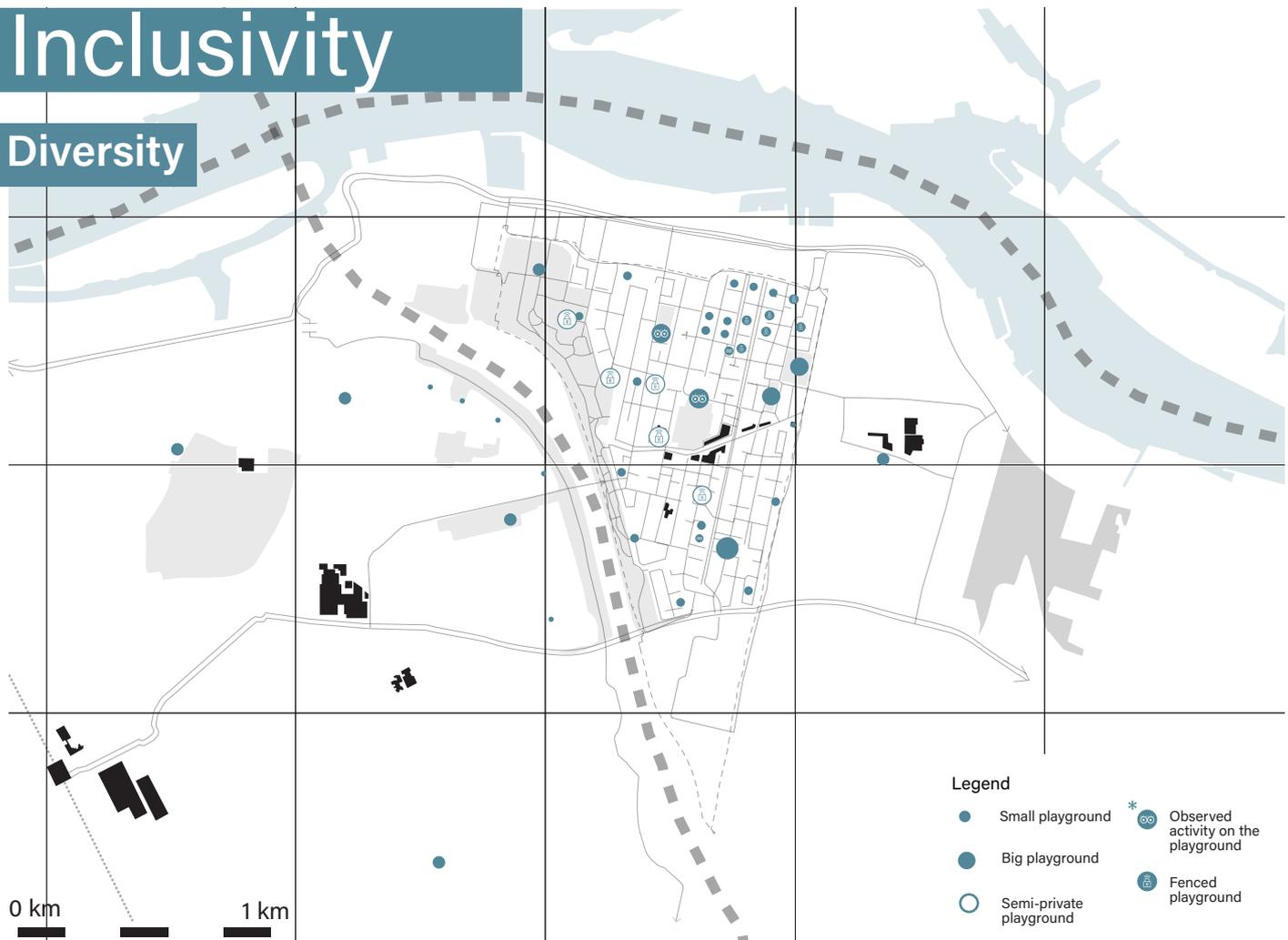


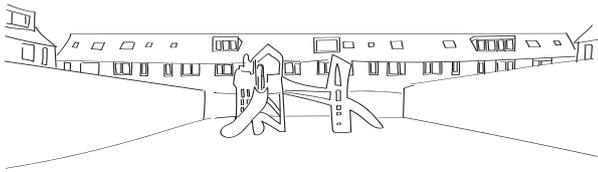
Image 102: Location Playgrounds- Source: Author

Playgrounds

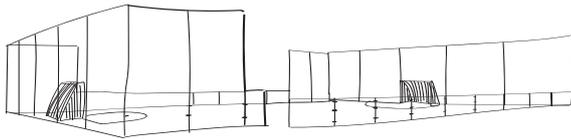
The playground functions as a gendered space, its physical and symbolic landscapes reinforce the binary divide. Playground participation, activities and micro-geographics are all structured by gender. For example, multiple studies point out that girls use playgrounds and other locations for playing less frequently than boys, and, if they do use them, they tend to go to play areas that are closer to home (Karsten, 2003). Playgrounds with very few play objects or playgrounds that are in bad condition are not considered attractive by girls. Next to that, girls are critical of the supply. They dislike dirty and disorderly places, prefer playing in smaller groups

and are often found playing in relatively hidden corners of the playground. For girls it is difficult to become a 'resident' without challenging traditional gender divides (Karsten, 2003).

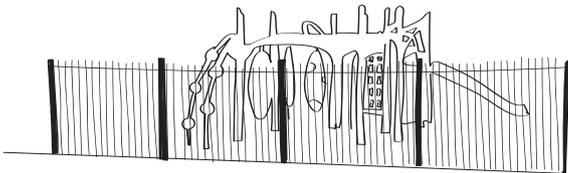
When looking at Beverwaard, we can see a very high density of playgrounds. A division has been made between three playground typologies, namely: the closed block playgrounds, big open playgrounds, and semi-public playgrounds. A closed-block playground is a playground inside of a building block, usually surrounded by back gardens and fences. These playgrounds are close to girls' homes



Closed Block Playground



Big Open Playground



Semi-Public Playground

Image 103: Playground typologies - Source: *Author*

Source: *Author*

and therefore you would expect them to be used intensively by girls (and boys). But actually during multiple field trips* nobody was ever observed using them. This could be explained by the bad conditions and dirtiness of these playgrounds, the fact that many of the play elements are only for very young children, the minimal amount of play elements (usually only two) and the ambiance with all the fences.

The big playgrounds were observed to be used the most, both by girls and boys. However in all cases, the boys outnumbered the girls and while the boys were playing football, the girls

were most of the time in smaller groups and used the playing elements or were walking around. The popularity of these playgrounds is due to the higher quality and diversity of the playing elements.

There are multiple semi-public playgrounds, fenced-off block playgrounds, school playgrounds and one paid playground. Both the fenced block and the school playground were observed being used*.

*Observations were done during the following days: the 7th of December, the 22th of February and the 15th of March. See appendix.

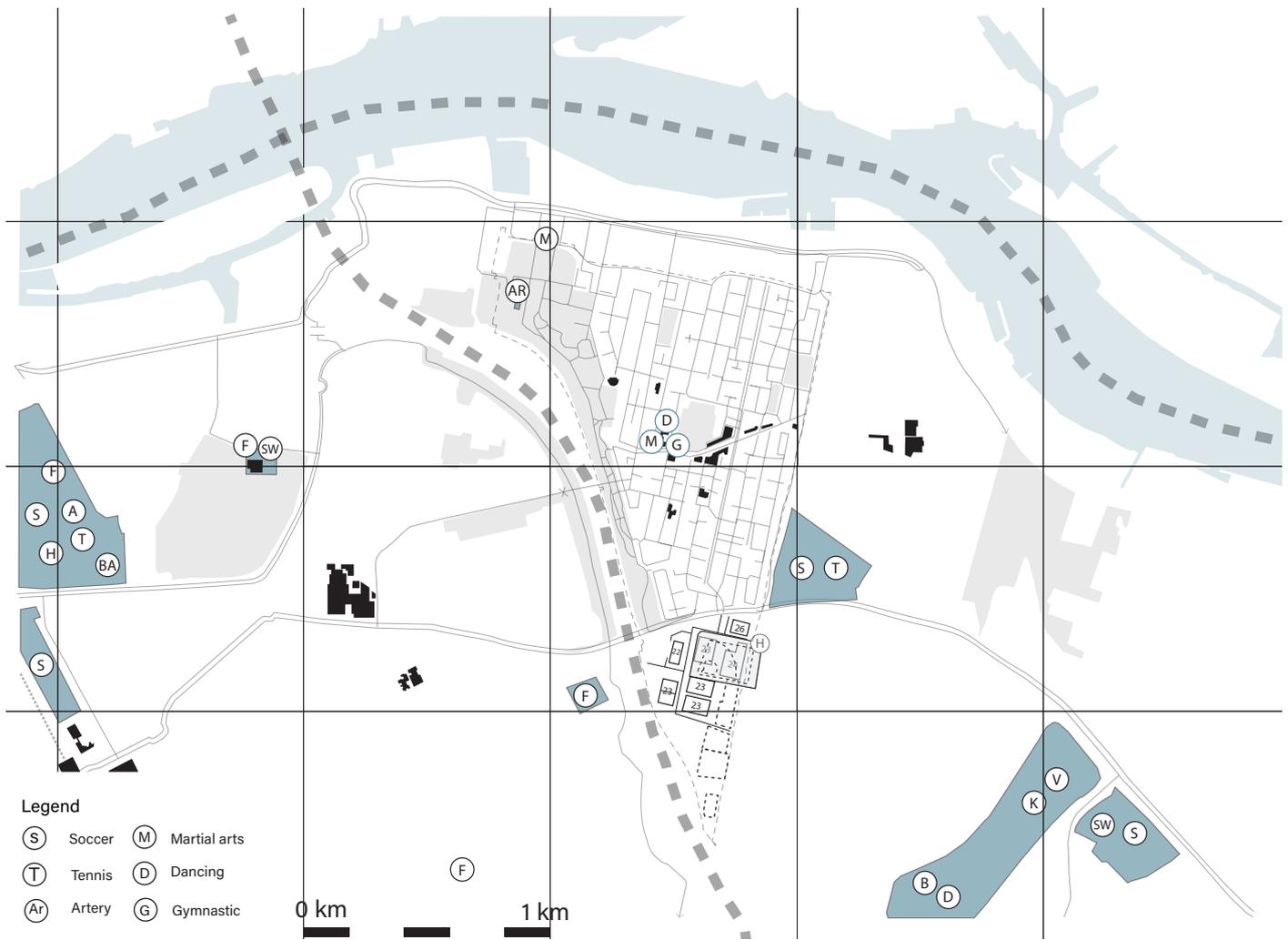


Image 104: Sport facilities in and around Beverwaard - Source: *Author*

Sports

The amount of female sports involvement has increased in the past decades. However, still, some gender differences exist. For example, females are more likely to practice sports activities outside of traditional or organized structures (only 33% are affiliated with a sports union) and are three times less numerous than men in competitive sports activities (Guillet et al., 2006). Sports like walking, jogging and swimming are examples of some of these sports. Just as there seems a relation between involvement in sports and gender, also different patterns of sport dropout seem to be evident. Females withdraw more frequently from

sports than men do, especially during adolescence (10-22 years old) (Guillet et al., 2006). Since the sport has both many social, physical and psychological benefits it is important to accommodate females as well as possible.

When looking at Beverwaard currently there is one martial arts center, soccer, tennis and an artery club. All, apart from tennis, are masculine-associated sports that are more popular among boys (Publicaties, n.d.). Originally more sports facilities were planned within Beverwaard, namely a korfbal (netball) field and three soccer fields. However, they were never realized. Probably

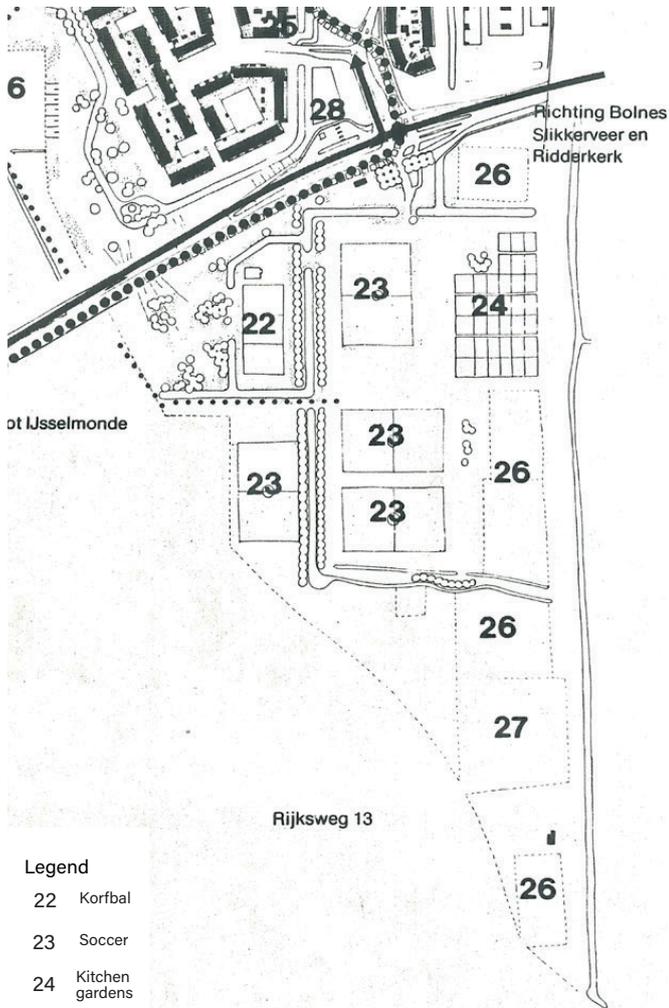


Image 105: Original design Beverwaard-South
Source: De Boer (2017)



Image 106: Aerial photo Beverwaard-South 2015 -
Source: Topotijdreizen.nl

because of problems with financing the plan. Instead, there was a baseball field, until 2016 when the place was used as a parking space and as an asylum center.

The local primary school provides some more sports that are popular with girls, like gymnastics and dancing. However, only children up to and including 12 years old are allowed to join them. While adolescence is the period when most girls drop out. Having to cycle or being brought to the sports facility can be a barrier for both female participants and their caregivers. Having not many facilities limit women's (and men's) exploration of options, therefore

excluding its social, physical and psychological benefits.

Informal sports such as hiking and jogging are just as important for women as formal 'organized ones'. The municipality does try to accommodate those needs by introducing a walking club, the time being 14:00-15:00. In the middle of the day, only accessible to those who do not work and have no small children. Improvement is possible.

Needs



Image 107: Housing types - Source: Author

Source: Author

Housing types

The nuclear family home has been criticized by feminist urban planners and architects ever since the 19th century (Hayden, 1980). Both by women who wanted to work outside the home and those who wanted better homes, even very traditional homes, for their families.

They were not only concerned with the architecture, but these concerns encompassed the definition of a good family life, the benefits or dangers of mixing different classes, races or ethnic groups; and the complex relationships of women and their homes, encompassing paying for the

dwelling, cleaning and beautifying it, making a pleasant place for family life and being able to leave it for work or other activities outside the home (Wright, 1985). Floor plans were seen as inflexible and impractical for single parents, single women, mixed families, people who work from home, are old and so on.

Yet also in Beverwaard, half of all houses are family-normative houses. Floor plans show the typical row house floor plan, with its three bedrooms, one bathroom and a private garden.

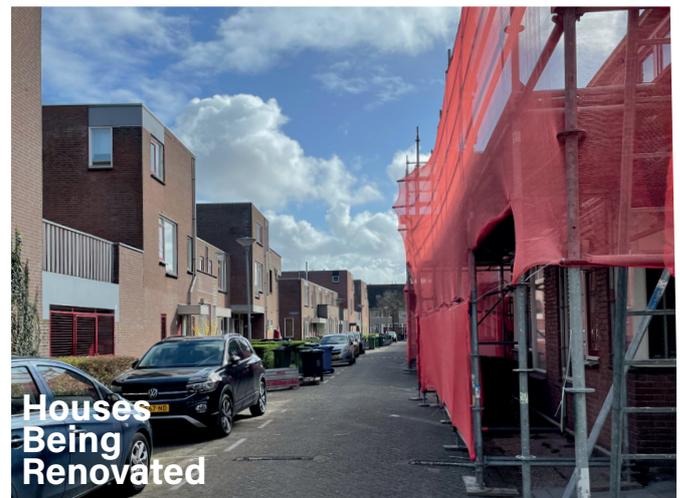


Image 108: Social Housing (corporations) -
Source: *Panorama Lokaal* (2019)

Source: *Author*

Social Housing

Social housing is very important for women because women are more likely than men to receive governmental support, as single parents and as the dominant elderly group. Several sources underline the importance of affordable housing (social housing) for women because it gives them more choice and independence (Sandercock and Forsyth, 1992). Therefore it can indirectly reduce domestic violence against women (because women can afford to live away from their abusive partners).

The amount of social housing first increased, due to the housing crisis

but is currently being reduced. While the social housing association had 1100 houses in 2000, 900 were left in 2004. These privatizations make cuts in resources, restricting women's movements. Today two housing associations manage the social houses, Woonbron and Woonstad (Horstink, 2004). This location of these social houses are clustered and are mainly located on the inside of the neighborhood, while the edges are private property. Some row houses are a mix of social housing and private property, showing a big contrast, especially since some social houses are renovated.



Image 109: Benches and Toilets Beverwaard- Source: Author

Small needs

There are many small needs, like benches, toilets and footpaths that are important for women to fully and comfortably participate in public space. The public bathroom was prohibited for women in early industrial cities, showing the relationship between the right to be present in public space and women's needs (Beebeejaun, 2017). Also, a well-placed bench can make the difference between participating in the city and remaining at home (Hunt, 2019). Especially in parks and play areas. Since girls also like to talk in small groups they use these benches for talking. Footpaths give women and girls the opportunity to linger, walk and

chat.

In Beverwaard there is one public toilet according to the app Hoge Nood (Urgent Need), which is inside the community center the Focus (open 8:30-22:00). For playgrounds close to home women and girls can use their private toilet. However, when spending more time in the park a public toilet is necessary. Most benches are of low quality and disproportionate quantity. Footpaths are present, mostly on the west side of Beverwaard, in the green area. Other smaller paths are mostly used for dog walking.

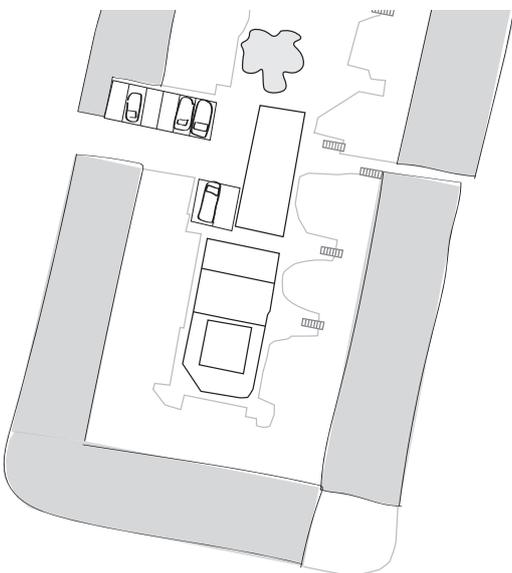
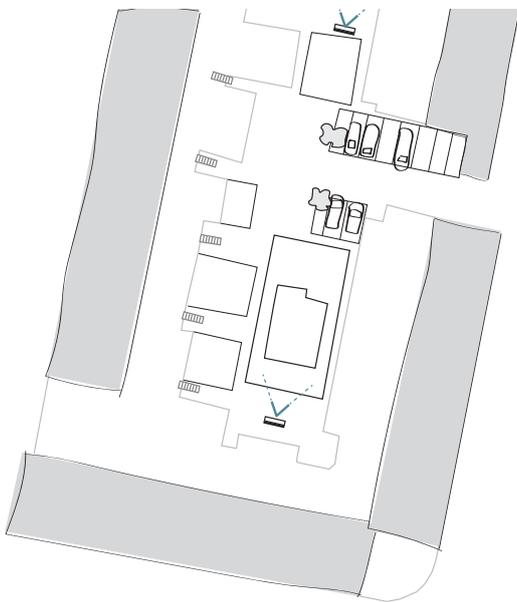
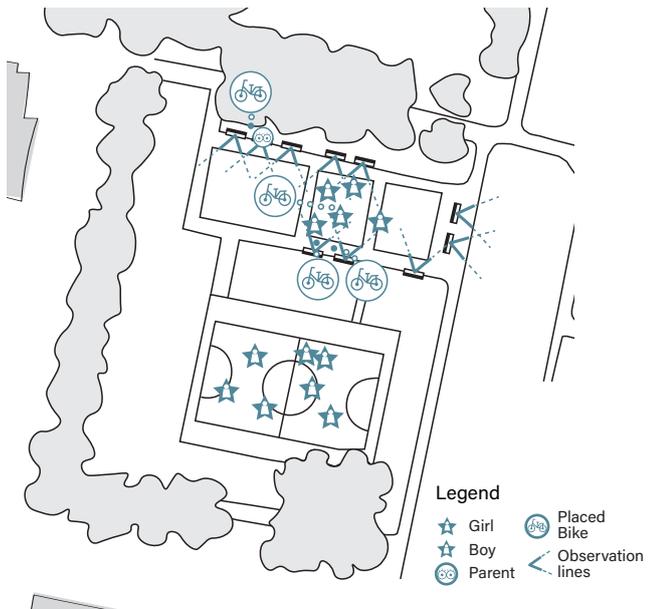


Image 110: Analysis based on observations of different type of playgrounds- Source: Author

Source: Author

Social cohesion

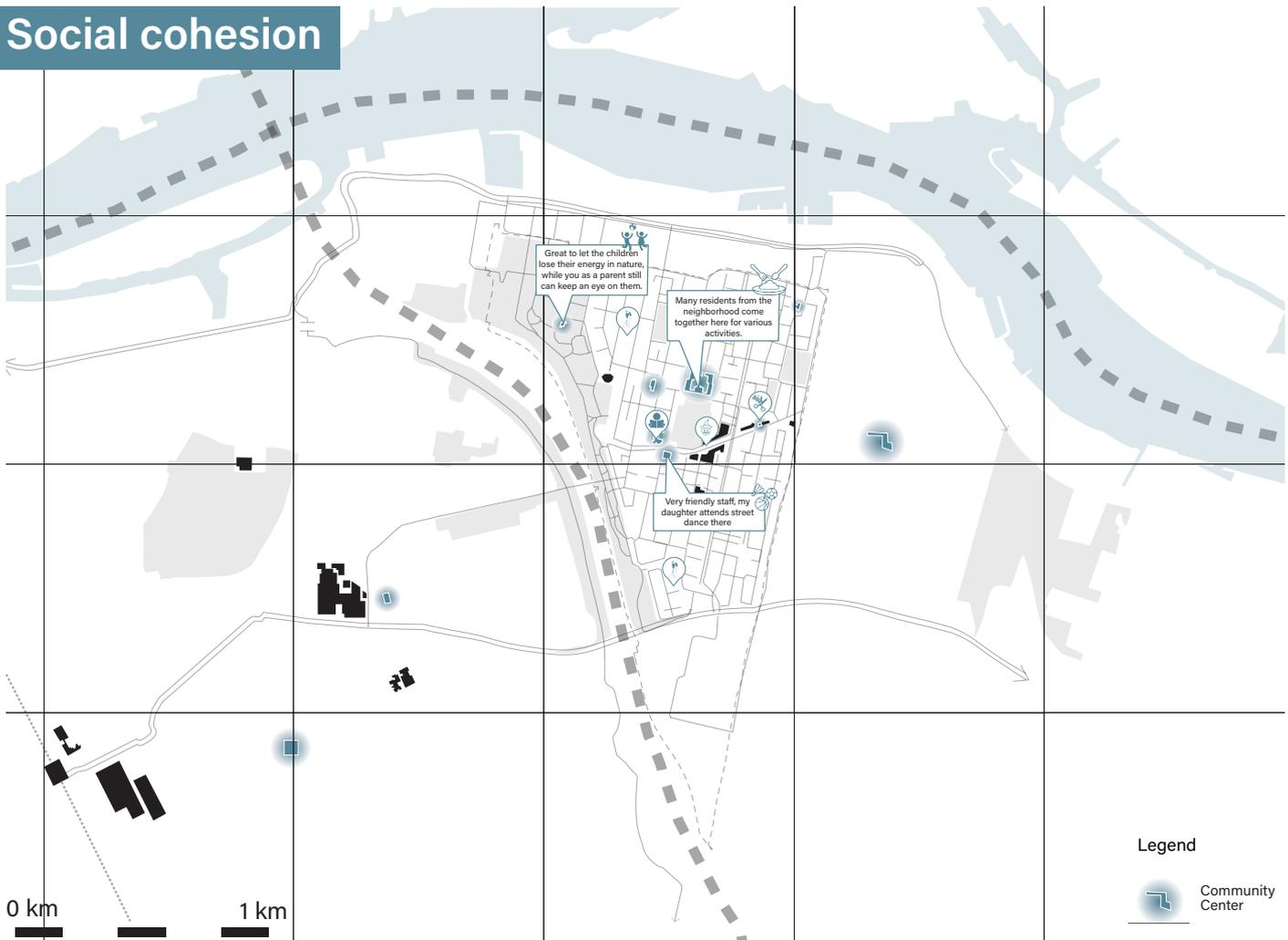


Image 111: Community Buildings in and surrounding Beverwaard- Source: *Author*

Formal meeting places

Social cohesion is generally seen as a good thing. However, what does it entail? According to Kearns and Forrest (2000), there are multiple dimensions of social cohesion. These dimensions are common values and civic culture; social order and social control; social solidarity and reductions in wealth disparities; social networks and social capital; and territorial belonging and identity. These dimensions are interlinked in that they have effects on one another (Kearns and Forrest, 2000).

Therefore having a strong social cohesion within the neighborhood can help support women in various

ways. It gives them someone to rely on for support, company, shared labor, education, and more (Kern, 2019). For example by helping each other with childcare duties, bringing them to school or watching them play outside (Perez, 2019).

One example of a grassroots initiative where social cohesion was strengthened is that of "Mother Centers" in Germany. Mother Centers usually reach between 50 and 1,000 families per neighborhood. The centers are self-managed public community spaces that supplement, and sometimes replace, standard social



Image 112: Institutions that organize activities for inhabitants - Source: *Multiple, see bibliography*

safety nets. They offer peer networks and drop-in childcare, facilitate access to employment resources, provide adult education and job training, and house positive social space for children. When possible, women are paid hourly for services, providing them with much-needed income and a sense of ownership and empowerment (Sassen, n.d.).

When looking at Beverwaard many events and activities are organized in the neighborhood. Mainly by three social organizations (the municipality (the Focus), the Salvation Army (neighborhood support center) and the

Christian organization (House of Hope). Many of these activities do provide, just as the Mothers Center, adult education, drop-in childcare and social activities.

The big difference however is that the centers are not self-managed. Outside of these centers that organize all kinds of social events, few activities or initiatives take place in the neighborhood itself. The building blocks have no communal feeling, nor are there any signs of maintenance of these places. The most communal encounter was that of a picnic table in an inner courtyard.



Image 113: Informal meeting places- Source: *Author*

Informal meeting places

Formal institutions can help with facilitating an increase in social solidarity, reductions in wealth disparities, social networks, territorial belonging and identity. However informal meeting places within the neighborhood are just as important. Think of schoolyards, supermarkets, parks, playgrounds, even streets can be the place where people talk, meet and connect.

Since the quantity of many of these types of spaces is already discussed in the previous analysis, we now will have a look into why people gather there or why not.

The four different informal meeting spaces have they facilitate people meeting each other. People are allowed to stand and wait there (supermarket and school) or to sit and watch (street and playground). Three out of the four spaces are for pedestrians only, which ensures a feeling of safety. This is especially important in the street because it enables the inhabitants to make their own communal micro space with benches and flowerpots. In the case of the school, parents have to wait behind the school fence. This means that they have to wait on the (car) road in small groups that are spread out.

