

P2 REPORT

Urban Families in Dense Cities

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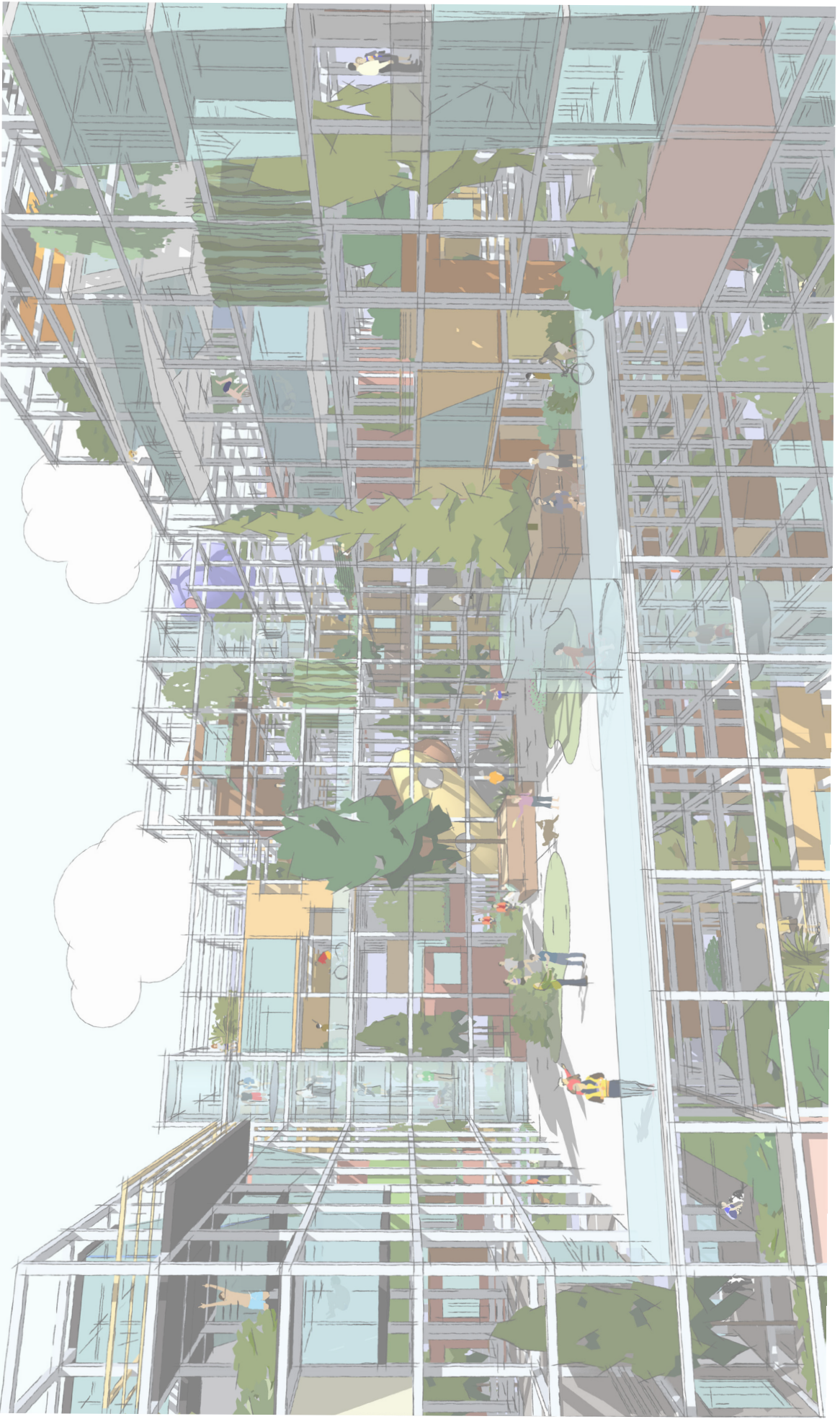
Introduction

Through the past decades, many cities have been confronted with the question on how to deal with housing shortages. Amsterdam has always had a plethora of expansion plans made and eventually developed, and throughout the years it has had an active policy of city development and expansion. At this moment, there is a great need for living and working space in Amsterdam, especially within the ring road. For my graduation studio for the master of Architecture at the TU Delft, the assignment has been given to me to design a residential building on a, yet to be developed, former port area inside this ring road in Amsterdam; the Minervahaven. This port is only a fraction of a much larger expansion plan of the municipality of Amsterdam in which they want to add 40,000 to 70,000 homes and 45,000 to 58,000 jobs to the city; Haven-Stad Amsterdam.

While conducting preliminary research, I found out that among others, a large group of families cannot find a suitable home in Amsterdam. This has sparked my curiosity on this topic. This group is affected by the housing shortages more so than others. Families with children have a particular demanding list of requirements and because of the aging of small children the list of demands is also changing continuously. This group is interesting because they are of importance to a city, providing strong social networks thanks to encounters between parents at, for example, schools and kindergartens but also extracurricular activities such as sports and hobbies. The requirements of families towards housing and environment offers specific challenges when it comes to designing.

