A social balance

influencing socioeconomic segregation through urban design

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Influencing socioeconomic segregation through urban design

Jard van der Lugt

''Something happens because something happens because something happens.''

Jan Gehl - Life between buildings, 1971

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Abstract

The emerged knowledge-based economy has an influence on society. Besides increasing innovation, labor productivity, and the average wealth, the knowledge-based economy divides our society. The division is created due to the increase in inequality and the subsequent rise of segregation in society. Segregation is not per definition a problem for society, to a small extent, segregation leads to more social cohesion within a society. However, an excess of segregation leads to social agitation, a loss of mutual trust, and an increase in criminality. Currently, the segregation level in the Netherlands does not exceed the critical level, however; if it exceeds the critical level, feelings of mutual trust are hard to re-establish. Hence, proactive measurements are needed to ensure a social balance with regard to the socioeconomic segregation in society.

When speaking of segregation, it is important to state the referred scale level of the segregation, as segregation on country level does not necessarily imply segregation at neighborhood level or the other way around. Therefore, simply mixing socioeconomic groups does not ensure the creation of social cohesion at neighborhood or block level. Social cohesion starts with being acquainted with neighbors. This stimulates the mutual trust between people. Being acquainted is only possible of social interaction is present. Social interaction can be encouraged or discouraged by the design of a block and neighborhood. The dimensions of streets, the existence of an encroachment zone and semi-public environments can encourage social interaction.

The Waterlandpleinbuurt in Amsterdam-Noord consist of postwar buildings that do not meet the requirements for social interaction in neighborhoods. A new design for the Waterlandpleinbuurt is proposed by partly reconstructing the neighborhood and by implementing design conditions for social interaction in the neighborhood. These design conditions consist of a morphological, typological, and use component. The proposed new design ensures an increase in social interaction and thereby, will decrease the negative influence of the knowledge-based economy on the city. However, this solution does not miraculously take away the concerns over the city.

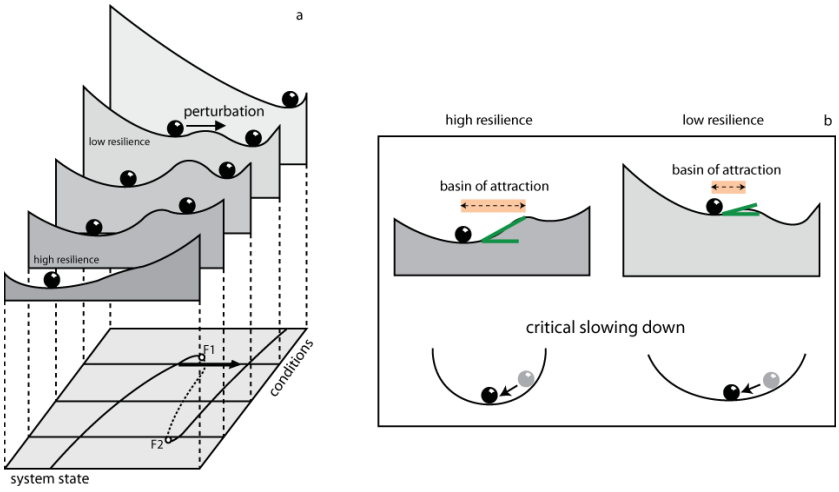


Figure 1: Transition of a system.

A transition of a system is hard to predict. However, indicators can show if a transition is likely to happen in de future. The figure shows a graphic explanation of the transition of a system into a new equilibrium. A small force can flip a system across a tipping point. These transitions occur in nature as well as in society.

(Scheffer, 2012)

Introduction: A city in transition

Our society is rapidly changing. Moving from a relatively stable state, to a state of transition (Rotmans, 2012). A transition is a fast change in a relatively short period of time. Prior to a transition, a system enters a fragile state. In this fragile state a tipping point will occur, however; predicting when the tipping will occur is hard, if not impossible (Scheffer, 2012). Moreover, seemingly small events can trigger a transition of a system (Gladwell, 2000). A small fly can trigger a rock to fall. Our society is experiencing transitions in energy, climate, resources, politics, and economics (Rotmans, 2012). This fragile state of our society influences our cities. Consequently, cities have to adapt to the new circumstances. Though, cities might even help the society in a new state of stability.

The knowledge-based economy

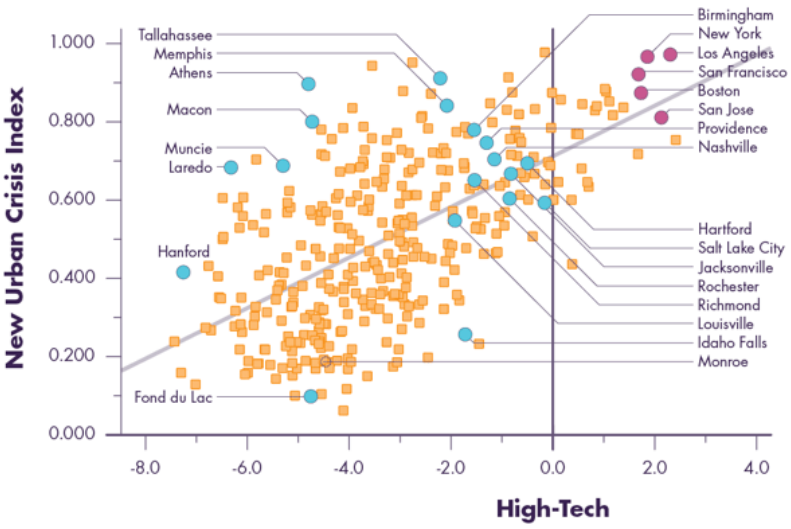


Figure 2: The relation between the presence of high-tech industry and the new urban crisis.

The New Urban Crisis Index is based on a combination of economic segregation, wage inequality, income inequality, and housing unaffordability.
A clear relation between the New Urban Crisis Index and the presence of high-tech industry can be seen in the diagram.

(Florida, Mapping the New Urban Crisis, 2017)

Knowledge-based economy

Globalization and digitalization have changed our society and our way of making money. The global world market has changed the location of the manufacturing of our products, and subsequently changed the work we do. This transition is changing and shaping our cities in a both a positive and in a negative manner. To understand this development, a short analysis is presented. After this, we can state the main research question of this research.

In the last three decades, the economy has globalized. Transnational economic connections have become common. At the end of the second world war the major economic countries established rules for international trade, leaving space for the individual countries to control their own economic agenda. This resulted in increased wages and the expansion of the welfare state. This regulated capitalism came to an end after the economic instability in the 1970s. After this, the neoliberal approach gained influence. Reducing the regulations of the state on the economy and globalizing the economic market.

Adam Smith (1723-1790) and David Ricardo (1772-1823) are the founding fathers of the ideology of the self-regulating free-market. The ideology is based on the presumption that the market is a self-regulating system, balancing supply and demand, and hence, allocating the economic activities based on their economic efficiency. The result of the transition to the neoliberal economic system has been the internationalization of the economy and the increasing power of international companies (Steger, 2013).

Furthermore, a rapid succession of innovation in communication, internet, robotics, and automation, has changed the work we do, and increased the labor productivity (the efficiency of the labor or the gross added value divided by the working hours (CBS,2017)) in the high-tech sector. Together with the economic globalization this has changed the mix of available jobs in certain areas to more high-educated positions and fewer positions for blue-collar workers. Ultimately, changing the economy from a manufacturing economy to a knowledge-based economy and, hence, influencing society.

The definition of the knowledge-based economy is: an economic system in develop economies which dependents on knowledge, information, and highly skilled people and in characterized by the increasing necessity to use these in the public and private sector (OECD, 2005). The transition to the knowledge-based economy has a considerable influence on society, on world, country, city, and neighborhood scale. The explanation of this influence can be found in the counterintuitive outcome of the economic globalization.

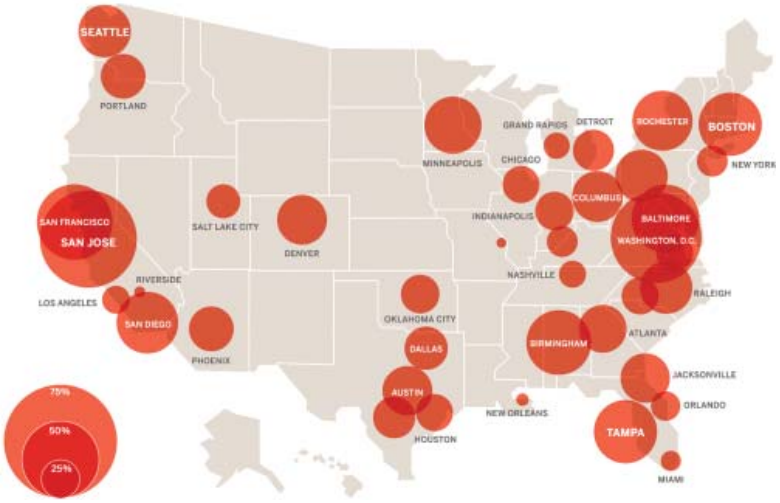


Figure 3: Percentage increase for high-wage jobs, 2009-2013

Knowledge hubs have a overwhelming lead in the generation of high-wage job growth in the United States. These hubs are the ecosystems of the high-tech companies.

(Florida, The Boom Towns and Ghost Towns of the New Economy, 2013)

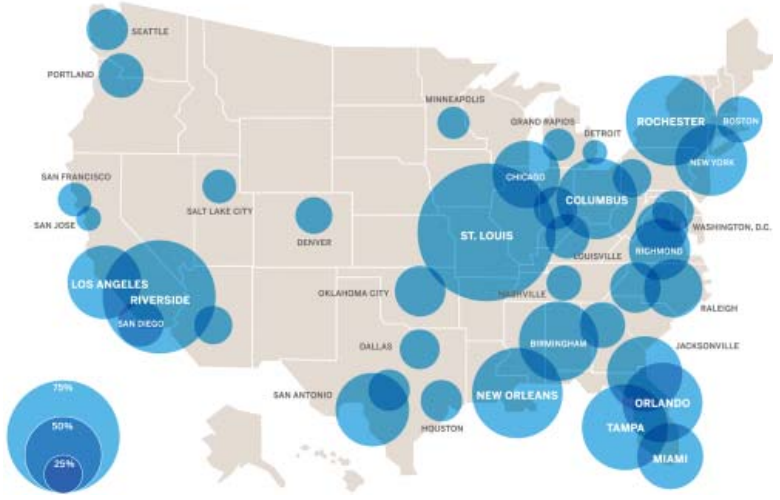


Figure 4: Percentage increase for low-wage jobs, 2009-2013

The American Rust Belt, around St. Louis, shows a growth in low-wage jobs. This reflects on the socioeconomic segregation in the United States. Moreover, the growth of low wage jobs in knowledge hubs around is due to the multiplier effect in the knowledge metros. One high-wage knowledge worker can create five jobs in the service sector (Moretti, 2012)

(Florida, The Boom Towns and Ghost Towns of the New Economy, 2013)

The neoliberal ideology resulted in a globalization of the economy. Around the year 2000, people thought that, due to the globalization and the innovation in communication, location of people and businesses would become irrelevant. The result would have been a globalization of labor, and an even allocation of businesses in the world. However, the exact opposite has happened. Clusters of companies have emerged in cities all profiting from the hereby created ecosystem (Moretti, 2012). This ecosystem consists of a specialized labor market, knowledge-spillovers and specialized service companies (van Winden, 2009). The specialized labor market ensures the availability of high-skilled employees for the companies, and subsequently, enough employers for the knowledge workers. The knowledge-spillovers ensure the exchange of technological information, both voluntary and involuntary (Dumont & Meeusen, 2000). This phenomenon accelerates the innovation in the high-tech industry. Lastly, the specialized service companies ensure the wanted additional services by both high-tech companies as knowledge workers. The success rate of the companies is significantly determined by the existence of an ecosystem. Thus, the location of the companies has become more important than ever. This development has benefits for the cities that can offer such an ecosystem, or cities that happen to be around one. These cities become more attractive and popular.

The composition of the labor market changes in the cities with a knowledge-based economy, in comparison to traditional manufacturing cities. A knowledge worker causes a multiplier effect on the labor market. This effect is characterized by the following: a knowledge-based economy thrives on the high educated employees. These high educated employees urn a higher salary than their fellow low-educated citizens. However, this high salary ensures the existence of jobs in the service sector of the city. As with this salary, one knowledge worker indirectly creates five jobs in the local service economy of a city. This service economy, for instance, consists of hairdressers, nannies, cleaners, security, cab-drivers and carpenters. Consequently, the local service sector of these cities expands and jobs are created, also for low-educated people. As a result, the salaries of both the high-educated knowledge worker as well as the low-educated service worker rises. However, the salary gap between these two groups is substantial. Furthermore, the middle section of the labor market (blue-collar workers) are dwindling. Resulting in cities with a significant difference in salaries, and thus socioeconomic inequality (Moretti, 2012).

Moreover, the cities that lack an ecosystem for high-tech companies, lose their high-educated citizens to knowledge hubs. Resulting in economic differences throughout the country with cities in economic prosperity and cities with increasing economic destitute. Therefore both at city scale as at country scale the economic differences increase. The rising inequality within cities as well as between cities has serious consequences, as increasing inequality can be a catalyst for populism (Lagarde, 2017) as can be seen in figure 5 and 6.

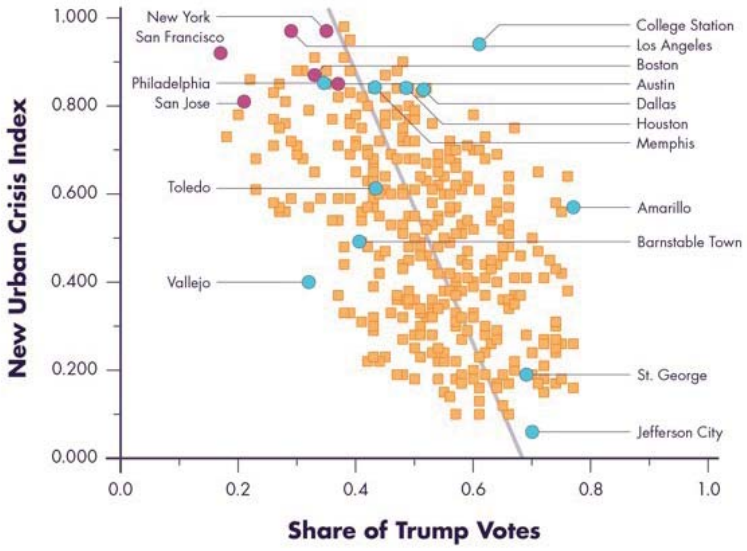


Figure 5: The relation between Trump votes and the New Urban Crisis

The graph shows a clear relation between Trump votes in the recent presidential elections in the United States

(Florida, Mapping the New Urban Crisis, 2017)

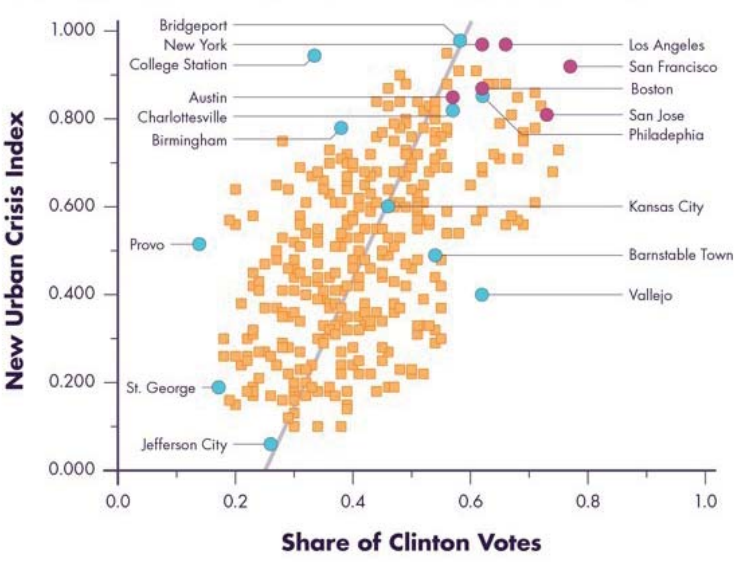


Figure 6: The relation between Clinton votes and the New Urban Crisis

Subsequently, this graph shows a clear relation between Clinton votes in the recent presidential elections in the United States

Both graphs confirm the statement of Christine Lagarde. The effects of the Knowledge based economy on the city can be a catalyst for populism

(Florida, Mapping the New Urban Crisis, 2017)

Furthermore, within these knowledge cities the new knowledge workers gentrify neighborhoods. Gentrification is the upgrading of a poor area to an area for a higher social class (Blokland,2009). The result of gentrification is a better image for the neighborhood. However, this trend results in the increase in housing prices. An increase in housing price is beneficial for the owner, as the value of the property increases. The renter however, does not benefit from the increase in housing prices. On the contrary, the renter will encounter an increase in rent, and is, in the worst case, pushed out of its neighborhood (Moretti, 2012).

Obviously, the knowledge-based economy in cities is not the sole basis of inequality, segregation, and exorbitant housing prices. Many different aspects, such as a low interest rates and the growth of Airbnb, influence the trends in society. However, we can state that the influence on the knowledge-based economy is profound (Florida, 2016) (Moretti, 2012).

This theory on the influence of the knowledge-based economy is derived from the situation in the United States of America. The next step is to look into the influence of the knowledge-based economy on Amsterdam and Helsinki. Both cities have different political circumstances and backgrounds than the U.S., difference in trends can therefore be expected.
In the next section the situation in Amsterdam and Helsinki are assessed according to the main trends that are caused by the knowledge-based economy.

Figuur 3.2 Sectoren die de meeste waarde toevoegen, zijn niet de grootste werkgevers
Aandeel van sectoren in de economie van de MRA; in procenten; 2015

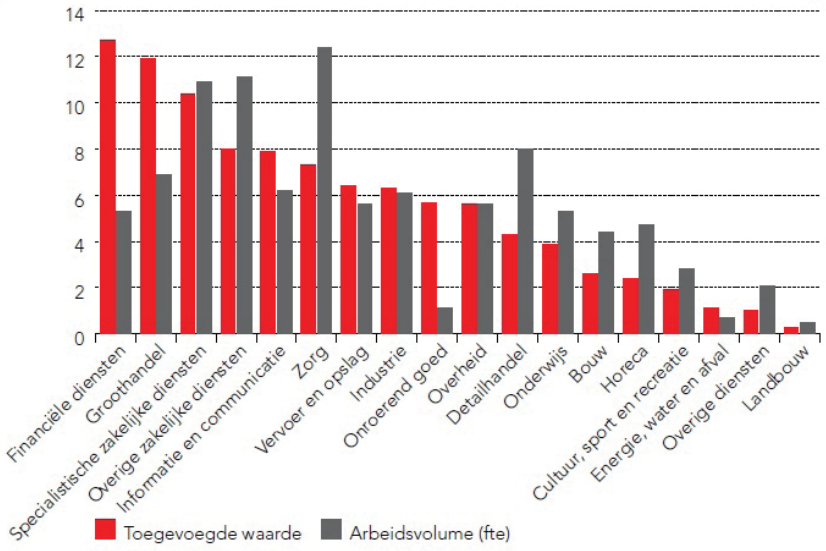


Figure 7: The added value of the economic sectors on the economy of the MRA (Metropoolregio Amsterdam

The financial sector adds the most value to the economy of Amsterdam. The relative low contribution tot the labor market can be explained by the increasing labor productivity due to digitalization and automation in this sector.

Source: De Economische Verkenning Metropoolregio Amsterdam 2017, Gemeente Amsterdam

	2014	2015	Verschil	
	x 1.000			%
Totaal	1.198	1.219	21	1,8
Laag opgeleid	219	216	–3	–1,5
Middelbaar opgeleid	472	481	9	1,9
Hoog opgeleid	506	522	16	3,1
Autochtoon	822	832	11	1,3
Niet-westers allochtoon	214	220	6	2,6
Westerse allochtonen	162	167	5	2,9
15–24 jarigen	169	173	4	2,4
25–44 jarigen	552	555	3	0,5
45–74 jarigen	481	491	10	2,1
Mannen	640	646	6	0,9
Vrouwen	558	575	17	3,0

Figure 8: The change in the composition of the working population within the MRA

An increase in high educated people of 3,1%, and a decrease in low educated people of 1,5 % can be seen in the table. This indicates a change in the composition of the labor market to a knowledge hub.

Source: De Economische Verkenning Metropoolregio Amsterdam 2017, Gemeente Amsterdam

Amsterdam

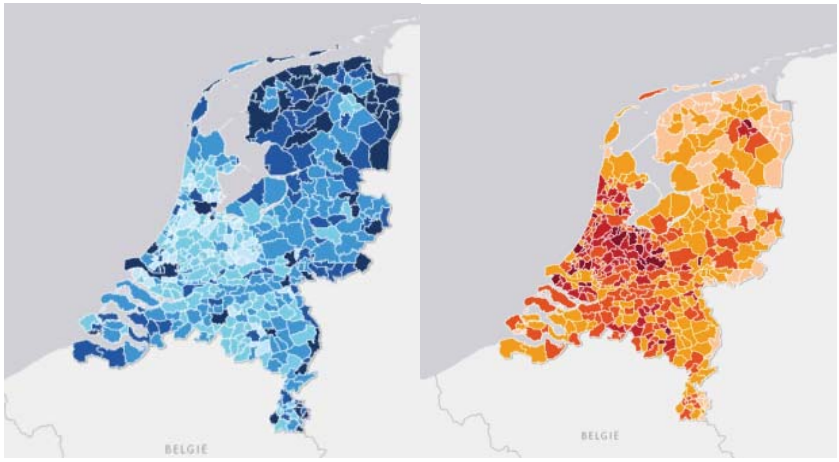
As explained in the previous section, the transition to a knowledge-based economy is accompanied by social and economic trends. These trends are:

- An increase in labor productivity
- An increase in innovation
- the increase in housing prices
- An increase in socioeconomic inequality
- Socioeconomic segregation (spatial inequality) at world, country, and city scale

A series of data on differing trends in Amsterdam is analyzed to assess the situation in the city and identify the main trends.

The added economic value of the financial sector indicates the importance of the knowledge-based economic sector in Amsterdam. The labor productivity of the financial sector is high, as can be seen in figure 7. Labor productivity is the efficiency of the labor in a particular sector. This is calculated by the gross added value divided by the worked hours (CBS, 2017). The increase labor productivity can be explained by the digitalization and automation in the financial sector. The composition of the labor population indicates a change to more high- educated jobs, as can be seen in figure 8. This trend is a known effect of the knowledge-based economy. Furthermore, as can be seen in figure 12, the housing prices in Amsterdam are growing. The prices have passed the level before the economic crisis of 2008, resulting in a practically unreachable city for low income groups. This increase in prices has been higher in Amsterdam in comparison to other cities in the Netherlands, as can be seen in figure 13. Moreover, from 2000 onwards we can see an increase in differences in disposable income in the city. This trend, as can be seen in figure 9 and 11, is detected in the city as well as in the Netherlands as a whole; the Randstad tends to attract the higher income groups and the rest of the Netherlands is slowly losing its higher educated people.

This inventory leads to the conclusion that the development of the knowledge-based economy in Amsterdam has an effect on the city, similar to the effects mentioned in the previously analyzed literature.



Low income High income

Figure 9: distribution of low and high income groups in the Netherlands.

A clear difference can be seen in the spatial distribution of low and high income groups in the Netherlands. High income groups are predominantly located in the Randstad. This spatial difference is known as economic segregation. Amsterdam has both low income groups as high income groups. This could be an indication for economic segregation within the city.