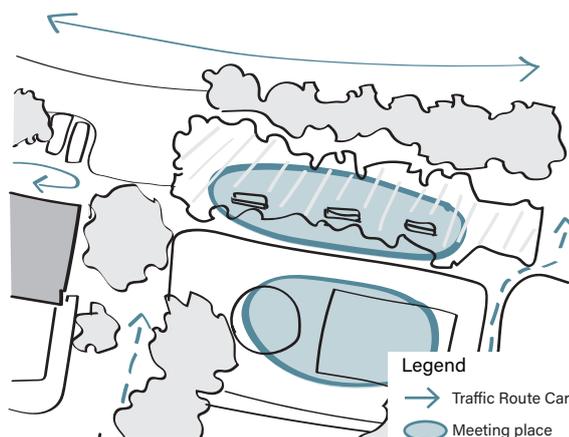
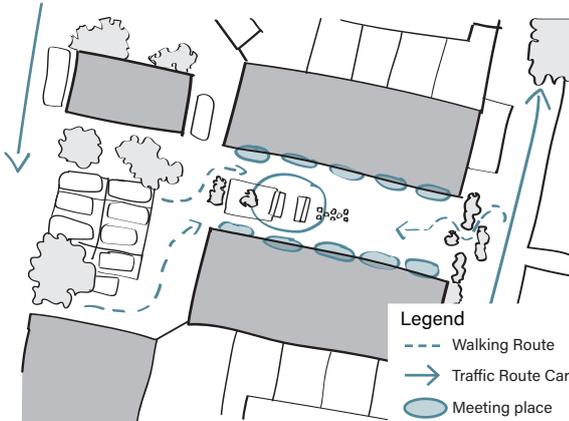
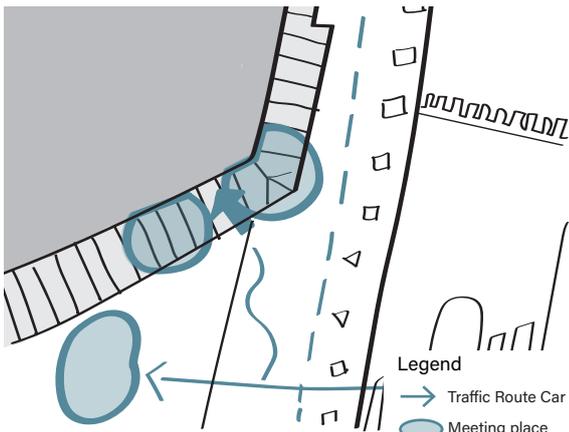
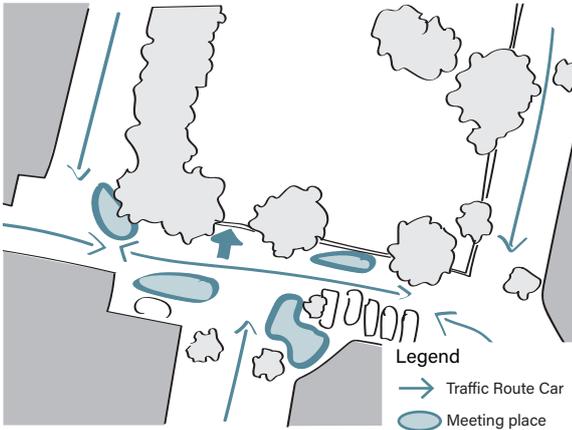


Image 114: Analysis different type of playgrounds-
Source: Author

Source: Author

Conclusion

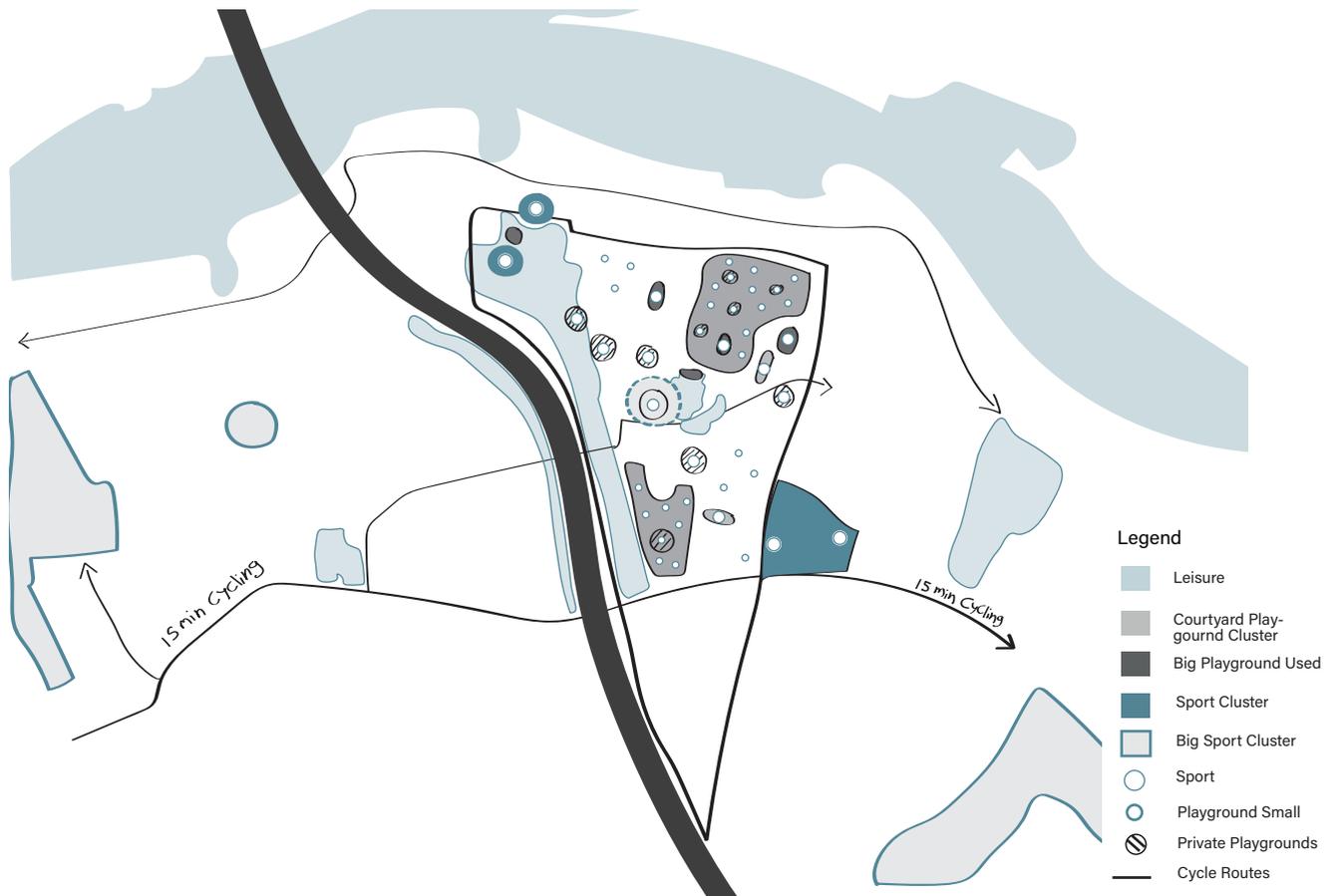


Image 115: Conclusion Inclusivity- Source: *Author*

Diversity

In this chapter, the type of activities present in Beverwaard and whether or not these activities were oriented toward both genders were analyzed. When looking at big playgrounds, although there are many in Beverwaard, most of them focused on sports like soccer, basketball and skating. The smaller playgrounds had play elements that were only interesting for smaller children and were generally badly maintained. While a wide variety of sports is present in Ridderkerk and Groot-IJsselmonde, there is not so much to choose from closer to Beverwaard itself.



Needs

Women generally have different needs, these needs can vary from having more toilets in public space to having access to social housing and support groups. When Beverwaard was built nearly all houses were social housing, however many of the houses have been sold. The current housing stock in Beverwaard is mostly single-family homes. There is one public toilet present within Beverwaard, namely at the community center.



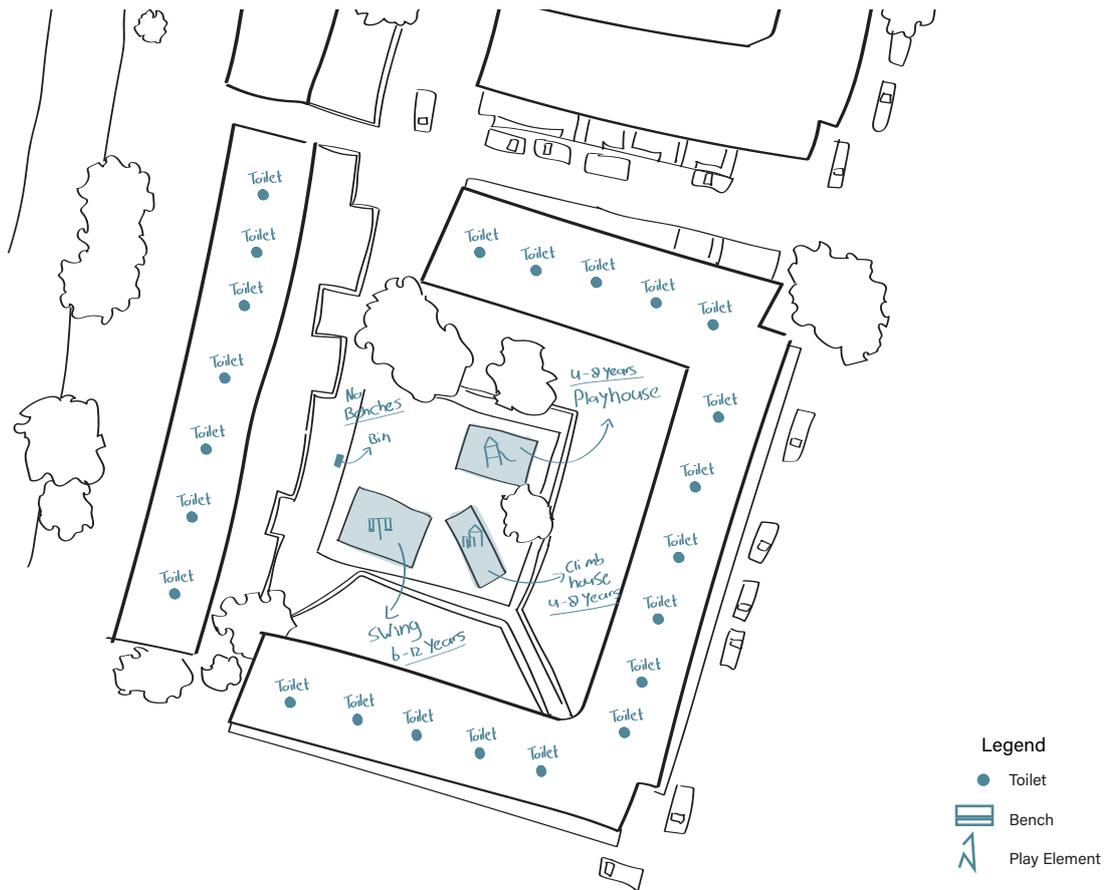


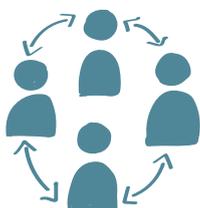
Image 116: Conclusion Inclusivity Block scale- Source: Author

Social cohesion

The courtyard is a formal meeting space for parents and children (the courtyard exists mainly of play elements) and an informal meeting spot for youth (they sit on the stairs leading to the houses). While there are many activities organized by local organizations, few activities or initiatives take place in the neighborhood itself. This is probably because the building blocks have no communal feeling, nor are there any signs of maintenance.

Needs

At the block scale, the needs are more subtle. For example, many playgrounds do not have a toilet, which does not cause any problems because the playground would be mostly used by residents of the block. However, in some cases, benches and lighting posts are missing. Also, the courtyards are surrounded by fences, they give the space a very cheerless and unsocial look. The courtyard is one open space, therefore there is no place for (semi-) seclusion.



Violence

Feeling of safety

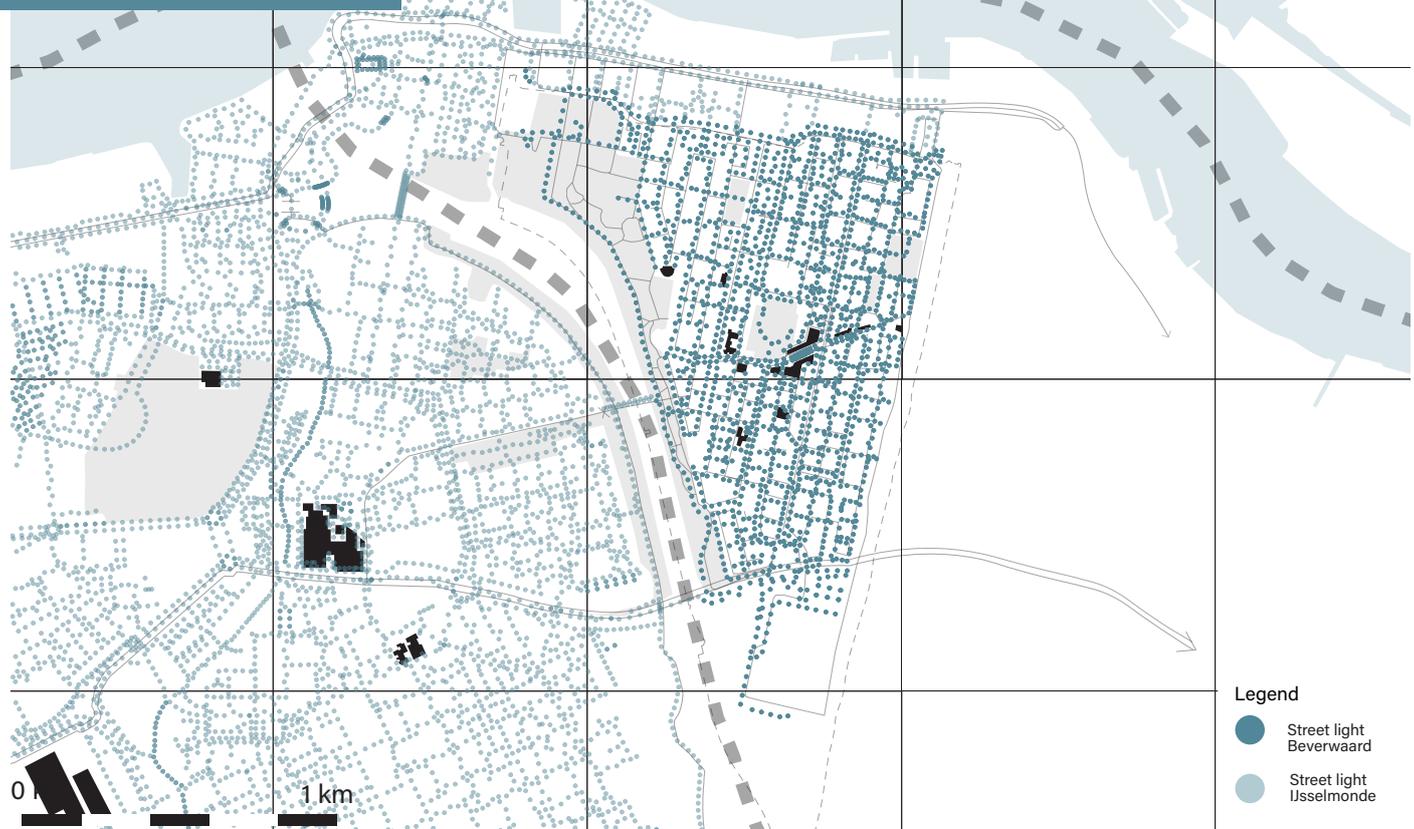


Image 117: Streetlights Beverwaard and IJsselmonde- Source: *Author*

Streetlight

The issue that made women feel unsafe in Canberra and therefore was reported the most was the lack of lighting (ABC News, 2019). Lighting may not prevent sexual assault, but it can alleviate women's feelings of anxiety, improving their access to the city and when they are faced with a potential threat, lighting improves their ability to assess the situation (Jackowska and Novas Ferradas, 2022). Proper lighting improves visibility and therefore the feeling of safety.

The municipality understands the importance of lighting and therefore Beverwaard itself is very densely

lit. There are even recently multiple streetlights added to the east side of the park between de Oude Watering and de Schinnebaan.

Still, some areas are more poorly lit than the neighborhood itself. These areas are mainly located along the highway and on the north side of Beverwaard. These areas are of importance because the three cycle routes from Beverwaard two go through such an area.

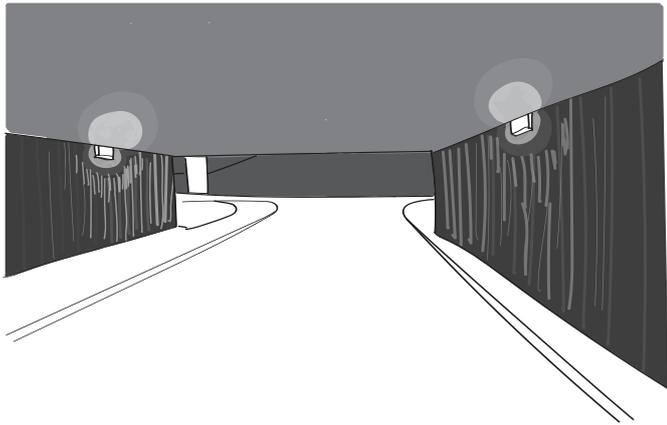
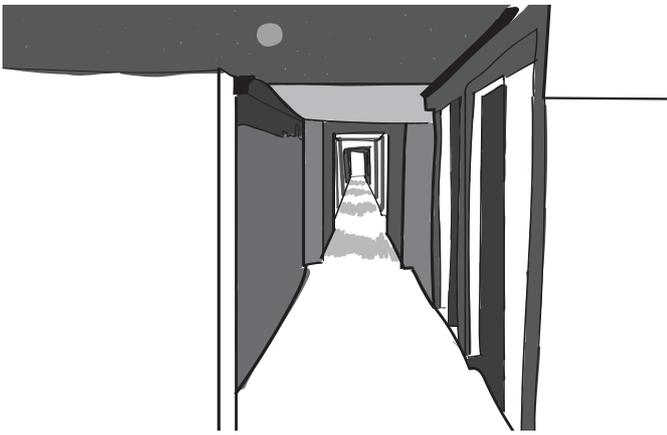


Image 118: Experience public space by night-
Source: Author

Source: Author



Image 119: Places with or without human activity during the night- Source: *Author*

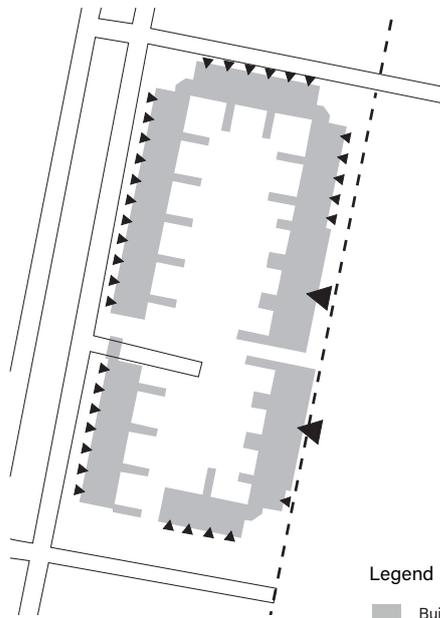
Eyes on the street

Social or natural surveillance means that the inhabitants themselves keep an eye on the street. It helps to create an environment where there is plenty of opportunity for people to engage in their normal, legitimate behavior to observe the space around them. To have well-functioning social surveillance, there must be a feeling of connection or responsibility for the space and the users of the space (Fini and Lakes, 2003).

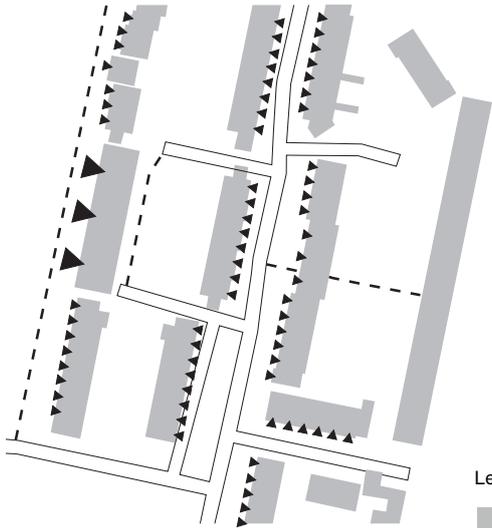
On the neighborhood scale, there are some spots where there is currently no or little natural surveillance. These areas are alongside the big park, in the

shopping center after closing time and on the north side of the neighborhood where some big industries are located. Natural surveillance is well provided for on the scale of the block. Entrances and windows are all at ground level and face each other, which creates a high degree of intervisibility.

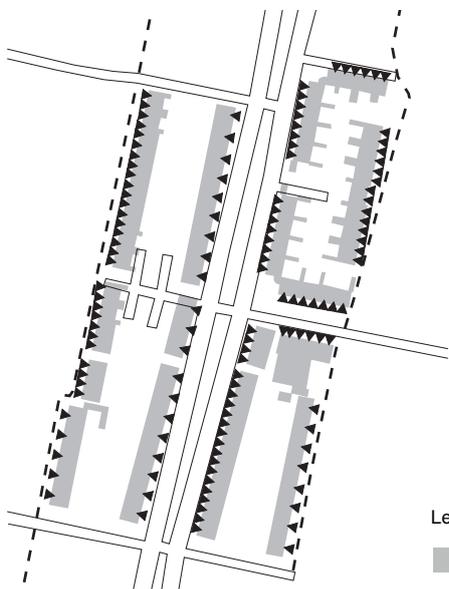
The closed block configuration also has a disadvantage, namely that the gardens and alleys are not under any kind of surveillance due to the high fences surrounding them. Therefore many of these places are closed off by some kind of gate.



Legend
 ■ Building
 ► Main Entrance



Legend
 ■ Building
 ► Main Entrance



Legend
 ■ Building
 ► Main Entrance



Source: Author

Source: Author



Image 120: Camera's in Beverwaard - Source: Author

A digital eye on the street

Installing CCTV can give people the feeling that they are being watched/ recorded and that they, therefore, can be held accountable for their deeds (Ceccato, 2017). This then will prevent people from exhibiting undesirable behavior.

Research shows that cameras were effective as a deterrent for crimes such as car burglaries and property theft. However, they had no significant effect on violent crimes (Chen, 2022). This consideration in combination with privacy issues and problems like vandalizing the camera should be taken into consideration. Also, the question

should be raised whether or not this can be seen as a legit solution or more of a problem solver.

In Beverwaard they know the answer to this question because there are a lot of cameras and there are more to be added to the current streetscape. Currently one can see that there is a high density of cameras around the shopping center and some cameras at the smaller parks and the bigger playgrounds.

A part of the camera's at the shopping center are from shop owners themselves, another part is placed there



Source: *Author*

by the municipality. The shop owners indeed placed the cameras there to prevent theft. The municipality placed cameras at spots where youth clutters together (shopping centers and around the parks) or places that are perceived as being of high risk.

However according to the safety accounted of Beverwaard, placing cameras is only used when all other solutions didn't work. In the case of loiters, this could mean social support, talking to their parents or the police addressing them. When this all doesn't help a camera is being placed. The placing of the cameras is done in

consultation with the police who check these images. According to the municipality, these cameras enable the police to respond quickly to any kind of incident.

Privacy is according to the municipality maintained by not pointing the cameras at people in their houses and by only allowing the police the store and watch the images.

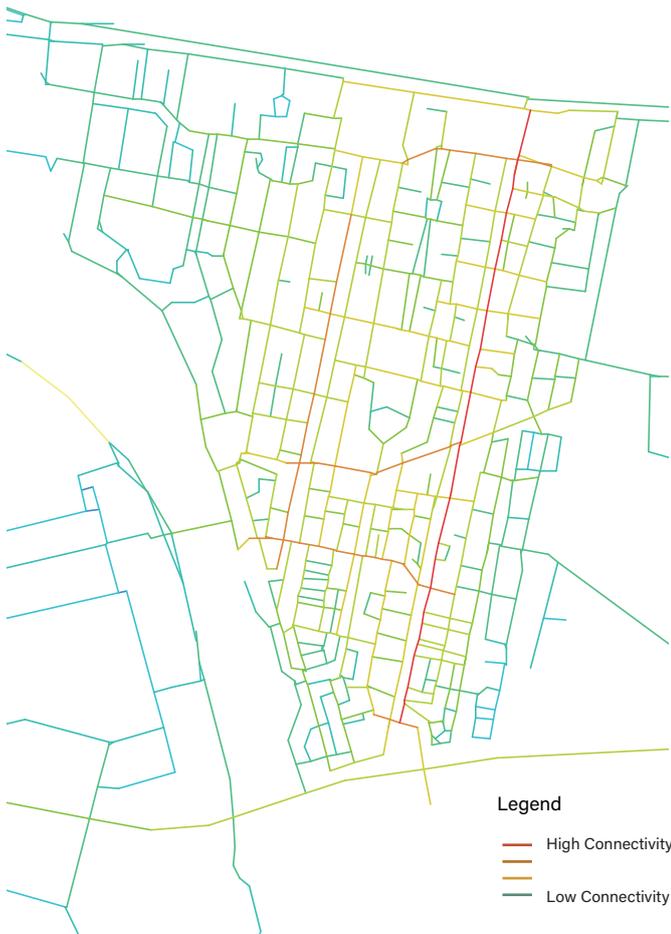


Image 121: Pedestrian road connectivity -
Source: *Author*

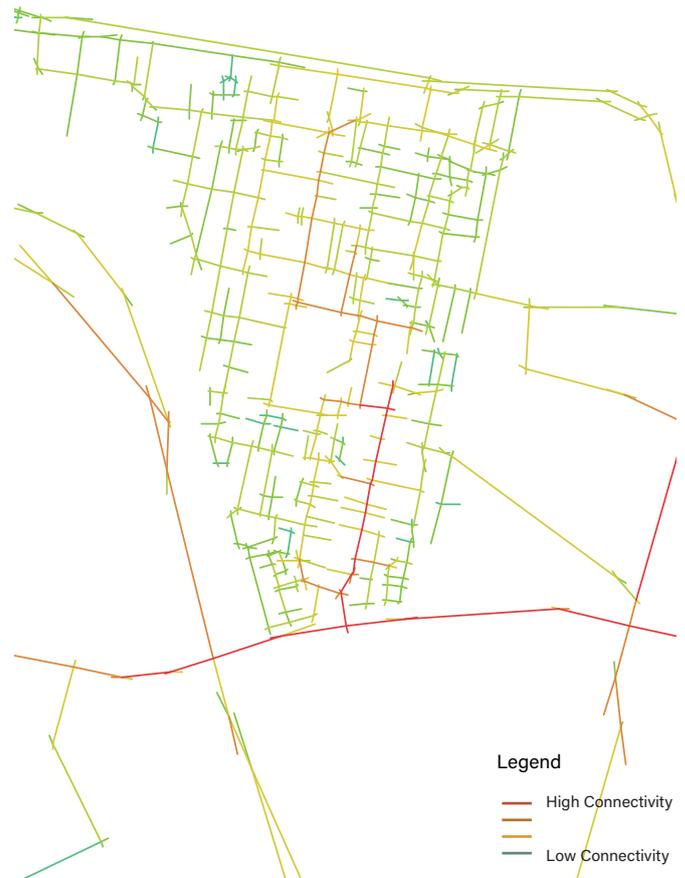


Image 122: Car road connectivity -
Source: *Author*

Road connectivity

oad connectivity tells you something about how well a street is integrated within the network and therefore is probably used more or used less. When more people use the street it contributes to a greater amount of natural surveillance (van Nes, 2021).

In Beverwaard there is a big difference between the pedestrian/cyclist network and the car network, the latter being more restricted and therefore less connected. The bicycle and pedestrian network within Beverwaard is very dense and mutually accessible (inter-accessible). Only along the edges, more towards Rotterdam, the density

decreases.

Originally the car road did not go through the little shopping center. However, this was seen as undesirable and therefore the road was extended. This encourages people to go through the neighborhood (promote street life), and therefore there is generally more surveillance, especially towards the shopping center.

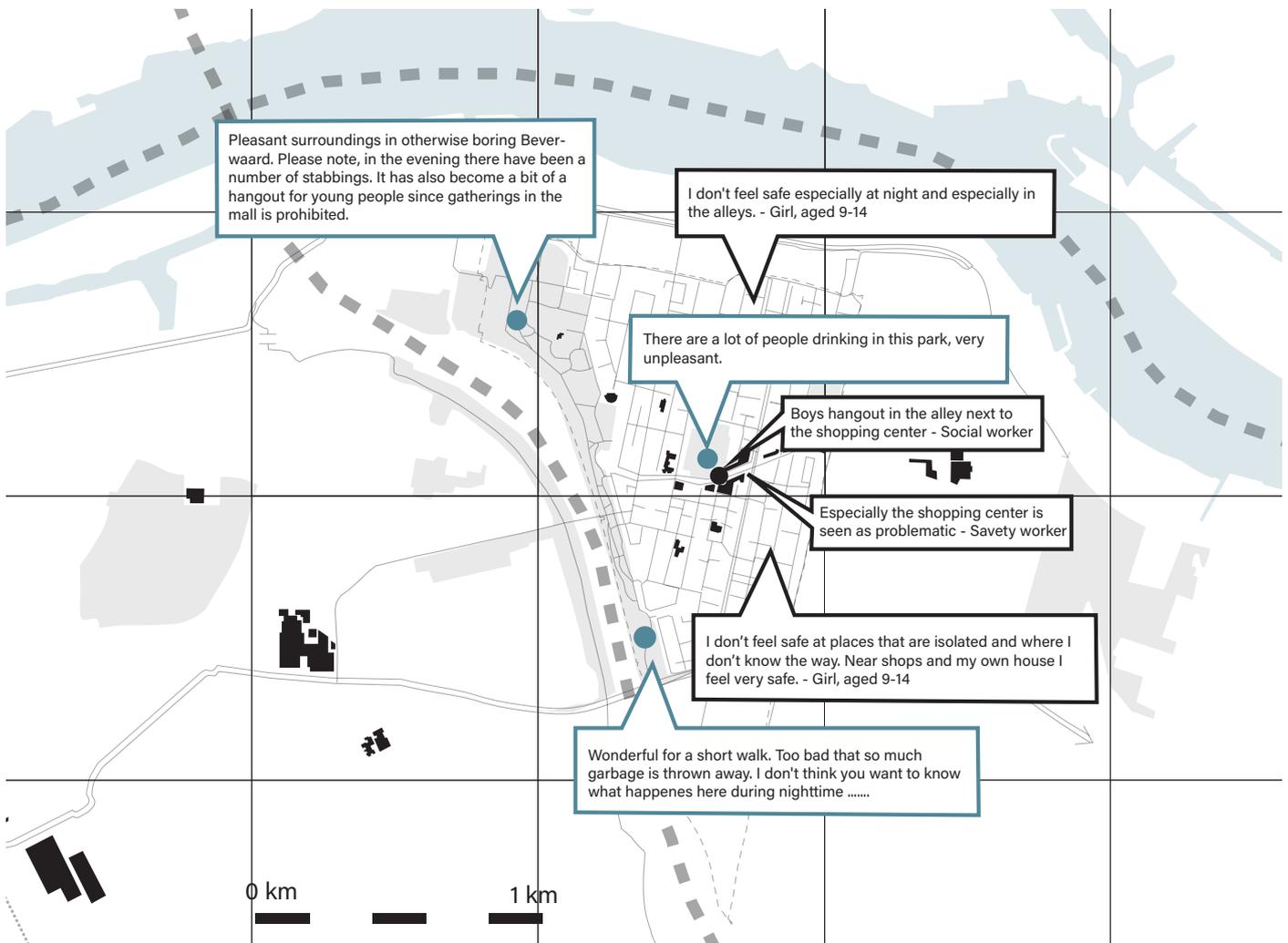


Image 123: Interview and review map - Source: Author

Inhabitants feeling of safety- Interviews & Reviews

As “the feeling of safety” is very subjective, there cannot be one clear answer to the question of whether the inhabitants of Beverwaard feel safe. However, while interviewing inhabitants and experts in the neighborhood a few things came up.

First of all according to the “safety project manager,” the actual incident rate was way lower than the perceived safety. He claimed it was due to one incident, which lingered and then lead to the feeling of unsafety among the inhabitants. Some informal interviewed inhabitants said they didn't feel unsafe,

others said that they did. Hot spots were the park(s), the shopping center, the dark alleys, the supermarket and generally the streets.

Also on Google reviews, many people commented on certain parks where they didn't feel safe, due to the cleanness of that place (litter and drug waste) and illegal activities.



Image 124: Walking route - Source: Author

Inhabitants feeling of safety- Transect Walk

Through the neighborhood manager, I got in contact with Hans (59) who was willing to walk (or drive on his mobility scooter since he was not able to walk) me through his neighborhood. He has lived almost half his life in Beverwaard and is very involved in managing the neighborhood. We walked between 16:00 – 17:30 on March 31st. We were very lucky with the nice weather during our walk and so we stopped on multiple occasions shortly. The route was not set in advance, so during our talk, he decided which way we should go to show me the things that he thought were important for me to

see. Therefore we went to the tram depot, women's shelter, trailer park, his own house, skate park, one of the green axis and the shopping center. The important things Hans said about the neighborhood can be found on the right side of the page. Some of the conclusions will be used in other chapters. All in all, it was an extremely interesting experience.

Preferably the transect walk would have been done with multiple people (with diverse backgrounds), as to make it more like a conversation or discussion, instead of an interview. However, due to time constraints, this was not possible.



Shopping Center



Trailer Camp



Green Ax



Big Playground



Women Shelter



Tram Depot



Edge Industry



Park Playground

Source: Author

Appearance public space

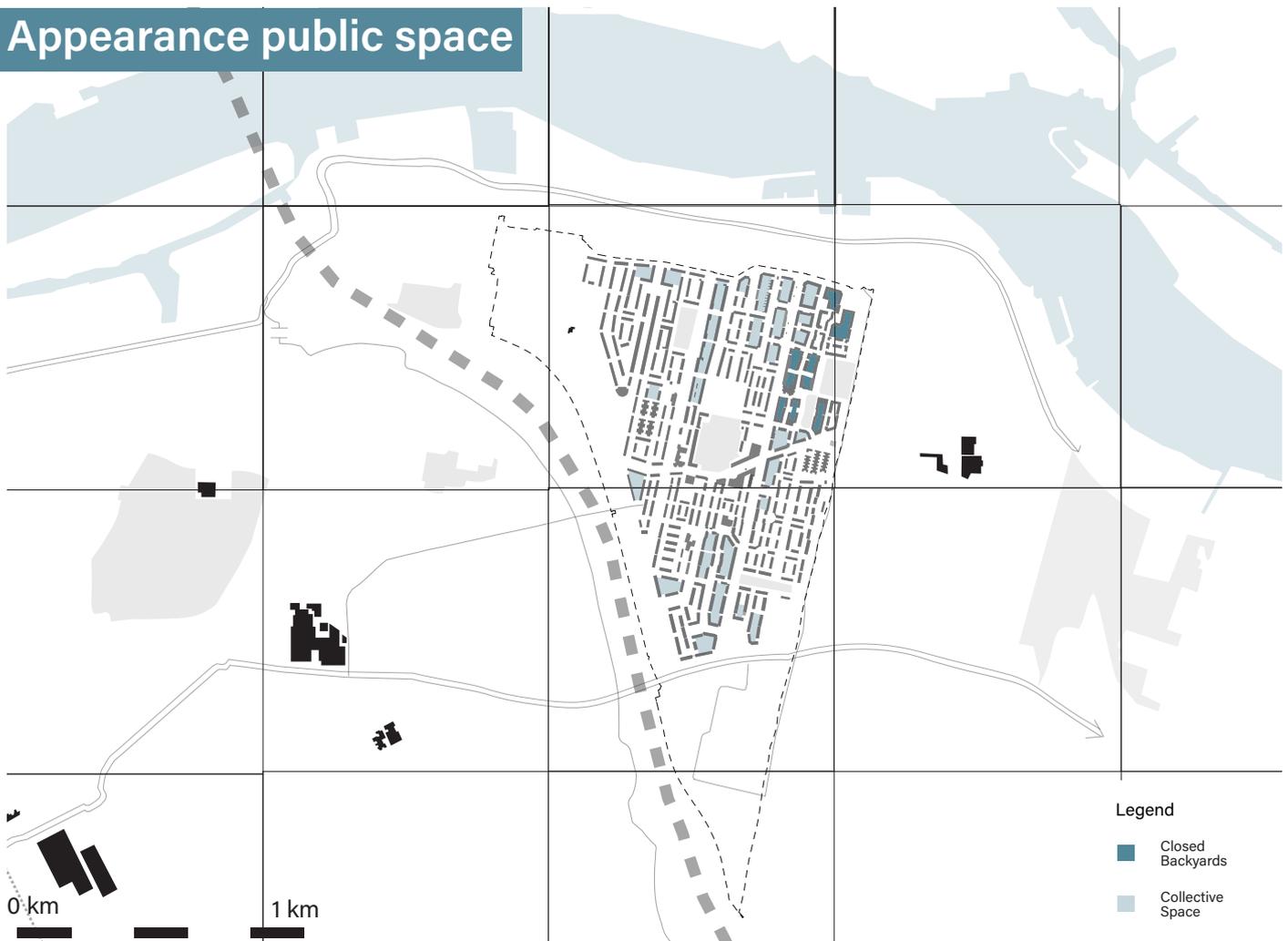


Image 125: Blocks that are closed off by a door or fence- Source: Author

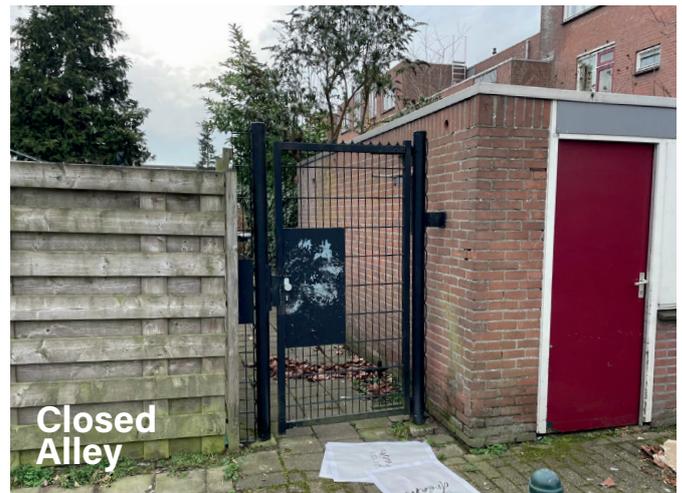
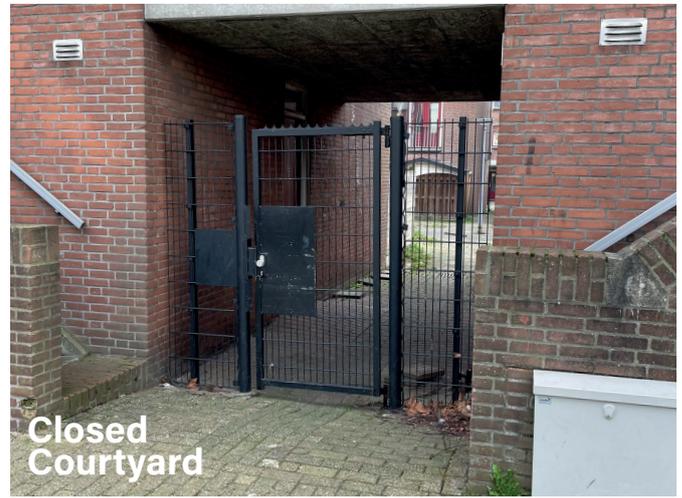
Target Hardening

A territorial space is a space that is clearly defined as a private space due to clues like fences, paving, landscaping, etc. They are all clues that help to create a sense of ownership. Therefore it is easier to identify an intruder and it gives the impression that greater effort is required to commit a crime because the space is well-defined (Fini and Lakes, 2003).

However, territoriality can engage in what we call 'target hardening.' Instead of marking space as yours, the space is being defended against intruders or attackers. Not only is the actual physical site being strengthened but

also a very clear message is being sent. Namely that this site is a well-defended one (Crime Prevention Through Environmental Design (CPTED) | Avans Hogeschool, n.d.).

The evidence of the effectiveness of target hardening is inconclusive. There is existing evidence that indicates that target hardening works best when arrest and imprisonment are relatively certain. Target hardening does have the effect of reducing citizens' fear of crime (Crime Control - Deterrence and Target Hardening, n.d.). However excessive use of target-hardening tactics can create a fortress mentality whereby residents



Source: *Author*

withdraw behind physical barriers and the self-policing capacity of the built environment is damaged and has a negative influence on social resilience.

In Beverwaard we see many signs of territorial spaces, people have small front gardens with different paving, plants, chairs, etc., and on the backside, we see a lot of fences. They show clearly that it is their territory that you enter when you walk there.

But there are also many signs of target hardening, giving off signals that this place has to be defended and therefore is unsafe. Especially the shopping

center, which has an excessive amount of cameras, both by shop owners and by the police. Walking there, even without any knowledge of Beverwaard you will know that it is a place that is seen by the municipality as a high-risk area. When looking at perceived safety, it could be questioned whether or not these signals are counterproductive



Back Alley



Communal Garden



Ditch



Container

Source: Author

Cleanness of Public Space

The physical and social conditions of a neighborhood influence the perceived safety of that neighborhood. Women more than men are influenced by this (ABC News, 2019). Analyses of crime data from the US and Sweden both show that women and men respond to similar environmental conditions differently, with women tending to be more sensitive than men to signs of social disorder, graffiti and unkempt and abandoned buildings (Perez, 2017).

Cleanliness of public space was found lacking both during multiple fieldwork observations and questionnaires issued by the municipality. It was also

confirmed during interviews with two safety project managers. They confirmed that removing the litter as fast as possible was one of their priorities.

During the transect walk, Hans explained to me that Beverwaard used to have its own Parks Department, led by people with a labor market disadvantage. He explained that they kept the neighborhood cleaner since they were regularly involved. The inhabitants themselves complained of nuisances, in most cases dog poop, litter on the street and the demolition of street furniture.

Community capacity

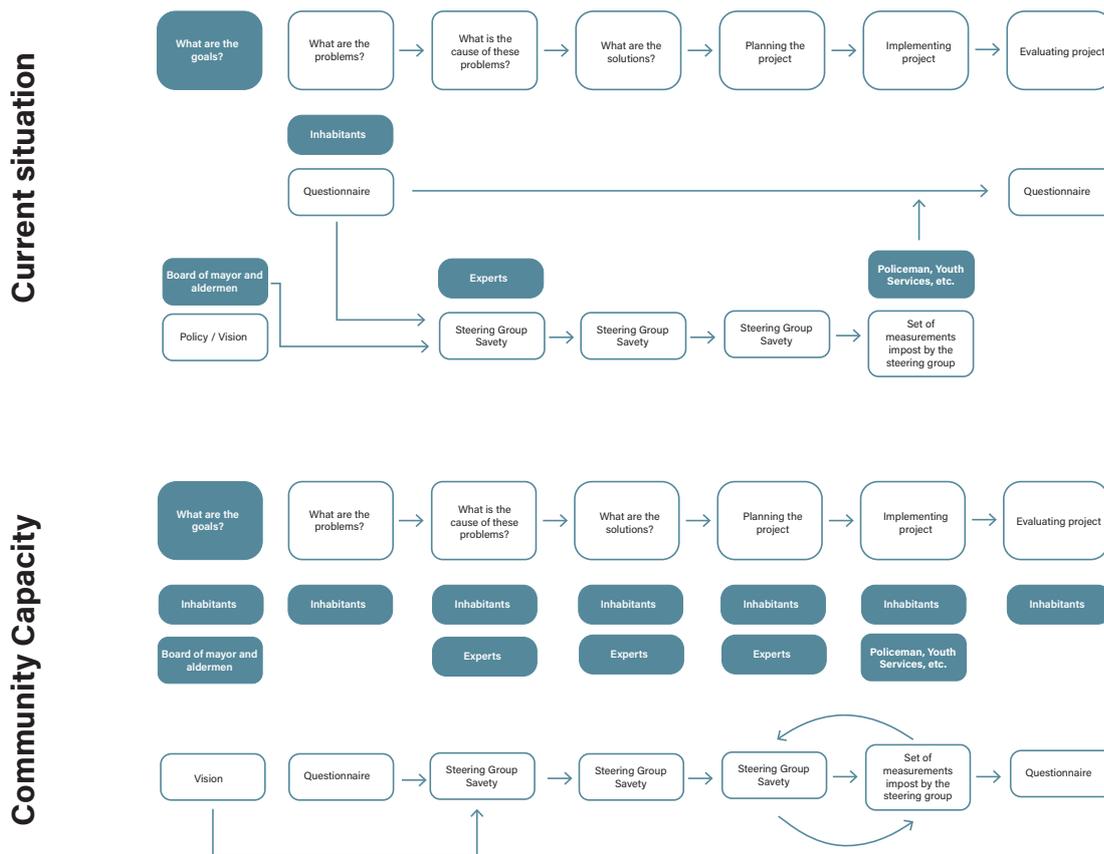


Image 126: Current and improved processes - Source: Author

Community Capacity

Community capacity is the increase of a community group's ability to define, assess and analyze and act on any concern that is of importance to its members (Gibbon et al., 2002). It empowers the community and the chance of success is higher because inhabitants agree on measurements that are taken (Gibbon et al., 2002).

When looking at previous safety plan processes, strengthening the community capacity was barely taken into account. The inhabitants were asked about their safety experiences, however, experts were the ones that came up with conclusions, action points

and implementations (Quint et al., 2009). Some workshops were organized to make inhabitants more able to respond to nuisance (Quint et al., 2009). Still, these workshops were initiated by experts.

When talking with a safety manager from the municipality of Rotterdam, she explained that in recent research they involved the inhabitants in more parts of the process. However, the decision was still made only by the municipality. The result of the research was a report with recommendations (action points), the question remains of whether these action points will be (integral) implemented.

Conclusion

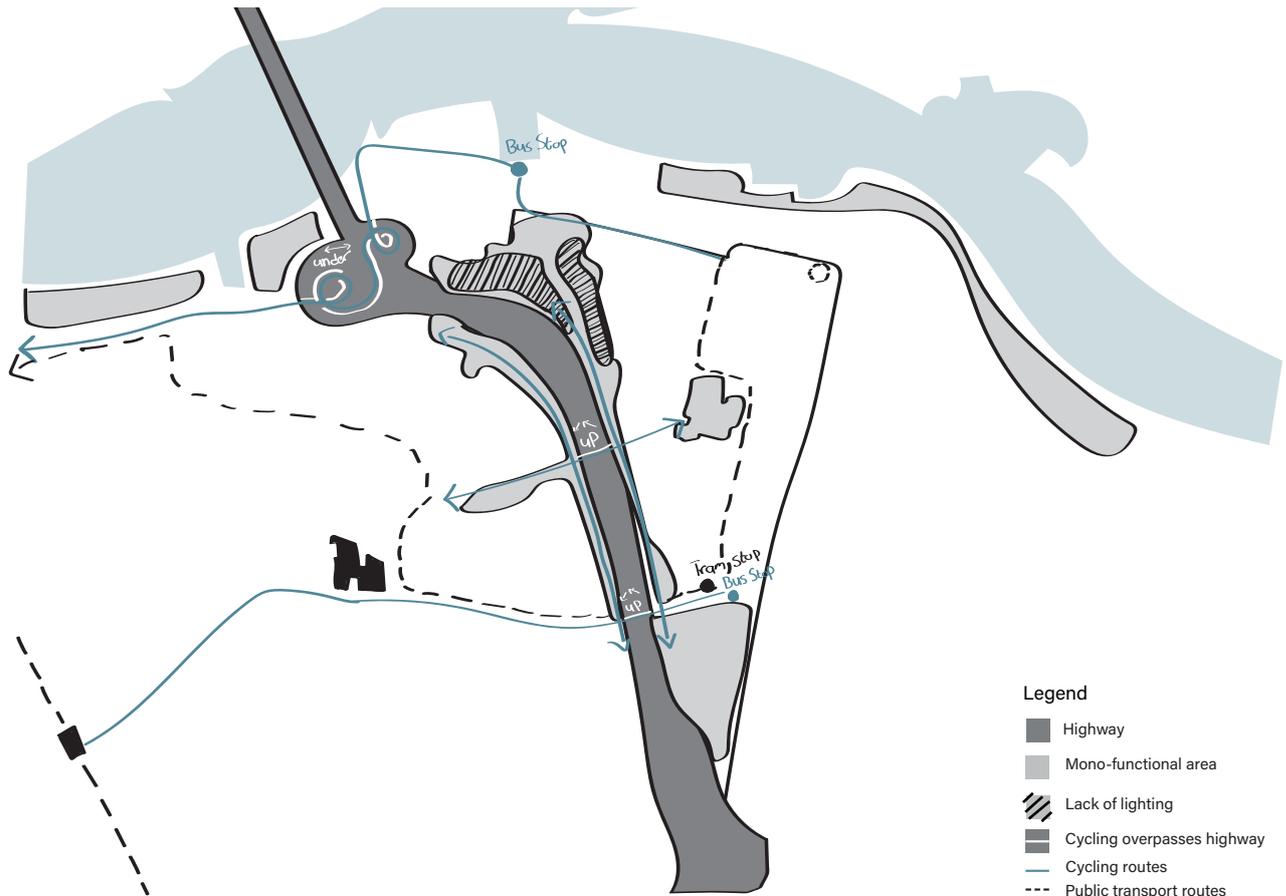


Image 127: Eengezinswoningen en appartementen- Source: *Elling & Ginneken, 2016*

Feeling of safety

On a neighborhood scale, the feeling of safety is especially low in areas where there is no natural surveillance at night (separation of functions or bad integration of roads) little streetlights (parks) and generally a low level of visibility. Problematically these areas coincide with the only three ways to cycle to Rotterdam (South) or IJsselmonde. Especially since the tram doesn't ride at late hours, having safe cycling routes is important. The other place that came up regularly during interviews was the shopping center and some smaller playgrounds.



Community Capacity

Although many safety analyses were constructed and many interviews and action points written down, nearly none of them increased the amount of community capacity. Part of the problem is the municipality itself. Namely, while some research did include the local inhabitants in brainstorming solutions, the researchers from the municipality left after the conclusions were drawn. Another part of the problem is the lack of participation and social cohesion in the neighborhood. To have effective community capacity, there needs to be a large number of inhabitants who are willing to participate and help with the implementation.



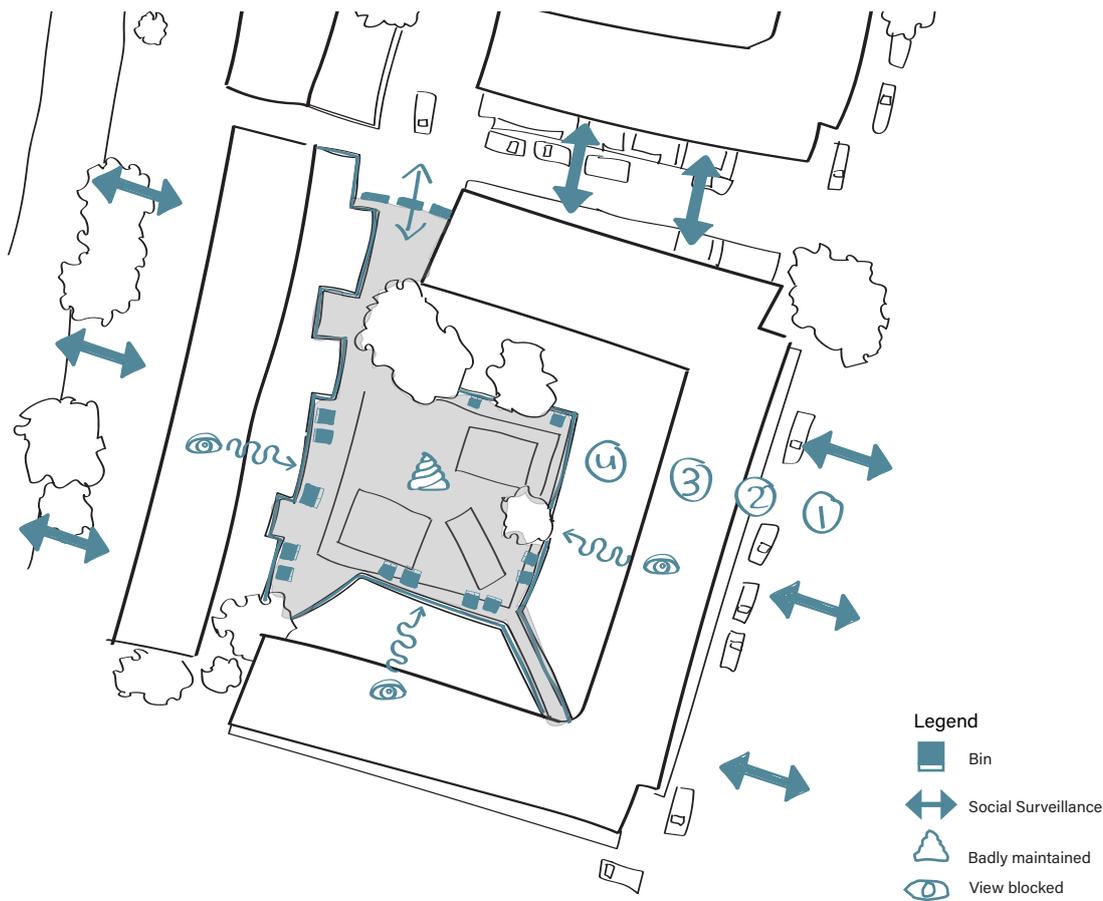


Image 128: Eengezinswoningen en appartementen- Source: *Elling & Ginneken, 2016*

Feeling of safety

On a block scale, the streets feel secure, because there is natural surveillance from people entering and leaving their houses. However, in the back alleys and the inner courtyards, this feeling of safety is sometimes lacking, even during the day. The back alleys are badly maintained, barely lit and even during the day dark due to all the high fences. The courtyards are better lit, however probably due to the lack of surveillance or bad experiences in the past, they are closed off during the night to prevent unwanted people from entering.



Appearance public space

Some spaces appear unsafe, due to the many cameras, barbed wire and fences to protect these places against unwanted aggressors. These elements give the impression that the space is unsafe, while often this is not really the case. Public space also looks unmaintained, especially in and around the courtyard blocks there are a lot of rubbish, rubbish bins and dog poop (with signs prohibiting dogs to poop there).



Research Insights

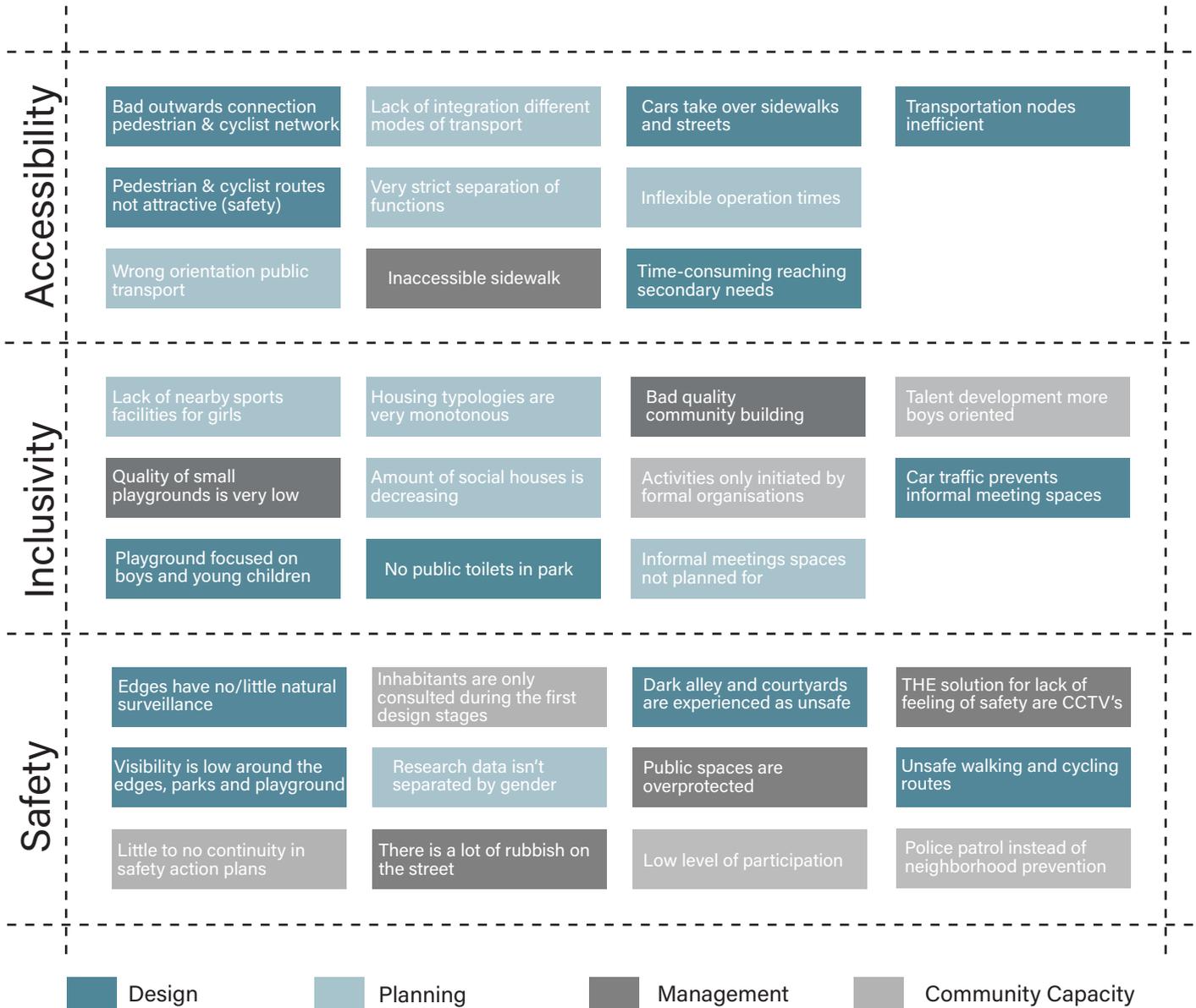


Image 129: Problem Matrix - Source: *Author*

Research Insights

The problem matrix is an overview of the main issues that were identified during the analysis of public space. The issues are classified based on Tummers' (2013) theory on complementary spatial strategies. In this theory, she names three elements: spatial planning, design and management. Community capacity is added to this classification because

without strengthening the community capacity, the chance of success of the design, spatial plan and management is low.

When looking at this problem matrix, one can see that gender-sensitive urban planning is complex and involves the collaboration of different stakeholders.