(CBS, 2017)

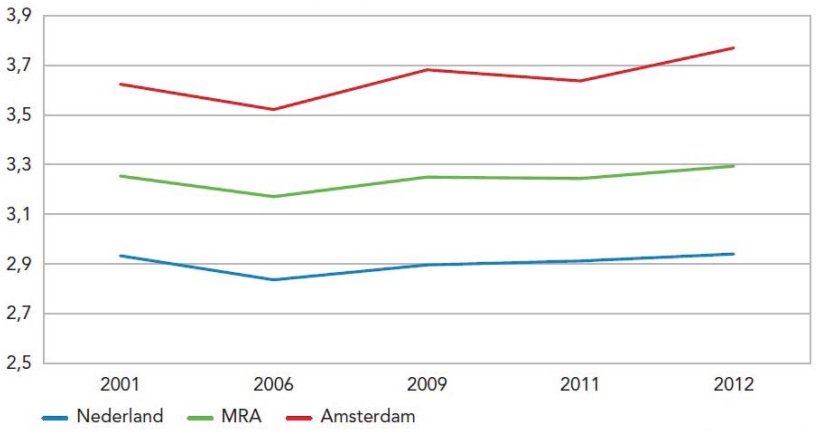


Figure 10: The ratio of high and low income groups (p90/p10-ratio) in the Netherlands, Metropoolregio Amsterdam, and Amsterdam.

The difference between high and low income groups is slightly growing in Amsterdam, and is growing faster in comparison to the MRA and the Netherlands. This could be an indication for an increase in inequality.

(Gemeente Amsterdam, De staat van de stad VIII; Economie, 2015)

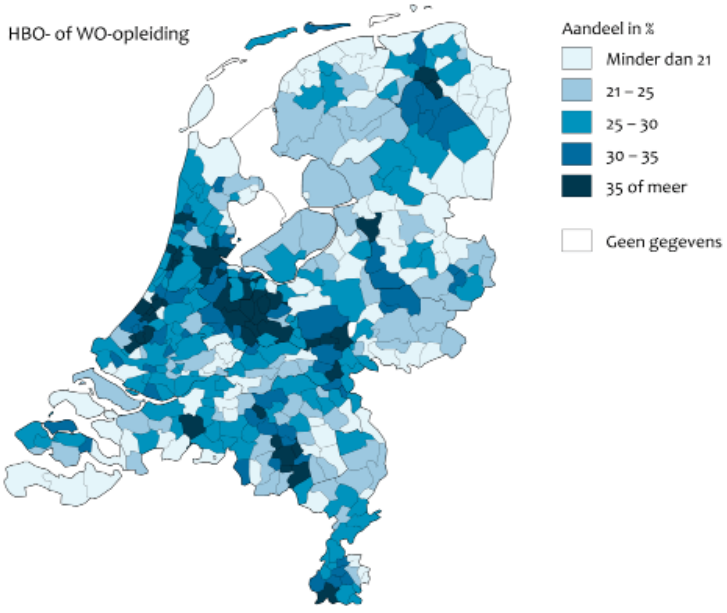


Figure 11: High educated people by municipality, 2015.

The high educated are concentrated in the cities mainly in the Randstad. This distribution is similar to the high income groups

(CBS, Opleidingsniveau bevolking, 2016)

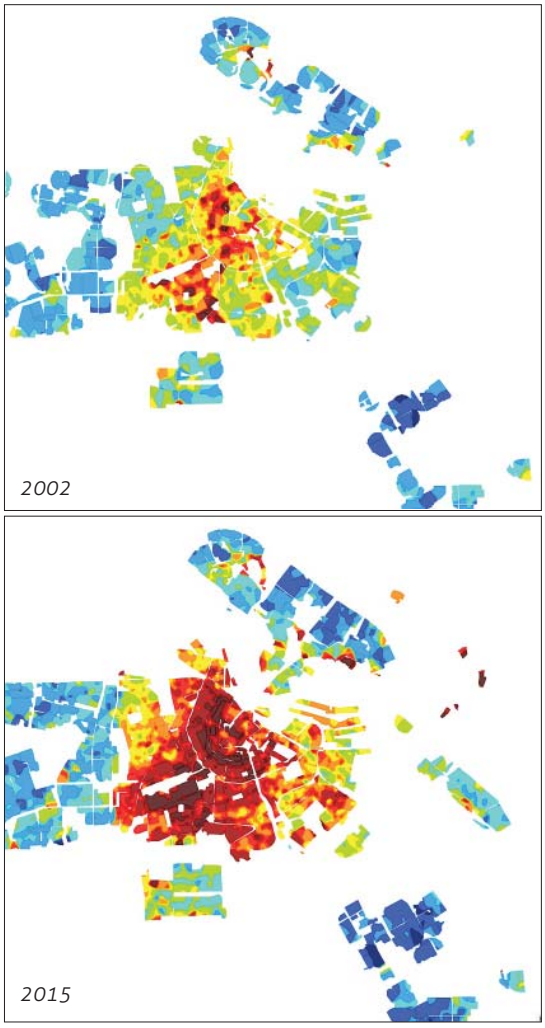


Figure 12: Retail price of dwellings in Amsterdam in 2002 and 2015.

The substantial growth of the housing prices in Amsterdam from 2002 - 2015.

(Gemeente Amsterdam, Woningwaarde - verkoopprijs per m2, 2017)

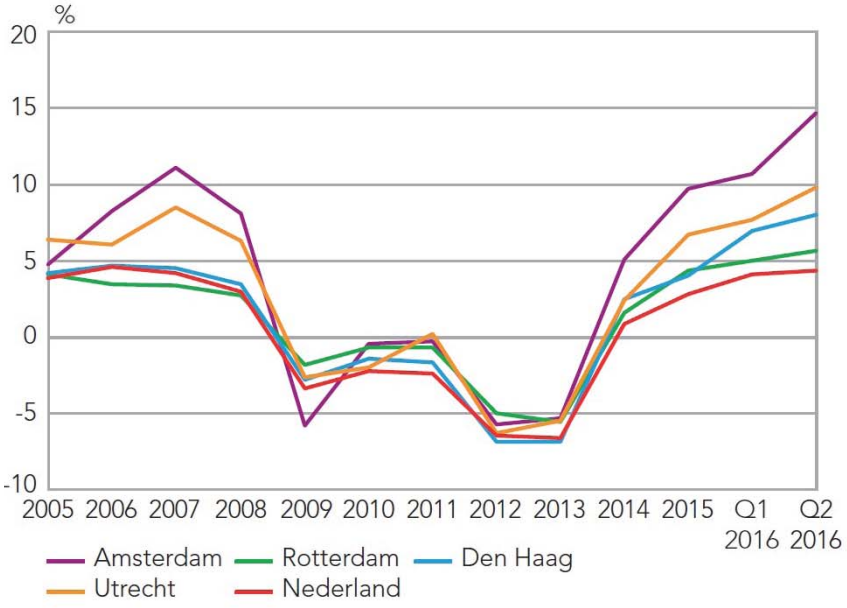


Figure 13: Development price of dwellings in Amsterdam, Utrecht, Rotterdam and the Netherlands.

An excessive growth of the housing prices can be seen in Amsterdam. A comparable growth can be seen before the economic crisis of 2008. The steep decline of the prices in 2008 and 2009 shows the instability of the housing prices.

Source: CBS, Kadaster

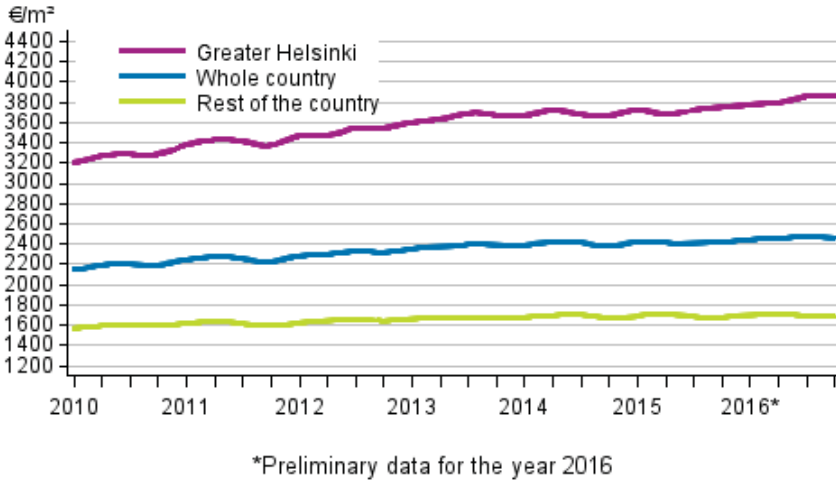


Figure 14: Average price per square meter of dwellings in old blocks of flats.

The housing prices grow faster in Helsinki than in the rest of Finland

(Statistics Finland, Average price per square meter of dwellings in old blocks of flats, 2017)

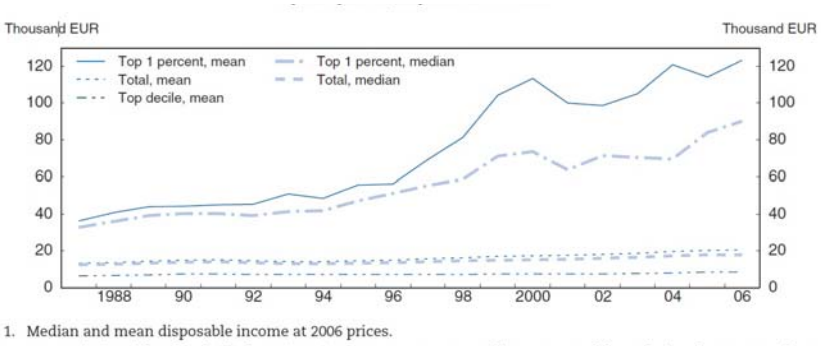


Figure 15: Development of disposable income in Finland

The disposable income of the top income group has risen in the last years, whereas the disposable income of the mean has been constant.

(Statistics Finland, Income inequality, 2017)

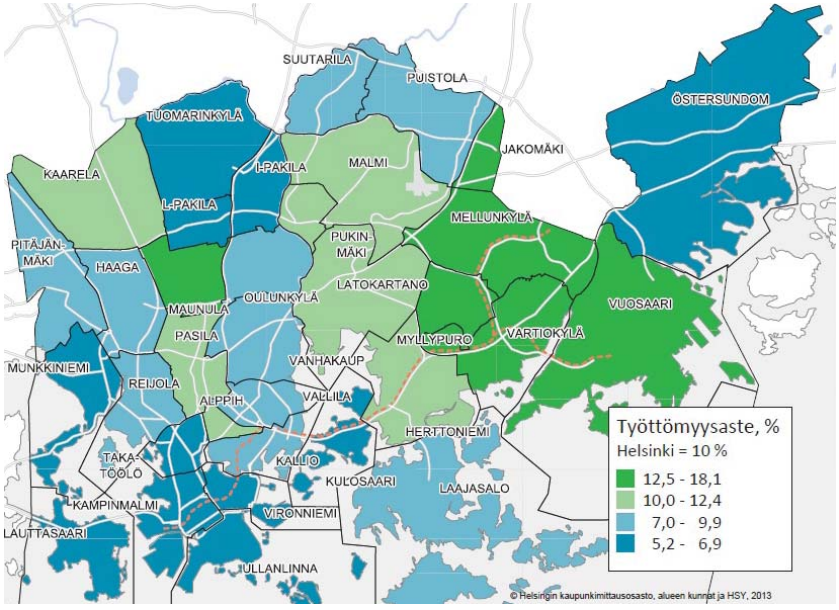


Figure 16: Rate of unemployement in Helsinki's districts, 2014

A clear difference can be seen in the unemployment ratio across the city.

(City of Helsinki Urban facts, 2016)

Helsinki

The situation in Amsterdam is comparable to the situation in Helsinki, as almost the same trends can be seen in Helsinki. As can be seen in figure 14, housing prices are growing faster than in the rest of Finland (Statistics Finland, 2017). However, not as capricious as in Amsterdam. The education level differs strongly throughout the city. The city center houses the high educated people, whereas the low educated people live in the north-east and north-west part. Moreover, large differences can be seen in unemployment ratios across the city (City of Helsinki Urban facts, 2016), as can be seen in figure 16 and 17. Both maps imply a socioeconomic segregation within the city. Furthermore, as in Amsterdam, the disposable income in the city has become more unequal, as can be seen in figure 15. Even though Finland is known for its equal society, the Gini-index has risen the fastest in Europe. Increasing the disposable income inequality in both Finland as in the city of Helsinki (Statistics Finland, 2017).

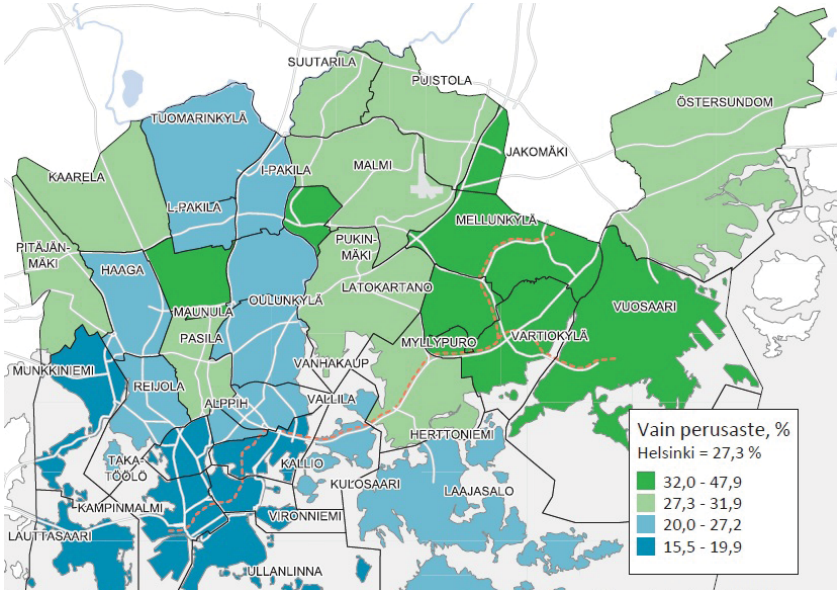


Figure 17: Ratio of low educated residents, 2013

This map shows a clear difference in the education level of the residents of Helsinki. This could be an idication of socioeconomic segregation in the city.

(City of Helsinki Urban facts, 2016)

The urban planner

The knowledge-based economy has multiple benefits: an increase in innovation, an increase in productivity, and an increase in wealth. Unfortunately, the knowledge-based economy increases the socio-economic inequality in cities and across the country, resulting in more segregation. Moreover, it plays a part in the rise of the housing prices in knowledge cities. The increasing inequality is an alarming trend in both countries as in cities (Moretti, 2012) (Florida, 2016).

After the glorification of the creative class and the gentrification of neighborhoods in cities, Richard Florida presents in his book ''The new urban crisis'' a different view on the matter. The negative implications of the gentrification partly caused by the knowledge-based economy is classified as unwanted. ''The crisis we face is urban and so is its solution''(Florida, 2017), are his words. After this, he proposes multiple urban solutions to the problem, most of them based on economic policy in the city, accompanied by the reform of zoning codes, investments in infrastructure, and the building of affordable housing. However, before thinking about solutions in the built environment lets first reflect on the basic analysis that the ''crisis'' is urban. It is evident, based on the data, that the ''crisis'' is experienced in the city. However, as explained prior, the basis of the ''crisis'' is rooted in the global economic neoliberal system. Therefore, we can argue that the most effective solution cannot be found in the built environment but in more abstract politics.

However, this introduces the question; what can an urban designer do in this context?

What if an urban designer could help these trends to move in a positive direction? What if we would incorporate the built environment as one of the actors in society? The built environment cannot make an equal society. However, the design of the built environment can influence us (Montgomery, 2013). Leaving a vital role for today's urban designers: create the right conditions for a city to cope with the challenges of today.

Segregation

To determine ''the right conditions for the city'' as stated in the previous chapter, we should first dive into the terms inequality, and segregation. The identification of the proper definitions should help us determine the approach for the city.

Socioeconomic inequality is a difference in socioeconomic circumstances (Oxford dictionary, 2017). Socioeconomic inequality is, in itself, not a problem. Since, for as long as cities exist, citizens live in different circumstances. Spatial inequality or a geographic uneven distribution of societal groups is called segregation (Musterd , Marcinczak, van Ham, & Tammaru, 2016). Segregation has an effect on society. The nature of the effect, positive or negative, depends on the ratio of the differences between societal groups and on the level, macro- or micro-level, of the segregation. Voluntary segregation at neighborhood level has multiple advances: more support for facilities, less social nuisance and more social cohesion (the belief held by citizens that they share a moral community, which enables them to trust each other (Larsen, 2013)). This might seem a contradiction, as segregation is often related to a decrease in social cohesion. However, a similarity in social circumstances increases the probability of social interaction within a community (Cabrera & Najarian, 2013). Therefore, we can conclude that a certain amount of segregation is a condition for social cohesion (figure 18,19,20). Though, if the level of segregation exceeds a tipping point, meaning the differences between the societal groups become substantial, distrust can occur between groups. Causing the society to enter a state of social agitation and increasing criminality (Malmberg, Andersson, & Östh, 2013) (Ponds, van Ham, & Marlet, 2015) . In this situation the social cohesion of the society is too low (Vrooman , Gijsberts, & Boelhouwer, 2014).

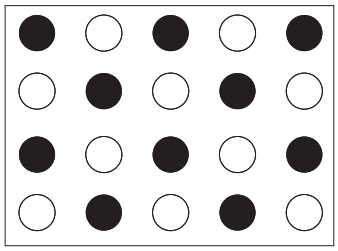


Figure 18: Perfect distribution. No segregation: No social cohesion

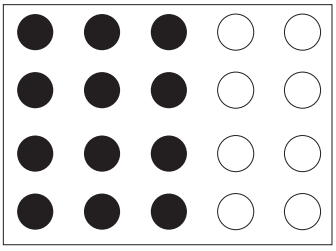


Figure 19: Complete segregation: Social cohesion within groups. No social cohesion between groups

Currently, our society is not clearly segregated or polarized. However, there is a considerable risk that the differences between groups, in particular between low and high educated people, will rise in the future (Vrooman , Gijsberts, & Boelhouwer, 2014) (Bovens, Dekker, & Tiemeijer, 2014). The transition of the economy to a knowledge-based economy can amplify this risk.

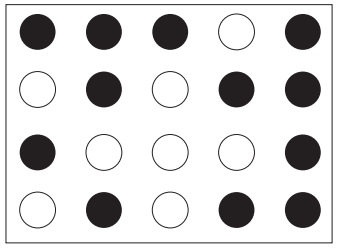


Figure 20: Partial segregation. Social cohesion within and between groups

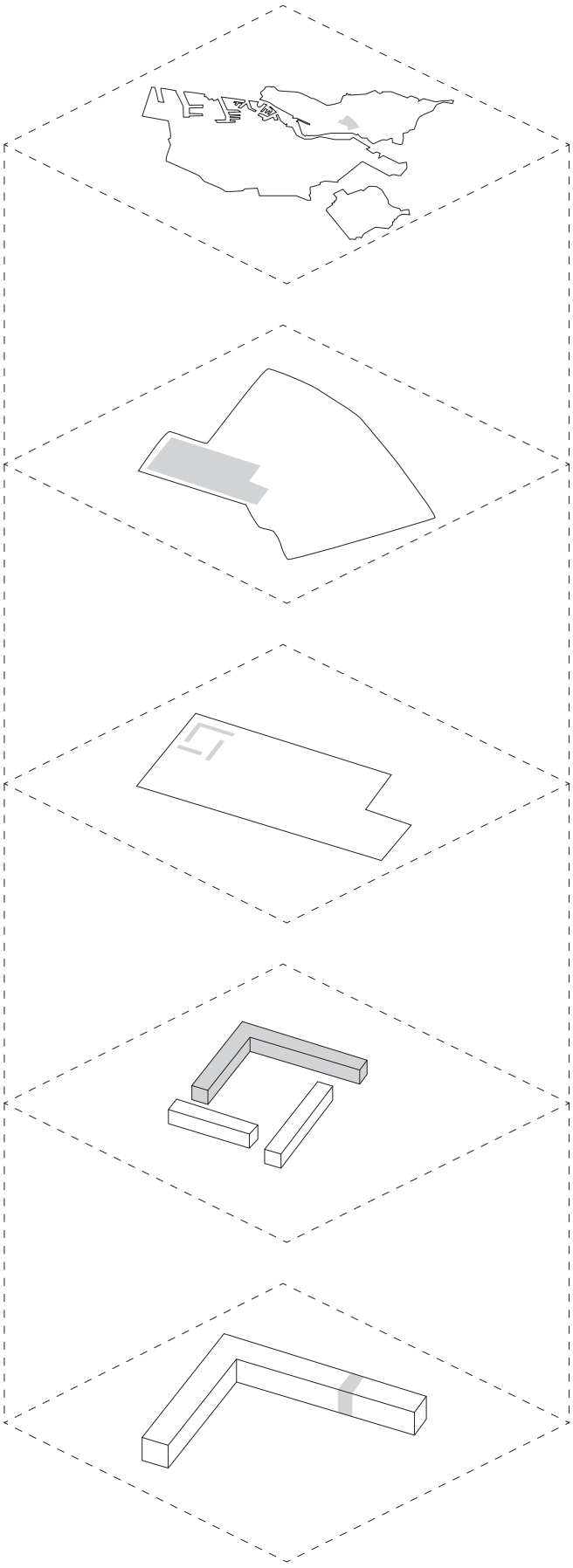


Figure 21: Segregation at different scales

Moreover, arguing from a moral idea of equality we can state that we owe everyone the same chances and recognition. Structural inequality is therefore not wanted. Furthermore, if there is a structural lack of recognition, in combination with socioeconomic segregation, it could lead to problems in society. Aiming for overall social cohesion is not realistic, as differences will always occur within societies. However, it is important to realize that a threshold of social cohesion is contained, as it ensures feelings of mutual trust and solidarity. When lost, these feelings are particularly hard to re-establish (Tiemeijer, 2017). The connection between people should be stronger than the disconnection. It is an equilibrium.

Segregation and scale

The definition of segregation; a geographic uneven distribution of societal groups (Musterd , Marcinczak, van Ham, & Tammaru, 2016), implies the use of a scale. A geographic uneven distribution could, for instance, be identified at the scale of the world, country, municipality, city, district, neighborhood, block, or street. The segregation on the chosen scale only reflects on that particular scale. Segregation on neighborhood scale does not imply segregation on block scale. Moreover, a non-segregated neighborhood could be situated in a segregated city. This might be straightforward, however; it is important to realize this when dealing with segregation in a city. A measurement at a certain scale does not per definition have an effect on another.

After this investigation into the knowledge-based economy, and the resulting socioeconomic segregation, the research question is stated:

How can an urban designer influence socioeconomic segregation on neighborhood and block level?

The following sections investigate the relationship between urbanism and socioeconomic segregation. However, we will start with a quick inventory of urbanism in Helsinki.

Pasila - Helsinki

Kallio - Helsinki
A gentrified neighborhood in Helsinki
High quality of green areas.

Suburban area- Helsinki
Collective outdoor spaces

Urbanism in Helsinki

A comparison between Helsinki and Amsterdam learns us that the level of inequality is lower in Helsinki than in Amsterdam. Subsequently, Helsinki also shows a lower segregation level (Bernelius, 2017). This difference can be explained by two aspects. First of all, Finland has a strong social welfare state. This social welfare state has ensured small income inequality and poverty rates. The welfare state provides adequate affordable housing for everyone. This policy was not specifically focused on low income housing, but on making good housing for all Fins. Therefore, the realized social housing has been able to set the bar for free market dwellings. Instead of an economically driven development, social housing in Finland is an ideological development (Myntti, 2007). This connection between housing policy and social policy is characteristic for Finland. Furthermore, segregation has been minimized by far-sighted urban planning and a high standard of urban and architectural design. The result of these policies is a city with a high standard or urban design and low level of segregation. However, despite all these beneficial conditions, the socioeconomic differences are increasing in the city (Jaakkola, 2012). This indicates that urban policy or design will never completely solve the issue.

Pasila - Helsinki
A neighborhood with a high level of unemployment and low income.

Pasila - Helsinki
A neighborhood with a high level of unemployment and low income.

Pasila - Helsinki
A neighborhood with a high level of unemployment and low income.

Alpilla- Helsinki
A neighborhood with a high level of unemployment and low income.

Segregation and urbanism

Segregation and urbanism

In the previous chapter, we identified the importance of an equilibrium with regard to the segregation within a society. This equilibrium is needed to ensure a certain level of social cohesion. A literature study was conducted to indicate possible measurements in the built environment to increase social cohesion.

In the analyzed literature, a distinction is made between place-based policies and people-based policies. Planbureau voor de Leefomgeving (2016) has made an assessment of both policies, and concluded that people-based policies have far more influence on the socioeconomic position of people than place-based policies. Interestingly, in the last few decades place-based policies, i.e. urban renewal policies, have often tried to decrease the level of segregation within a neighborhood. Most of the approaches consisted of mixing societal groups, by creating a variety in the housing supply (Ponds, van Ham, & Marlet, 2015). At first sight, this might seem a wise step, however; the effectiveness of this method is questionable. Research shows that mixing socioeconomic groups (based on income) could result in more poverty, more unemployment, and a lower average income in the affected neighborhoods (Hipp, Kane, & Kim, 2017). This phenomenon occurs due to the amplification of the socioeconomic situation of the lower social classes. By specifying and categorizing the people, the stigma is increased and the relative destitution is inflated (Chaskin & Joseph, 2010).
However, deliberately not mixing socioeconomic groups feels counterintuitive, as social cohesion between groups can only occur if they interact. Nonetheless, social interaction between different socioeconomic classes in renewed mixed neighborhoods are often trivial, or even hateful. Hence, simply mixing socioeconomic groups is not a solution for more social cohesion within a city or neighborhood (Uitermark, Duyvendak, & Kleinhaus, 2007).

In the last decades, mixing socioeconomic groups has been the strategy in multiple neighborhoods. By introducing high educated people in deprived neighborhoods the social status is upgraded. This strategy of gentrification seems to work. The average income increases

and the unemployment ratio drops. However, this upgrade is only applicable for the average of the neighborhood, an improvement of the socioeconomic circumstances of the lower social classes in these neighborhood is not evident. At the macro level of the city the diversity is increased; however, this does not automatically lead to diversity on micro level. A poor citizen does not seem to profit from its rich neighbor (Gerritsen & Reininga, 2011). Nonetheless, this ''neighborhood effect'' has been a basis for a large number of policies for poor neighborhoods (krachtwijkenbeleid). With regard to the previous statements, it would be no surprise that this approach did not have a measurable effect on the neighborhoods (Permentier, Kullberg, & van Noije, 2013).

However, being in the same space, and being able to meet is important to acquire information about the lifestyle of others and thereby a foundation for trust. Strong segregation of public spaces is unwanted. Furthermore, differences in mobility opportunities and facilities, can increase the separation of social groups and thereby decrease the social cohesion within a city (Legeby, 2013). The possibilities offered by a specific location also affects the ability to maintain social contact. An inaccessible spot in a network can affect the social possibilities of people (York Cornwell & Behler, 2015).

Indicators that can enhance social segregation:

- Segregation of public space
- Limited spatial reach
- Uneven distribution of centrality (uneven clusters within a city)
- Mixing income groups, gentrification of neighborhoods
- Inequality in network, spatial locations, clustering of services.

Indicators that can enhance social cohesion:

- People-based policies
- Social housing
- Equal access to services

The literature study does not give a conclusive strategy for the increase of social cohesion within a neighborhood. Therefore, the focus shifts to the architectural and urban theories. As social interaction is identified as the starting point of social cohesion, the analysis of the theory focusses on the possibilities for encouragement of social interaction in the built environment.

Jan Gehl

Jan Gehl identified the built environment as an important factor in the social interaction between people. Social interaction is a precondition for social cohesion, as people need to meet to be able to recognize each other and create activities. Seeing and hearing other people is passive contact. This form of contact is the starting point of all forms of social contact. The design of the built environment can invite people to start activities. An important aspect of the design is the physical capability of people. The field of vision, and the private space of people is important to include in a design, as these enable the possibility for passive contact. The dimensions of the design should be a maximum of 25 meters from one building to another. Furthermore, the transitional zone between the dwelling and street should be carefully designed, as these edges are a perfect place to start passive or social contacts. Moreover, differences in level should be avoided. Another important aspect of the design of neighborhoods is the mix of functions. A neighborhood with separated functions decreases the possibility to meet people. These mixed neighborhoods should have a walking distance between the different function of around 400-500 meters (Gehl, 1971).

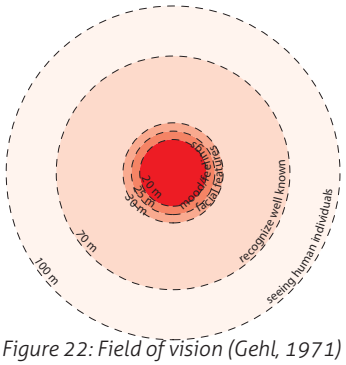


Figure 22: Field of vision (Gehl, 1971)

- 20-25 meters is minimum for social contact
- Avoid differences in level
- Transitional zone between dwelling and street (good staying areas)
- Activities start at the edge of a space. Make sure the edges work
- Easy access in and out of a dwelling
- Acceptable walking distance: 400-500 meters

Edward T. Hall

Edward T. Hall researched the dimensions of social contacts in everyday life. He identified four main distances in the social behavior of people: Firstly, the intimate distance. This distance is within 0,50 m. and suitable for close contacts. Secondly, personal distance, this distance is from 0,5 – 1,2 m. This distance is used during contacts with a friend or a good acquaintance. Thirdly, at 1,2 – 3,7 m the social distance is can be found. Within these parameters contacts with unknown people take place, it feels rude not to talk to each other. Lastly, at 3,7 m the public distance starts. From 3,7 m people can ignore each other without feeling social pressure. These dimensions can be used as guideline for the design of spaces. For example, a small front yard (>3,7 meter) will increase the possibility that the person in the front yard will greet a passing person. If no front yard is present, or a transition zone of some sort, the passing person enters the personal zone of the people in the dwelling. As a result, the dwellers will protect its personal space with the use of curtains or another view blocker. The identified dimensions by Edward T. Hall might be useful for the design of neighborhoods, however; it is important to realize that these distances are culturally differentiated. Using this rule as a very strict principle would therefore be unwise (Hall, 1966).

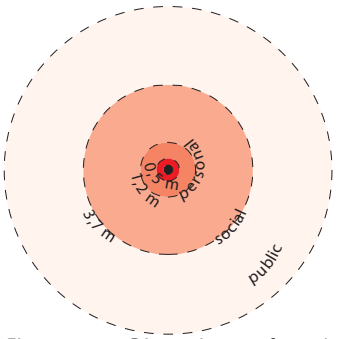


Figure 22: Dimensions of social contact (Hall, 1966)

Herman Hertzberger

Herman Hertzberger describes the entrance of a building as the key element to connect areas of a different status. The public territory is connected to the private territory. This transition zone is the perfect place to create social contact. Urban designers can make or break this environment through design. A good environment encourages people to appropriate and annex the transition zone. Making it into a personal space. The key to this is the careful design of the transition zone of buildings (Hertzberger , 1991).

Transition zone

The transition zone is important for the enhancement of social interaction in a neighborhood. With the transition zone we mean:

the area in-between the dwelling and the street or public space. The transition zone ensures the gradual transition from a private domain (the dwelling) to the public domain (e.g. street). This gradual transition is created by the application of, for instance, sidewalks or front yards. These zones function as a safe place to observe the city. The transition zone finds its origin in the Dutch city. The addition of a zone, in-between the house and the traffic on the street, offers the possibility for a multitude of activities and facilities: stairs, shutters of cellars, or the display of goods. This zone, Delftste stoep, was 1,25 meter. The exact dimension is the result of policy of the municipality (van Ulden, Heussen, & van der Ham, 2015). After the second world war, the housing shortage was resolved by the construction of modernist neighborhoods. These neighborhoods are characterized by functional segregation, often no transition zone, and excessive room for traffic (Hereijergs & van Velzen, 2001). The transition zone is crucial for the creation of public familiarity in a neighborhood. Public familiarity is, quite similar to social cohesion, the ability to recognize neighbors and being able to estimate their life style (Blokland, 2009).This means that less or no transition zone in a neighborhood results in less social contact between the residents.

The spatial characteristics of a neighborhood influences the transition zone and, consequently, the social interaction. Furthermore, the overall satisfaction with the neighborhood improves, and the length of residence increases. At the neighborhood level, the typology of the building and entrance determines the possibility of a transition zone (van Ulden, Heussen, & van der Ham, 2015).

No transtion zone between the dwelling and the street

Enclosed garden: no transition zone between dwelling and street

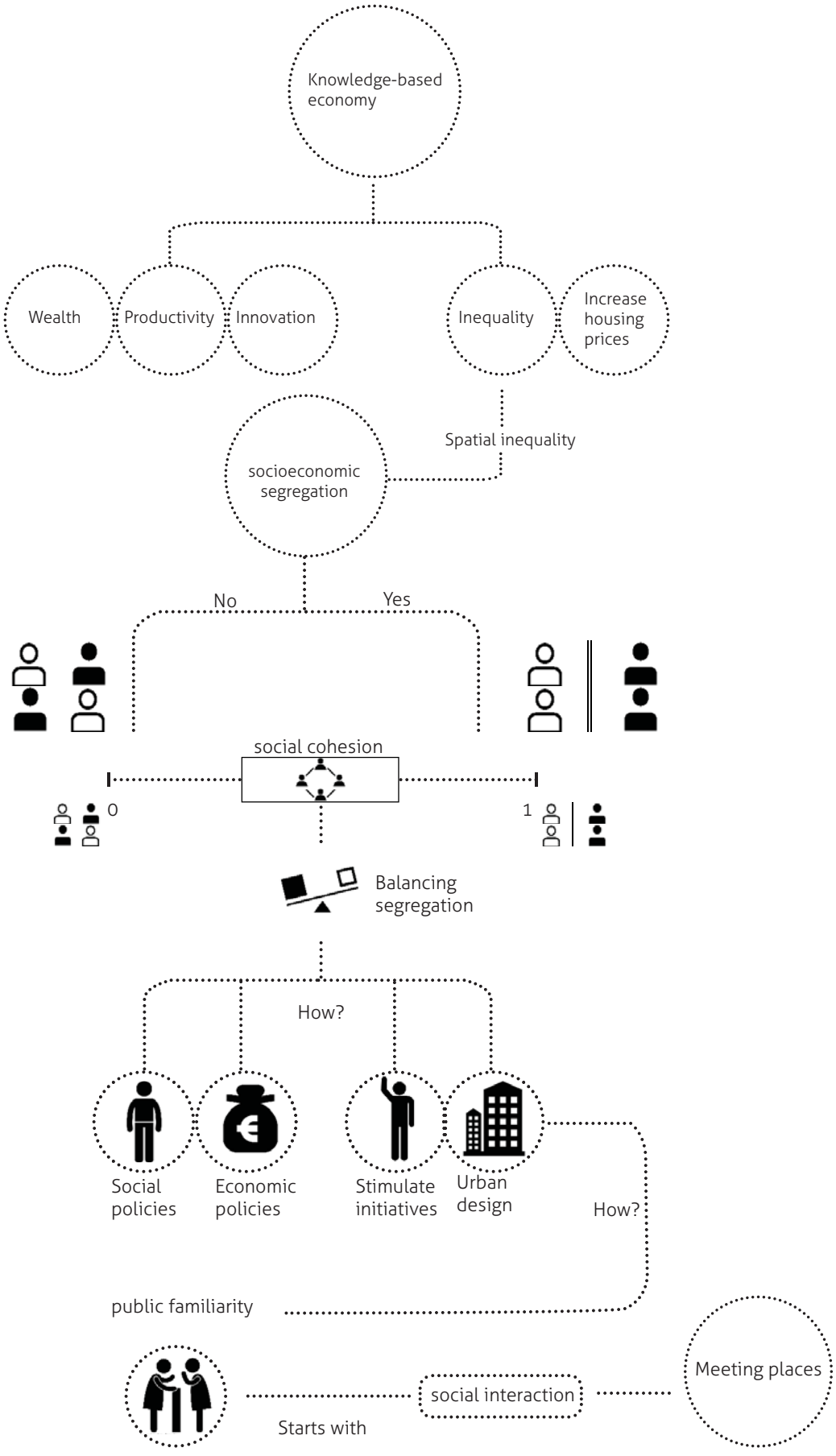
Transition zone inside the dwelling: often closed with curtains

Semi- enclosed garden: transition zone between dwelling and street

Transition zone between the dwelling and the street

Figure 23: Five different situations with a without a transition zone

Design conditions for social interaction in a neighborhood


Knowledge-based economy
Wealth
Productivity
Innovation
Inequality
Increase housing prices
Spatial inequality
socioeconomic segregation
No
Yes
social cohesion
0
1
Balancing segregation
How?
Social policies
Economic policies
Stimulate initiatives
Urban design
How?
public familiarity
Meeting places
social interaction
Starts with

Design parameters

The analysis of the methods for enhancing social interaction, through urban design, resulted in design parameters. These parameters can be categorized into three different scales: street, block, and neighborhood. This distinction is important as different conditions can be implemented at different scales. Moreover, the conditions have a different effect at different scales. Besides the scales, the parameters can also be categorized by topic namely: morphology, typology, and use. The morphology of a city is the urban fabric of a city. The fabric defines the framework of the city (Oliveira, 2016). The typology in the subdivision of the urban fabric in type of program, type of dwelling. The use refers to the facilitated activities in the urban fabric. The urban fabric defines the structure of the street, block and neighborhood and can, because of this, encourage or discourage certain activities. It is therefore vital to ensure a proper framework, if social interaction is the goal.

Obviously, the design parameters do not guarantee social interaction. Numerous other conditions, such as economic and social, have a profound influence on the encouragement or discouragement of social interaction. This report focuses on the urban design conditions. The result of this research by design is therefore not an ideal model for society. Even if this would be the case, it would only cover the urban design conditions for a social interactive neighborhood.

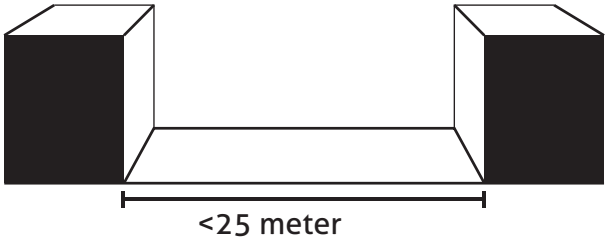


Figure 24: Dimensions

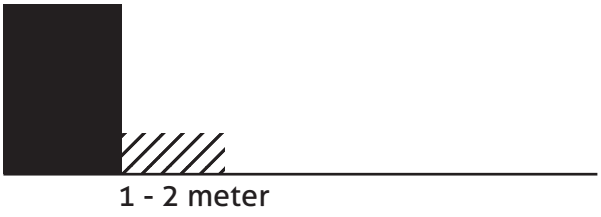


Figure 25: Encraochment zone

Figure 25: Semi-public space

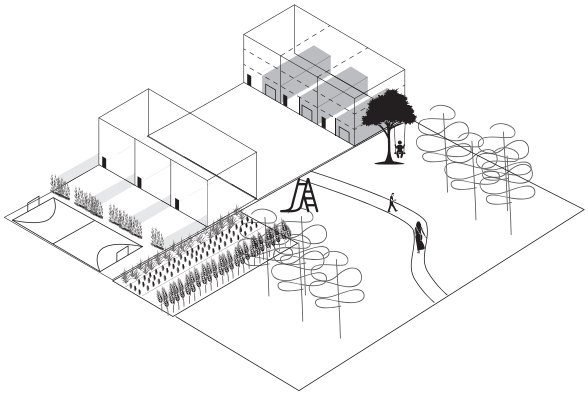


Figure 25: Connecting facilities

Morphology

The dimensions of the streets should be within 25 meters. This ensures visual contact between neighbors. Visual contact is a precondition for social interaction (Gehl, 1971).

A transition zone should be created in between the private zone and the public zone. This zone is called the encroachment zone. When carefully designed, this space will encourage appropriation. The zone should be around 1 or 2 meters and not exceed 3,7 meters, as this will encourage residents to enclose the space (Hall, 1966). The enclosure of the space descreases the possibility for social interaction.

The difference between the public and semi-public space is important in the design. If the difference between the public and semi-public space is substantial people will not feel welcome to enter the space. This could result in more social cohesion within the block, as less unfamiliar faces enter the block. However, the social differences between the blocks could increase. This could result in segregation between the blocks.

The morphology of the neighborhood should facilitate a mix of functions. It should be possible to connect multiple functions within a neighborhood. This ensures a possibility for a variety of activities, and hence, more social interacion.

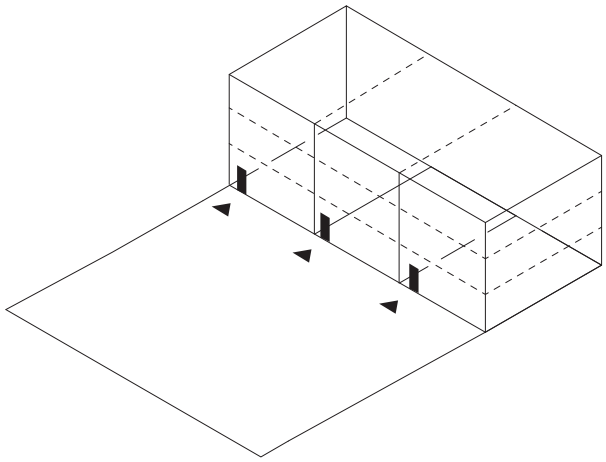


Figure 26: Access

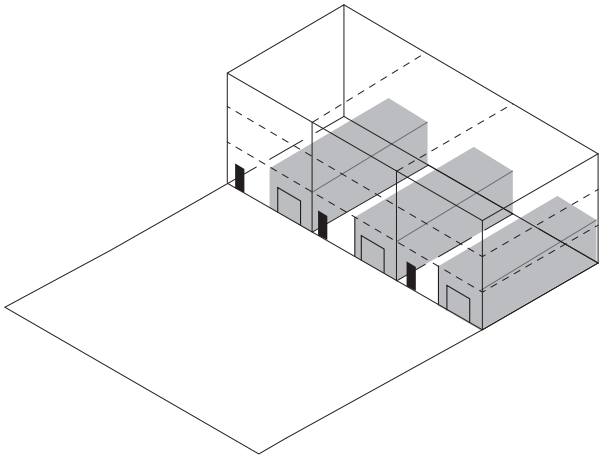


Figure 27: Mixed use of the dwellings

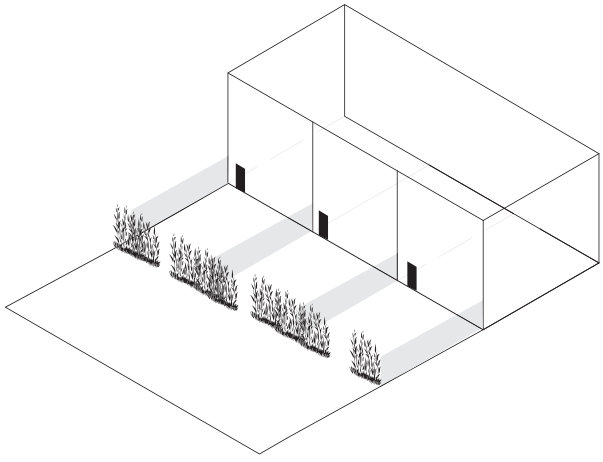


Figure 28: Enclosure of the back and front yard

Typology

The typology of the dwellings should enable social interaction and thus should contain a transition or encroachment zone which is adjacent to the exterior. This is only possible if the access of the building is in direct connection to the street.

A mixed use program transforms a monofunctional area into an area with multiple activities throughout the day. Hence, social interaction is more likely to occur.

The borders of the private gardens should be soft, and hence, encourage the use of the adjacent collective space.

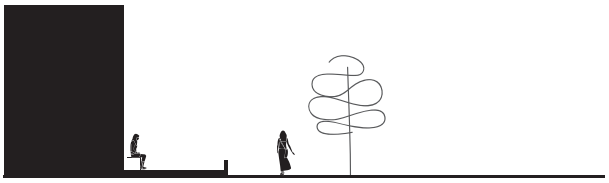


Figure 29: Encroachment zone

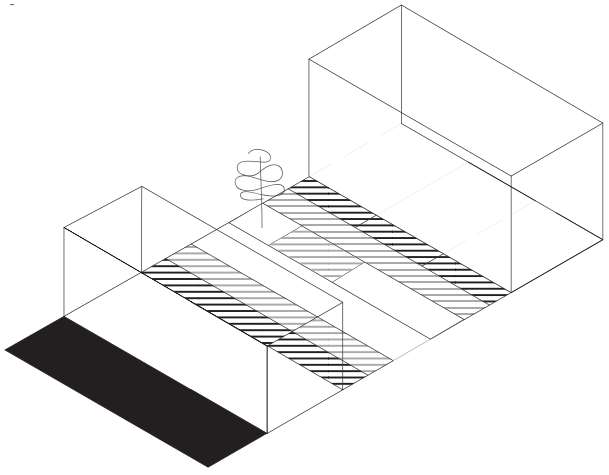


Figure 30: Encroachment zone in the streets

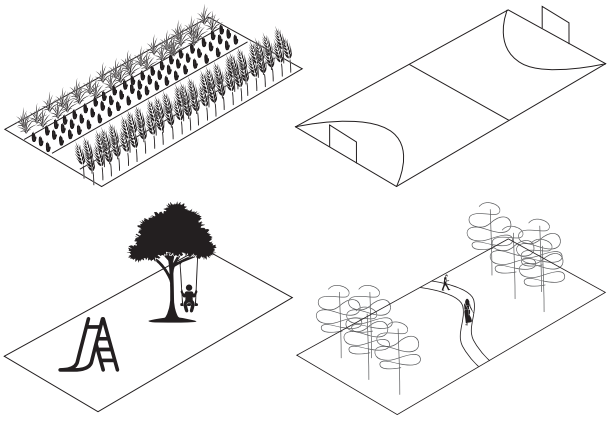


Figure 31: Urban farming, sports field, playground, park

Figure 32: Public transport

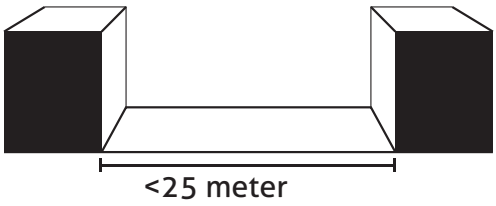
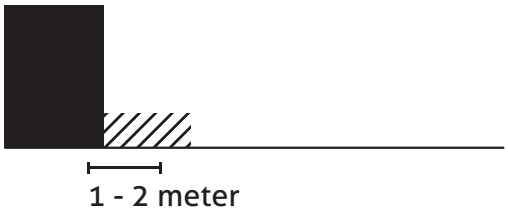
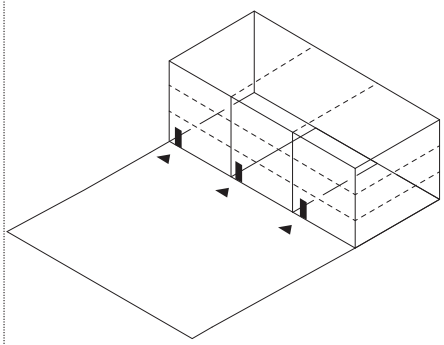
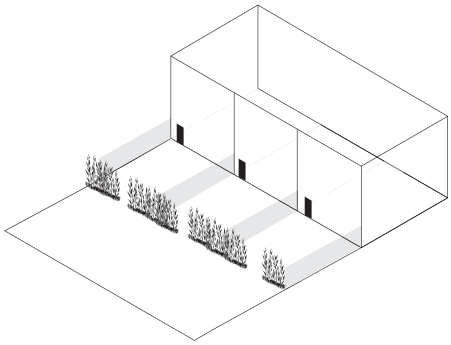
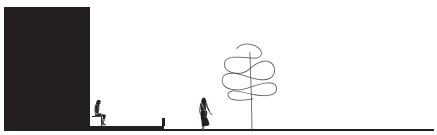
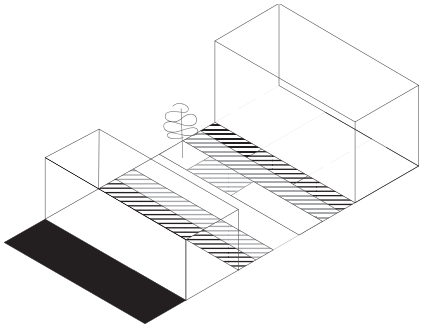
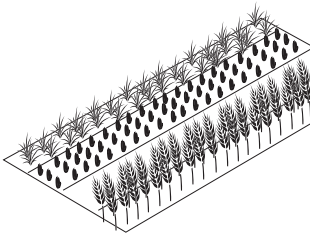
Use

The design of the streets should encourage appropriation. This could be achieved by a gradual transition from the private to the public zone through an encroachment zone. Appropriation should be possible in both the encroachment zone as the public street.