Strategic Framework

Evaluating the framework

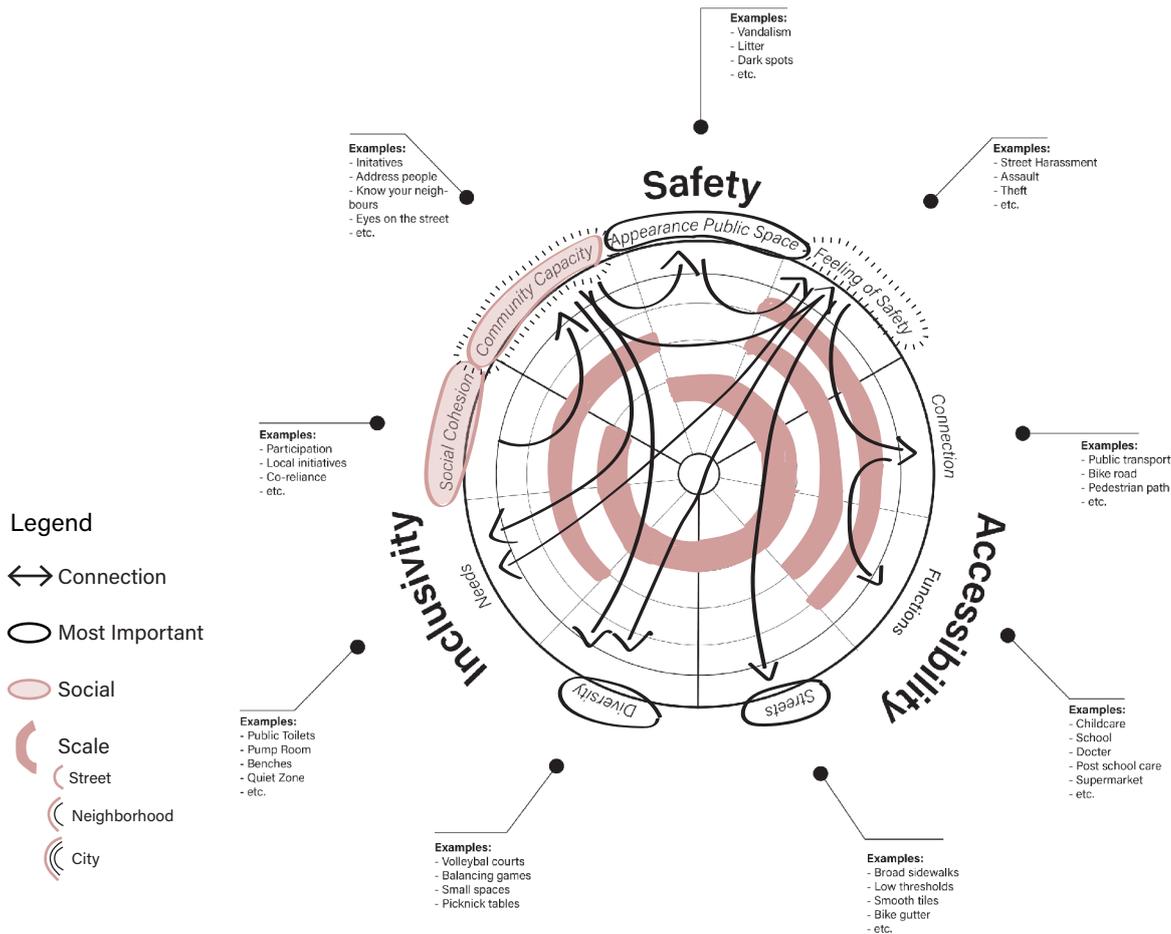


Image 130: Assessment Preliminary Framework - Source: Author

Categories

The framework is based on patterns. The patterns were assessed and changed as a result of the case study. Since the patterns changed, so did the framework. "Community capacity" and "social cohesion" were found to be too similar in meaning. Community capacity was hard to analyze spatially and was too broad. Therefore, it was replaced by social support.

The concept of "connection" was seen as too limited, since the patterns were also about transportation grids, hubs and barriers. The connection suggests it is only about connecting one place to another. Therefore, connection was

changed to "network".

The concept of "feeling of safety" was considered too vague, while the patterns were rather specific and all involve improving the visibility (as one of the patterns is also called that way). Therefore, the name of the categories was changed to "visibility".

The framework was also one-dimensional, containing only the different categories on how to plan more gender sensitive. However, the different categories work on different scales and are of different importance.

Safety

Visibility

~~Feeling of safety~~



1b. A digital eye	✓
1c. Visibility	○
1e. Light it up	✓ ○
1g. Women only	✗
1h. Social surveillance	○
1i. Activating safety	○

Appearance public space



1d. Spotless	✓ ○
1j. Territoriality	✓

Social Cohesion

~~Community Capacity~~



1a. Woman's voice	✓
1f. Know your neighbour	○
1i. Activating safety	○



Pattern currently used in the Dutch Urban context based on the urban neighborhood of Beverwaard.



Pattern applicable in the Dutch context based on the urban neighborhood of Beverwaard

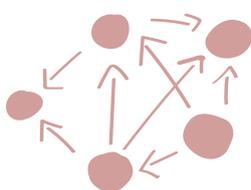


Pattern NOT applicable in the Dutch context based on the urban neighborhood of Beverwaard

Accessibility

Network

~~Connection~~



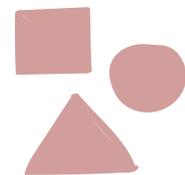
2f. All aboard	○
----------------	---

Streets



2a. Green light	○
2b. Sidewalk	○
2c. Low step	✗
2e. Level out	○
2h. Smooth sailing	○

Functions

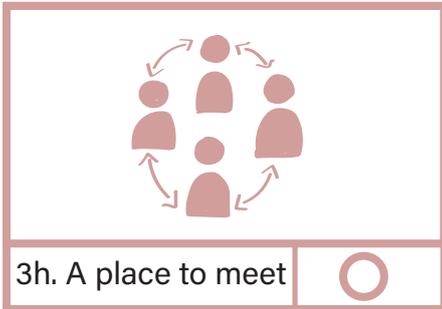


2d. Next to work	✓
2g. A short walk away	✓

Inclusivity

Social Support

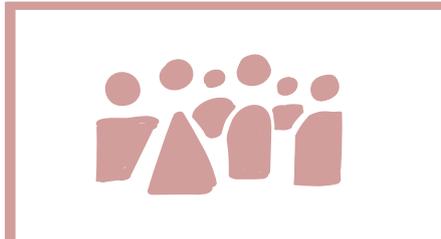
~~Social Cohesion~~



3h. A place to meet



Diversity



3b. Sports



3d. Lingerin



3e. Quiet zone



Needs



3a. Small relief



3c. Play all day



3f. The observer



~~3g. Pumping room~~



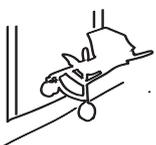
Removed Pattern(s)



1g. Women Only

1g.

This pattern is based on exclusion instead of inclusion. I believe that making spaces specifically for women (segregation) should not be a solution for gender sensitive design of public spaces.



2c. Low Step

2c.

Within the Netherlands, there are already strong regulations concerning the accessibility of buses, trams and trains (See: Equal Treatment on the Grounds of Disability or Chronic Illness Act: Public transport stop). In Beverwaard all stops were accessible.



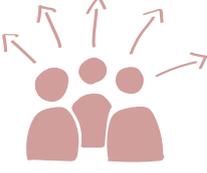
3g. Pumping Room

3g.

For pumping you need electricity and a space you can relax in. Instead of adding them to public space, I think it is more important that it is obliged for community centers, sport clubs and public transport hubs to have a pumping room.

Safety

Social Cohesion

	
Women Watch	○
Women Talking	○

Visibility

	
Keep it short	✓○

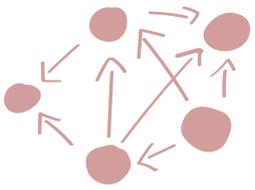
Appearance public space

	
Report App	✓○
Bin Mam & Dad	○
Bin Garden	○
Look for the good	○
Local Sourced	○

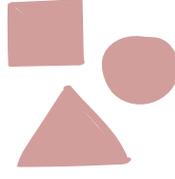
- ✓ Pattern currently used in the Dutch Urban context based on the urban neighborhood of Beverwaard.
- Pattern applicable in the Dutch context based on the urban neighborhood of Beverwaard
- ✗ Pattern NOT applicable in the Dutch context based on the urban neighborhood of Beverwaard

Accessibility

Network

	
Meshed Grid Pedestrian/Cyclist Network	○
Transfer Hubs	○
No Bridge Too Far	○

Functions

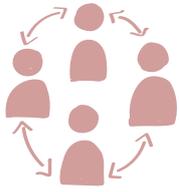
	
Flexible	✓○

Streets

	
NO PARKING	○
Keeping Straight	✓○

Inclusivity

Social Support



Promote Local Initiatives	✓ ○
Listening	✓ ○
Cooperative Childcare	○

Needs



We Also Want That ✓ ○

Diversity

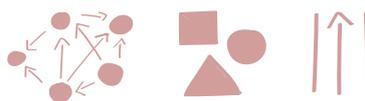


Stimulating Talent	✓ ○
All ages	○



SAFETY

- 1a. Woman's voice
- 1b. A digital eye
- 1c. Visibility
- 1d. Spotless
- 1e. Light it up
- 1f. Know your neighbour
- 1g. Keep it short
- 1h. Social surveillance
- 1i. Activating safety
- 1j. Territoriality
- 1k. Women watch
- 1l. Women talking
- 1m. Report App
- 1n. Bin Mom & Dad
- 1o. Look for the good
- 1p. Locally sourced



ACCESSIBILITY

- 2a. HUB
- 2b. Sidewalk
- 2c. Mesh grid
- 2d. Next to work
- 2e. Level out
- 2f. All aboard
- 2g. A short walk away
- 2h. Smooth sailing
- 2i. No bridge too far
- 2j. Flexible
- 2k. No parking
- 2l. Keeping straight
- 2m. Green light



INCLUSIVENESS

- 3a. Small relief
- 3b. Sports
- 3c. Play all day
- 3d. Lingering
- 3e. Quiet zone
- 3f. The observer
- 3g. Stay local
- 3h. A place to meet
- 3i. Listening
- 3j. Cooperative
- 3h. We also
- 3l. Talent
- 3m. All of us

Strategic Framework

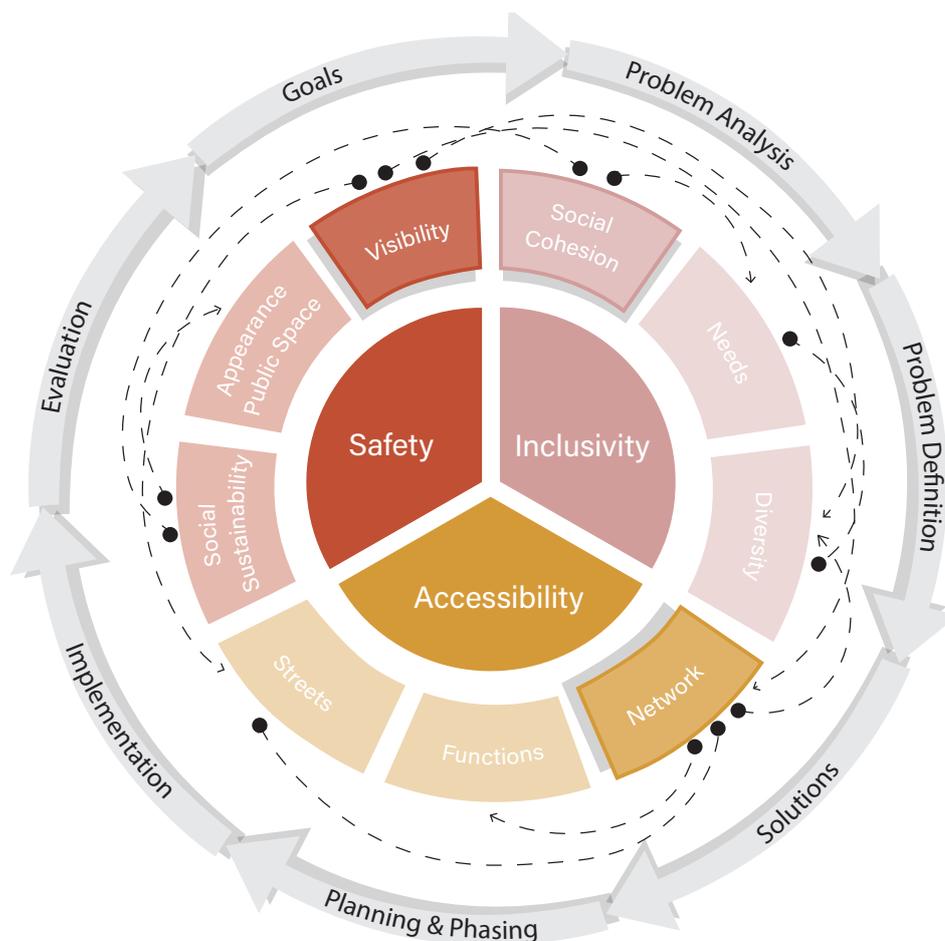


Image 132: The strategic framework for gender inclusive design and planning of public space
- Source: Author

Strategic Framework

The strategic framework is supposed to be a starting point for planning and designing more gender inclusive public spaces. Each category is associated with a set of patterns (see pattern book). These patterns were either derived from literature, field research, spatial analysis or interviews and are specific to Dutch urban neighborhoods.

There are three main categories: safety, inclusivity and accessibility. Each category is then split up into three sub-categories of which some are more important than others. The importance of the sub-categories is visualized with the amount of dots and the dotted lines

connect the different categories. The categories that have more connections are therefore slightly more important, which is illustrated with thicker edges and a darker color.

The circle around the framework depicts the different phases of the planning process that were mentioned before in the chapter on community capacity. Gender inclusive planning and design is not only about designing and planning according to these patterns but also concerns how gender (relations) are included and assessed.

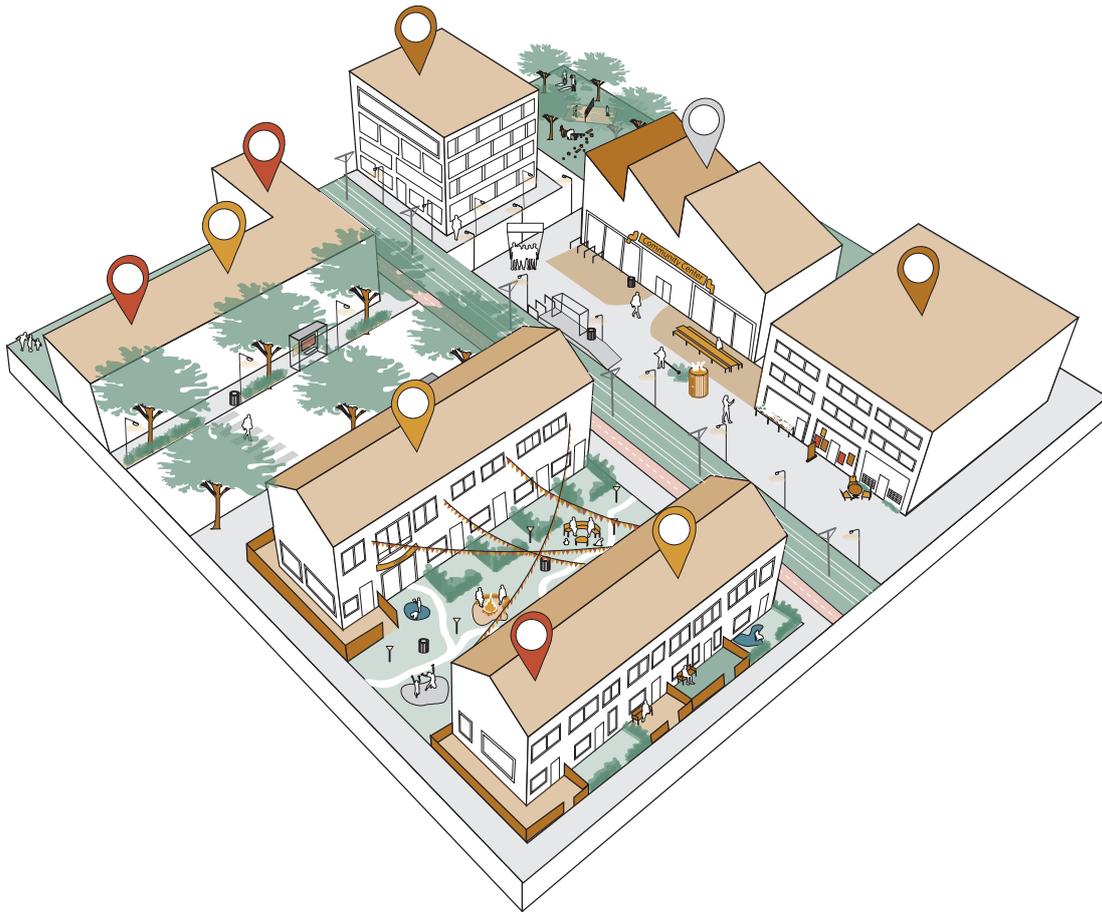


Image 133: Summary of the different strategies (clusters of patterns) - Source: *Author*

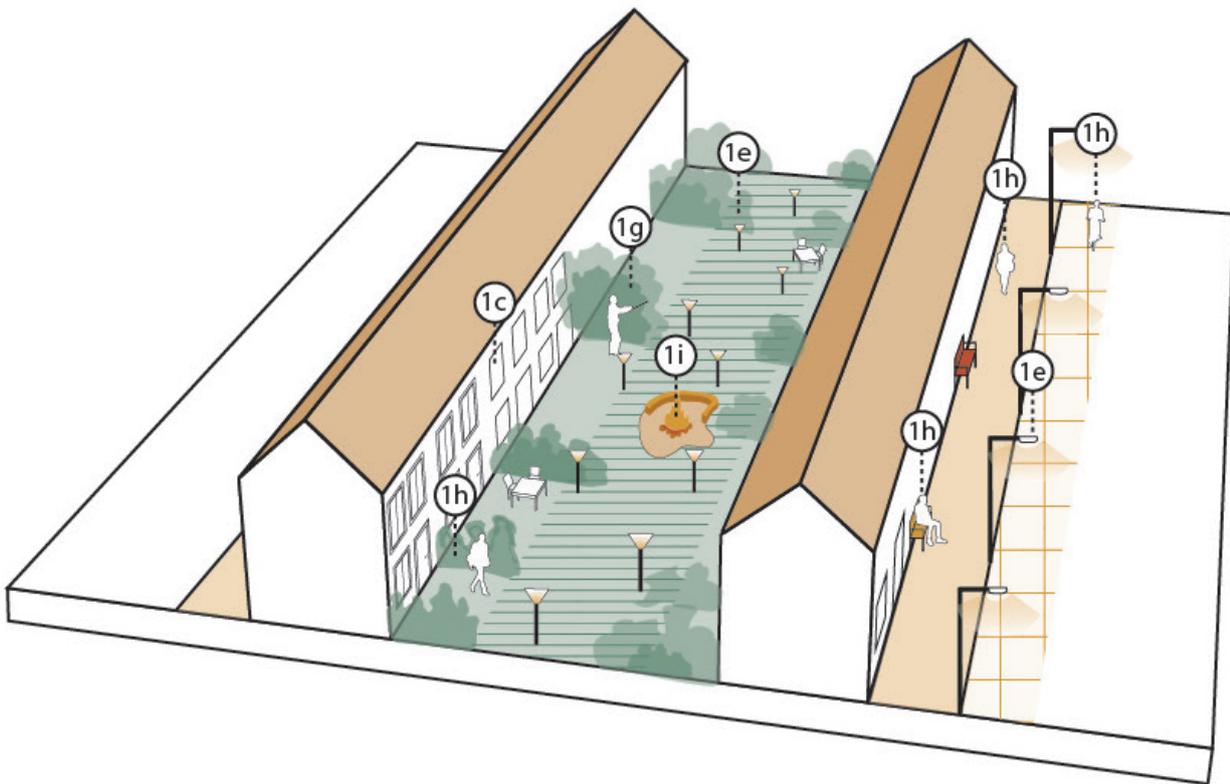
Summary Strategies

The strategic framework is based on a collective of patterns. A cluster of patterns is called a strategy. In this thesis, there are nine strategies: network, functions, streets, social sustainability, appearance public space, visibility, social cohesion, needs and diversity.

Each strategy is spatially visualized, giving an impression of how the patterns could be implemented and how they could look like. However, the patterns are location specific, for a more detailed example of the usage of patterns in a spatial context have a look at the design.

All patterns are shortly mentioned in the strategies. However, for a more elaborate explanation and assessment of for example the possible stakeholders of each pattern, have a look at the complimentary pattern book. In this patternbook, you can also find an overview of all strategies.

Strategy 1a: Visibility



- ①c Visibility
- ①g Pruning Green
- ①i Activating Safety
- ①e Light it up
- ①h Social Surveillance
- ①m Report App

Source: Author

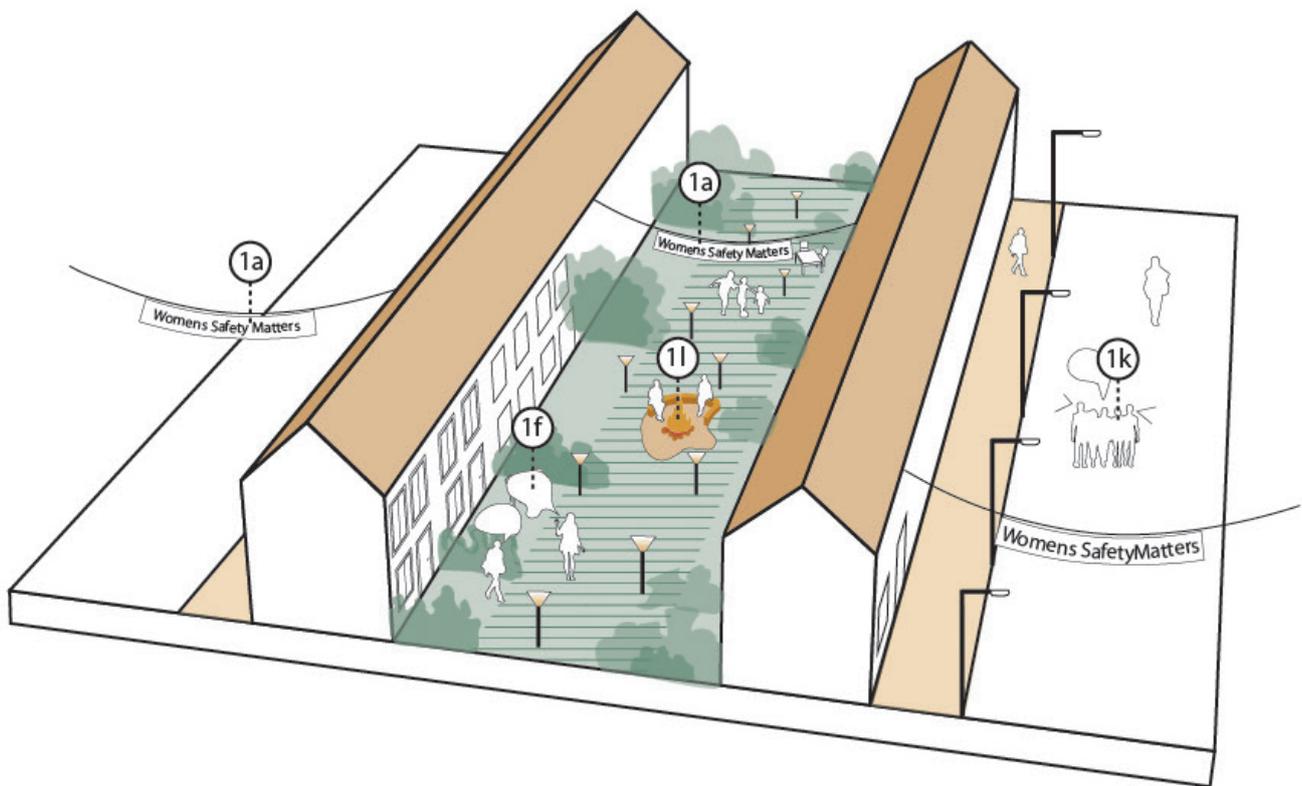
Visibility Patterns

Women generally experience higher levels of fear than men after sunset (Roberts, 2013). The visibility (seeing and being seen) of a space has a big impact on whether the space is marked as scary or not. For example, dark corners, parks, bus stops or streets without street lights were generally marked as the most feared places by women (Jackowska and Novas Ferradas, 2022).

Strict separation of functions (land use) leads to the isolation of buildings and spaces, which could lead to higher

levels of perceived unsafeness (Fini and Lakes, 2003). For example, business parks or shopping streets have no natural surveillance at night.

Therefore, improving the lighting of an area (1e), keeping bushes lower than eye level so you can look over them (1g), have people who are either present or looking upon the space so they can intervene when something happens (1h), preventing dead plinths (1c) or dead facades (1c) and having activities at places that are not active during that part of the day (1i) can all help to increase the feeling of safety.



1a Women's Voice

1k Women's Watch

1f Know your Neighbors

1l Women Talking

Source: Author

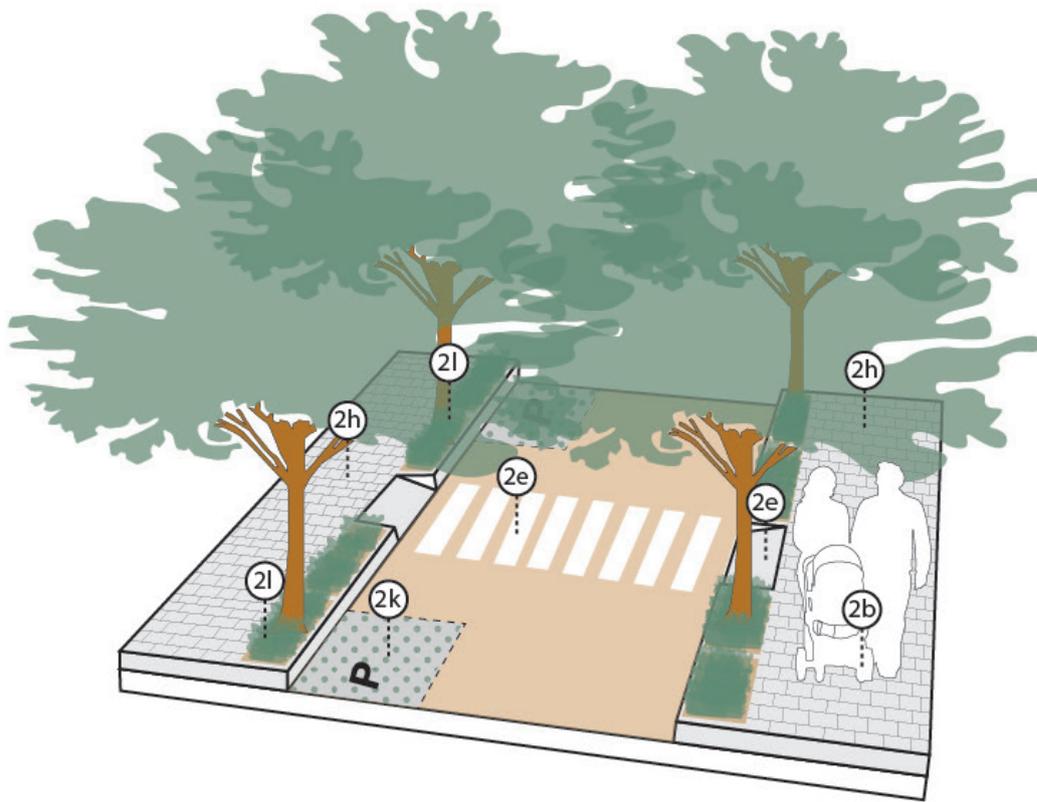
Social Cohesion Patterns

A lot of women experience violence or sexual harassment in public space (Perez, 2019). Therefore, it is important to raise awareness (1a) about this, to increase the consciousness of people by humanizing the victim and by promoting that it is acceptable to make a scene as a woman. Also, giving women a place to talk about their experiences with violence or just a place where they can talk about their daily lives, is very important (1l).

A more active way for women to

increase their feeling of safety is to unite and claim space on the streets of the neighborhood by forming, for example, a "women watch" (1k): a group of women walking through the neighborhood, who are in direct contact with the police and municipality.

The feeling of connection or responsibility for the space and the users of the space is important for a well-functioning social surveillance system (1f) (Fini and Lakes, 2003).



(2b) Sidewalk

(2h) Smooth Sailing

(2l) Keeping Straight

(2e) Level out

(2k) No Parking

Source: Author

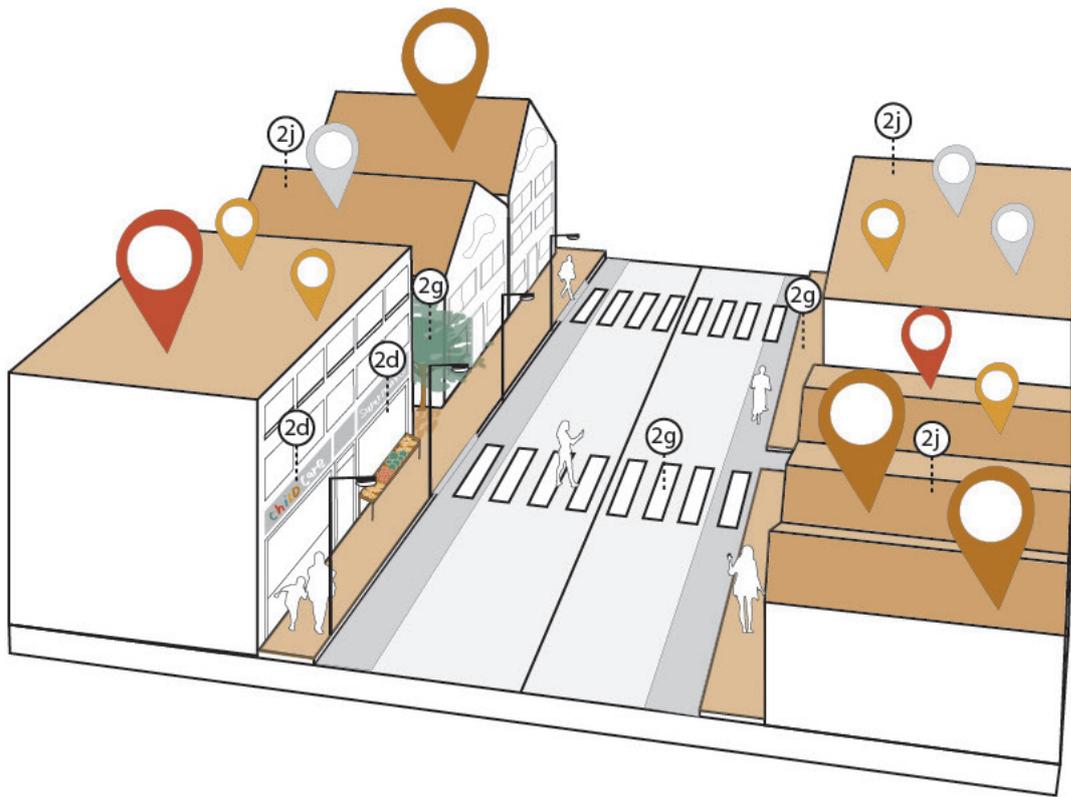
Street Patterns

The width of many pavements has been determined by a single person walking. However, a person with a large stroller, a pack of disposable nappies, a shopping bag and a small child requires a lot more width than a single person (Jackowska and Ferradas, 2022).