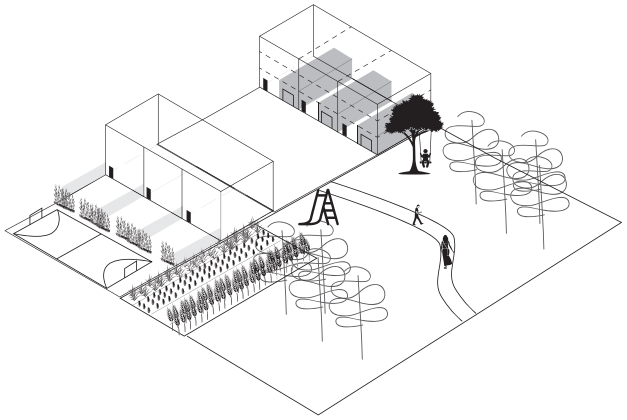
The addition of a program to a block creates the possibility for activities. Each activity requires a certain dimension. Urban farming requires a space of around 10 by 20 meters. A playground or sports field requires an area of around 20 by 40 meters.

The program of the neighborhood should include functions that attract residents from other areas, for instance a park. This increases the social interaction between the residents of different neighborhoods.

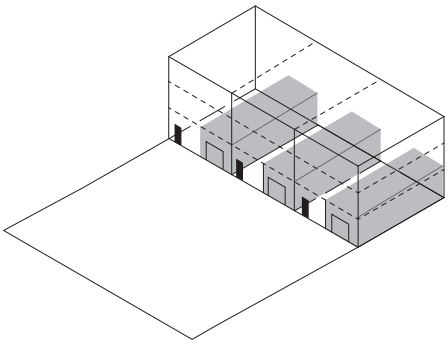
The facilitation of good public transport connections could increase the use of public transport, and, hence, the pedestrian traffic in the neighborhood.

	Street	Block
Morphology	 *Dimensions*  *Encraochment zone*	
Typology	 *Access*  *Enclosure of the back and front yard*	
Use	 *Encroachment zone*  *Encroachment zone in the streets*	 *Urban farming*

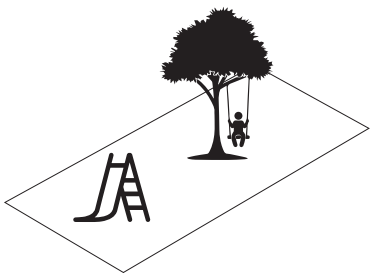
Semi-public space



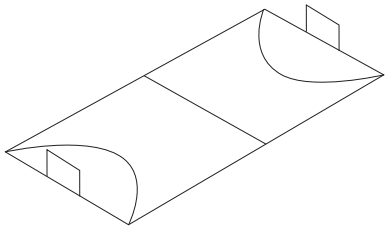
Connecting facilities



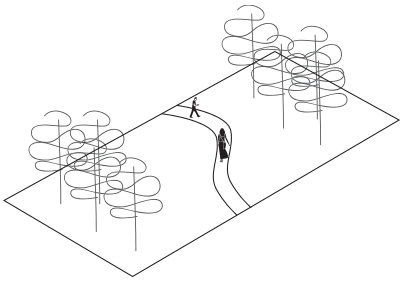
Mixed use of the dwellings



Playground



Sports field



Park

Public transport

Research by design: Waterlandpleinbuurt

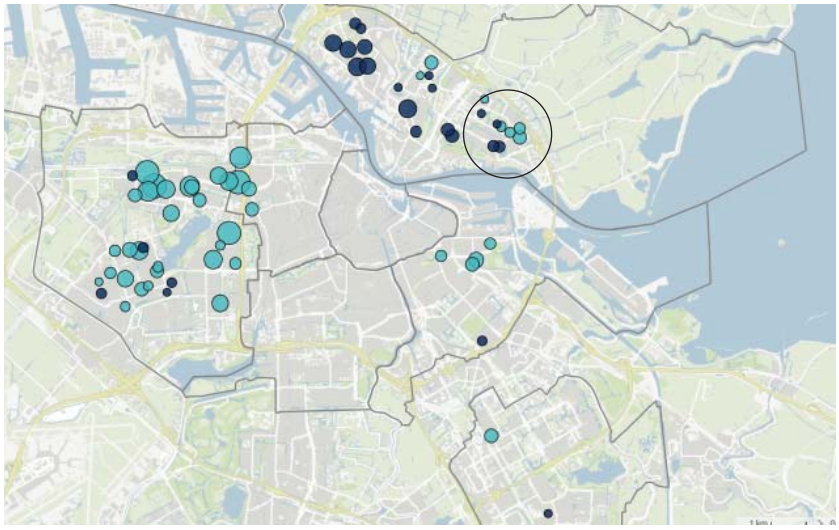
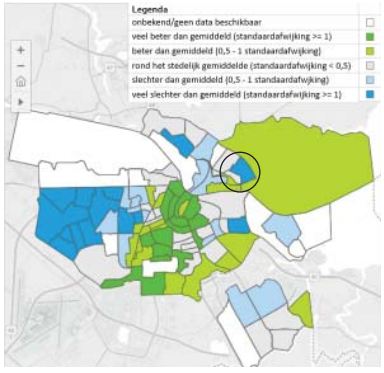


Figure 33: Results of the parliamentary election of 2017.

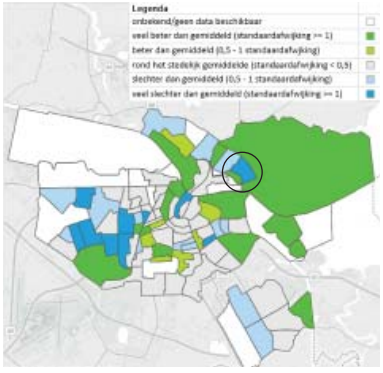
The dotted areas represent the local winner of the elections. Both colors represent populist parties.
Light blue = Denk
Dark blue = PVV

The Waterlandpleinbuurt is an area where both parties have won. This could be an indication for social agitaion

(www.maps.amsterdam.nl)



Social agitation



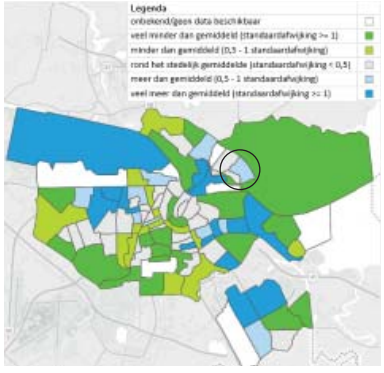
Social cohesion score

Figure 34: Social agitation, social cohesion score, low income, and registered unemployment.

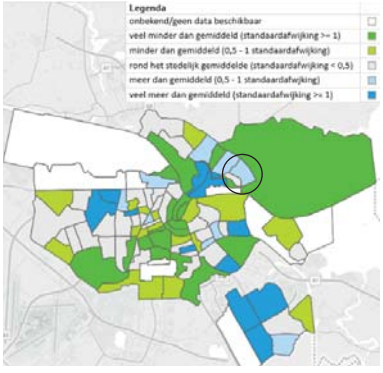
The Waterlandpleinbuurt is a neighborhood with a high level of social agitation, and a low social cohesion score.

The low income households and the registered unemployment is higher than the average of Amsterdam.

(http://www.ois.amsterdam.nl/visualisatie/dashboard_kerncijfers.html)



Low income



Registered unemployment

Waterlandpleinbuurt

The Waterlandpleinbuurt is a neighborhood in Amsterdam-Noord. The south-west part of the neighborhood (officially known as Werengouw Midden) is analyzed in this research. The typical postwar buildings in this area, were built in the beginning of the 1960s. The plan of the neighborhood is monofunctional and is therefore strongly fragmented. The repetition in both the urban plan as well as the architecture of the neighborhood results in anonymity. Recognition and appropriation of the dwellings is almost impossible in the area. The typology of the neighborhood consists of apartment buildings of four floors with a vertical shared entrance.

Figure 35: Location of the Waterlandpleinbuurt

(www.openstreetmap.org)

In the last two decades, the Waterlandpleinbuurt has been partly reconstructed. This reconstruction has commenced in the north-west part. This decision was made due to the outdated program of the area. A thorough analysis of the neighborhood led to the conclusion that the dwellings did not meet the current demands. Consequently, the postwar apartments were replaced for terrace houses. The ambition of the program consisted of the differentiation of the housing supply, and hence, offering a prospect for current residents. Furthermore, an important aspect of the program was the upgrading of the social status of the neighborhood. The chosen approach consisted of mixing social groups at microscale, by alternating social housing and private sector housing (Stadsdeelbestuur Amsterdam-Noord, 2001). However, as can be seen in figure 34, the upgrade of the neighborhood has not occurred. This corresponds to the result of the literature review, as mixing socioeconomic groups does not automtically upgrade the socia status of the neighborhood.

Recently, the center of the neighborhood has been reconstructed. Multiple mixed-use buildings were added in the center of the neighborhood, housing numerous facilities.

The neighborhood is chosen for its low score in social cohesion, relatively high social agitation, high unemployment ratio and low-income households (figure 34). Furthermore, a recent parliamentary election has shown the significant influence of populism in the area, as can be seen in figure 33.

Figure 36: Location of research

The reserach focusses on a particular part of the area that is characterized by postwar buildings. All the buildinsg are social housing. The area can be seen in figure 36.

Analysis

The area is analyzed according to the previously determined design conditions.

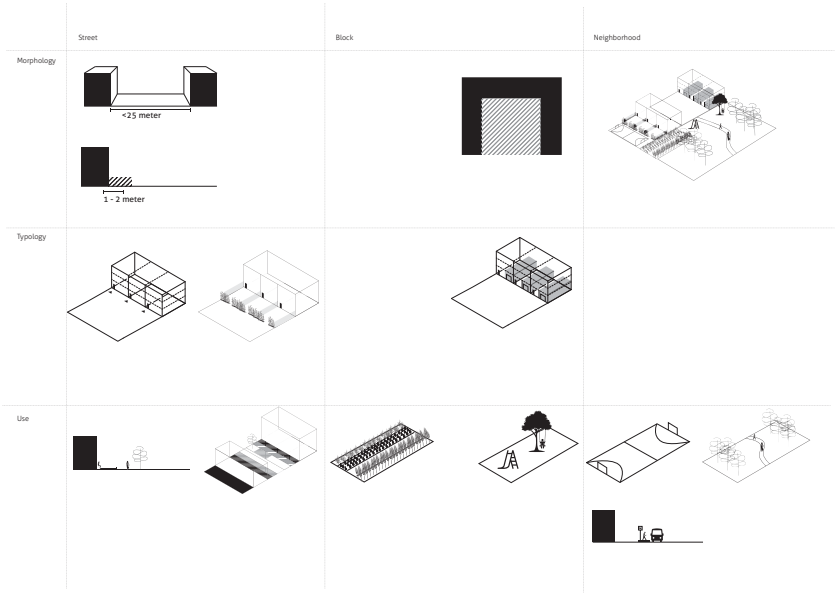
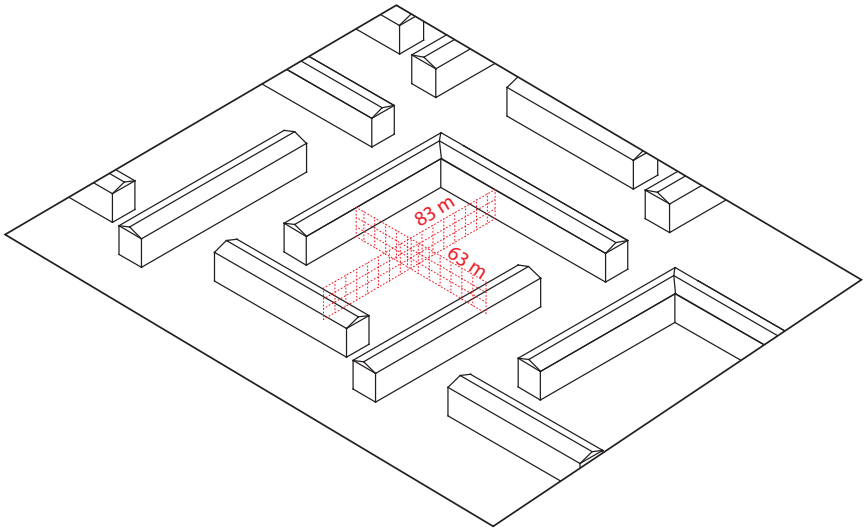


Figure 37: Design conditions

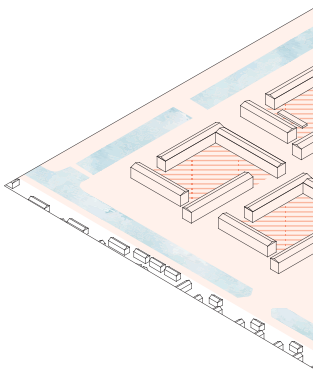
Street

Block

Morphology

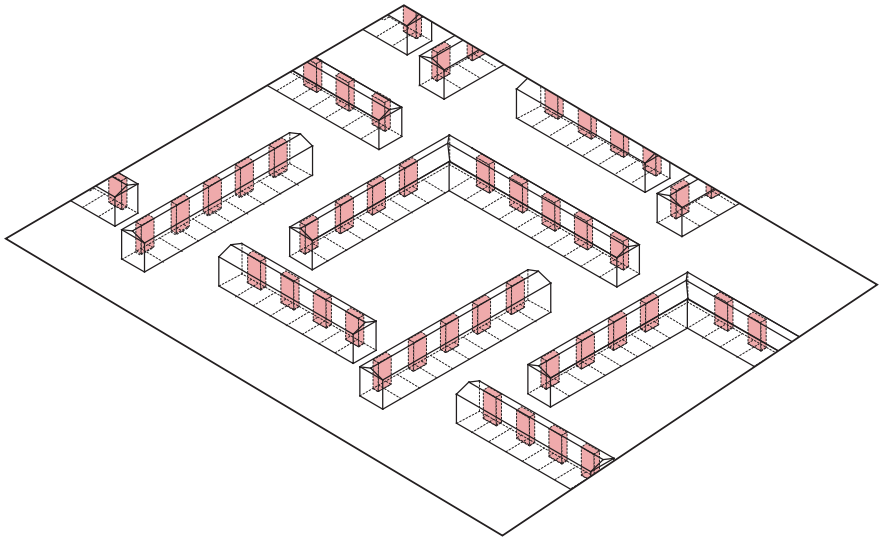


Dimensions

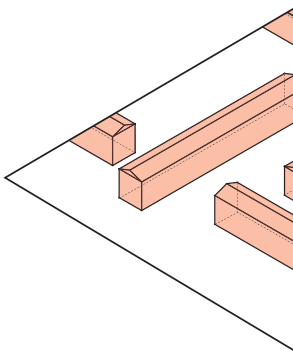


Semi private space

Typology

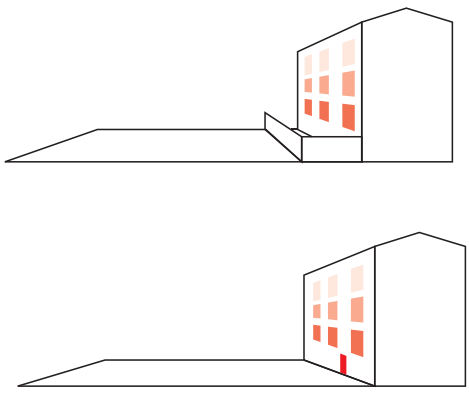


Access

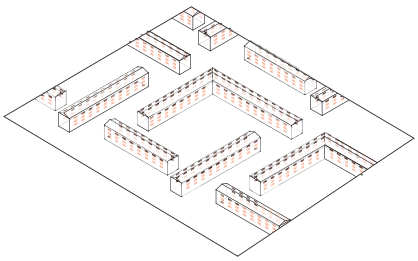


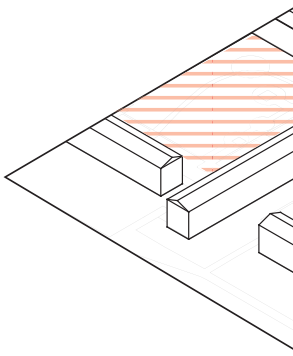
Mixed use of the dwellings

Use



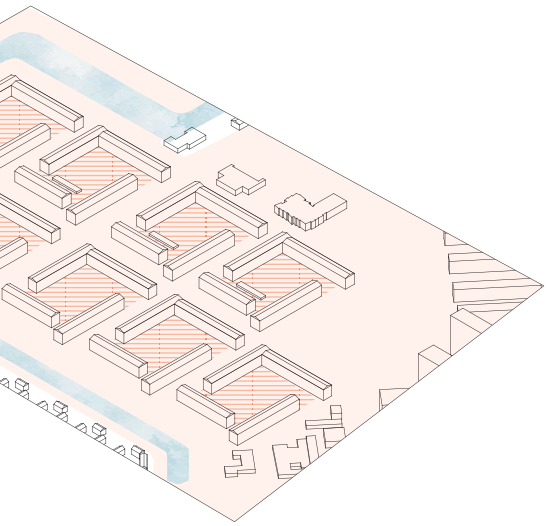
Encroachment zone

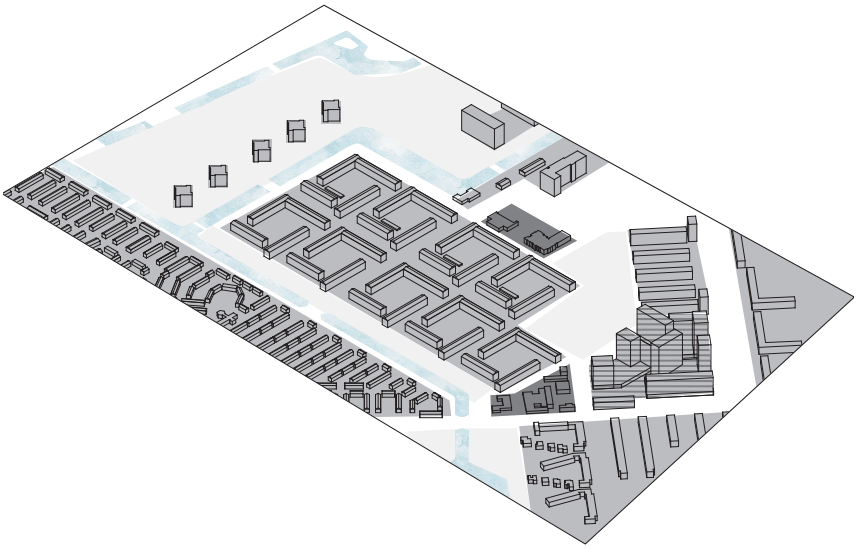




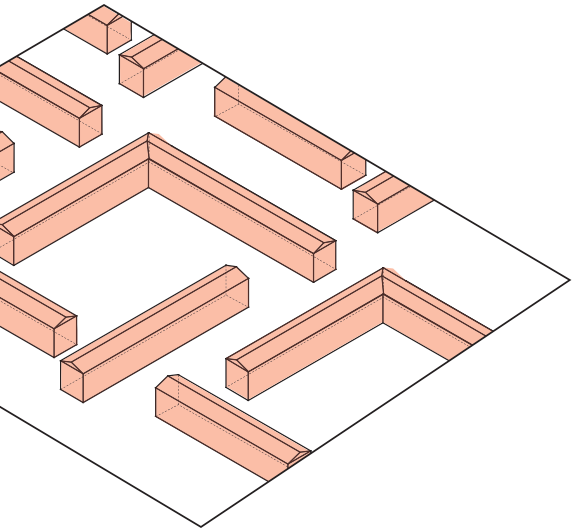
Variety in program

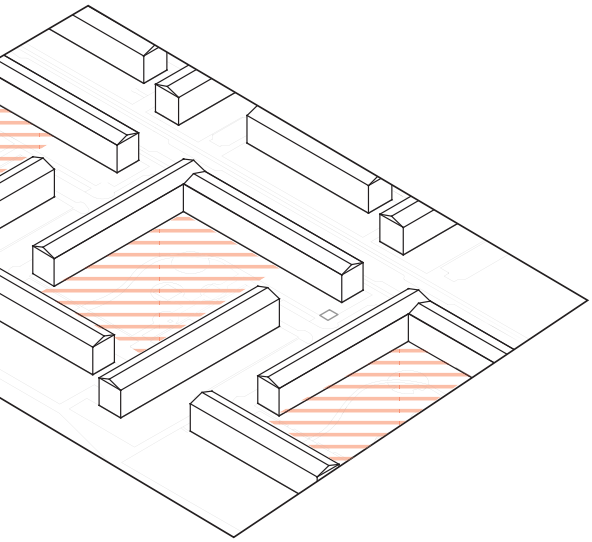
60

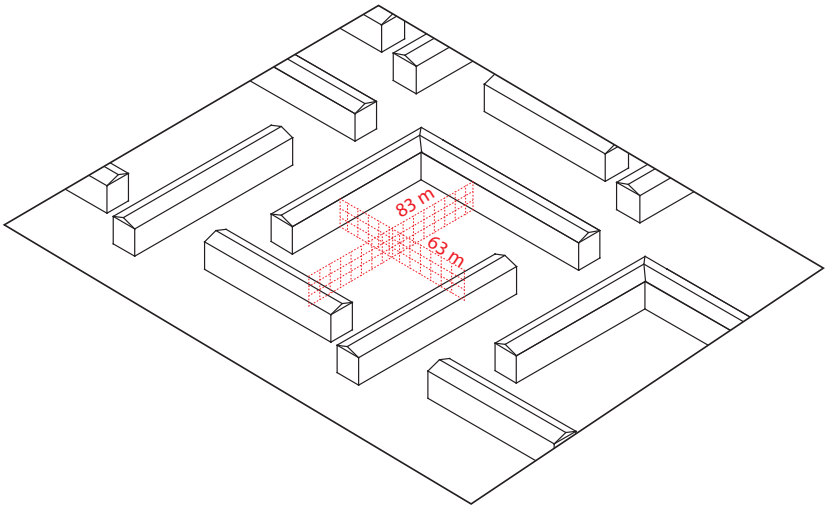




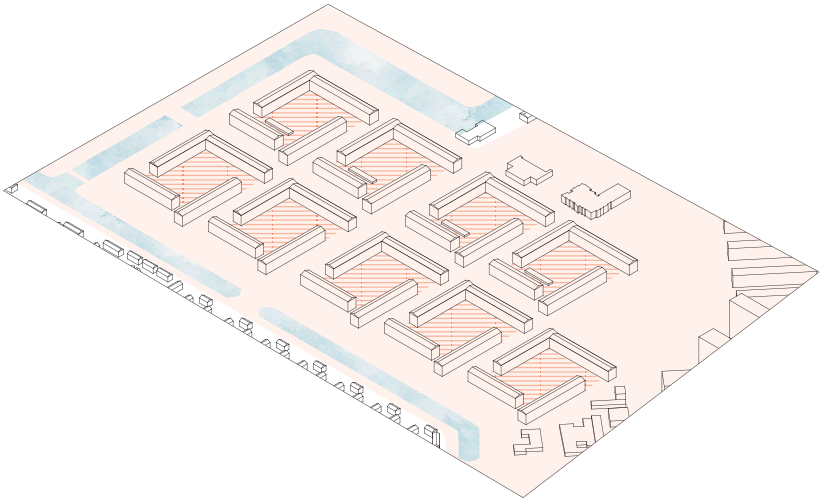
Connecting facilities



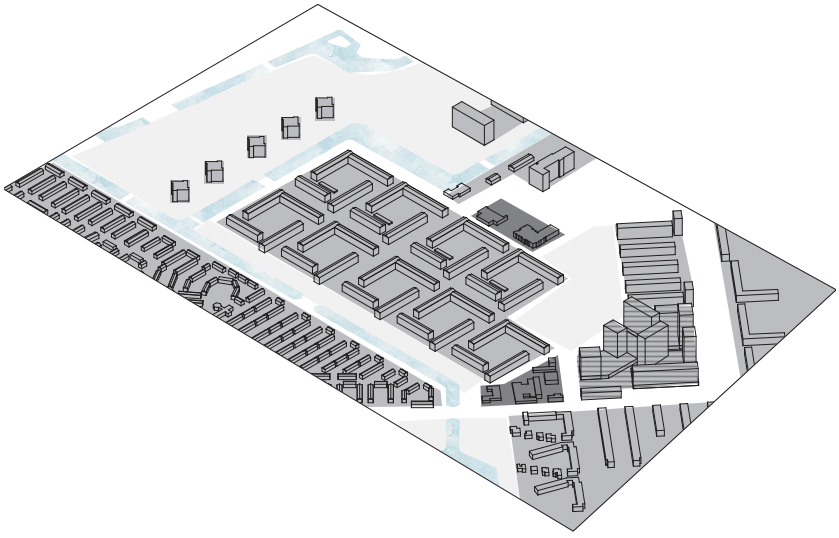




Dimensions



Semi private space



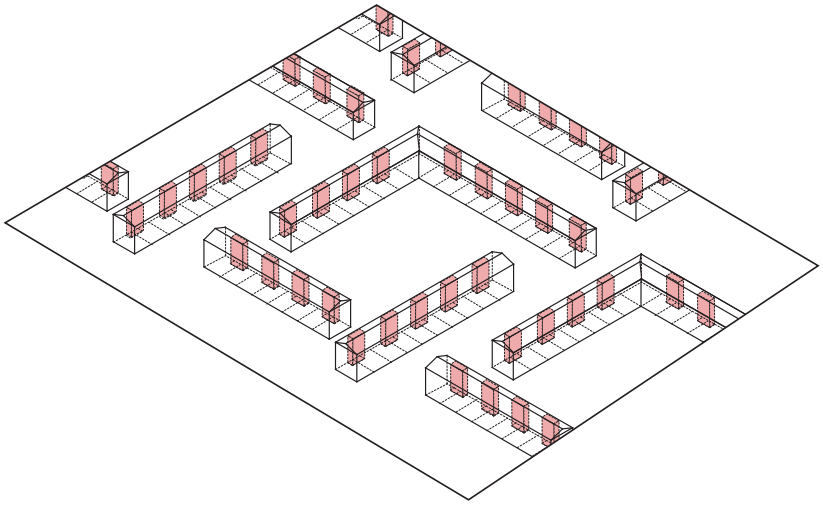
Connecting facilities

Morphology

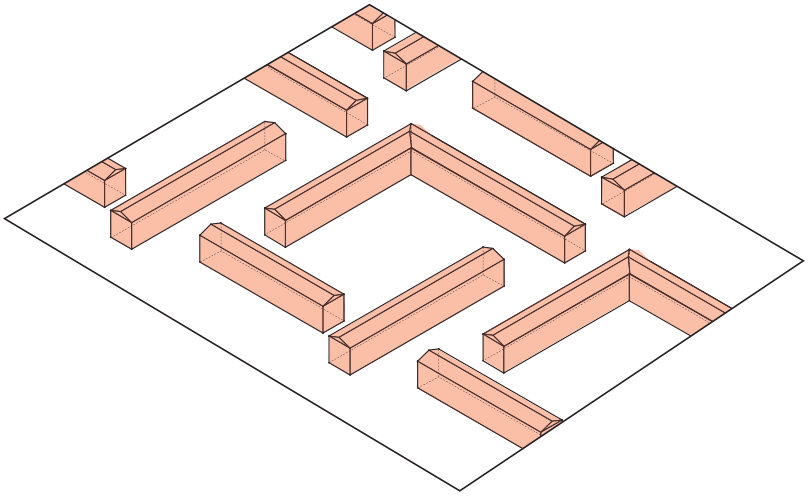
The dimensions of the blocks do not correspond to the maximum dimensions given in the previous chapter. The 83 by 63 meter area in between the blocks make recognizing neighbors problematic.

The morphology of the block ensures a minor transition from public to private. However, the extensive scale of the area in between the blocks make it impossible to adequately make the space semi-public.

The neighborhood is strongly fragmented. Living is separated from other activities, hence a mix of activities does not occur.
The recently built shopping center of the neighborhood attracts residents from other neighborhoods. However, the neighborhood lacks other facilities that can attract people.



Access

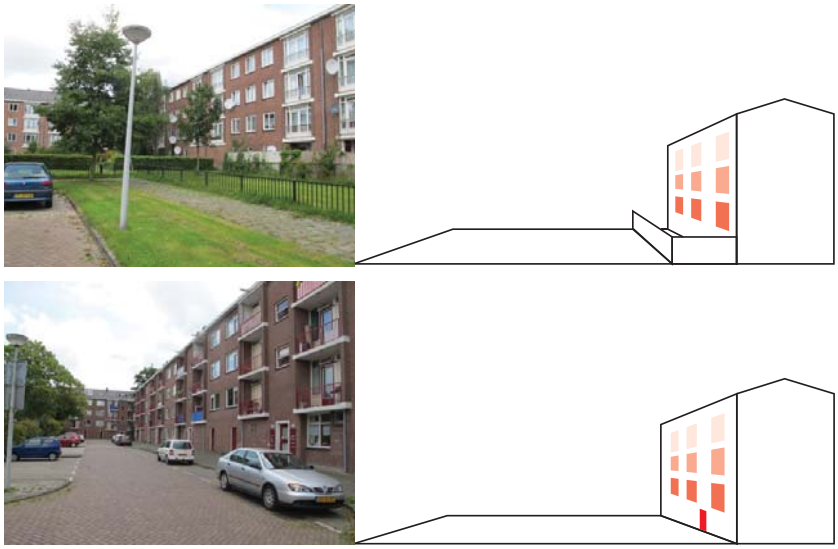


Mixed use of the dwellings

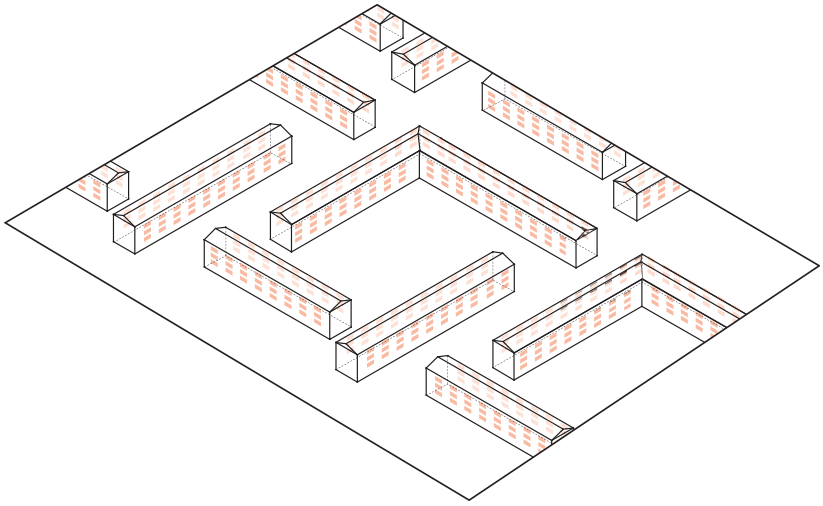
Typology

All the buildings have vertical shared entrances, and thus, no direct connection to the street. This results in the absence of an encroachment zone in between the dwelling and the street.
Only a minor selection of the dwellings has a private garden. All these gardens are fully enclosed without an encroachment zone to the public space.

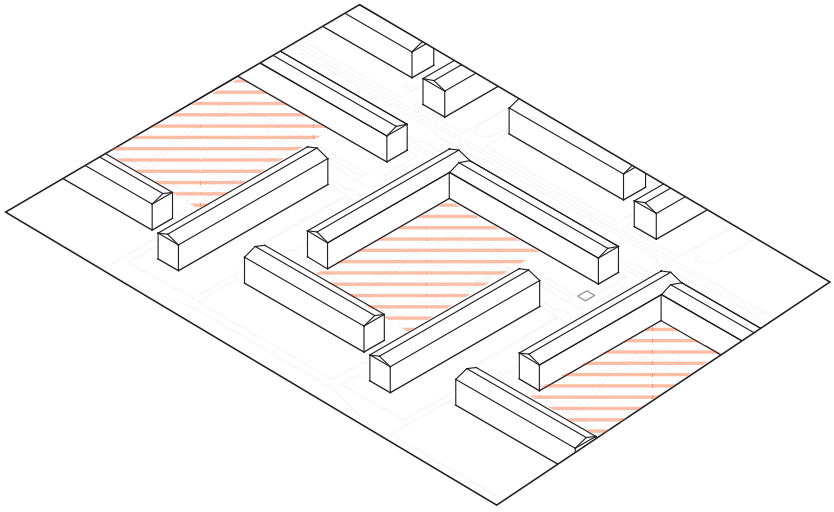
Both the design of the street as the typology of the entrance does not make it possible to appropriate a part of the area.



Encroachment zone



Encroachment zone



Variety in program

Use

The only encroachment zone is located on the balcony of the dwellings. As this zone is not a direct connection to the street, the transition zone is not sufficient for the encouragement of social interaction.

The public space in the neighborhood does not have a clear function and therefore, does not encourage particular use.

Design

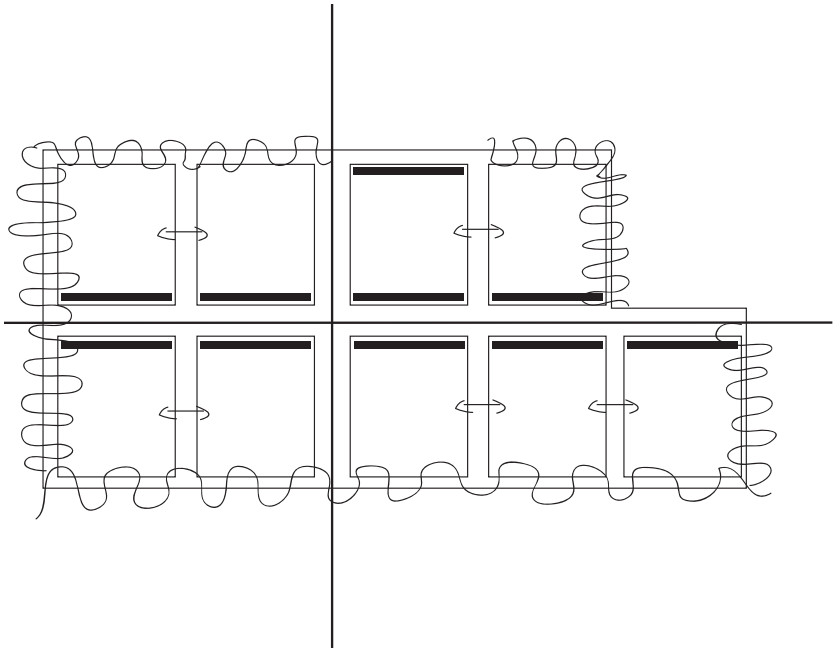
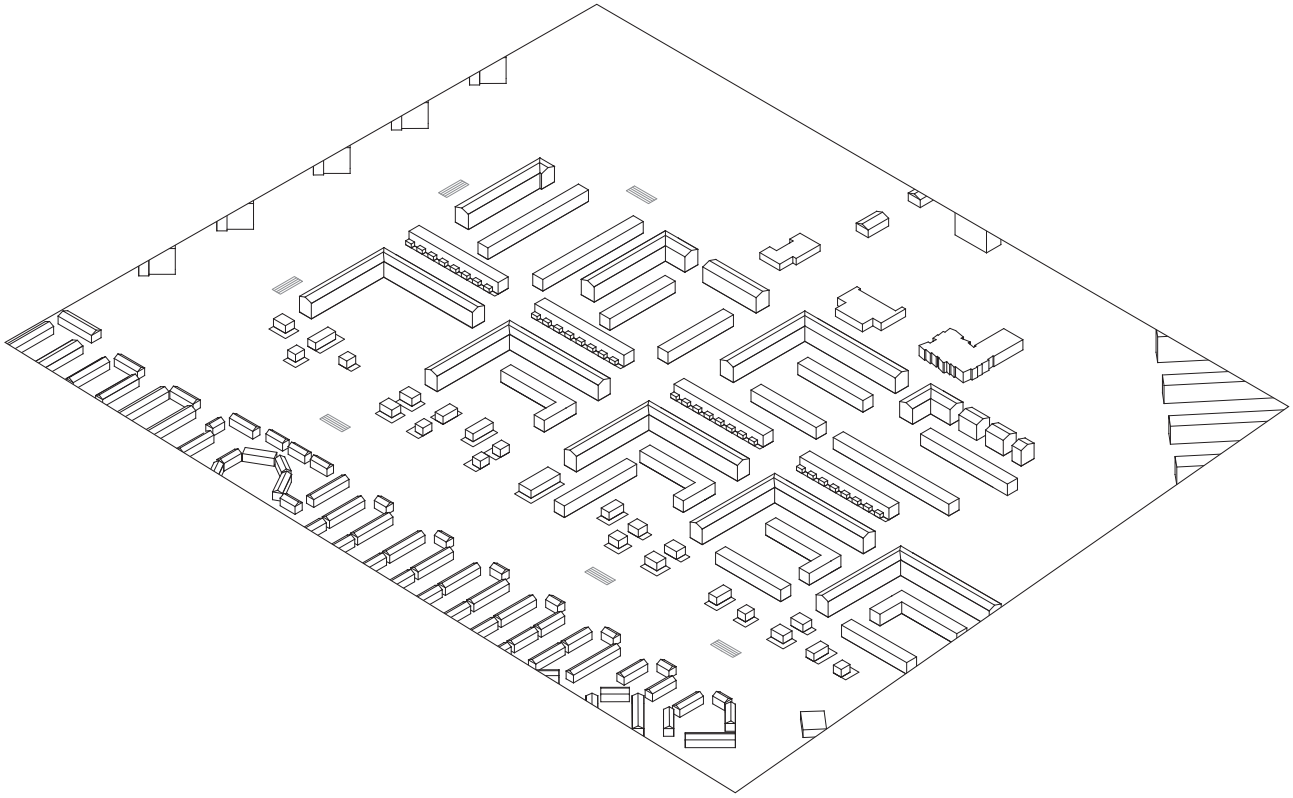


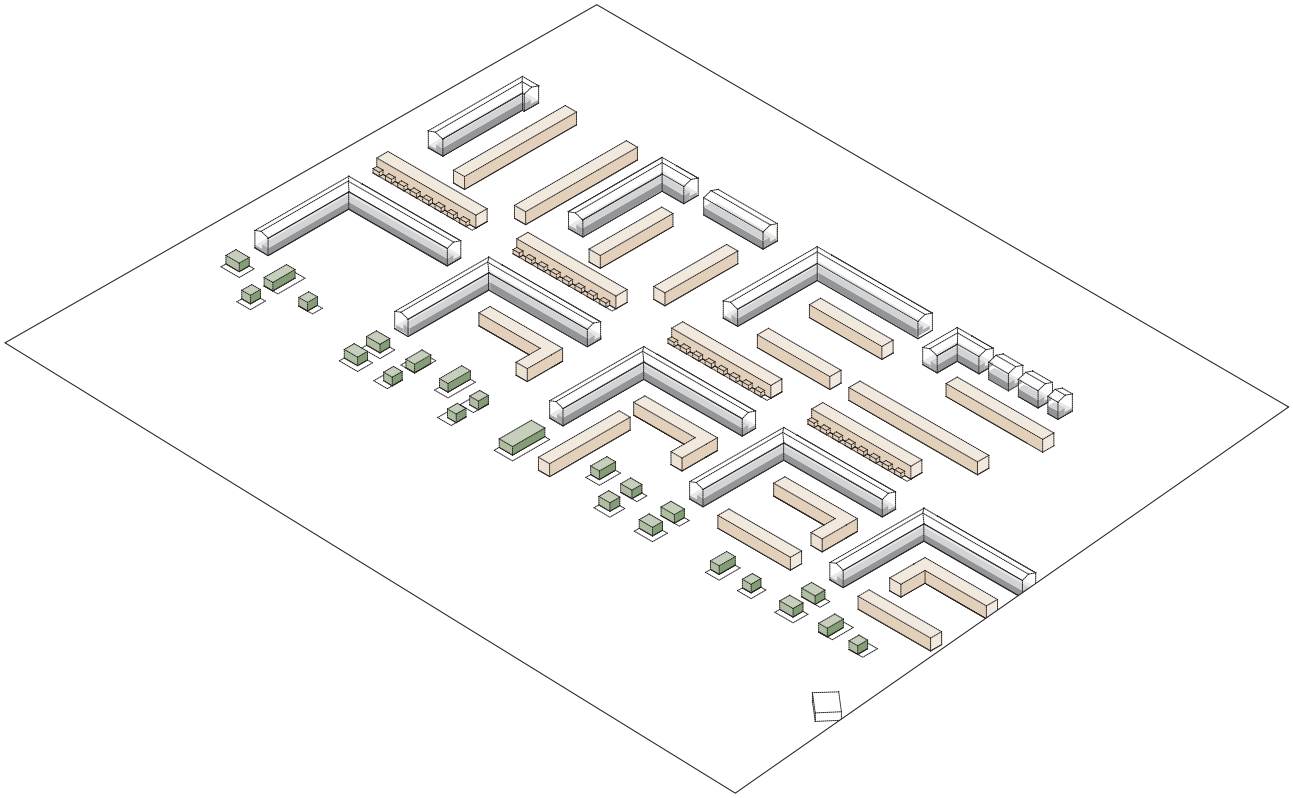
Figure 38: Concept

Concept

The prior stated design conditions, together with the analysis of the neighborhood, act as the foundation of the new design for the neighborhood. These conditions imply a certain method for the design. This method is almost mathematical, as some of the conditions consist of a certain measurement, and could be applied on every location of choice. However, to create a sufficient design, simply applying this method will not be enough. Hence, a concept for the design is needed.

The developed concept strengthens the horizontal axes of the plan by accentuating the adjacent buildings along the horizontal road. A connection to the surrounding is made through the borders of the morphology. The green fringe, as well as the park, is drawn into the morphology. Creating the, currently missing, connection between the surrounding and the buildings.





Morphology

The new morphology of the neighborhood decreases the distances between the buildings. The maximum distance is around 25 meter. Furthermore, the morphology creates semi-public spaces in each block. The fringe of the plan is incorporated in the surrounding making the neighborhood less secluded.

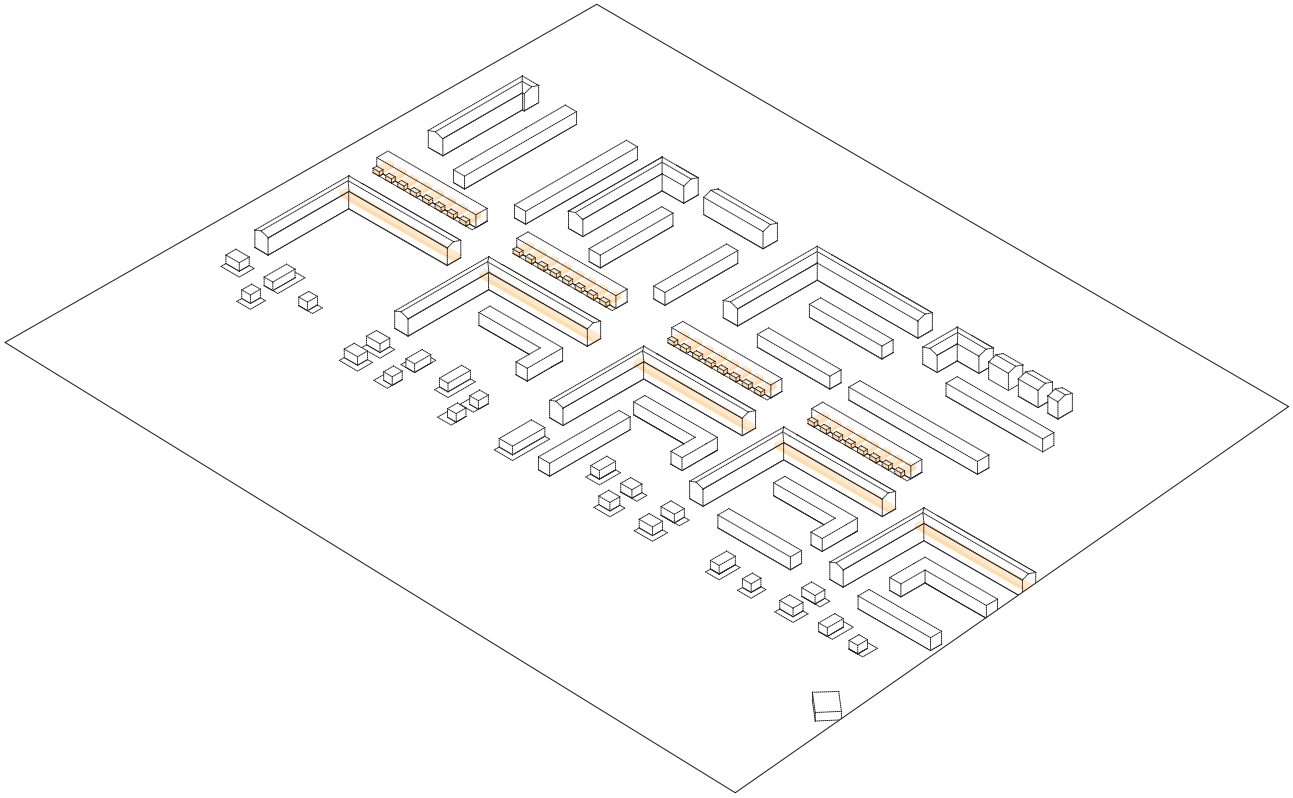
Typology

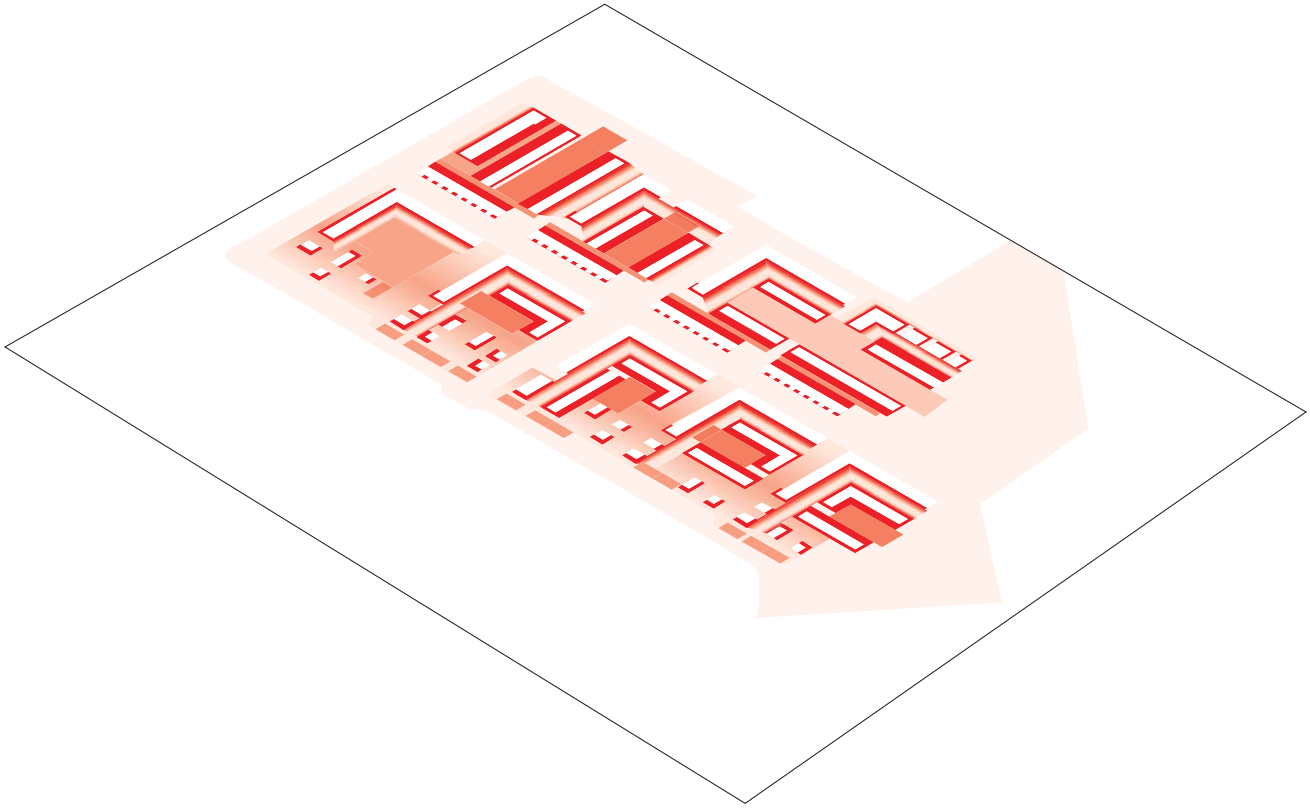
The typology of the existing buildings is changed from only apartments with vertical shared entrances to maisonnettes (grey), apartments (white), terrace houses (brown), and urban villas (green). The differentiation should extend the length of stay in the neighborhood as residents can alter from type of dwelling. A longer length of stay of residents is beneficial for the social cohesion within a neighborhood.