Thereby widening the pavement will make it more accessible for a wider variety of people (2b). Also preventing obstacles on the pavement like cars (2k), is important for keeping streets accessible to all. Slopes are often

placed in illogical places, making it difficult to proceed quickly and easily (2e). The pavement can be an obstacle when it is ill-maintained (2l). Roots of trees and prolapse of the pavement can both be extra obstacles, that can easily be prevented. Furthermore, the type of material of the pavement could hinder those who are less mobile than the average person (2h).

Strategy 2b: Functions



- (2d)** Next to work
- (2j)** Flexible
- (2g)** A short walk away

Source: Author

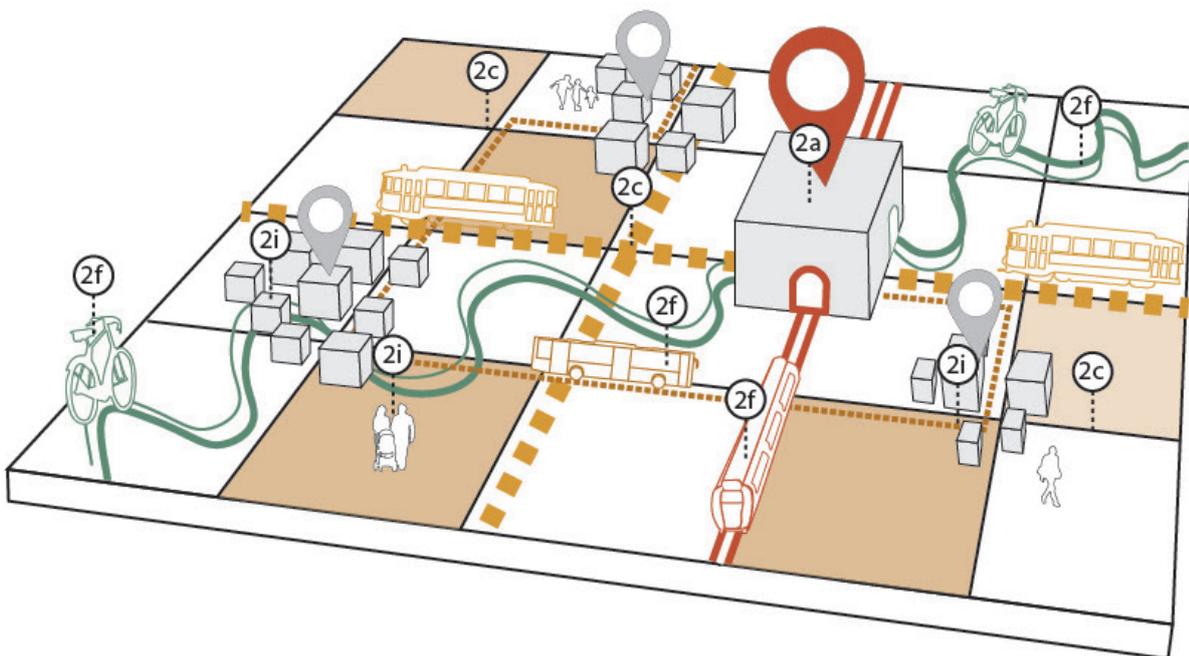
Function Patterns

Zoning laws are based on and prioritize the needs of a bread-winning heterosexual married man who goes off to work in the morning and comes home to the suburbs in the evening (Perez, 2017). Monofunctional neighborhoods increase the time women have to spend on transportation. The proximity of services such as supermarkets, post offices and childcare, amongst others, are important to have close by.

multi-functional neighborhood (2d), such that all required services are only a short walk away (2g). If this were the case then the average time women (and men) have to spend on household chores would decrease. In order to achieve this, there needs to be more flexibility (2j) in both zoning laws, urban planning and housing plans.

Therefore, it is important to have a

Strategy 2c: Network



②a HUB

②f All Abroad

②c Mesh Grid

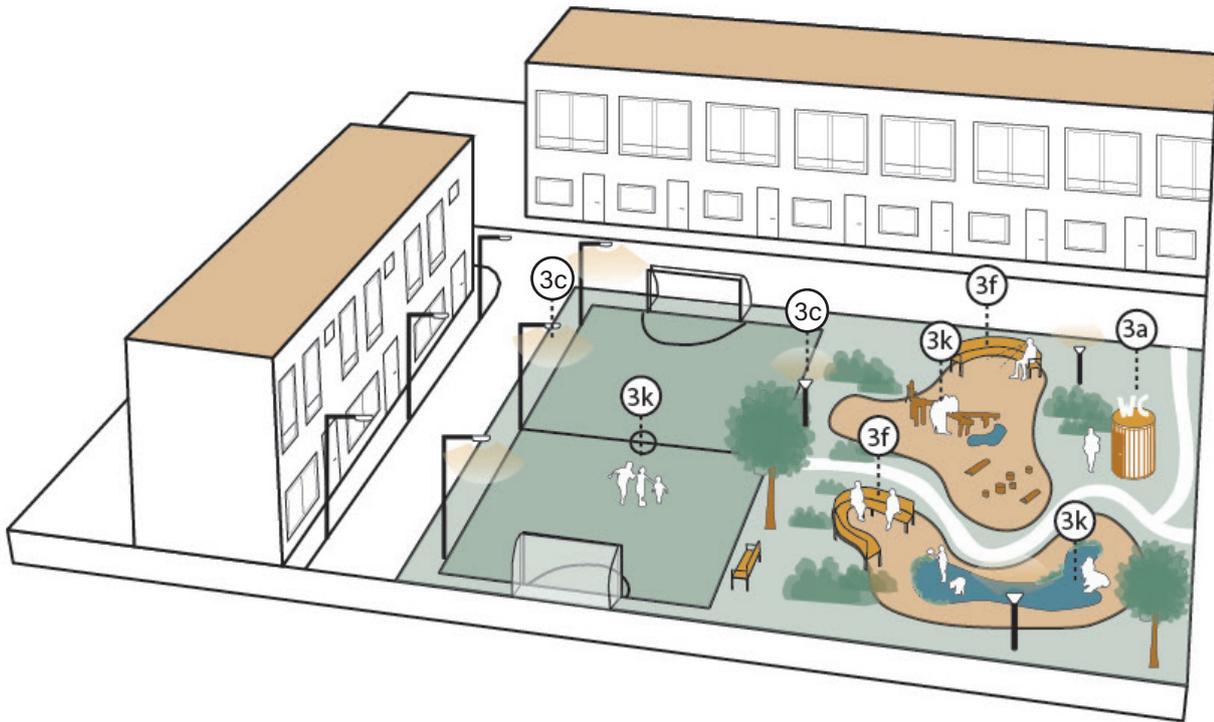
②i No bridge too far

Source: Author

Network Patterns

Most public transport systems are radial, women are its prominent users and therefore they have to deal with connection times (Perez, 2017). Having effective transportation HUBs or nodes that are well-placed and optimally accessible (2f) is very important as it reduces travel time (2a). Other desired qualities of transport nodes are: enough waiting seats, luggage storage, enough lighting as well as rain and weather protection (Jackowska and Novas Ferradás, 2022).

As women walk and cycle more than men and make more stops, it is important to have a dense network of routes that are pedestrian- and cyclist-friendly (2c)(Jackowska and Novas Ferradás, 2022). Next to that, pedestrian scale planning brings qualities to cities focused on needs and accessibility (2i) (Boccia, 2013). Reclaiming pedestrian activity on the streets relates to the concept of safety, contact and assimilation (Jackowska and Novas Ferradás, 2022).



3a Small Relief

3k We Also

3c Play all day

3f The observer

Source: Author

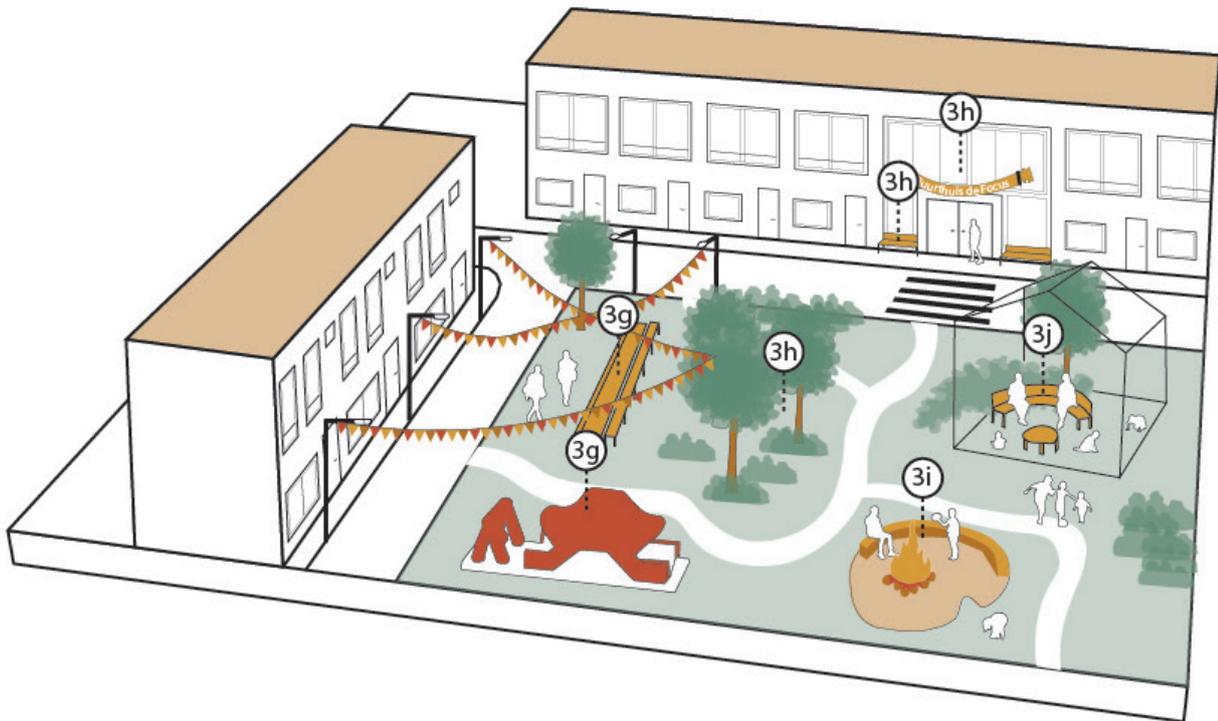
Needs Patterns

Playgrounds are not only important social gathering spaces for children but also for their parents. Benches surrounding the playground therefore are very important in facilitating this social contact.

Additionally, well-placed benches are important for elderly (3f), as it might make the difference between participation in the city and remaining at home (Hunt, 2019). Also the lighting of these playgrounds and parks (3c), a toilet nearby (3c) and a safe way

home increases time women (and men) will and can spend in public space. Therefore it makes the city more inclusive for all.

Strategy 3b: Social Support



3g Stay Local

3i Listening

3h A place to meet

3j Cooperative

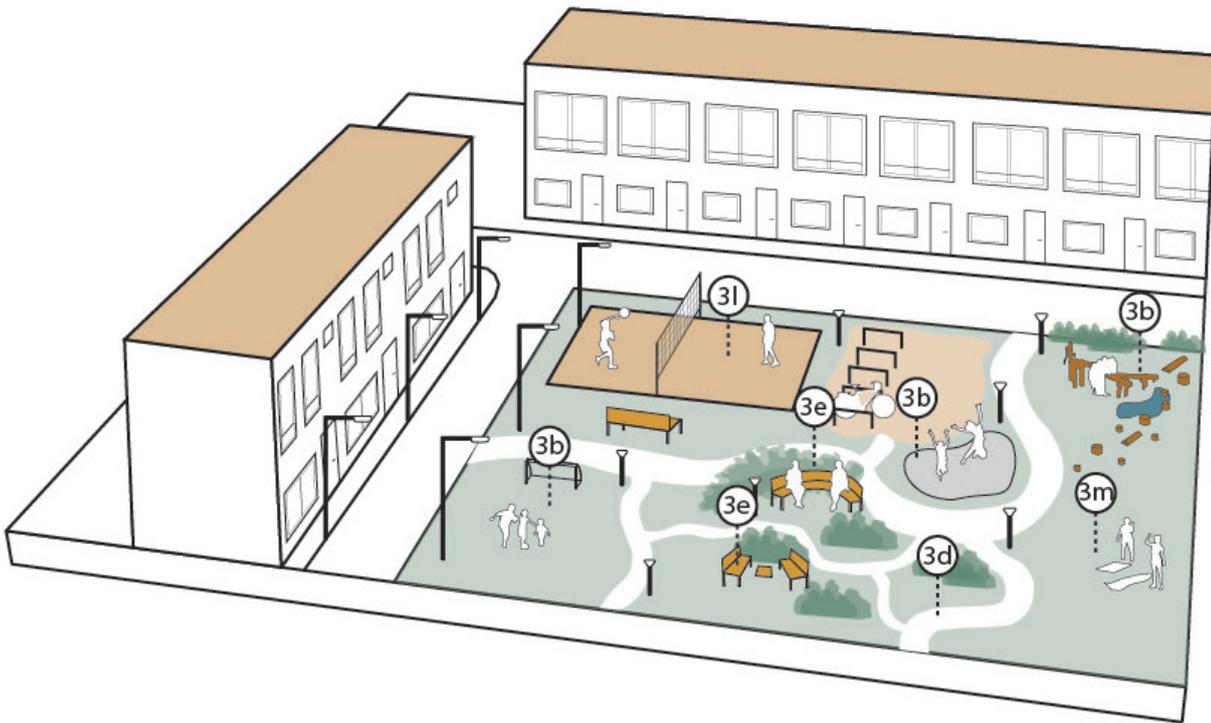
Source: Author

Social Support Patterns

Places such as libraries, markets and shopping malls are important places for women to meet (3h) because here, they can talk undisturbedly with each other (Webinar, 2022). Having a strong social network is important to decrease a woman's unpaid care burden (3j) (Perez, 2017), but can also function as informal support (3i).

Having a place to organize community activities could give rise to more local activities (Gibbon et al., 2002). Next to that, women are more likely to take

a leading role in (unpaid) community activities (Buckingham, 2020). It gives them the possibility to strengthen their social network and propose what could be beneficial for them (3g).



③b Sports

③e Quiet Zone

③m All of us

③d Lingering

③l Talent

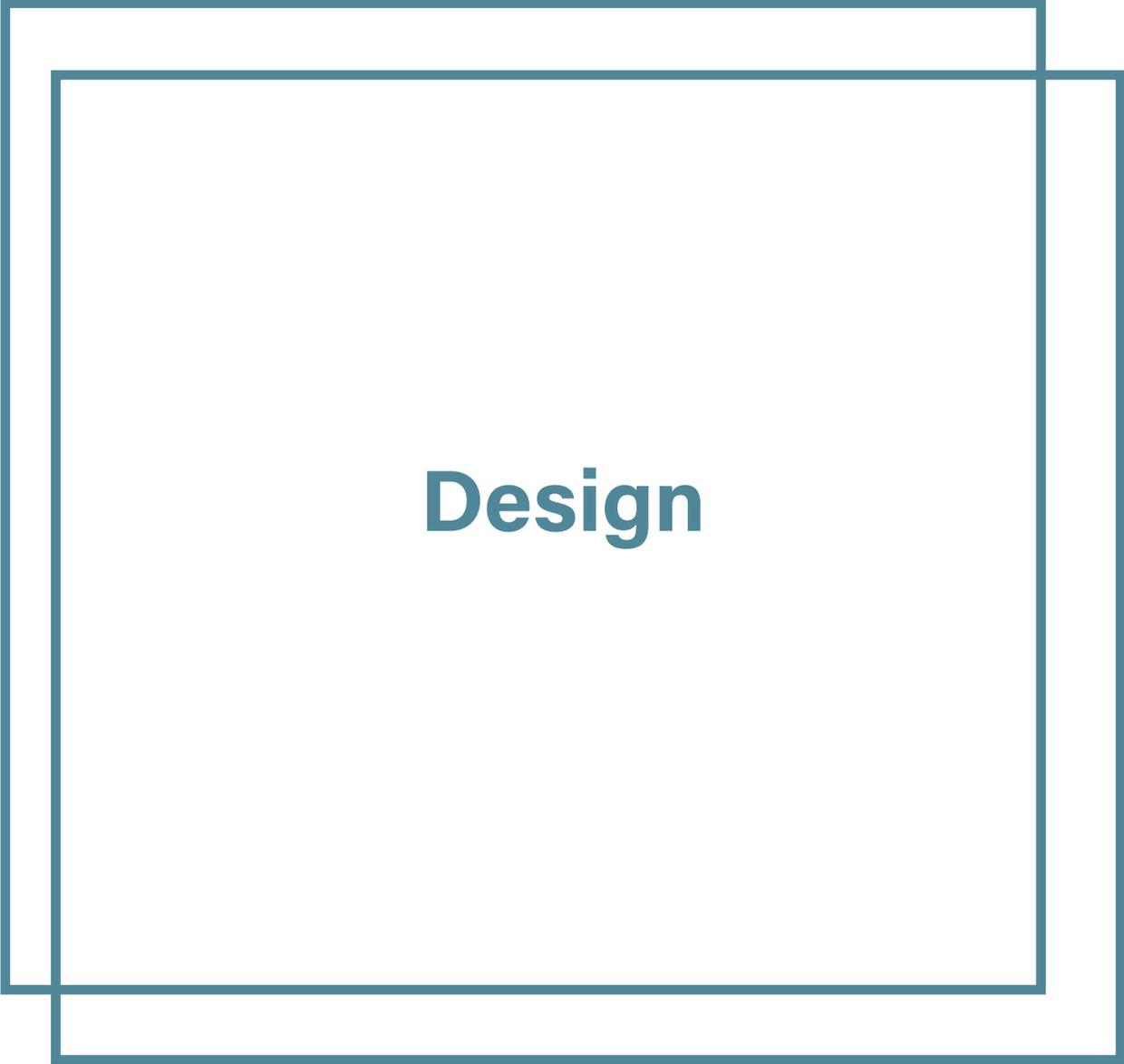
Source: Author

Diversity Patterns

Compared to boys, especially girls aged 9-12 do not spend as much time in parks and on playgrounds (WPS Prague, 2017). That is because usually parks and playgrounds only facilitate sports such as basketball or football, that take place in single large open spaces (3b). Girls and women generally like more secluded spaces (3e), where they don't have to compete with boys for space (Whyte, 1980; Perez, 2017). Footpaths that have a clear routing concept and that are in direct line of sight to the streets and apartment

buildings encourage them to linger because of their sense of security (3d) (Municipality of Vienna, 2015).

Since public space should accommodate activities that are interesting to all groups (3m).

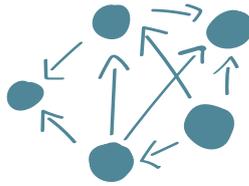


Design

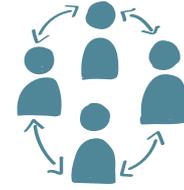
Design goals



There is a safe space for everybody



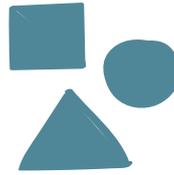
Part of a strong coherent network



People support each other and are looked after



The neighborhood is clean and well maintained



Diverse functions within the neighborhood



Public space is accommodating



High sense of safety



Accessible streets



Everybody has a place within the neighborhood

Image 134: Design goals Beverwaard - Source: *Author*

Design Goals

The design of Beverwaard, which will be presented in this chapter, is an example of how the strategic framework and patterns can be applied in a ‘real’ design case. Therefore, the design goals are a direct translation of the strategic framework and the patterns that are correlated with the framework.

It is important to understand that the planning and designing of gender inclusive space is very complex and interrelated on multiple scales of intervention. That is why some goals (and patterns) are used more often than others, on different scales.

Most research that has been performed for designing the framework was based on a neighborhood level. Therefore, there was no opportunity to analyze and interview people in detail about the zoomed-in spaces. Thus, some design decisions have been made based on assumptions. For example, a new design was made for the courtyards based on the assumption that it is fruitful for mothers (and fathers) to have a playground nearby, such that they can watch their kids from the house. Currently, courtyards are not used because of bad maintenance. In the case of a real design, this assumption should be checked and verified with inhabitants.

Scales

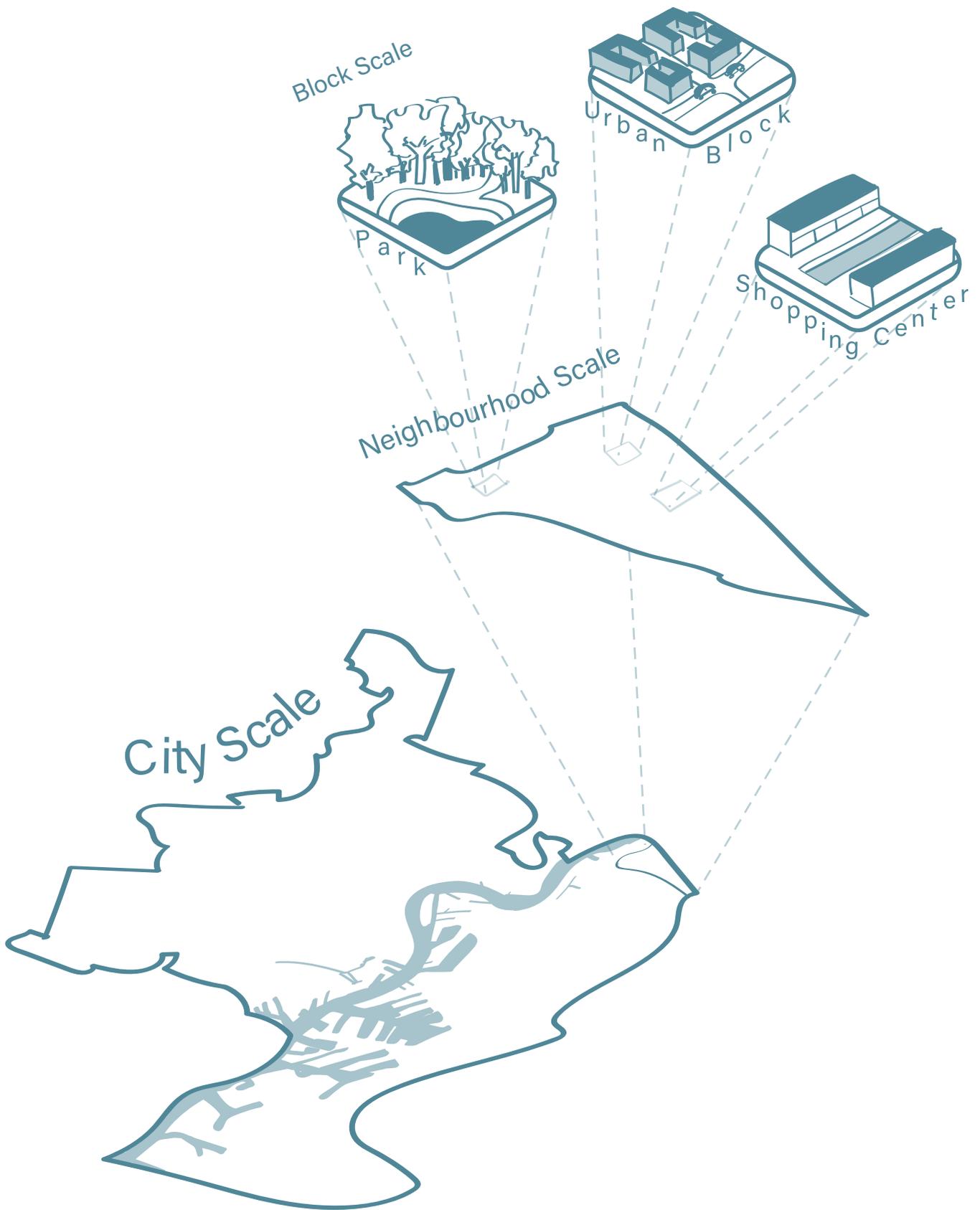


Image 135: Different design scales - Source: Author

Existing Situation



Image 136: - Source: *Elling & Ginneken, 2016*

The City

Public transport is orientated towards the city center while Rotterdam South is a more important place for people from Beverwaard, as this is the place where they go to the market or do some shopping. However, the tram doesn't bring you directly to Zuidplein; you would have to transfer twice.

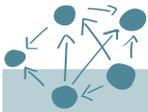
It will take quite some time to travel anywhere from Beverwaard, because transferring to a fast transportation mode (like the train or the metro) is only possible after either transferring from the bus or by taking a 40-minute tram ride, to arrive at the metro stop. The only place that is easily accessible

by tram is Keijzerswaard, which is an important connection to maintain.

On the edge of Beverwaard, there is already a transportation HUB: there is a park&ride, a bus and tram stop and some bike racks. However, the bike racks are placed at a location without a bike path and the bus stops are 200 meters apart from each other on the opposite side of the road.

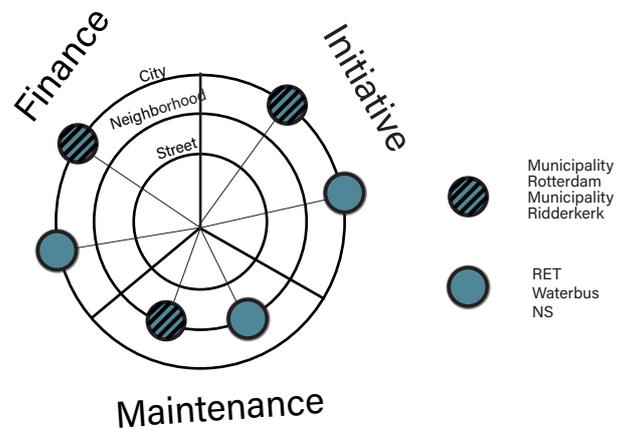
The water bus only stops on the opposite side of the river (Stormpolder). This could be an opportunity for increasing public mobility.

Spatial Interventions & actors



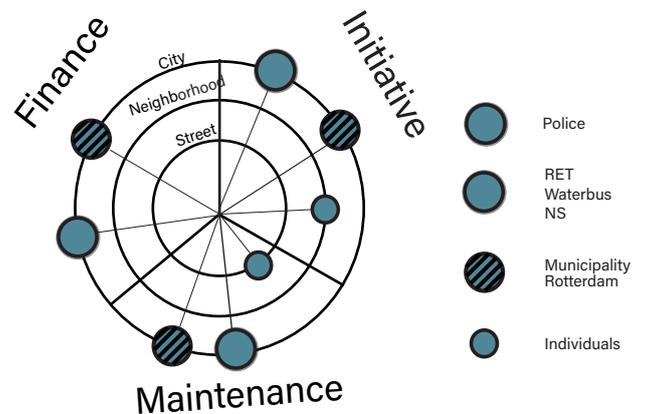
Part of a strong coherent network

- 1) Create different transportation HUBs that facilitate easy transfer between different modes of transport.
- 2) Re-route the current tram 23 to Rotterdam-South instead of Rotterdam Central.
- 3) Create an extra transportation option over water (water bus).
- 4) Increase flexibility in time schedules for public transportation.
- 5) Improve bike accessibility toward IJsselmonde - Rotterdam.



High sense of safety

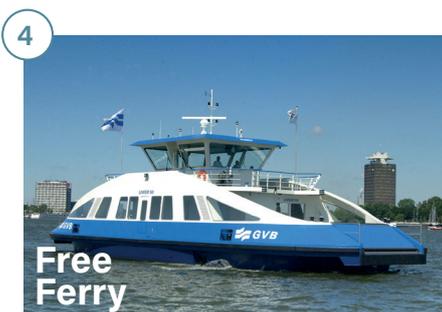
- 1) Create a high level of safety at the transfer HUBs.
- 2) Ensure that routes towards the HUBs are experienced as safe.