The transformation of the existing apartment blocks to maisonnettes and apartments creates more entrances adjacent to the street.

The added terrace houses also ensures an entrance adjacent to the street making it possible to create an encroachment zone. The composition of the added terrace houses create a semi-public space in the blocks.

The urban villas are placed in the green fringe. This connects the blocks to the park.



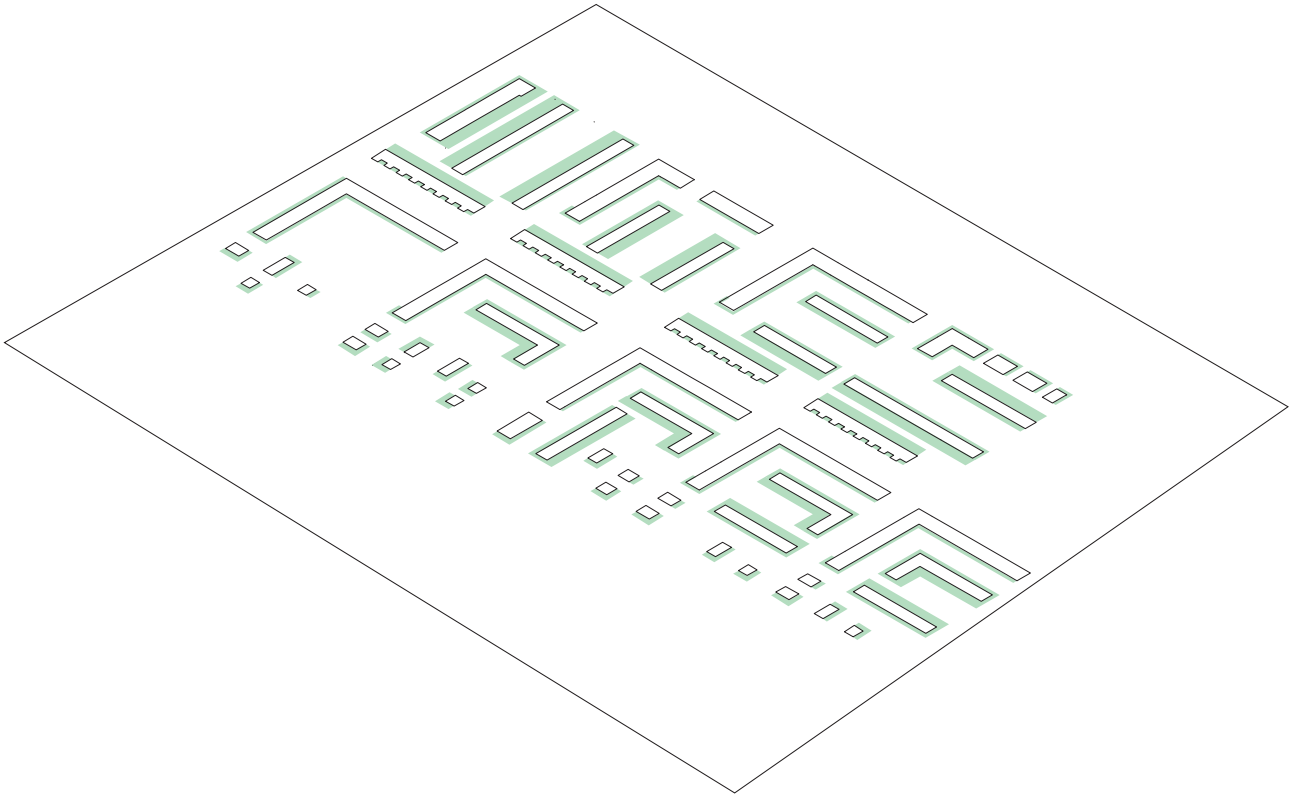


Mixed use

The maisonnettes and terrace houses along the central axes contain mixed use dwellings. These dwellings combine working and living. This mix is needed as it ensures more activities in the neighborhood. Moreover, the neighborhood has a relatively high number of freelancers. However, the existing supply of working environments is minor in the neighborhood. Adding these units will fulfill this demand.

Private/public

The morphology of the buildings accompanied by the typologies of the entrances of the dwellings, as well as the design of the streets, creates an informal transition from private to public.

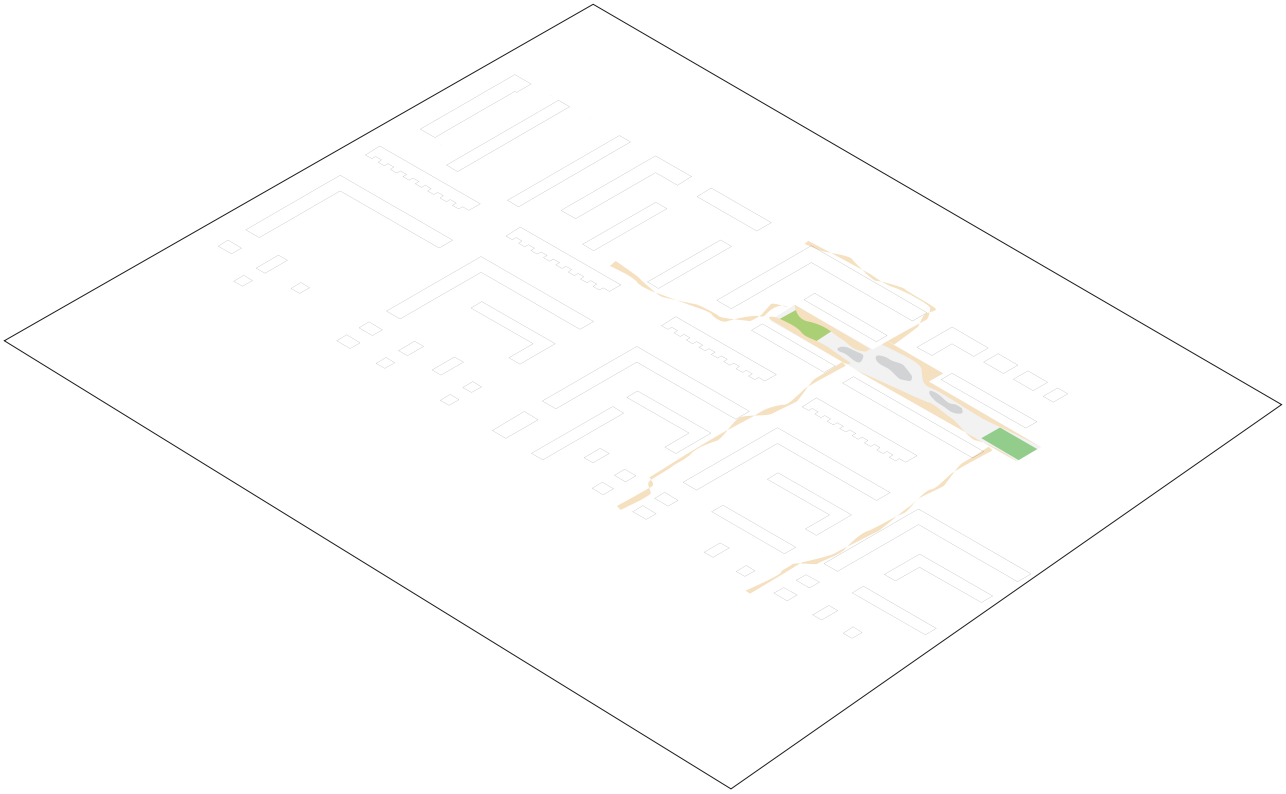


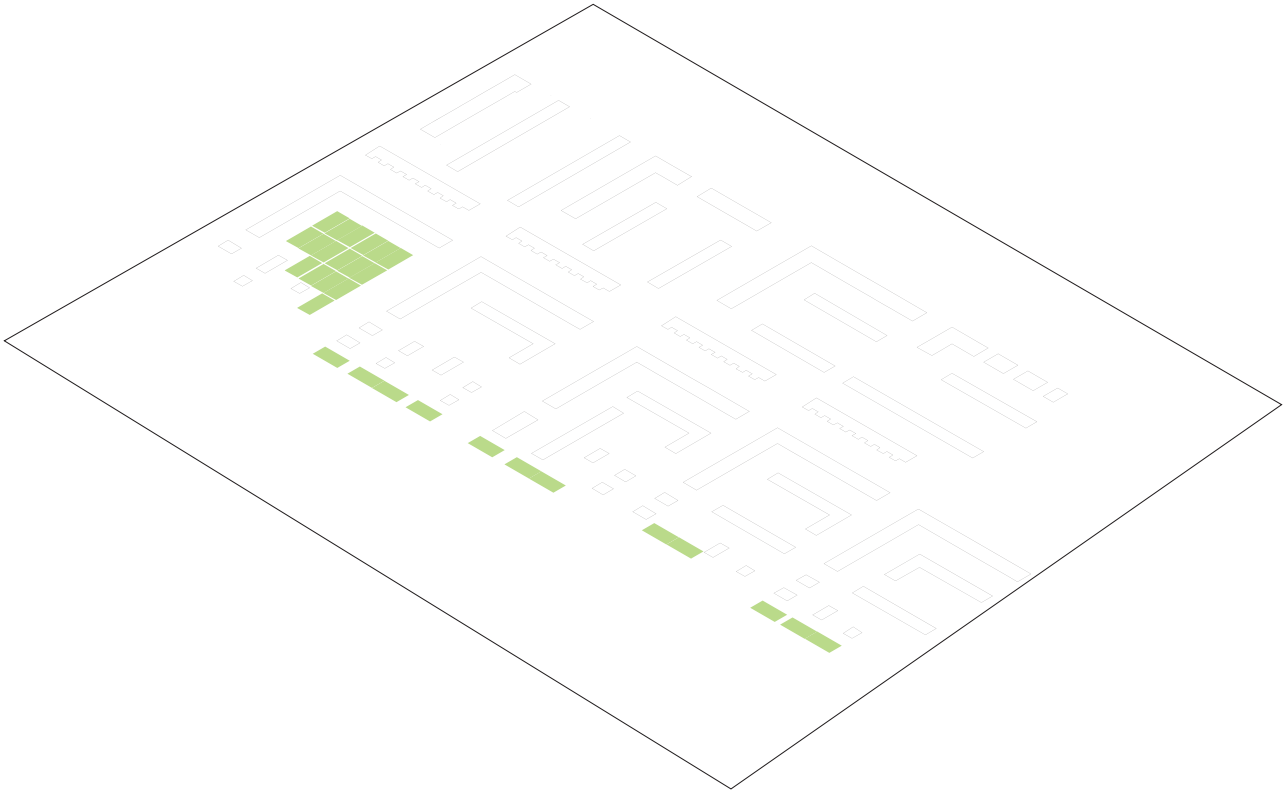
Collective space

Six of the eight block have a collective green space. The dimensions of these spaces are around 20 by 40 meters, which is a sufficient dimensions for a collective space within a block. The spaces can be designed as playgrounds, small parks, barbeque zones, or even swimming pools.

Private gardens

The terrace houses include a private yard in the front and back of the dwelling. The maisonnette dwellings include a front yard. The urban villas include a terrace. The dimensions of the front yards as well as the terraces are sufficient for the creation of an encroachment zone (1 - 3,7 meters).



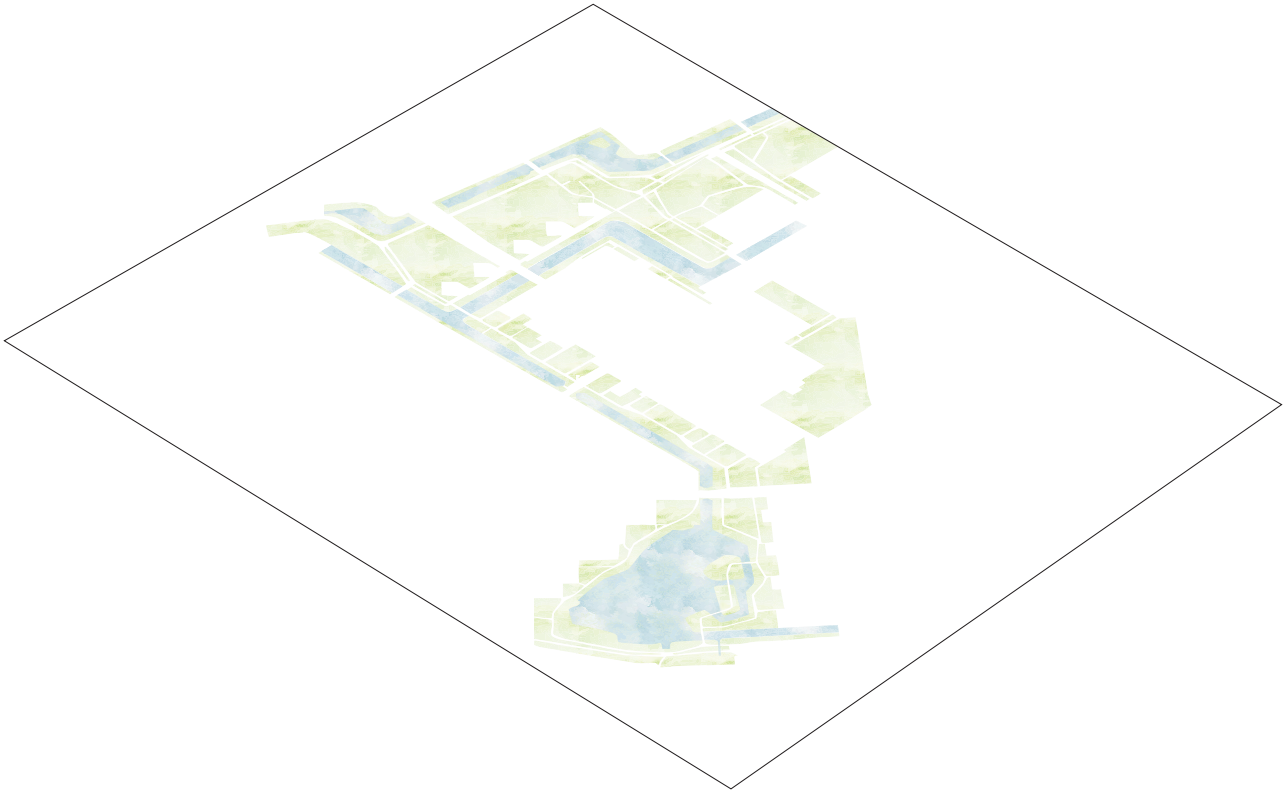


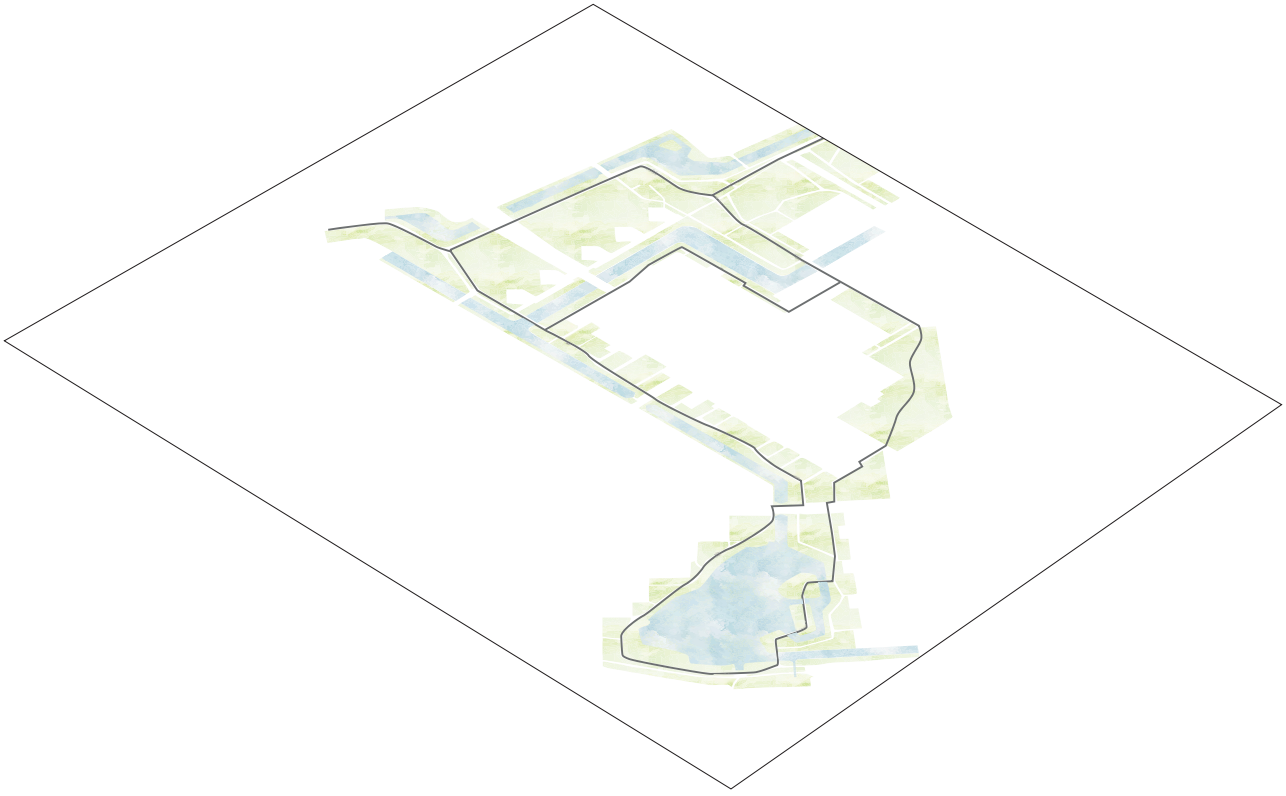
Playground

The playground is intended for the whole neighborhood. A child route leads to the playground from the other blocks. The playground is supplied with playground equipment for different age groups.

Urban farming

Urban farming is added in one of the blocks and along the green fringe. Within the block, the urban farming will ensure activities and increase the possibility for social interaction. Along the green fringe the urban farming creates a transition from the public park to the semi-public blocks.



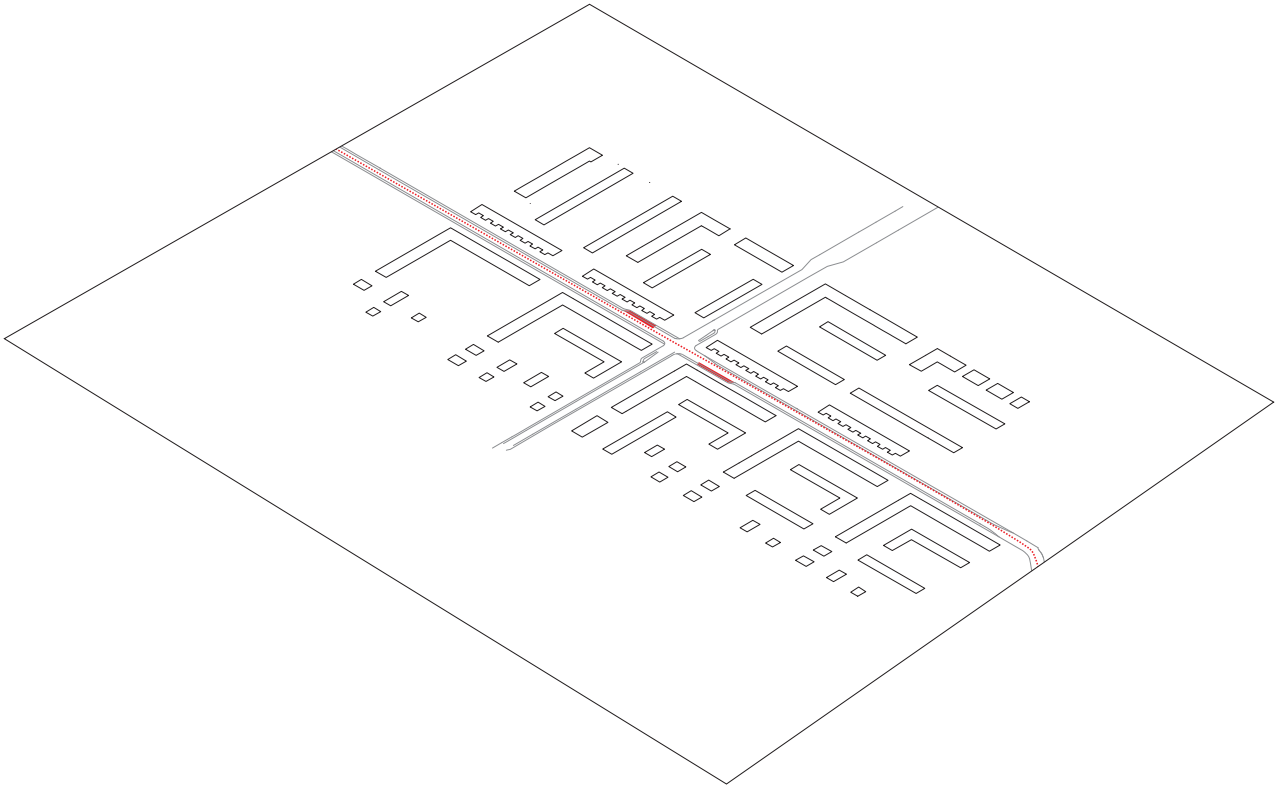


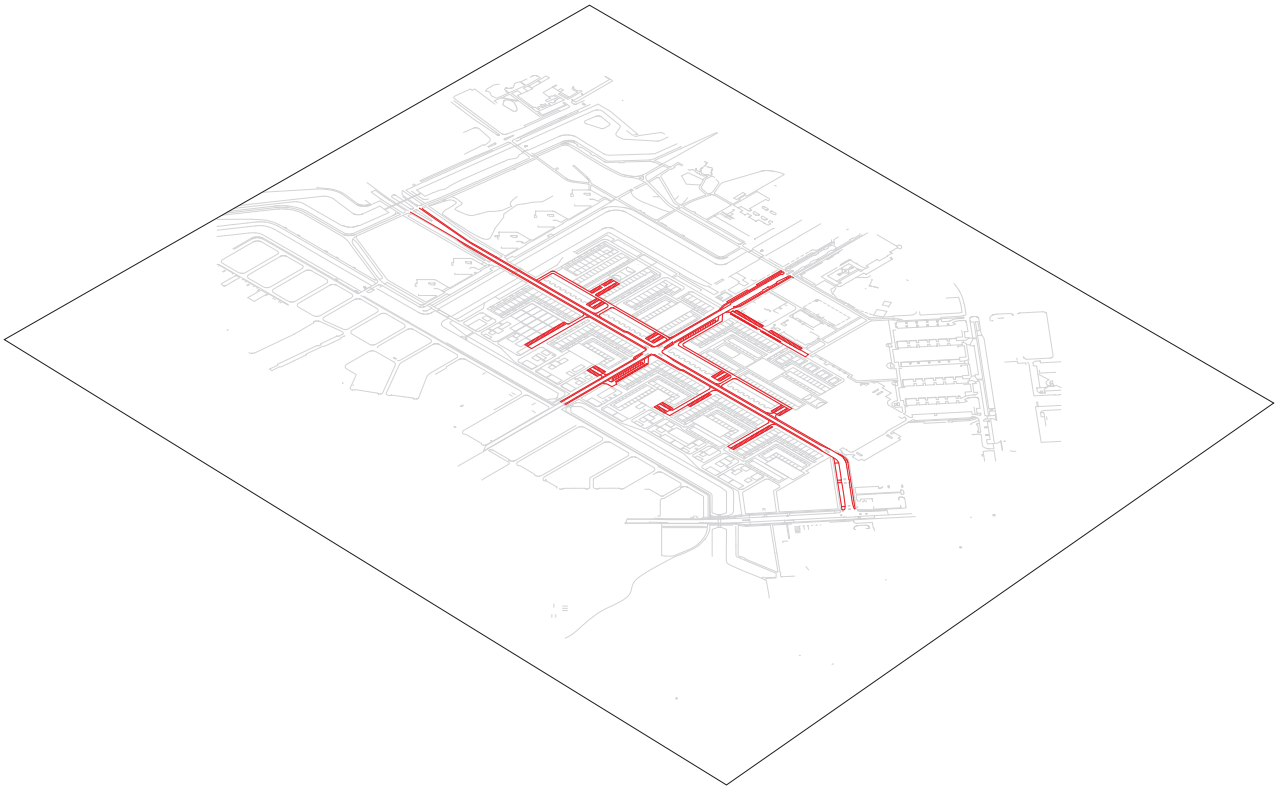
Park

The park is connected to the other parks in the surrounding, Baanakkerspark and Schellingwouderbeek. This creates an ongoing ecological zone and the possibility for recreation.

Recreation

The recreation route combines the parks and makes it possible to walk or run different routes.



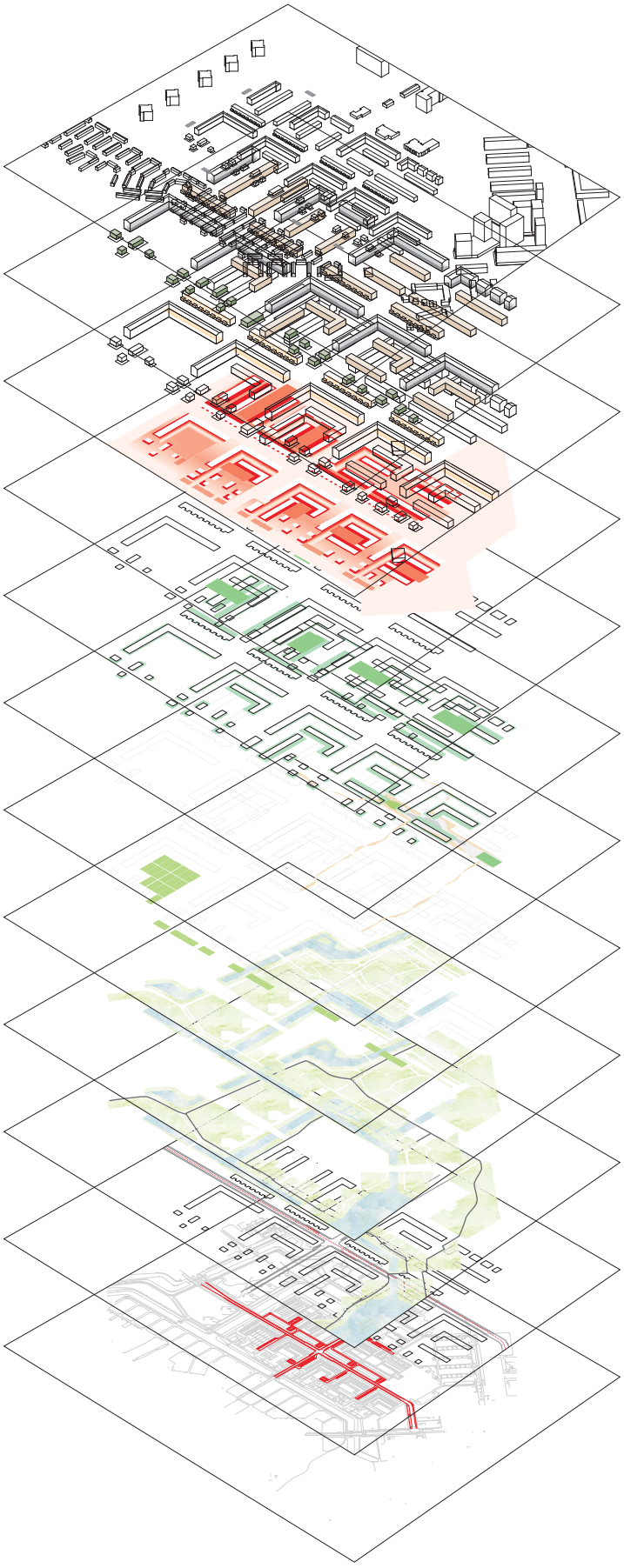


Public transport

The bus connection to the Noord-Zuidlijn is created in the center of the neighborhood. This ensures a beneficial connection to the rest of Amsterdam.

Parking

The car parking is situated in the blocks. The movement of the car is restricted as far as possible creating more space for bikers and pedestrians and more safety for children.



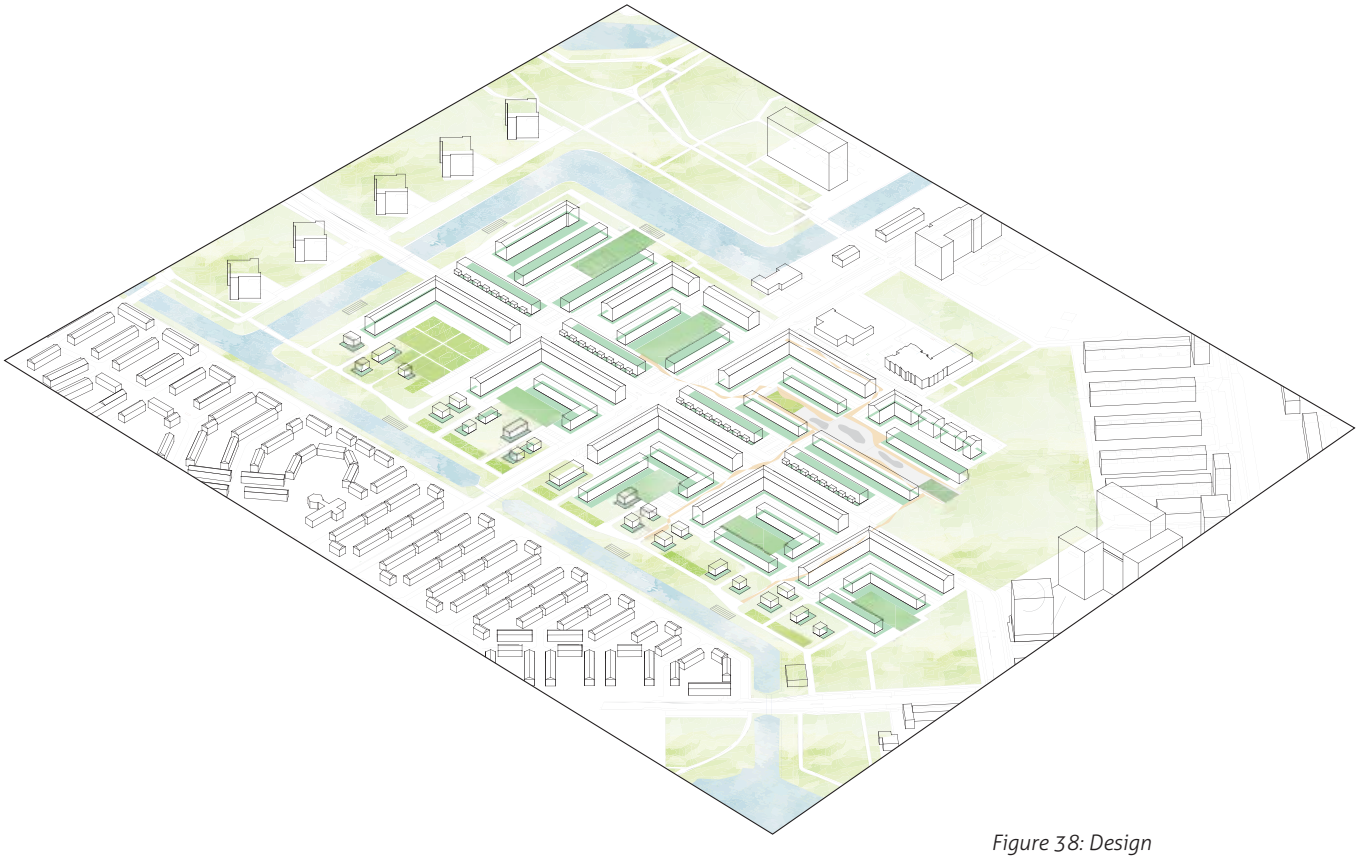
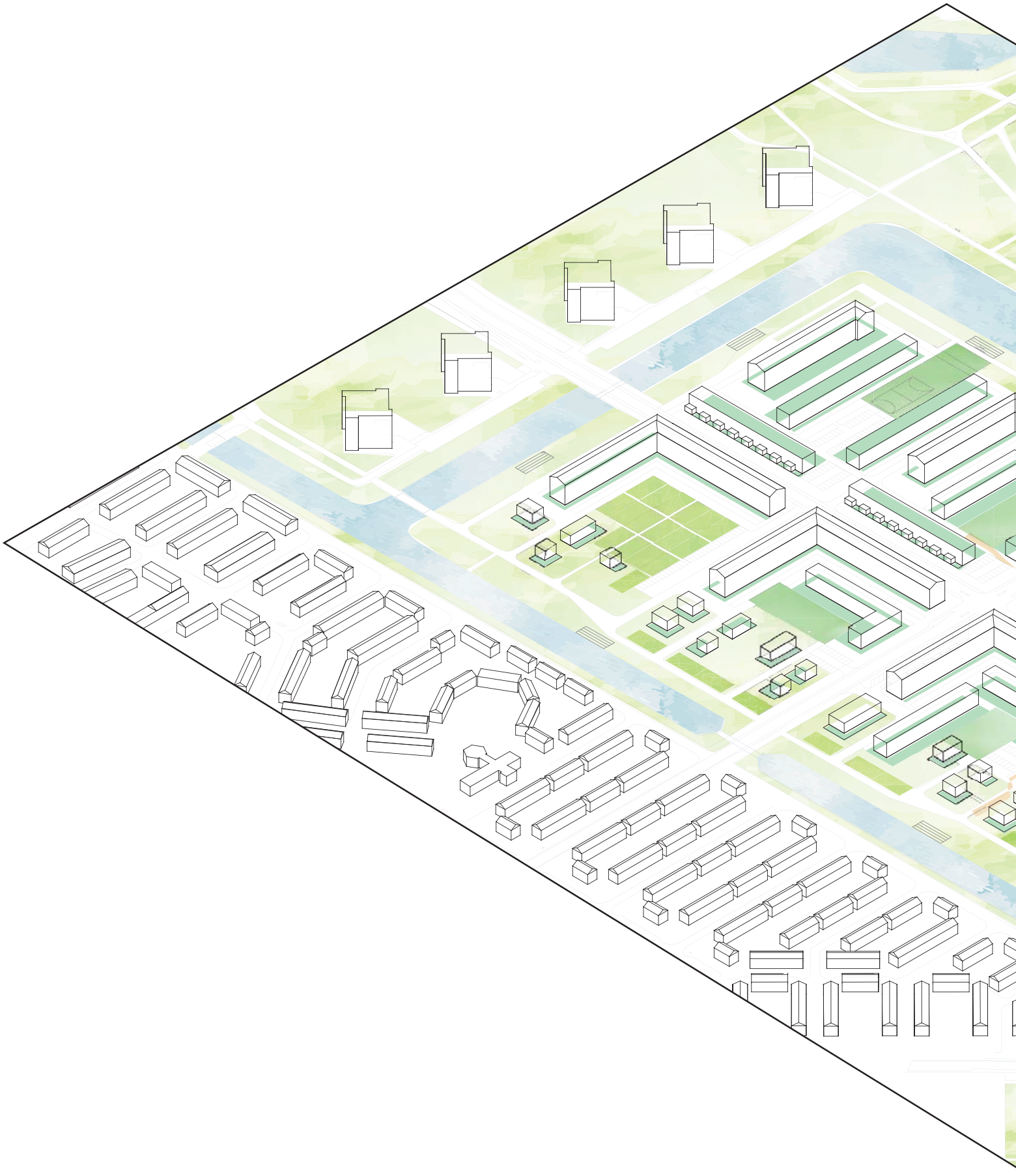
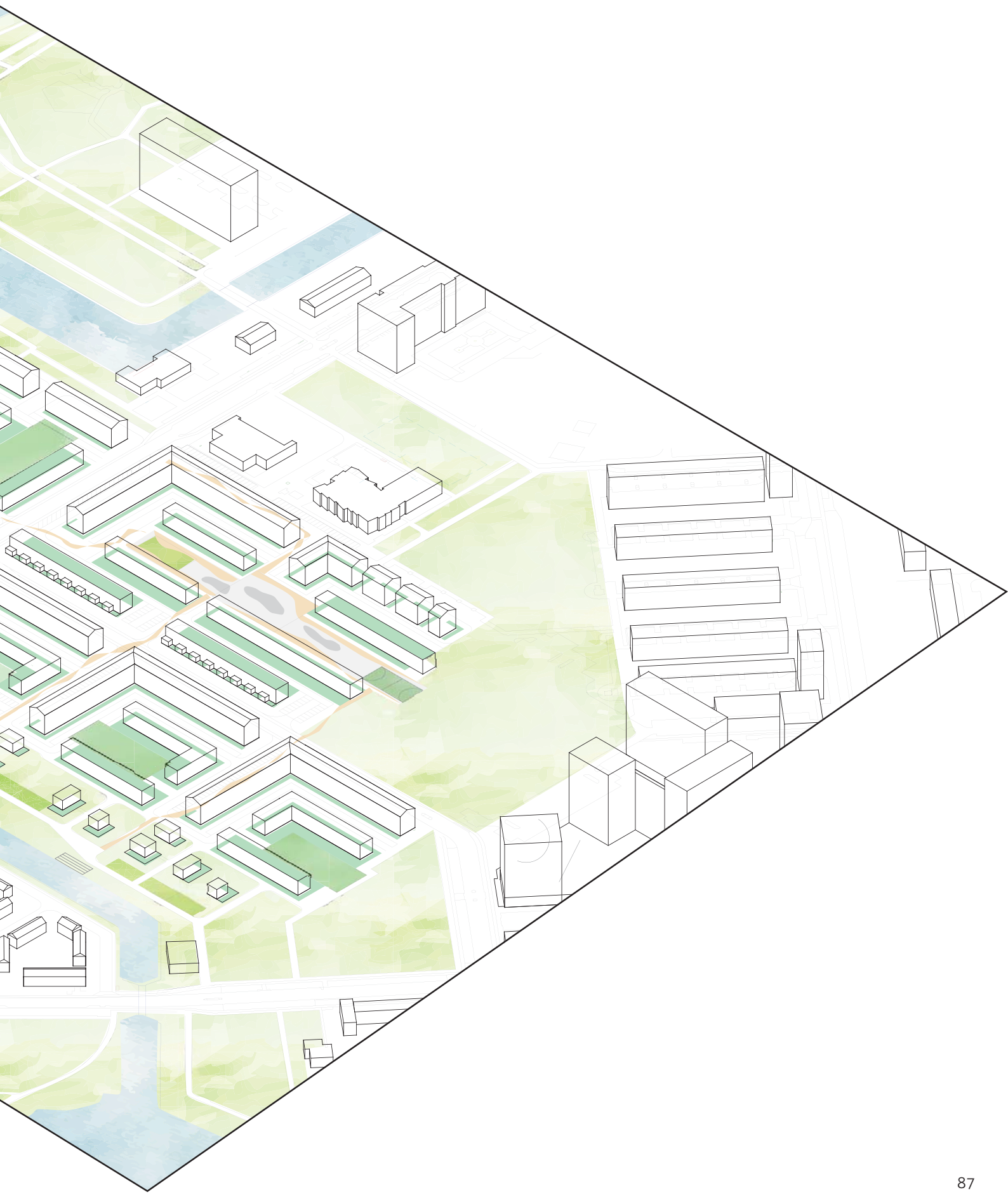
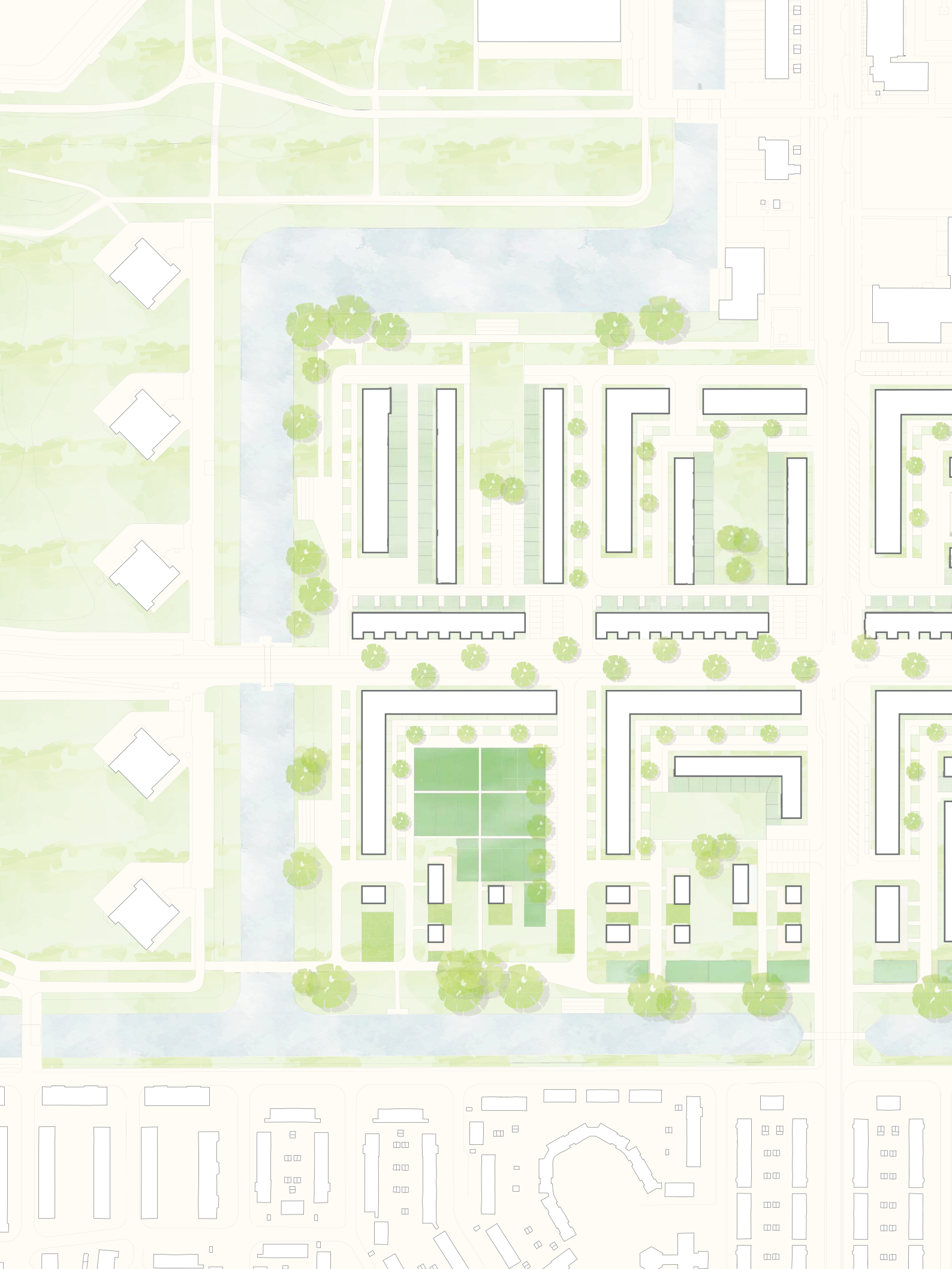