Vision



Image 137: Vision new public transportation connection- Source: Author



Source: Multiple, see bibliography images



Image 138: Vision new public transportation connection bird eye view- Source: *Author*

Existing Situation

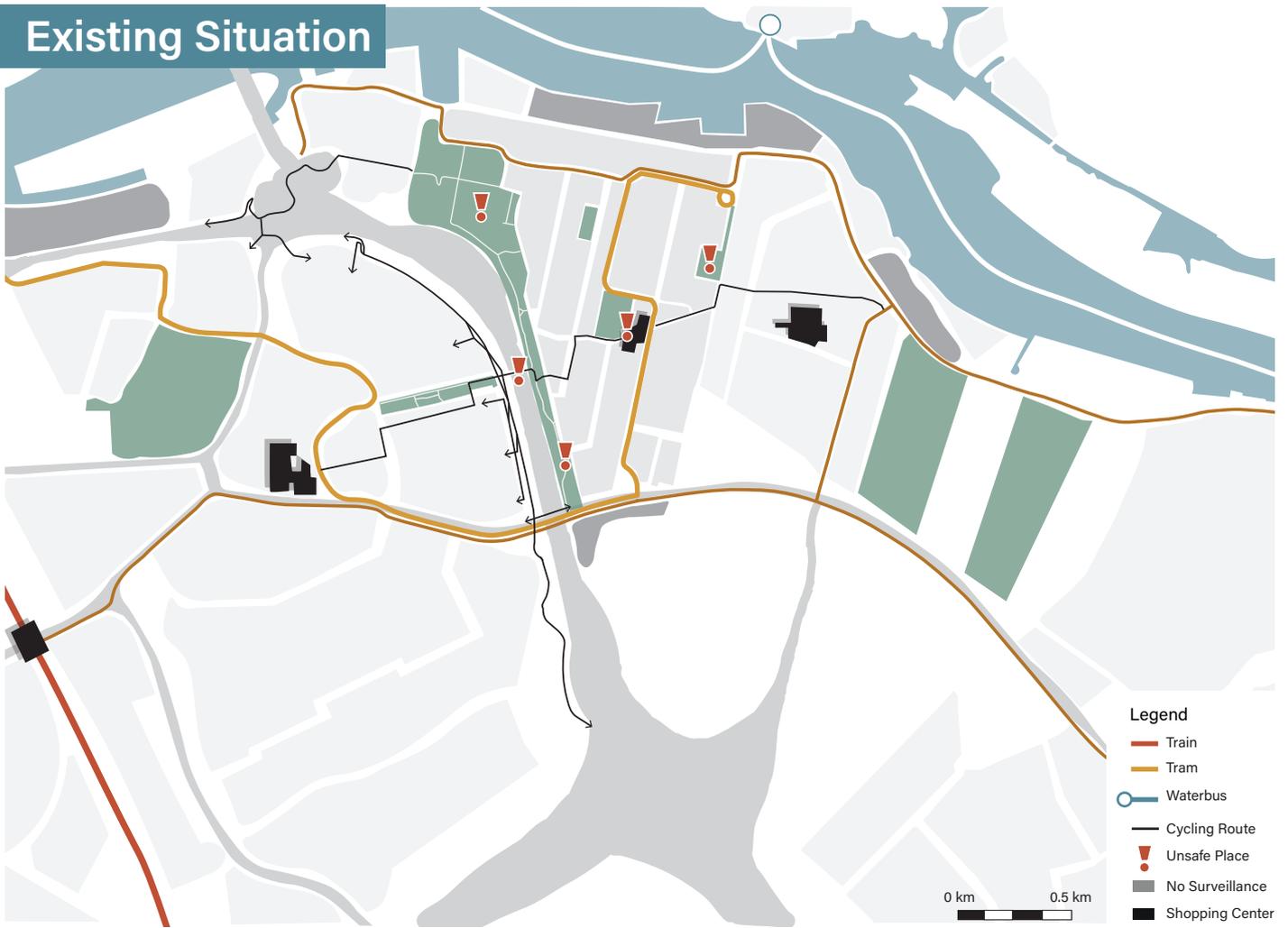


Image 139: Accessibility and safety- Source: Author

The Neighborhood

Beverwaard is a very walkable and bikeable neighborhood. However, its connection with the rest of Rotterdam is hindered by the highway and the river. The bike passages that are present are either not very attractive routes, because they lead through a park that is perceived as unsafe, are not the fastest route or are located next to a very busy motorway. Beverwaard is well connected to the highway since it is positioned right next to the highway.

There is one cycling bridge that crosses the highway. Since there is a noise barrier, one either has to climb up stairs or take the longer route by

cycling downwards. The connection between Bolnes (a village on the right side of Beverwaard) and Ridderkerk is way better for pedestrians and cyclists. There are regular buses that run towards Bolnes and Ridderkerk.

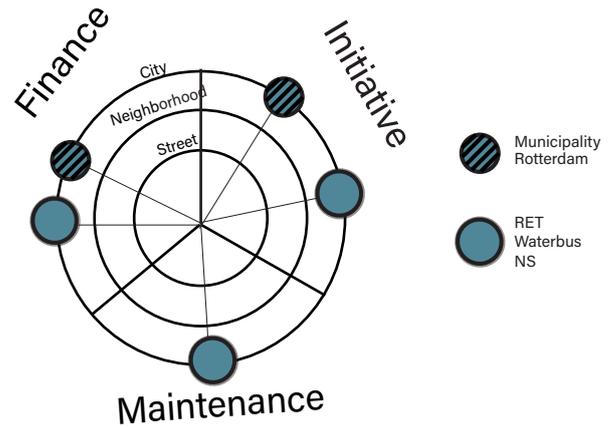
Next to the park, other places like the shopping center, multiple playgrounds and the park near the shopping center were experienced as unsafe. The reason was in most cases loiterers, lack of street lights or bad maintenance. The occurrence of multiple stabbing incidents resulted in a general higher level of fear among the inhabitants.

Spatial Interventions & actors



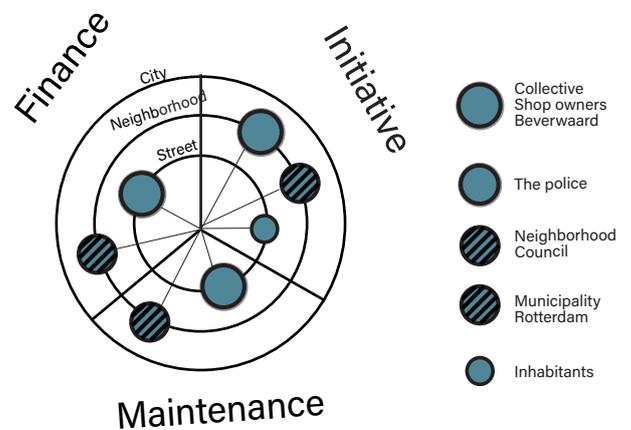
Part of a strong coherent network

- 1) Create a fine-meshed cycling (and pedestrian) network, by adding missing cycling infrastructure
- 2) Create new public transport links over water
- 3) Re-route the current slow public transport so that it connects to more (different types of) HUBs



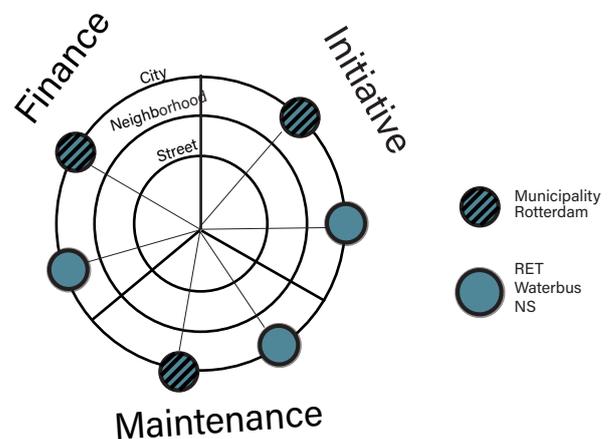
High sense of safety

- 1) Add activities in the shopping center and the parks
- 2) Increase visibility in parks, alleys, playgrounds and other places that are marked as unsafe
- 3) Increase territoriality, thereby improving the image of the street



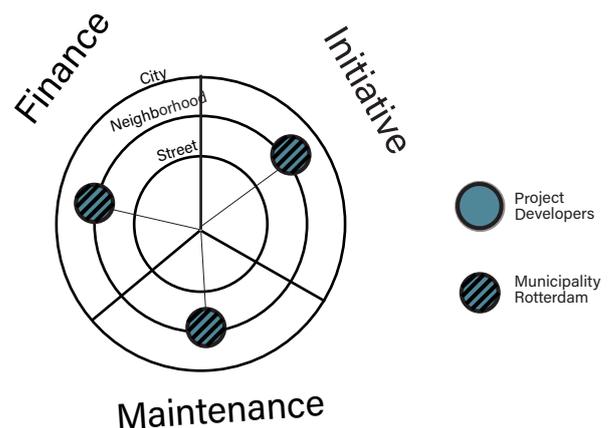
Accessible streets

- 1) The streets towards the shopping center and transportation hub should be accessible to all
- 2) The fine-meshed cycle and pedestrian network should be accessible to all



Diverse functions within the neighborhood

- 1) Stimulate diversification of functions near the new transportation HUB (waterbus, bus and tram)



Vision

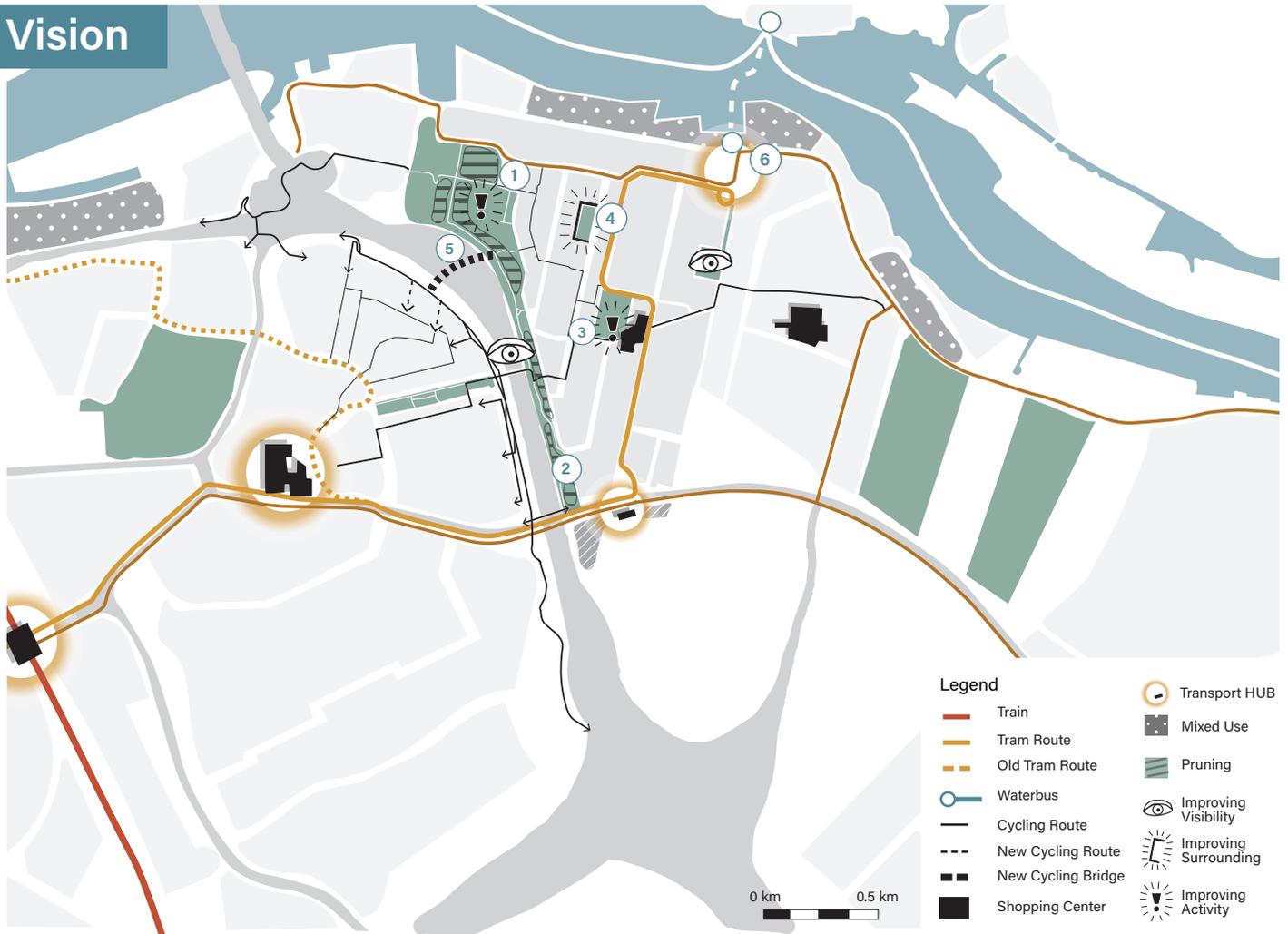
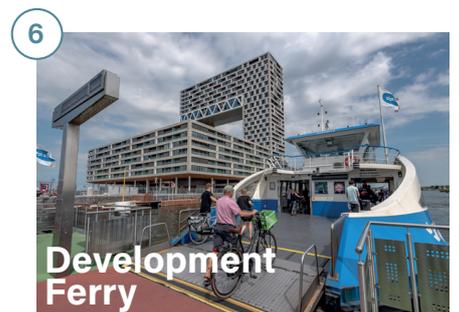
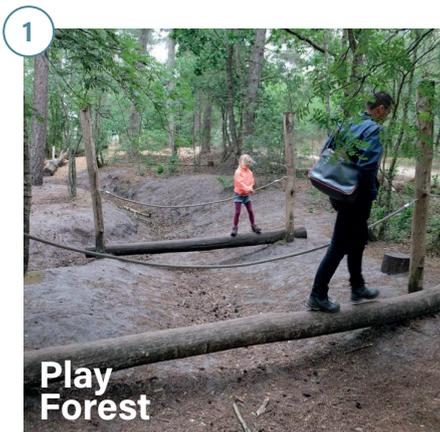


Image 140: Vision accessibility and Safety- Source: Author



Source: Multiple, see bibliography images

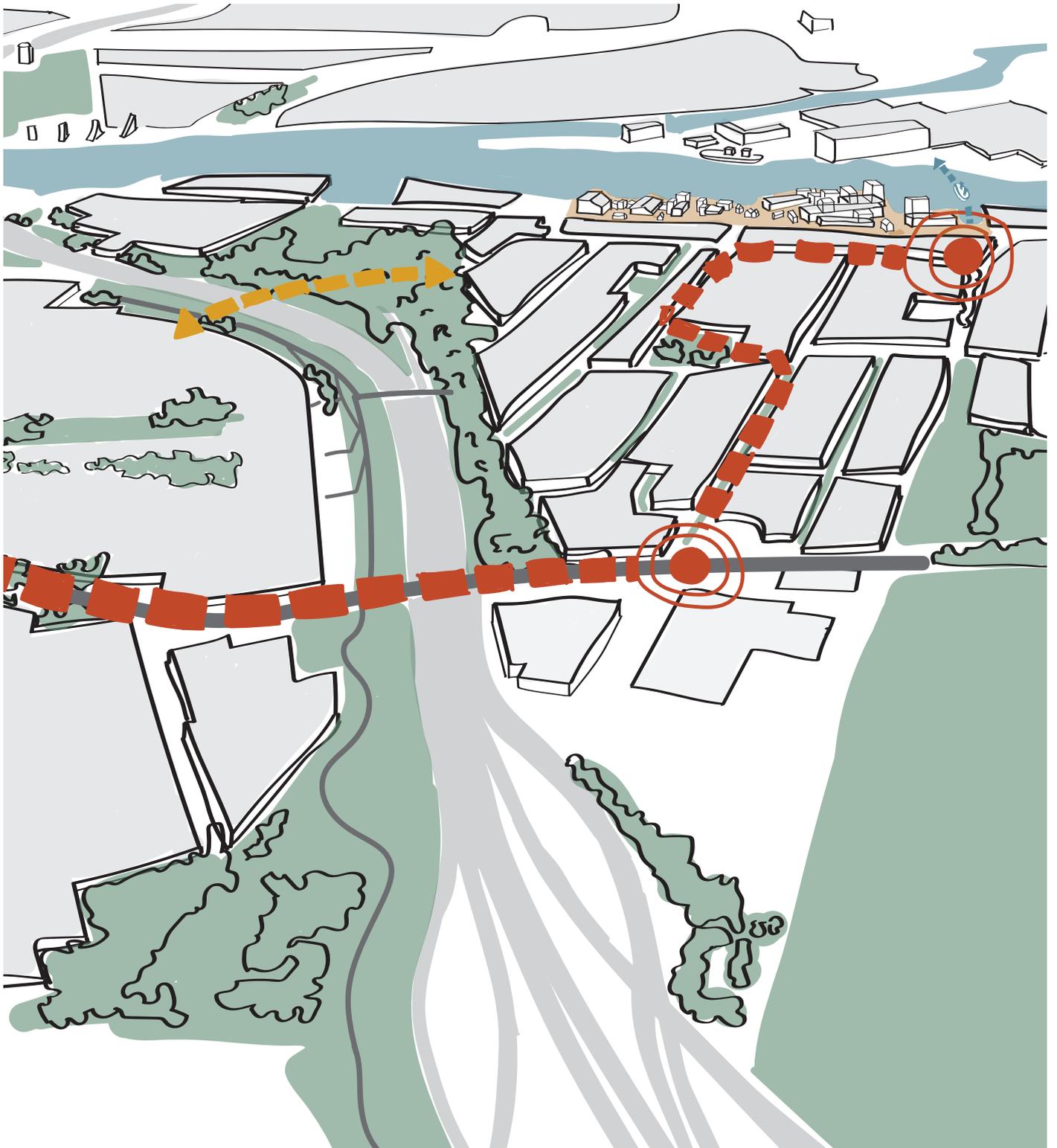


Image 141: Vision bird eye view- Source: *Author*

Existing Situation



Image 142: Diversity and inclusivity- Source: *Author*

The Neighborhood

Beverwaard was built as an expansion neighborhood in 1978 and it was designed for families that wanted more space and peace. Therefore, most of the current houses are single-family homes. There is one shopping center and there are some other functions, like daycare, a dentist, social organizations and a nail salon scattered across the neighborhood. The functions within the shopping center are mixed and vacancy isn't a big problem, only one shop is vacant.

While the planners of Beverwaard had ambitions for a sport cluster in the tip of Beverwaard, this was never

realized. Therefore sports are scattered around the area. There is a soccer and tennis club in Bolnes, a more extended sport cluster in Ridderkerk and Groot-Ijsselmonde and some sport activities in the community center and the primary school.

The communal center is very important for the women in Beverwaard. It is a place where they meet, have activities and can talk. While the building has been renovated, it still is very shabby (fenced-off stairs). There is too much space ever since other organizations have left and the rooms are not very cozy.

Spatial Interventions & actors



Public space is accommodating

- 1) Strengthen the currently existing sports cluster by adding more diverse sports to it
- 2) In parks (and playgrounds) facilitate activities that are interesting for all ages and that can be used at different times during the day
- 3) Place public toilets at places where people are likely to stay for a longer time, like parks or shopping centers.



Diverse functions within the neighborhood

- 1) Diversify housing typologies by renovating and adding for example studios, communal houses, or multigenerational houses to the current stock of mainly single-family houses.



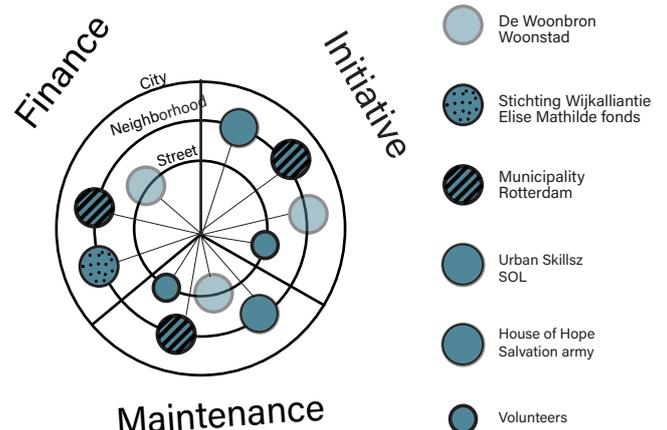
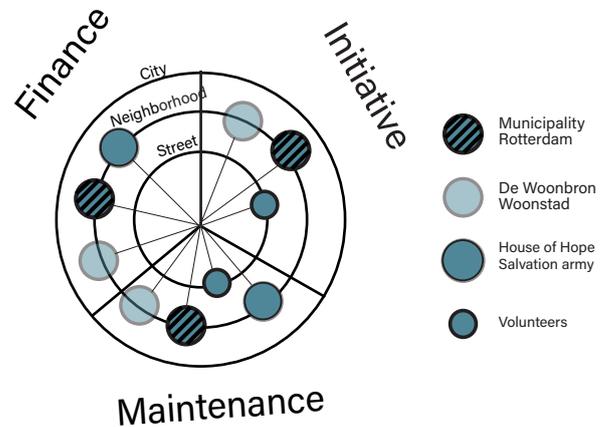
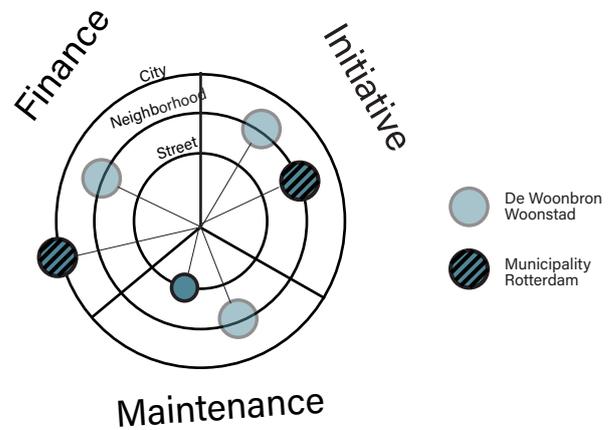
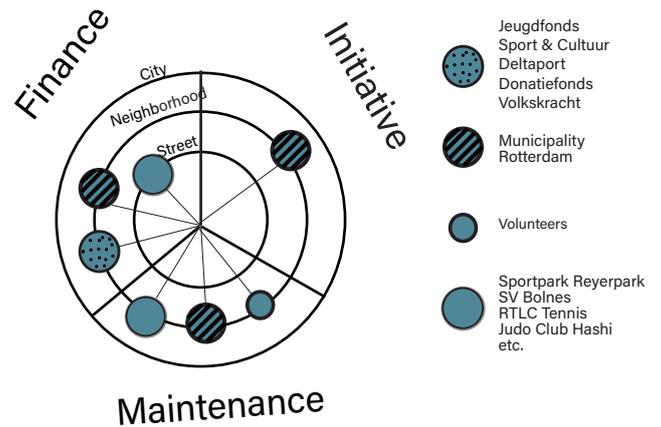
People support and look after each other

- 1) Increase the amount of high quality meeting places
- 2) Give people a space to initiate and start their own activity



Everybody has a place within the neighborhood

- 1) Develop meeting places within the courtyards and at the small squares
- 2) Improve the facilities of social organizations like the salvation army, house of Hope and the communal building



Vision

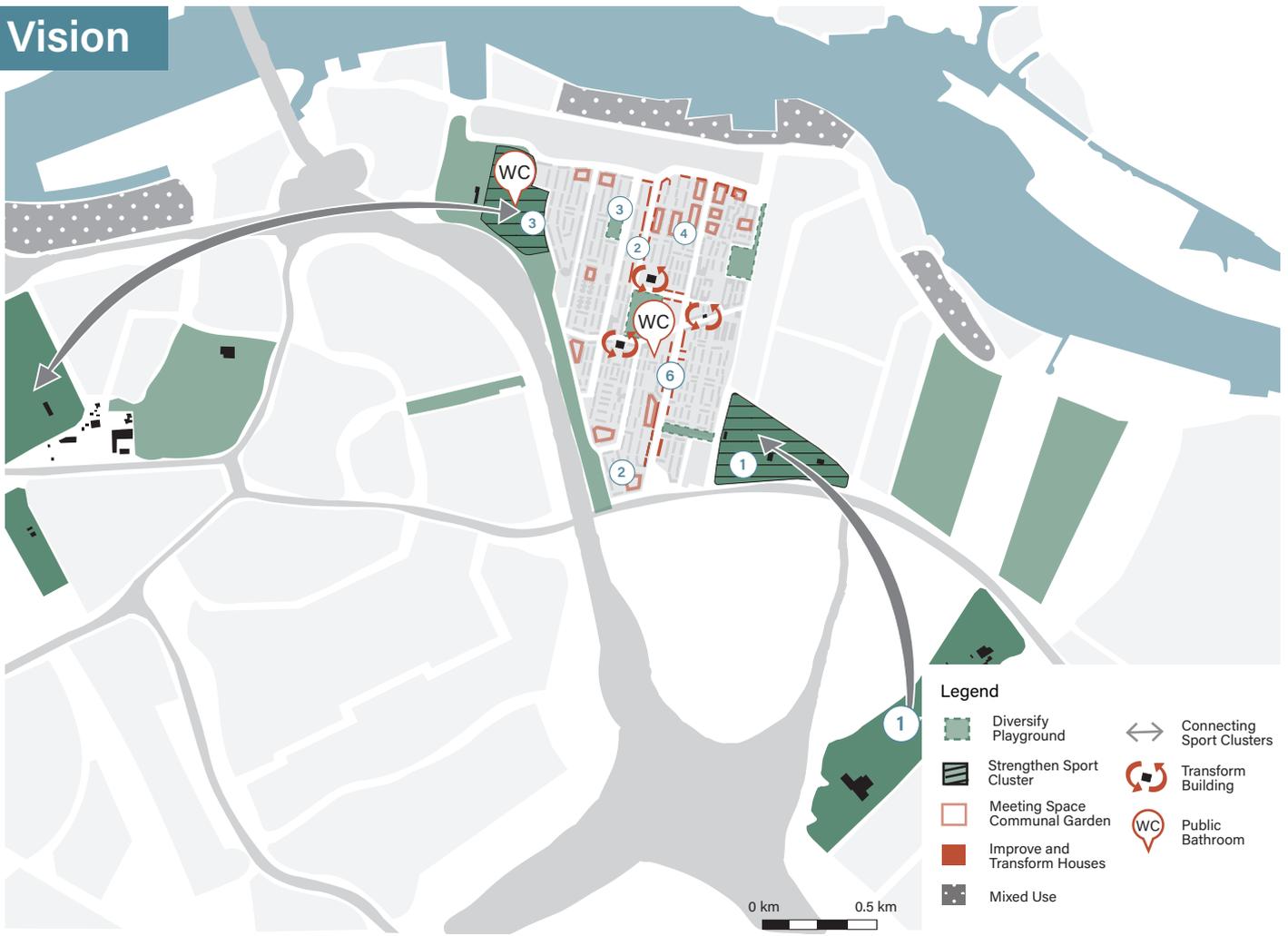
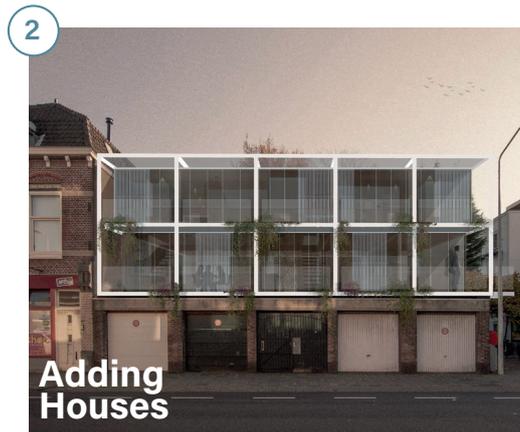
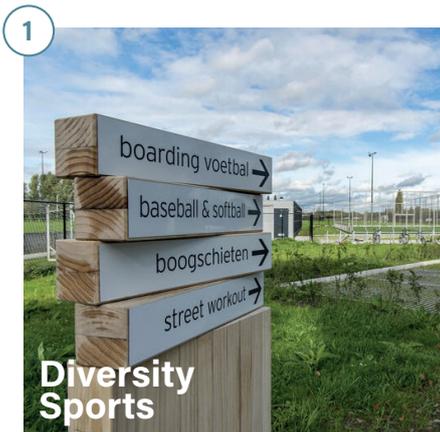


Image 143: Vision diversity and inclusivity- Source: Author



Source: Multiple, see bibliography images



Image 144: Vision diversity and inclusivity bird eye view- Source: Author

Existing Situation



Image 145: The park, current situation - Source: Author

The Park

The park is experienced by many as pleasant, while for others it is seen as more problematic. These problems are a lack of diverse activities and sports and a lack of safety at certain spots.

Currently, there are only male-oriented activities like soccer, basketball, skateboarding and strength training devices in the park. All activities are also more attractive for 'older kids' (6-18).

Next to that, they are nearly all clustered in the same spot. The skate park and basketball field are well-lit, but the soccer field isn't. There is a

playground in the park that has more variety, but it is a private playground, so you have to pay to get access.

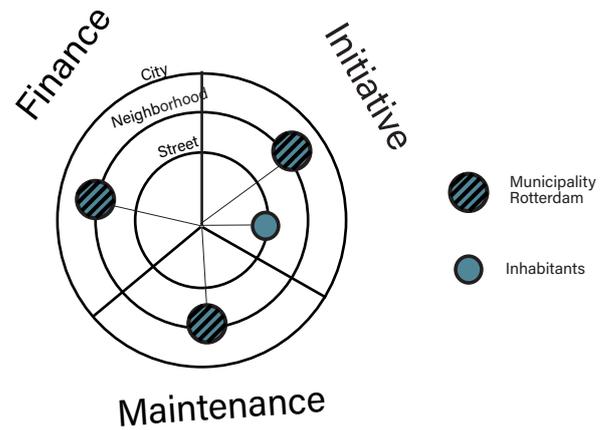
The cycling paths that go through the park were experienced as unsafe. Namely, the view is totally blocked on both sides of the road by trees and bushes. While the other big cycling path has activities alongside it, this cycling path is isolated from both footpaths and activities. The cycling paths are well lit, however, the footpaths are not. The footpaths follow the strict grid of the ditches and there are no small paths.

Spatial Interventions & actors



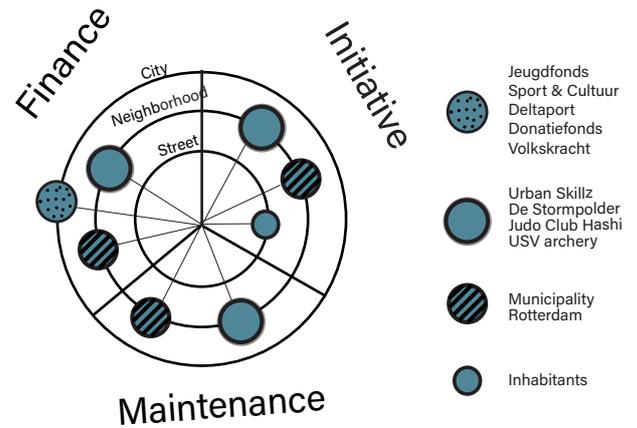
High sense of safety

- 1) Spread out activities more throughout the park
- 2) Add more footpaths through parts of the park
- 3) Improve lighting of footpaths and activity areas



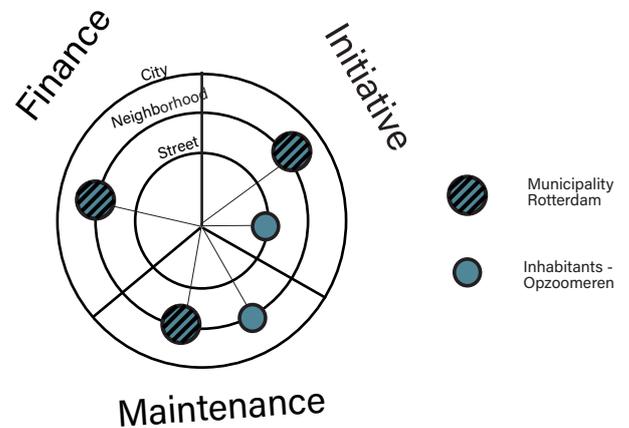
Public space is accommodating

- 1) Facilitate different kinds of sports.
- 2) Facilitate activities that are interesting for all ages, that can be used at different times.
- 3) Create lingering footpaths within the current existing grid.
- 4) Place benches near (the new) activities
- 5) Place public toilets in the park



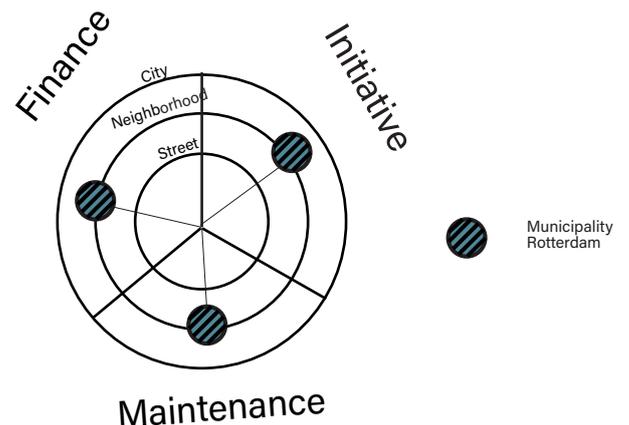
The neighborhood is clean and well maintained

- 1) Decrease the density of bushes and trees in the park
- 2) Place trashcans at places where people often come together and regularly clean them
- 3) Have a team regularly check and clean the park



Part of a strong coherent network

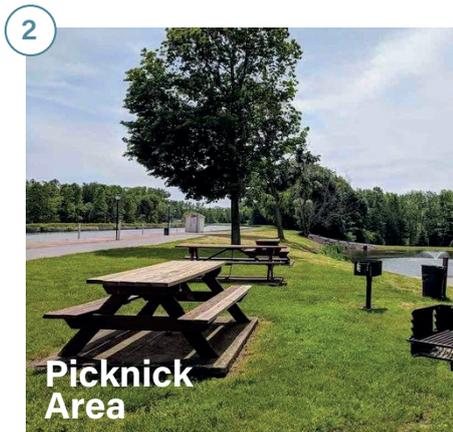
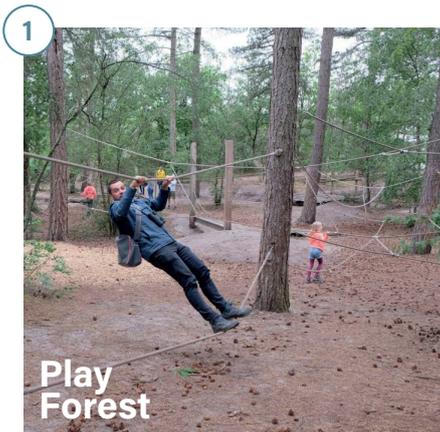
- 1) Create both "fast paths" (cycling) through the park and more recreational "slow paths" (jogging and walking).



Design



Image 146: The park, new design- Source: *Author*



Source: *Multiple, see bibliography images*

Impressions



Source: Author

Existing Situation

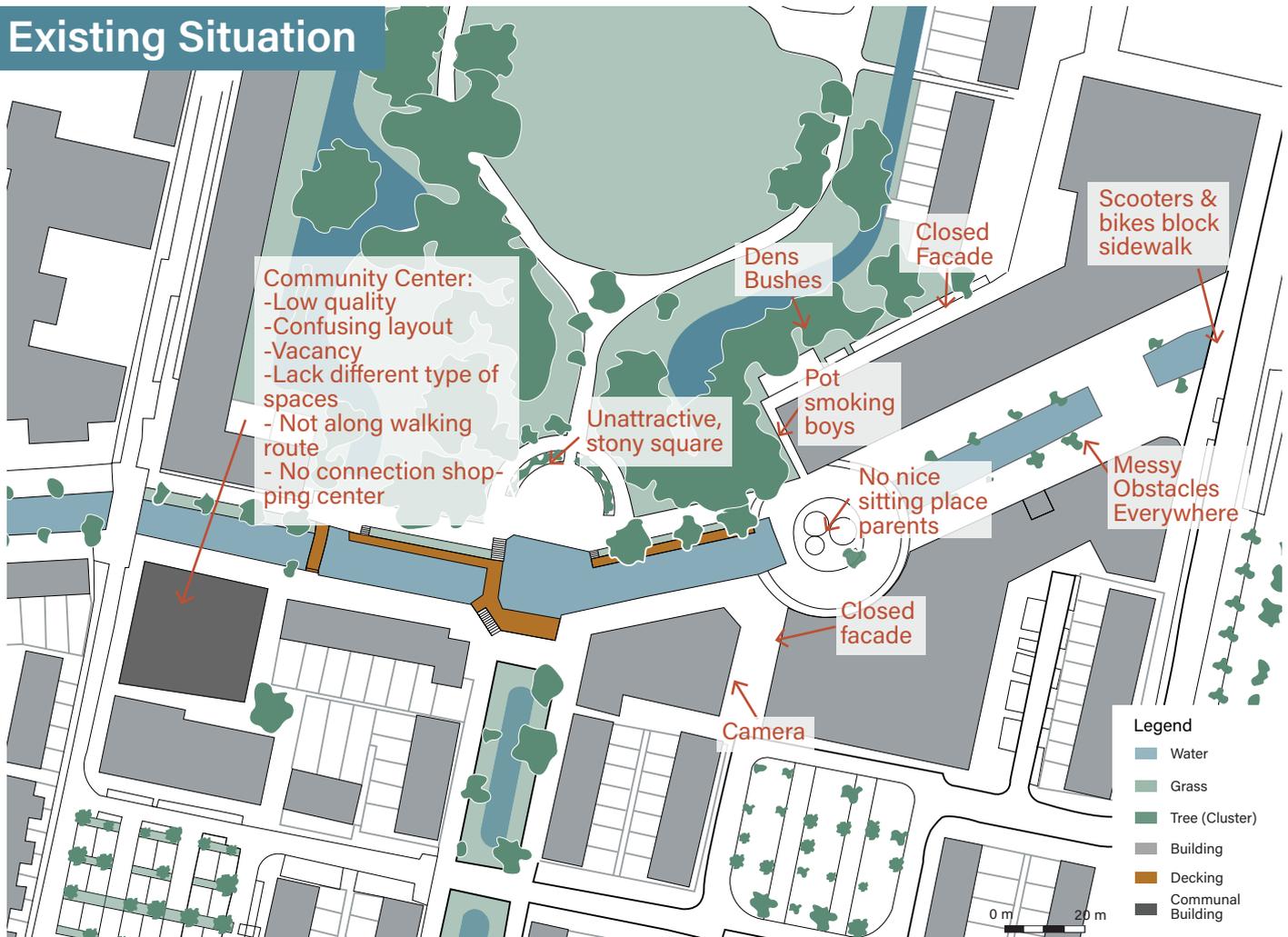


Image 147: The shopping center - Source: Author

The Shopping Center

The shopping center lies in the center of the neighborhood and is used by all inhabitants. However, multiple observations that were done during the day suggested that women are the main users.

However, the shopping center lacks multiple qualities. First of all, there is a shortage of high-quality sitting places. Currently, the benches that are present are placed in unattractive spots, like a stoney square or along the shopping streets between some bushes. Next to that, many spots in and around the shopping center are considered unsafe. They are used by groups of men, have

no social surveillance and are highly protected by multiple cameras, warning signs and barbed wire.

The communal center, placed on the outskirts of the shopping center, has been renovated recently. However, the building still is outdated and the layout is extremely confusing. Many spaces within the building are vacant because organizations moved out and the spaces cannot be used for another purpose. The communal center is used frequently and appreciated by many women.

Spatial Interventions & actors



There is a safe space for everybody

- 1) The community center facilitates the diverse needs of people. It should provide privacy and intimacy without losing its open character.



Diverse functions within the neighborhood

- 1) Diversify functions that are possible within the community center (library, dance studio, kitchen, etc.)
- 2) Stimulate different functions in shops, like education, sport or leisure in case of vacancy
- 3) Improve the concept of the shopping center as a playground by making it more comfortable for parents to stay and children to play



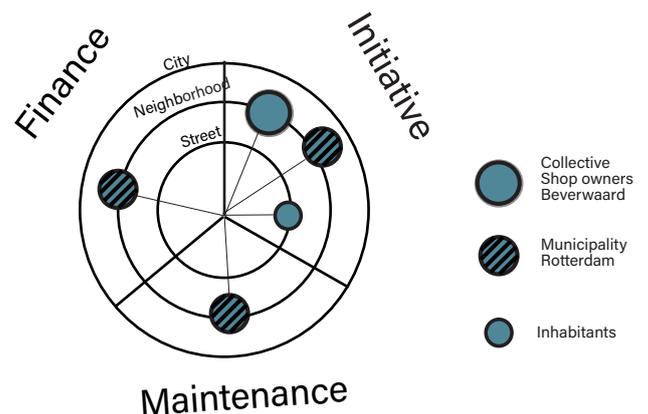
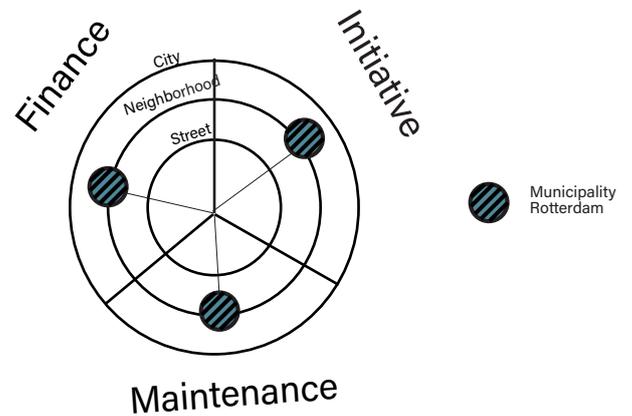
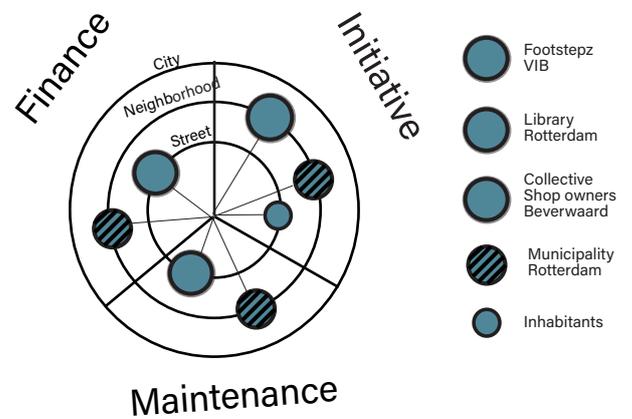
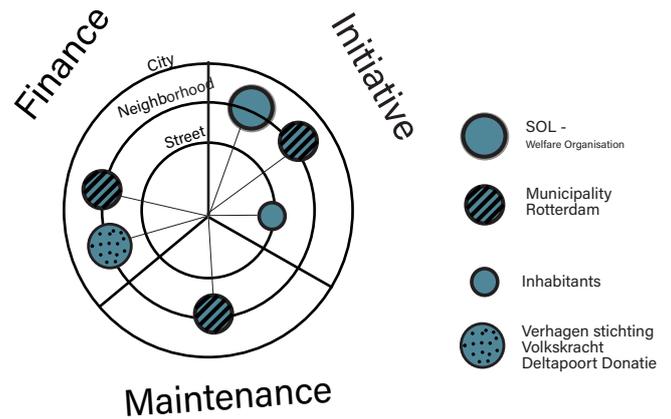
Accessible streets

- 1) Prevent parking of scooters and bikes on the pavement by making specific parking areas
- 2) Set rules about where shop owners are allowed to stall their goods.



High sense of safety

- 1) Decrease the density of bushes on the edge of the park
- 2) Create a terrace zone surrounding the central square for more social surveillance
- 3) Increase usage alleys, by widening and making them part of a larger network



Design

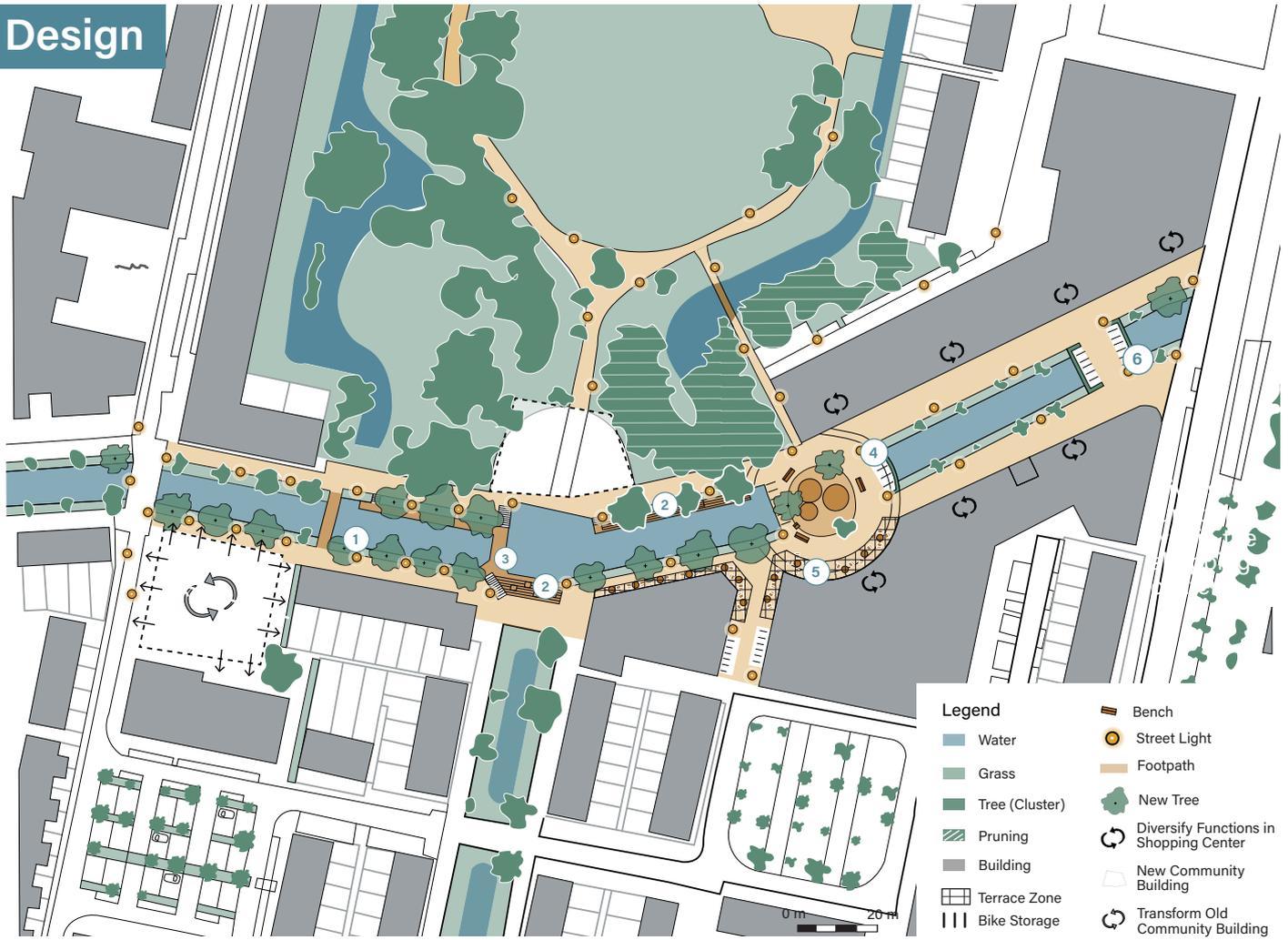
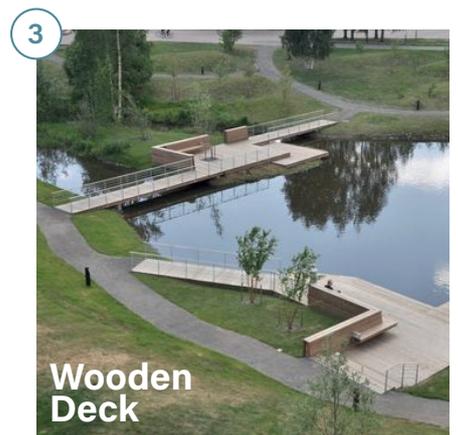
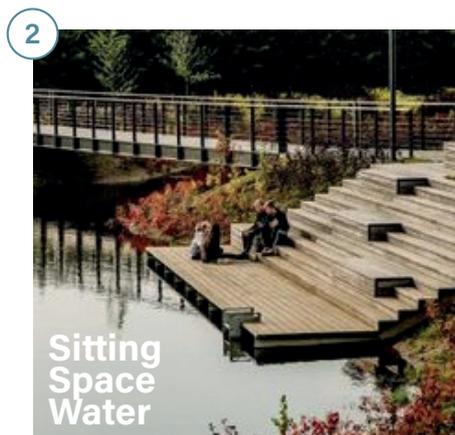


Image 148: The shopping center, new design - Source: Author



Source: Multiple, see bibliography images

Impressions



Source: Author

Existing Situation

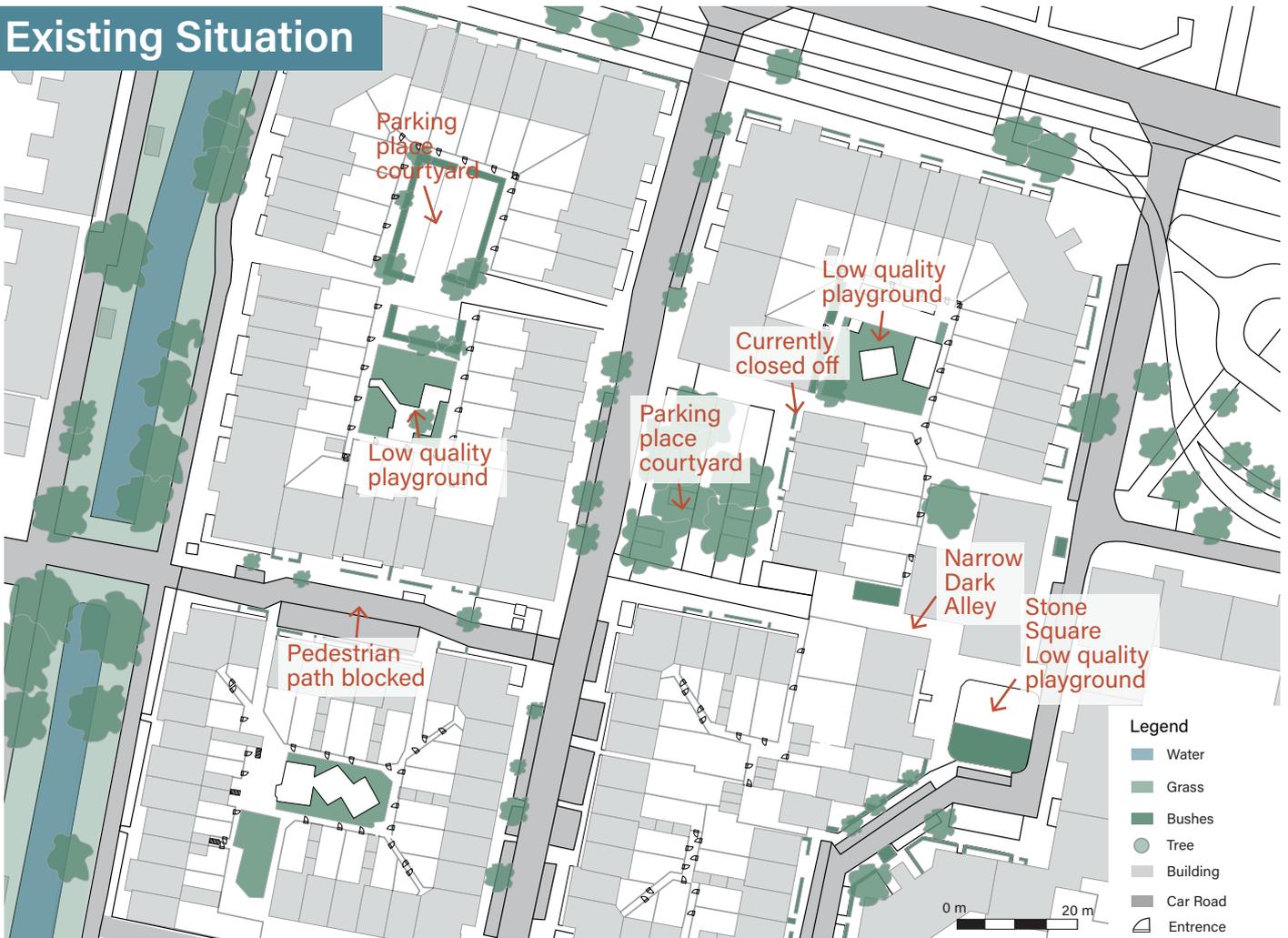


Image 149: The closed blockhouses - Source: Author

The Urban Block

The original plan of the designers was realized on the North-East side of Beverwaard, the location for this design. This original plan included many communal courtyards, probably with the idea that people would have a hedge and would look directly into the communal garden. Currently, there are no hedges but only fences. The communal "garden" is more similar to a desolated small and stoney playground than to a garden. The play elements are mostly for small children and lack diversity in usage. The alleys leading to the communal gardens are dark and badly maintained.

The side streets are a woonerf, with no straight walking path since there are obstacles (trees, car parking, posts, trash bins and slopes) all along the road.

There is one small square in this part of Beverwaard. Along this square are three social organizations, that could use the square for some of their activities. However, the square is currently taken over by bushes and the space that is left only consists of stones and two small play elements.

Spatial Interventions & actors



High sense of safety

- 1) Increase visibility of alleys and courtyards by adding street lights
- 2) Improve the quality and therefore the usage of the alleys and courtyards



Everybody has a place within the neighborhood

- 1) Develop meeting places within the courtyards and at the small squares
- 2) Improve the facilities of the Women's shelter and the Salvation Army to make them part of the neighborhood.



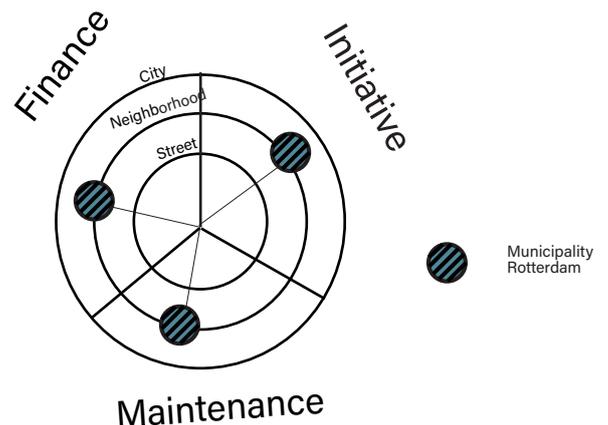
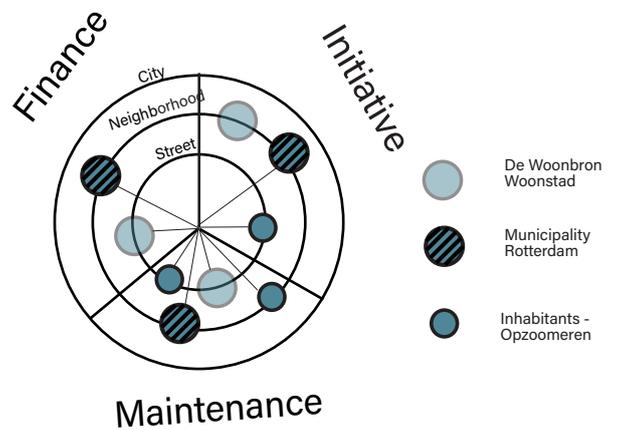
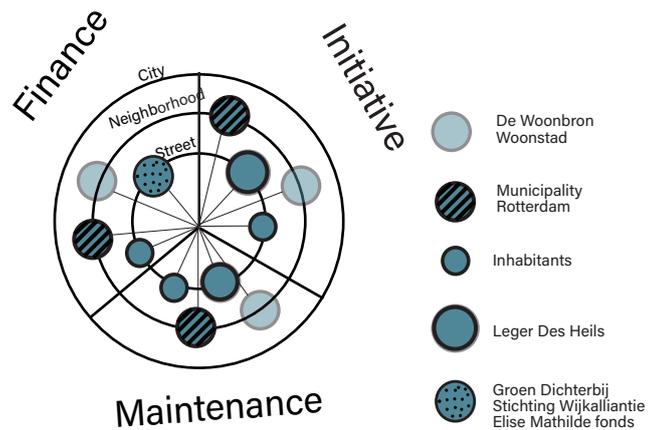
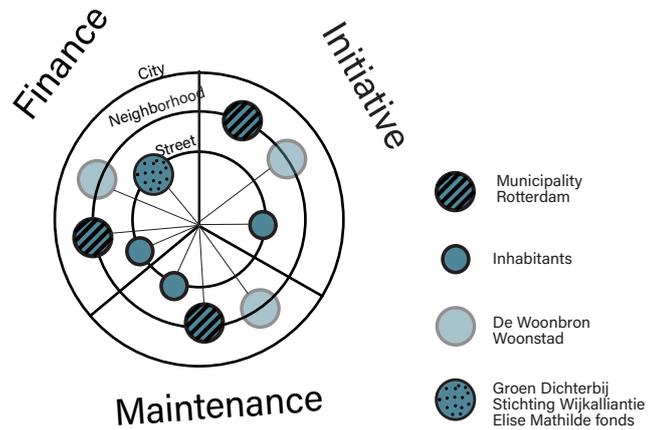
The neighborhood is clean and well maintained

- 1) Increase maintenance of trees, bushes, and grass within courtyards and along sidewalks
- 2) Decrease misplacing trash



Accessible streets

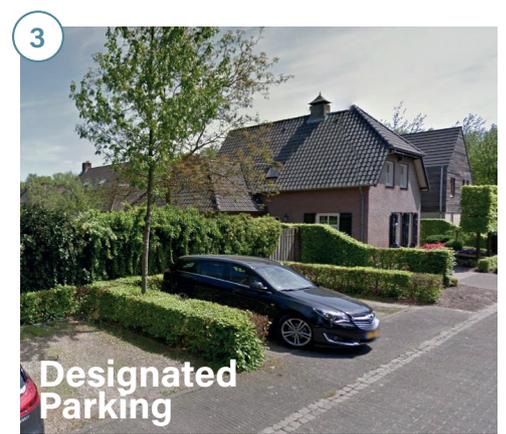
- 1) Remove obstacles from pedestrian walkways
- 2) Ensure the safety of pedestrians and cyclists
- 3) Create designated places to place cars, bikes and scooters
- 4) Create space for trees



Design



Image 150: The closed blockhouses - Source: Author



Source: Multiple, see bibliography images

Impressions





Conclusion & Reflection

Conclusion

This thesis focused on the following main research question: how could a strategic planning and design framework improve the gender inclusiveness of public spaces in the Netherlands? In order to answer this research question, multiple sub-questions were formulated, each answering a part of the main question.

RQ1) What shapes gendered (exclusive) public space? What are its characteristics?

Gendered space is foremost shaped by our society. Society produces and imposes certain gender norms and values on us, individuals. They keep the system in place. These norms and values change slowly.

Planners and designers are influenced by these norms and values and therefore have a certain bias in their designs and plans. But these norms and values also affect our behavior, for example our acceptance of violence against women working part-time to take care of the children, and so on. Our behavior is part of the reason why space is experienced as gendered or exclusive. The characteristics of gendered exclusive space are too many to sum up in a short text, but can be found in the corresponding pattern book. However the characteristics can be divided into three categories: unsafe, unaccessible and exclusive public space.