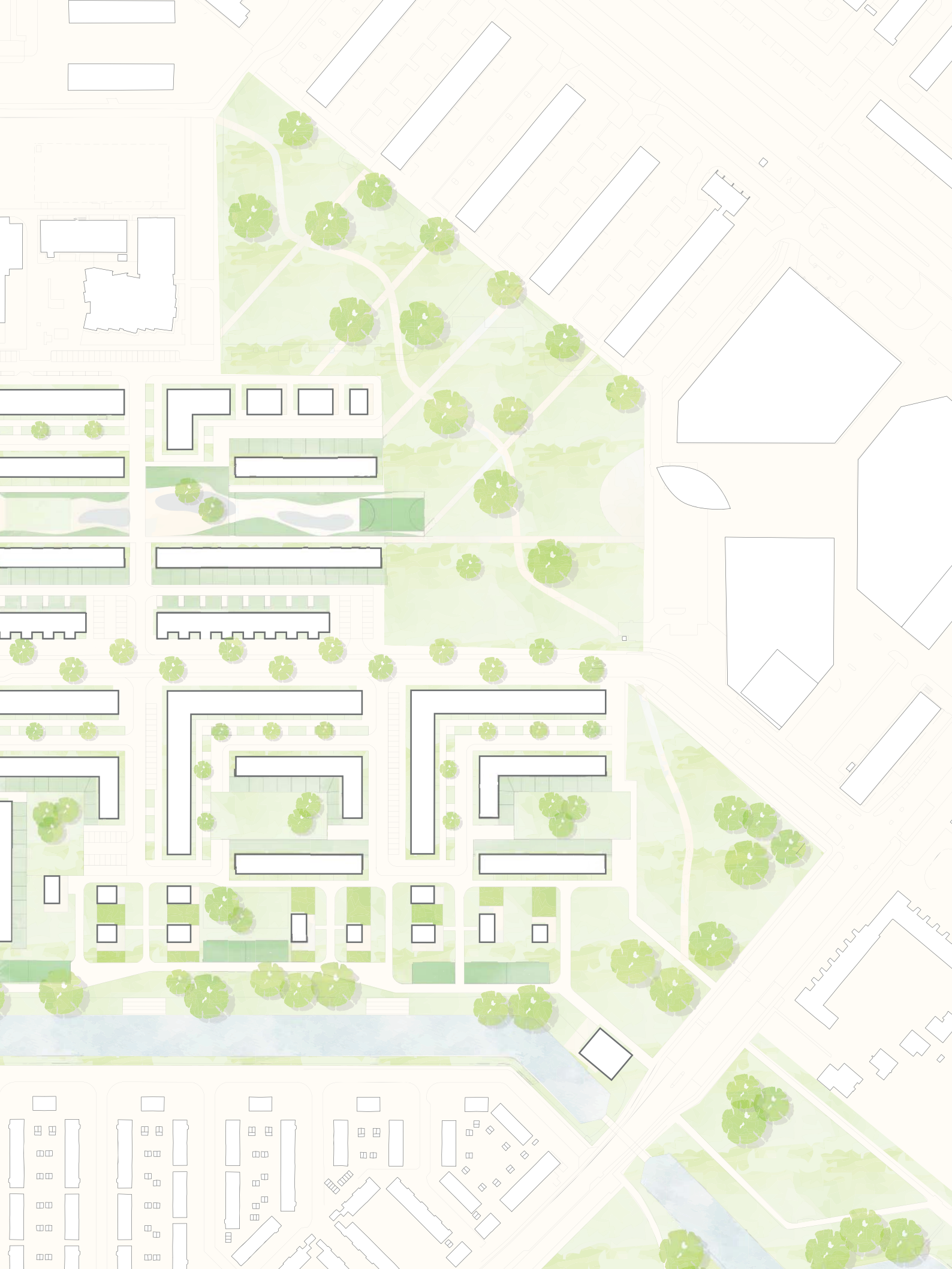
Figure 38: Design

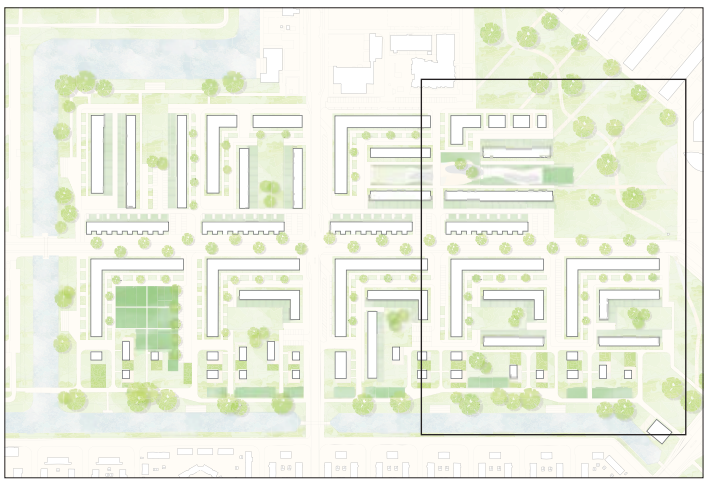
The combination of the layers results in the design of the neighborhood





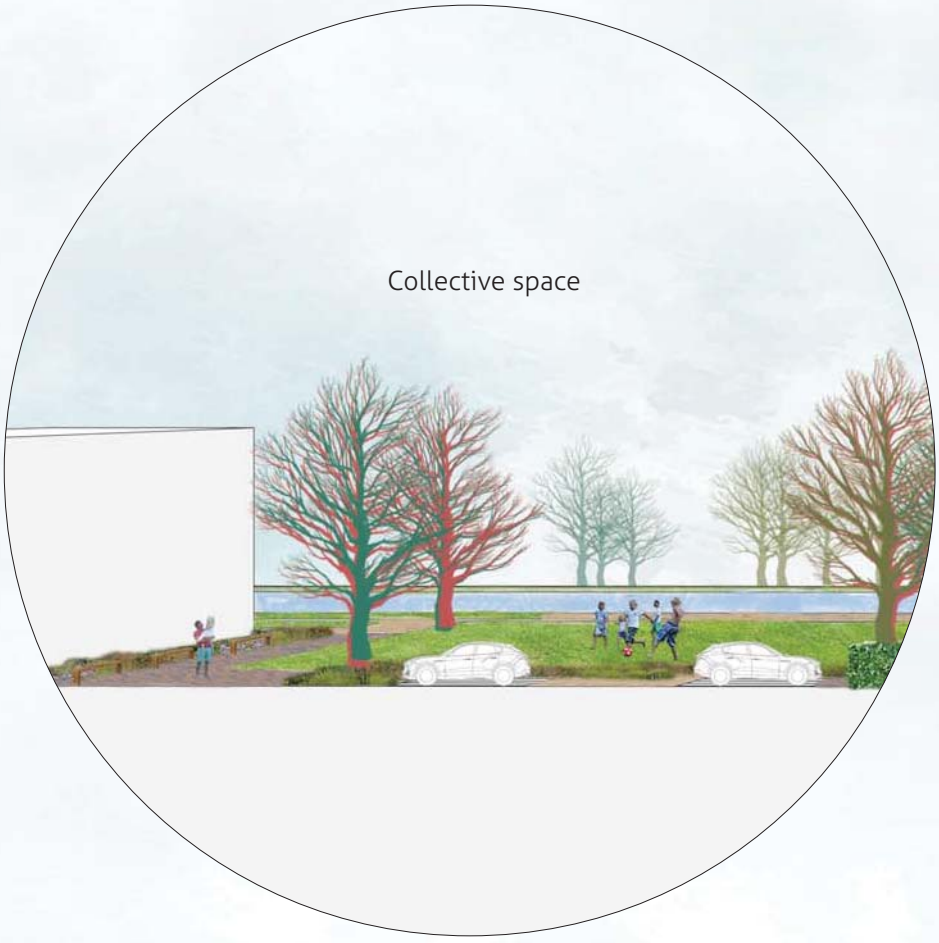




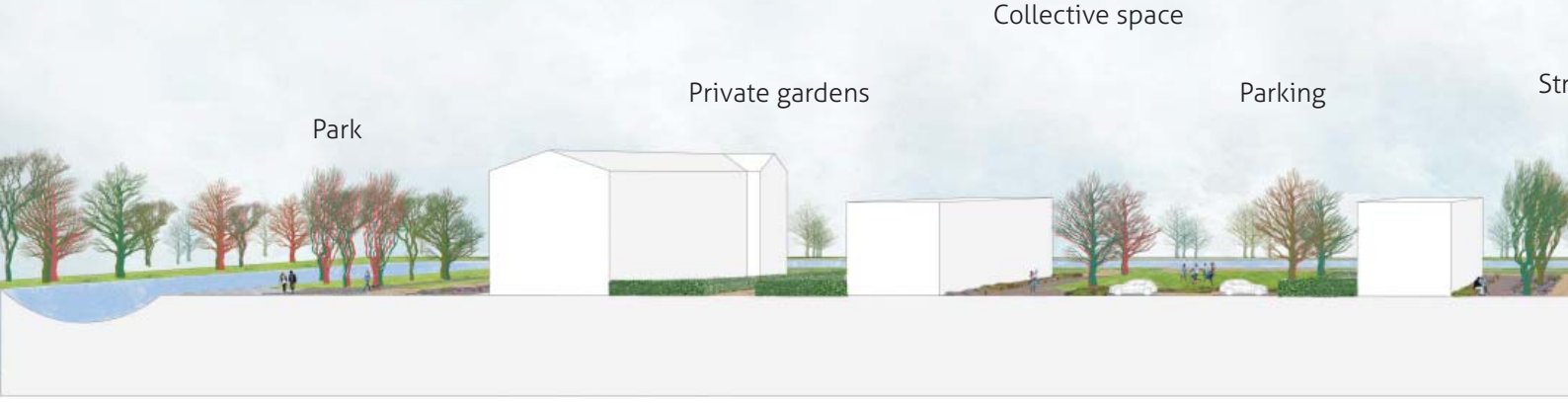


Location of the zoom in map

Section 1


Collective space


Street


Collective space
Private gardens
Parking
Park

reet

Street

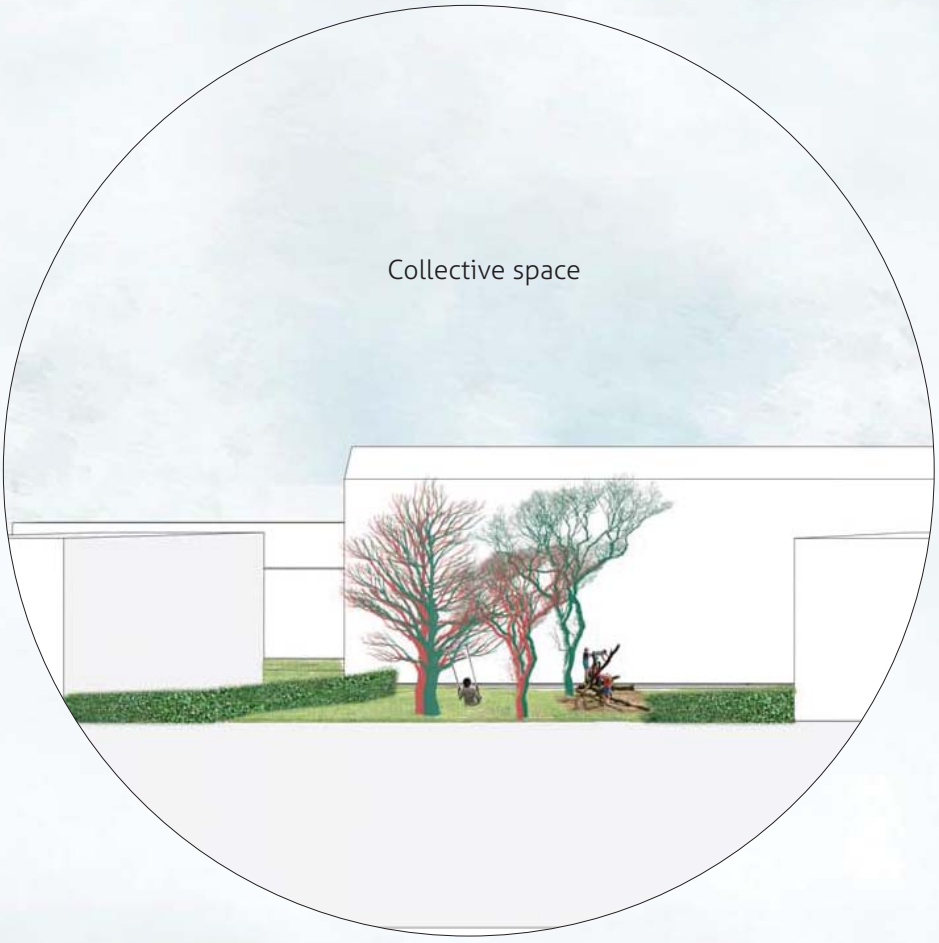
Collective space

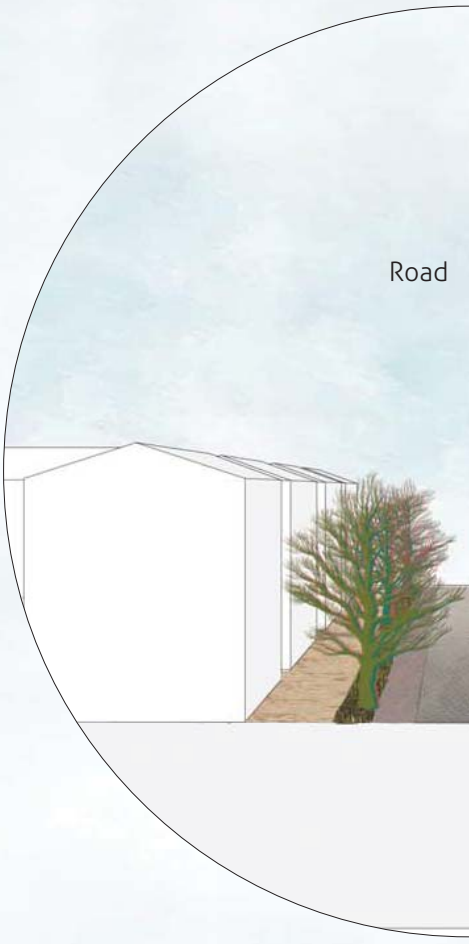
Road

Parking

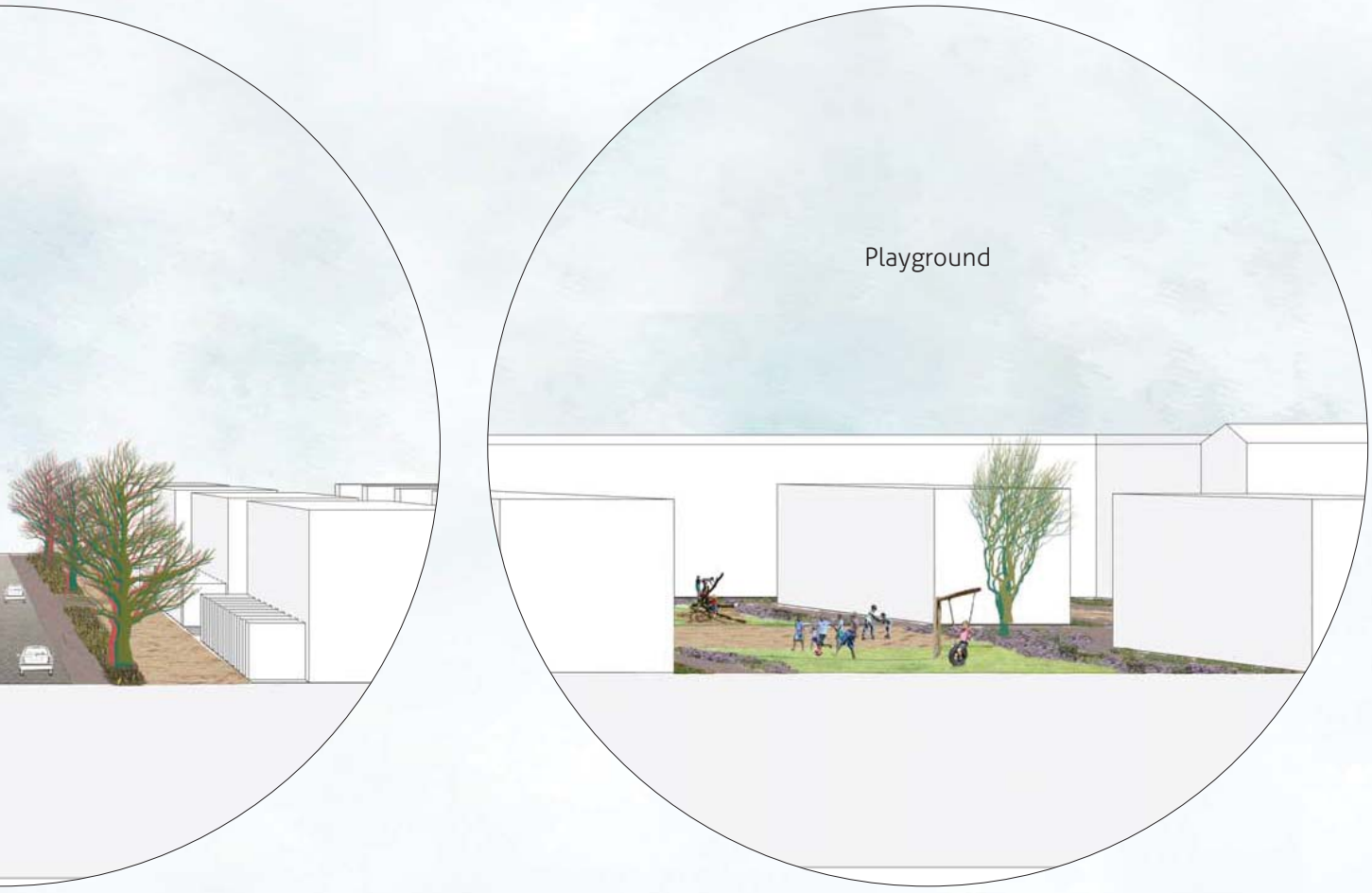
Section 1

Section 2


Collective space

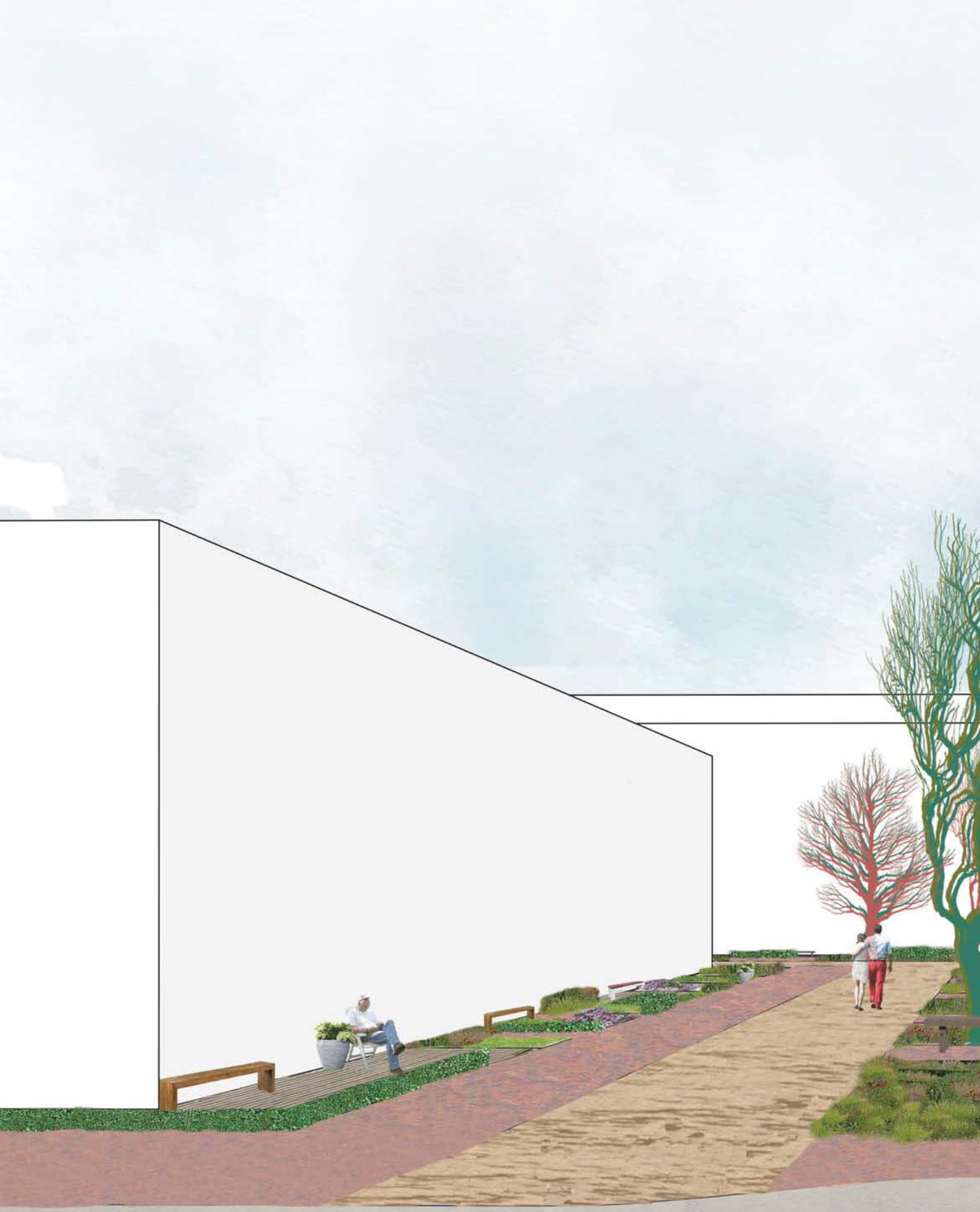

Road


Collective space
Street
Park
Private gardens
Private gardens


Playground


Road
Private gardens
Parking
Playground
Street
Park

Section 2



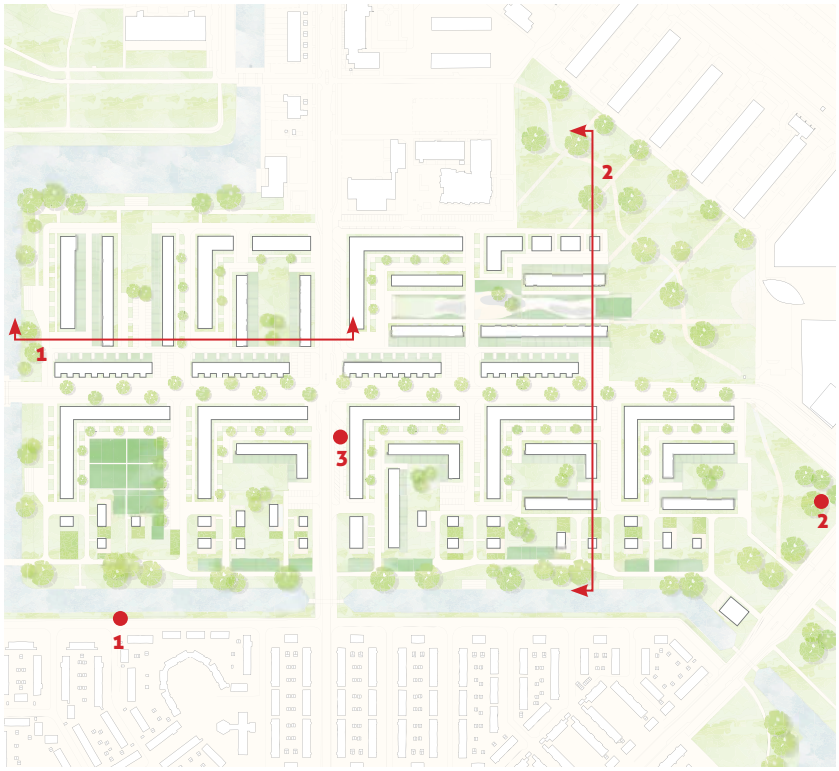


Figure 39: Locations of sections and visualisations

A perfect ineracting society?

Finally, we can conclude this research with the answer to the stated research question: How can an urban designer influence socioeconomic segregation on neighborhood and block level?

An urban designer can influence the socioeconomic segregation by designing for social interaction. The determined design conditions are important to implement in this design. These design conditions consist of: encroachment zones, semi-public spaces, a maximum distance between buildings of 25 meters, a typology of the buildings which enable access adjacent to the street, mixed use of the dwellings, and a variety of program which attracts residents from both the neighborhood as the district. The design for the Waterlandpleinbuurt is an example of the implementation of these conditions. The design encourages the residents of the neighborhood to interact. This is achieved by the careful design of encroachment zones, semi-public spaces, and a variety of functions.

However, we should not be tempted to think that this is the ultimate solution to the effects of the knowledge-based economy. This design will not create a perfect interacting society, nor will it ensure an impeccable balance in the socioeconomic segregation. Urban design is merely one actor in society which influences us. It is hubris to think that an urban designer can solely change society. Moreover, the complexity of the problem is shown by the fact that an urban designer can only change one factor at a specific scale. Other problems should be handled at appropriate scales. On the other hand, this does not make the work of an urban designer insignificant. Above all, even small changes can cause a transition, as a tipping point needs multiple minor pushes.

Reflection

This graduation project started from my fascination for a growing gap in society. Daily news messages repeatedly reflect on the differences in society, feelings of distrust, agitation, and the sense of feeling left behind. During the research on Amsterdam and Helsinki, this fascination took the form of graphs and diagrams, and led me to the global economic system as an actor in these feelings in society. In the subsequent months, I submerged into numerous literature on the basic income, doughnut economics, life after capitalism, critical transitions in nature and society, tipping points, the new urban crisis, and the new geography of jobs. After that, I realized that I should actually graduate in urban design, not economics or sociology. The subsequent search, into the connection between socioeconomic segregation and urbanism, resulted in the presented design. After all, this process has made me eager to take the next step.

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