RQ2) How does gender exclusive public space manifest itself through spatial planning and design?

Exclusive public space is manifested through spatial planning and design. As said before, planners and designers are no "neutral entity". For example, they are influenced by their education and the predominant ideas of that time. When during their education there are no female representatives and the only theories that are discussed are written by men, it leads to a certain bias or at least to a gap in knowledge about certain experiences. Designers and planners can be limited by, for example, their client, the location or the economy.

In Beverwaard the designers were aware of certain issues, such as "the boredom of the housewives in mono-functional neighborhoods" or the importance of communal spaces for social cohesion.

However, certain limitations such as the housing crisis, the isolated location, predominant ideas on woonerfs and the brief that nearly the whole neighborhood had to be social housing resulted in an unsafe, inaccessible and exclusive neighborhood.

RQ3) How would a strategic framework look that facilitates a better understanding of gender equal public spaces by planners and designers in the Netherlands?

The strategic framework is supposed to be a starting point for planners and designers on how to design more gender inclusive public spaces. Each category is associated with a set of patterns (see pattern book) which either derive from literature, field research, spatial analysis or interviews and are specific to Dutch urban neighborhoods.

There are three main categories: safety, inclusivity and accessibility. Each category is then split up into three subcategories of which some are more important than others. The importance is related to the amount of relation (dotted lines going to that category) the category has with other categories. The ones that have more connections are therefore slightly more important and have an extra colored edge and a darker color.

The framework is bordered by the different phases of the planning project that were mentioned before in the chapter on community capacity. Gender inclusive planning and design namely is not only about designing and planning according to these patterns. It is also about how and in what way, within the whole plan and design process, gender (relations) are included and assessed.

Reflection

1) What is the relation between your graduation project topic, your master track (Urbanism), and your master programme (MSc AUBS)?

In Urbanism we look at the desirable and possible developments of existing and new urban areas, therefore including public space. During research, we don't only look at the space, but also at what the space encompasses and how it influences ecology, economy, culture, social issues, geography and administrative-political issues. Urbanism is a study that focuses on interaction. My graduation research studies specifically the interaction between gender (norms and values) and the design and planning of public spaces in Dutch urban neighborhoods.

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

I performed different types of research (interviews, literature reviews, spatial analysis), so to just speak about how 'research' influenced my framework (and the other way around) would be short-sighted. The literature research helped me to understand past and present issues in Beverwaard. As time changed, so did the neighborhood, politics, the inhabitants, and so on. The interviews and transect walk helped me to extend my understanding of who lived in Beverwaard and what were their difficulties. It kept me grounded during the design phase. For example, when I had to make a design for the courtyards, my first impulse was to make a communal garden. However, most people have problems getting by and therefore many gardens are already badly maintained. So who is going to maintain the flower garden or kitchen garden? It is simply unrealistic. The spatial analysis were convenient for being able to make assumptions, such as finding out where social housing was located. Designing felt as doing the research all over again, since the research was mostly done on the neighborhood scale. When making the design on the smallest scale, it felt a bit like doing it all

over again but now on a smaller scale.

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

I think my methodology and used methods were mostly "appropriate", as far as I can say. This topic is complex because it is not solely rooted in space but is also in society. This made analysis of, for example, informal meeting spaces sometimes a bit intangible. However, analytically I am happy with the work I have performed. Although, because of a shortage of time, I was unable to perform observations, interviews and transect walks to the fullest extent as they could only be done a few times or with a few people. However, the observations, interviews and the transect walk I was able to do, were all very useful. I would have liked to have more interaction with the inhabitants and with the people who are already more familiar with Beverwaard. I originally had planned to have more feedback loops within the process: once with the inhabitants, to see if they agreed with my conclusions and once with planners and designers, to see how they experienced the usage of the framework. Looking back on my planning, I now can see that this was unrealistic. This research is different from research that has been done before (at the faculty of Architecture, Urbanism and the Building Sciences), because it looks at all possible "solutions" for gender inclusive design of public space, instead of focusing on only one or two themes. All these solutions are then put in a clear and easy-to-use framework, something that also hasn't been done before. My way of working could improve, for example by asking for more feedback and help from peers or friends. However, I often felt resistance to discuss my research topic, because peers didn't agree with the assumption that space is gendered. Finding arguments to convince them was not always easy, because many arguments are based on the fact that women still do more of the care and household work and many women and men I talked to said that that just wasn't the case anymore. However, it does show that

gender inequality is a topic we should talk about more within our faculty of Architecture.

Limitations

Interviews

When I performed the interviews, I explained what my research was about. This led to the fact that in some cases the interviewees answered my questions in a way they thought would like to be answered. For example, when I asked about safety, they immediately started to talk about places women felt unsafe, while this was actually not my question. Next to that, all formal interviewees were actively involved within the neighborhood, I did not speak to many inhabitants.

Transect Walk

As said before, only one transect walk has been done. This person was white, very active in the neighborhood and middle-aged, therefore this specific transect walk can produce a slightly distorted picture. As a method it is very valuable and relevant, therefore my advice for further research would be to focus on doing more transect walks with people with a different backgrounds.

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

Societal Value

“The fact is that worth is a matter of opinion, and opinion is informed by culture. And if that culture is as male-biased as ours is, it can't help but be biased against women. By default” (Perez, 2019). Societies and cultures impose norms and values on all of us that then affect our thoughts and behavior. Urban planning mirrors this social construction and affects the relationships between changes in decision making processes in urban spatial planning and their impact on the implementation of

gender-aware urban planning (Tummers, 2013). Therefore, the planning and design of public space is gendered in a way that one is not always aware of (Perez, 2019).

This is felt all through society, by mothers, gay people, working women, little children and people with a migration background. Between 2005 and 2022, the political goals in the Netherlands shifted towards privatization, decentralization and individualization, allocating more and more responsibilities towards the municipalities and therefore no longer including gender-aware guidelines in design and planning assessments (Tummers, 2013).

With gender no longer being an active issue on the planning agenda in the Netherlands, it is important to create awareness, to address the urban planning gender gap and challenge gender equality in space. Because sustainability is not deliverable without a change in the relationship between the sexes with regard to equal access to and equitable distribution of resources. Any society that dispenses on a long-term basis with part of its human resources by, for example, failing to involve these individuals in economic and political decision processes, can scarcely be called sustainable (Boccia, 2013).

Scientific Value

While this research is closely related to social studies, it does also have a strong relationship with spatial and planning studies. Currently, there are two scientific gaps in the field of gender-sensitive planning and design. Although there has been written a lot on the topic of gender inclusive planning and design, there is nearly no present-day scientific research about gender equality in public space in the Netherlands. Most of the research focuses on countries other than the Netherlands (for example in India, the United States of America or Spain), or was written more than ten years ago and therefore their relevance could be questioned.

The second gap is the lack of a coherent framework. While multiple articles provide in-depth analysis of gender inclusive planning and design and others propose a wide variety of solutions, there is a lack of coherent, overarching frameworks. Therefore, this thesis will add to the scientific discourse by providing an overarching strategic framework, based on research about current gender equalities that are present in public spaces in the Netherlands.

Ethical Reflection

Focus on Women

This research focuses on women and not on men or people from the LHBTIQ+ community. The reason for this is not that LHBTIQ+ people are not discriminated against or because they experience no violence. Nor was it because men experience no gender inequality in public spaces (masculine spaces are also a problem (van Delden, 2022)). However, I chose to focus on women because I, myself, am a woman and therefore it is easier for me to empathize and communicate with other women about their experiences. Next to that women have been more marginalized throughout most of history than men.

Bias as a woman

A bias is "the action of supporting or opposing a particular person or thing in an unfair way, because of allowing personal opinions to influence your judgment" (Bias, n.d.). When choosing my graduation topic, I chose a topic that interests me, which I am passionate about and a topic that I have a personal opinion about. Therefore, this research will reflect that in different ways. For example, I focus solely on inequality in space for women, therefore excluding specific research on masculine or queer spaces. When working with a target group, one will have to create stereotypes, which means that an extremely wide variety of lifestyles women may have, cannot be taken into consideration at all times. Next to that, inhabitants and experts also have their

own biases, they have their own specific backgrounds and opinions. Some might be experts and have a lot of specific knowledge, but may have a hard time acknowledging other perspectives than their own. Others may be inhabitants who know a lot about the specific location but have a very strong opinion. When working with other people, one should also take into account the biases they might have.

Inclusive

The goal of the study is to create a strategic framework for the designers and planners of urban spaces, in order to make the city more gender inclusive. But what does inclusivity actually mean? By adding street lights, one may increase the feeling of safety of women (and men). At the same time, studies show that old people sleep worse because of light pollution. Insects, birds and other animals are also malfunctioning because of light pollution. So, making a space more inclusive could also mean that it becomes more exclusive for others. Who has more rights to public space? Who is more important? Inclusion could also work the other way around: when one group of people is included, automatically another group of people may also be included. For example, by making the sidewalk wider, you help elderly, but also mothers and other pedestrians. Insight into the different actors is key in understanding whether or not the measure includes rather than excludes certain groups of people.

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

All the methods are transferable and so are the final strategic framework and the corresponding pattern book. The transferability of the strategic framework for the Dutch urban neighborhoods was essential in this thesis. The main goal was to provide a framework for planners and designers to use as a starting point for gender sensitive design elsewhere in the Netherlands. The design itself is very location-specific and therefore not transferable.

6) What recommendations would you give the person who would continue with this research/ thesis?

Focus on a subset of the total problem. The goal of this research was to look at all elements of gender inclusive/sensitive design and planning, I sometimes felt that I was unable to go really in-depth with the topics, especially since the time was really limited. Therefore I would recommend a future researcher or student to specialize in one subject. I also think that it would be extremely interesting to perform the same research in a rural area in the Netherlands. It would be extremely interesting to see whether the framework would look different and if the spatial experience is different.

7) To what extent do you think the results meet your expectations? Were the results surprising or were they obvious?

The results were not surprising in a way, because I did not have to start from zero. A lot of literature was already written about gender sensitive design and there were, also within our faculty, multiple thesis projects about this topic. However, the surprising part of my research was actually seeing it in my own environment and hearing it from inhabitants and experts themselves. Therefore, I do think that my results add to the already existing literature, although some results may indeed be obvious, although maybe not to everyone, unfortunately.

The image features two overlapping rectangular frames in a dark red color. The inner frame is slightly offset to the right and down from the outer frame, creating a layered effect. The word "Acknowledgment" is centered within the inner frame.

Acknowledgment

Acknowledgment

This master thesis is the result of one year of research within the domain of urban planning and design. I could not have finished this thesis without the help and support of many people.

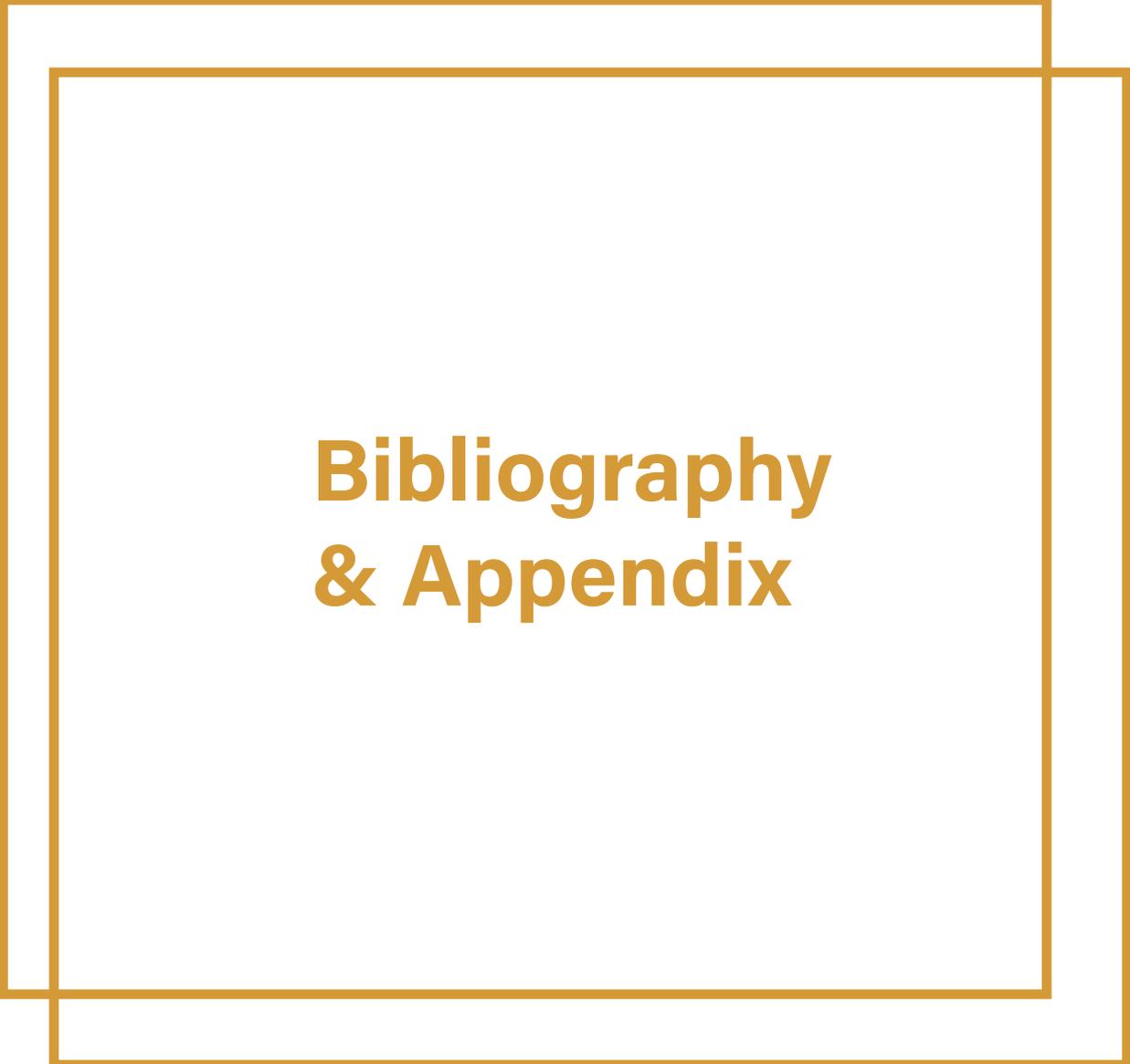
First of all, I would like to thank my mentors Reinout Kleinhans and Els Bet for their mental support and critical reflections during the graduation project. As a first mentor, Reinout guided me all through the graduation process and he helped me with reflecting on my process and methods. As a second mentor, Els inspired me with her stories, tips and example projects. Without their faith in me, this thesis would not have been possible.

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Francien Fons
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Appendix

Appendix A

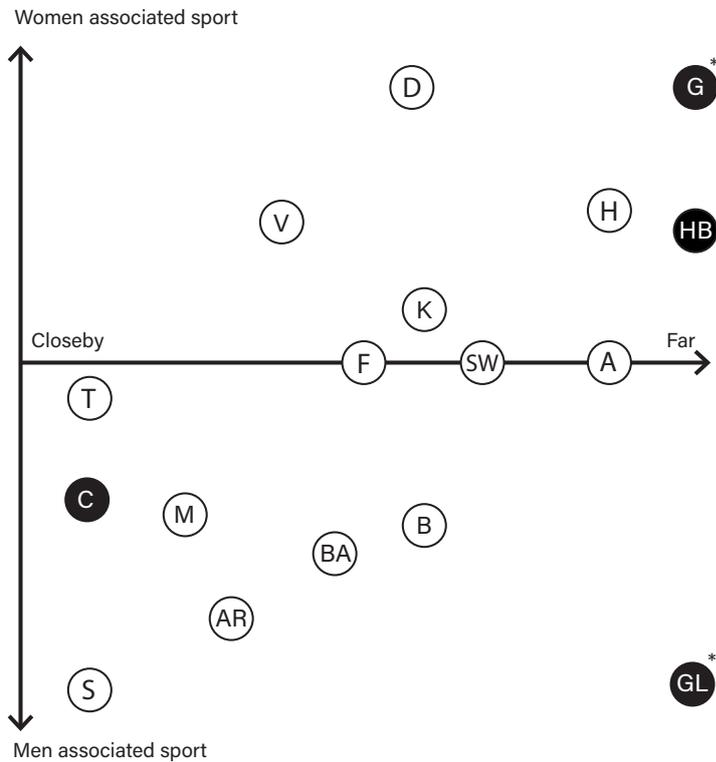


Image 58: Tram Schedual leaving at Beverwaardseweg- Source: *Elling and Ginneken, 2016*

- | | | |
|---------------------------|----------------------------|-----------------------|
| G Gymnastics | F American Football | H Field Hockey |
| C Cycling | SW Swimming | BA Basketball |
| GL Cycling | A Athletics | |
| HB Handball | M Martial Arts | |
| D Dancing | AR Archery | |
| S Soccer | B Billiard | |
| K Korfbal (Netbal) | T Tennis | |

Appendix B

Interview questions

Socialworker Beverwaard

Jeugd

- 1) Heb je altijd al in Beverwaard gewoond, of ben je hier naartoe verhuisd? Waarom zijn je ouder/ jij hier naartoe verhuisd?
- 2) Hoe heb je de wijk als kind ervaren? Speelde je vaak buiten, zo jaar waar? Wat waren je favoriete plekken?
- 3) Wie was er na school? Ging je na naschoolse opvang? Of was een van je ouders thuis?
- 4) Is er veel veranderd in de wijk sinds jouw kind tijd? Of juist niet?
- 5) Waar ging je naar de middelbare school? Hoe ging je daarnaartoe?
- 6) Deed je aan een sport?
- 7) Waar in de wijk sprak je af als tiener? Als je uit ging, hoe ging je daarnaartoe?

Huidige ervaring wijk

- 1) Ervaar jij de huidige wijk als onveilig? Waar voel je je onveilig en wanneer?
- 2) Vind je dat er veel sociale cohesie is binnen de wijk? Ken bijvoorbeeld je burens?

Girls flex

- 1) Waarom is Girls Flex opgericht? Waarom werd dit als zinvol of nodig gezien?
- 2) Hoe gaat zo'n sessie, is er een specifiek onderwerp waar jullie het over hebben? Of kunnen zij gewoon vertellen waar ze mee zitten?
- 3) Mag je een voorbeeld noemen van een probleem waar veel meiden mee te maken hebben?
- 4) Is waarom komt dit probleem/ deze problemen voor in deze wijk? Wat zijn denk je de achterliggende problemen?
- 5) Je vertelde dat je nu probeert een groep met iets oudere meiden op te zetten, waarom?
- 6) Hoe zou de wijk meer voor deze meiden kunnen betekenen? Wat missen ze nu?

Interview questions

Neighborhood Manager

- 1) Wat doet een wijknetwerker precies?
- 2) Wat voor sociaal maatschappelijke organisaties zijn er allemaal in Beverwaard?
- 3) Is er veel sociale cohesie in Beverwaard? Is die sterker binnen bepaalde groepen?
- 4) Wat zijn volgens u de problemen in de wijk?
- 5) Wat voor vrouw georiënteerde initiatieven zijn er (geweest) in Beverwaard?

Interview questions

Project leader subjective safety

- 1) Wat is precies uw functie en wat hield het veiligheidsproject in Beverwaard precies in? Was dit project gerelateerd aan het 'actieplan geweldig Beverwaard'? (Projectleider Cuneyt Zeman)
- 2) Wat waren precies de geïdentificeerde problemen en hoe zijn deze omgezet in actiepunten? Wat is het verschil ten opzichte van al de eerder gedane onderzoeken?
- 3) Is in jullie onderzoek nog specifiek gekeken naar het verschil in veiligheidsbeleving tussen mannen en vrouwen? Waarom niet?
- 4) Wat zijn volgens u de hotspots? Welke plekken worden het meest als onveilig beschouwd?
- 5) In hoeverre speelt de ruimtelijke indeling van de openbare ruimte daarin een rol?
- 6) In hoeverre wordt in de nieuwe aanpak gebruik gemaakt van het zelf georganiseerde vermogen van de bewoners? In het rapport gaat het voornamelijk over meer inzetten van politie, het aanpakken van veel plegers, etc.
- 7) Waarom worden de camera's als oplossing beschouwd? Wie bepaald of er camera's komen?

Interview questions

Security Manager Municipality Beverwaard

- 1) Wat is een accounthouder veiligheid? Wat doe je dan precies?
- 2) " stroomlijnen van de werkprocessen en diversifiëring van de dienstverlening" Wat zijn dingen waar je op let tijdens het stroomlijnen van werkprocessen? Waarom niet op gender, aangezien dit best wel een ding is als je kijkt naar veiligheid.
- 3) Wat ik miste in mijn interview met Berna was dus voornamelijk het Ruimtelijke aspect. Kunt u mij iets meer vertellen over de 'hotspots', plekken die vaak als onveilig werden genoemd?
- 4) Ik heb voornamelijk dingen gehoord over het winkelcentrum is dat niet te beperkend? Waarom ligt die focus op het winkelcentrum?
- 5) Waarom werd deze als onveilig gezien?
- 6) Ik was benieuwd naar de aanpak vanuit de gemeente voor het plaatsen van camera's. Is dit iets wat alleen in Beverwaard gebeurt? Waarom camera's? Is dit nuttig?
- 7) Hoe gaat dit project verder?

Appendix C

Oberservations Beverwaard

Location: Shopping street Beverwaard

Time: 11:45 – 12:00

Date: 07/12/2022

	Male	Female
Child		IIII I*
Young Adult	II	I
Adult	IIII IIII II	IIII IIII IIII IIII IIII
Elderly	I	II

*They were all babies, therefore I was not able to see if the baby was male or female, but they were all driven by their mothers

Observation: Most women were either shopping. Others just walked by, it is possible that they passed by to get their kids out of school since it was on a Wednesday when school is done at 12:00. Man generally just walked by.

Location: Playground Duinbekedam

Time: 12:45-13:00

Date: 07/12/2022

	Male	Female
Child	IIII II	III
Young Adult		
Adult		
Elderly		

Observation: The boys were all playing football and one person joined later. I estimate their age at around six or seven. The girls were either alone (one) or with two. They used the swing and the tumble bar. When sitting on the swing they watched the boys play football, looked at their phone and talked with each other.

Location: Playground Duinbekedam

Time: 15:45- 15:50

Date: 15/03/2023

	Male	Female
Child	IIII	IIII I
Young Adult		
Adult		I
Elderly		

Observation:

They all came by bike, maybe indicates that they came from a bit further? The girls are playing with the playing elements. Two boys are playing soccer, then two girls join. There are playing around a bit. One parent is sitting on the benches on the side of the smaller playground area.

Location: Playground Duinbekedam

Time: 14:30- 14:35

Date: 30/03/2023

	Male	Female
Child	IIII I	II
Young Adult		
Adult		I
Elderly		

Observation:

Four boys are playing with a shopping cart at the soccer field. Two smaller girls play together with their mother on the same soccer field. Two boys are sitting on the play elements in the small playground

Location: Shopping street Beverwaard

Time: 13:45- 13:55

Date: 22/02/2023

	Male	Female
Child	III (los)	IIII (los)
Young Adult	I	
Adult	III	IIII IIIII IIIII
Elderly	III	IIII

Appendix D

Example form filled in by the interviewee.

**Delft University of Technology
HUMAN RESEARCH ETHICS
INFORMED CONSENT TEMPLATES
(Dutch Version: January 2022)**

This form is based on the template that has been developed by the Human Research Ethics Committee (HREC) to assist you in the design of your Informed Consent materials for non-medical research involving human Research Subjects. **It is adapted to the outline and requirements of my particular study, using the notes and suggestions provided.**

For additional information or specific expertise on Informed Consent materials you can consult the following:

- The TU Delft [Research Ethics webpages](#),
- Your faculty Data Steward, the TU Delft Privacy Team
- Our brief guide on Completing the HREC checklist
- Our [Risk-Planning tool, Managing Risk in Human Research](#)

If you have any questions about applying for HREC approval which are not dealt with on the [Research Ethics webpages](#), please contact HREC@tudelft.nl

You can find guidance on Informed Consent together with **English versions** of the Informed Consent templates in the Informed Consent section of the [Research Ethics webpages](#).

INTRODUCTIE tot het ONDERZOEK

U wordt uitgenodigd om deel te nemen aan een onderzoek genaamd: *The gender reveal of space: A spatial strategic framework for a more gender inclusive planning and design of public spaces in the Netherlands*. Dit onderzoek wordt uitgevoerd door Francien Fons onder begeleiding van Reinout Kleinhans (TU Delft). Het onderzoek wordt niet gefinancierd.

Het doel van het onderzoek is om inzichtelijke te krijgen wat ontwerpers en planners kunnen doen om openbare ruimte toegankelijker te maken voor specifiek vrouwen. Wat beperkt de toegang tot of hun plezier in de openbare ruimte op dit moment en hoe zou dat kunnen worden verbeterd. Om dat te onderzoeken is als case study de wijk Beverwaard in Rotterdam gekozen.

Zoals bij elke online activiteit is het risico van een databreuk aanwezig. Wij doen ons best om uw antwoorden vertrouwelijk te houden. We minimaliseren de risico's door het veilig bewaren van geluidsbestanden en transcripten op de eigen computer.

Uw deelname aan dit onderzoek is volledig vrijwillig, en **u kunt zich elk moment terugtrekken zonder reden op te geven**. U bent vrij om vragen niet te beantwoorden.

Voor vragen omtrent dit onderzoek kunt u contact opnemen met:
Francien Fons
F.Fons@student.tudelft.nl en 0631926118

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
A: GENERAL AGREEMENT – RESEARCH GOALS, PARTICIPANT TASKS AND VOLUNTARY PARTICIPATION		
1. Ik heb de informatie over het onderzoek gedateerd <i>30/03/2023</i> gelezen en begrepen, of deze is aan mij voorgelezen. Ik heb de mogelijkheid gehad om vragen te stellen over het onderzoek en mijn vragen zijn naar tevredenheid beantwoord.	<input type="checkbox"/>	<input type="checkbox"/>
2. Ik doe vrijwillig mee aan dit onderzoek, en ik begrijp dat ik kan weigeren vragen te beantwoorden en mij op elk moment kan terugtrekken uit de studie, zonder een reden op te hoeven geven.	<input type="checkbox"/>	<input type="checkbox"/>
3. Ik begrijp dat mijn deelname aan het onderzoek de volgende punten betekent: <ul style="list-style-type: none"> – Het delen van mijn ervaringen in een interview dat de onderzoekers opnemen, waarvan de onderzoekers aantekeningen maken en dat zij, indien nodig, uitwerken in een transcript. – De data zal gebruikt worden voor verschillende onderzoekspapers: white paper voor RDI project en een artikel in een wetenschappelijk journal en of een wetenschappelijke conferentie en een PhD thesis 	<input type="checkbox"/>	<input type="checkbox"/>
B: POTENTIAL RISKS OF PARTICIPATING (INCLUDING DATA PROTECTION)		
4. Ik begrijp dat mijn deelname betekent dat er onbedoeld persoonlijke identificeerbare informatie en onderzoeksdata worden verzameld, met het risico dat ik hieruit geïdentificeerd kan worden.	<input type="checkbox"/>	<input type="checkbox"/>
5. Ik begrijp dat binnen de Algemene verordening gegevensbescherming (AVG) een deel van deze persoonlijk identificeerbare onderzoeksdata als gevoelig wordt beschouwd: indien ik uitspraken doe waaruit politieke inzichten/ standpunten geïdentificeerd kunnen worden.	<input type="checkbox"/>	<input type="checkbox"/>
N.B. de focus van dit onderzoek is niet expliciet politiek, maar er kunnen altijd politieke elementen naar boven komen.		
6. Ik begrijp dat de volgende stappen worden ondernomen om het risico van een databreuk te minimaliseren, en dat mijn identiteit op de volgende manieren wordt beschermd in het geval van een databreuk: De geluidsbestanden, notities en transcripten worden op een veilige TU Delft netwerk schijf opgeslagen.	<input type="checkbox"/>	<input type="checkbox"/>
7. Ik begrijp dat de persoonlijke informatie die over mij verzameld wordt en mij kan identificeren, zoals naam, contactgegevens en woonplaats, niet gedeeld worden buiten het studieteam.	<input type="checkbox"/>	<input type="checkbox"/>
C: RESEARCH PUBLICATION, DISSEMINATION AND APPLICATION		
8. Ik begrijp dat na het interview de geanonimiseerde informatie gebruikt zal worden voor onderzoekspapers en een PhD thesis.	<input type="checkbox"/>	<input type="checkbox"/>
9. Ik geef toestemming om mijn antwoorden, ideeën of andere bijdrages anoniem, maar met omschrijving van functie, te quoten in resulterende producten. De quotes worden in dat geval aan mij voorgelegd voor publicatie.	<input type="checkbox"/>	<input type="checkbox"/>

Signatures

9 Mei 2023

Naam

Handtekening

Datum

Ik, **de onderzoeker**, verklaar dat ik de informatie en het instemmingsformulier correct aan de potentiële deelnemer heb voorgelezen en, naar het beste van mijn vermogen, heb verzekerd dat de deelnemer begrijpt waar hij vrijwillig mee instemt.



9 Mei 2023

Francien Fons

Handtekening

Datum

Contactgegevens van de onderzoeker voor verdere informatie:

Francien Fons

F.Fons@student.tudelft.nl en 0631926118