Therefore, in the past couple of months I have immersed myself in the theme of families versus the dense city, looking deeper into these requirements, with this research report as a result. The research has been done in several ways. First, by using the study of precedents, multiple analyses on different scales have been done; the scale of the urban plan and the scale of the residential building. Subsequently, with the result of these analyses, an urban plan has been made to eventually make an analysis of the location. In addition to the case studies I have done an extensive literature research with the main focus on families and their dwelling preferences.

The report has been carefully constructed and I hope you enjoy reading it and I look forward to your thoughts.



Manifesto: A City for Everyone

We all know the world population will keep growing and that everyone needs a place to live. Simultaneously, people tend to require more personal space than before. Numbers show that over the last decades the ideal number of square meters per person has increased. In the Netherlands we are claiming eight hectares of undeveloped area every day by constructing new projects. But we cannot continue like this without putting our nature under heavy pressure. We will have to live in closer proximity to each other in order to prevent us from living in an urbanized landscape. This dichotomy, more people needing more space whilst less buildable space is available, shows the challenges cities have to face. An unintended and rather unwanted consequence of this dichotomy, the lack in variety of dwellings, causes several groups in our society to move out of the cities. This, as a consequence, decreases diversity within the cities resulting in segregation of our population. But isn't the city for us all? It should be! Everyone should find a suitable home within the city; students and elderly, locals and expats, rich and poor, singles and couples with or without children, all of us. This requires different types of housing but most of all it requires the city to be adaptive to every type of inhabitant who wishes to live there.

We must live closer together, in cities of high density, but it does not mean that we should do that in a city made up of tall buildings that radiate anonymity. Rather, a city that has several levels of qualitatively habitable public and private spaces that allures social cohesion and inclusivity. The city should create these spaces and meet them by creating levels that go up in the sky. This means it should quite literally create levels above one another. A three-dimensional grid not only containing streets and dwellings with gardens next to each other but also above one another. Not a city filled with individuality but a city containing buildings and neighbourhoods that strengthen relationships between people, and promotes commonality which creates social sustainability. Not a city full of criminality and inequality but a city that is safe, clean and healthy. A city as a place where people come together, where children can play on the street. An environment where there is no place for discrimination towards religion, culture, social class or status. We all have the right to live in the city. In this city for us, buildings will become small neighbourhoods containing public and private spaces within its own boundaries. The city will be owned by people rather than the market. This feeling of ownership will make sure we take care of it. Due to the quality of our neighbourhood there will be no need for anyone to leave it. Public will belong to the public and by sharing several facilities and spaces this will allow us to live more compact at the same time. For instance, a day-care for children, a gym, an extra room to organize parties and events, and a shared garden will all contribute in using squared meters more efficiently. We need an efficient organization of public transport rather than streets full of traffic jams. We need parks and squares for people rather than fields for cars. We need many gardens for everyone rather than a garden for one. We need a city for a child and a city for an adult. We need a city for us all.



nederlandsdag

Yasmine Colijn Ze is 23 jaar en ze leidt een vluchtelingenkamp
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- totdat i

22 Mark Ronson Hij slaapt je met z'n nieuwe plaat weer de dansvloet op

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• Hoeveelheid
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EN
sdeel onzinnig'
Samenvoeging provincies is nodig, omdat veel zaken dubbel gebeuren

Leeuwarder Courant
Gezinnen met jonge kinderen verlaten Amsterdam
Nieuw kabinet snel aan de slag

INVESTIGATION OF ASSIGNMENT & TOPIC

Topic: Urban Families in Dense Cities

As beforementioned in the Manifesto, with the population growing worldwide and the ideal number of squared meters used per person increasing, cities such as Amsterdam are facing new expansion challenges; needing more dwellings whilst less buildable space is available. This dichotomy causes several groups of people in our society to move out of the cities. One of these migrating groups are families. Recent research has shown that many young families in Amsterdam are dissatisfied with their homes and with their living environment and as a result many of them move away from the city.^{1,2} As a consequence, the diversity within cities decreases, resulting in the segregation of the population.³ However, families have a preference towards living in the city, but the problem is that the housing supply is not sufficiently tuned to their needs. In other words, the right houses are missing. Families with a modest income are usually dependent on the outdated housing stock. As a result, they either stay dissatisfied in their current dwelling or move outside the city.⁴ A straightforward solution is building enough suitable dwellings for families. However, building dwellings with gardens for everyone is not feasible because of the lack of space and the high prices of the land. These issues that cities are facing, have brought me to my graduation topic. I have researched how we can design affordable and good quality family apartments in dense areas such as in a city. How we can design dwellings with the right size, the right layout, the right number of rooms and the right costs. In this chapter a complete overview will be given of the aspects that are of influence on this topic.

Fact & Figures

In November 2017, a report from the CBS (Central Bureau of Statistics) stated that many young families in the Netherlands are leaving the big cities. Since 2013 this number has increased.⁵ As shown in figure 1, Amsterdam has the biggest percentage of emigrating families, whilst having a relative low number of families living there compared to the rest of the country. Of all households in Amsterdam, only a quarter are families compared to 33% in the Netherlands.⁶ If nothing changes, Amsterdam could become similar to London; a city that

Couples that got a first child in 2012 and moved before the end of 2016 to another municipality.

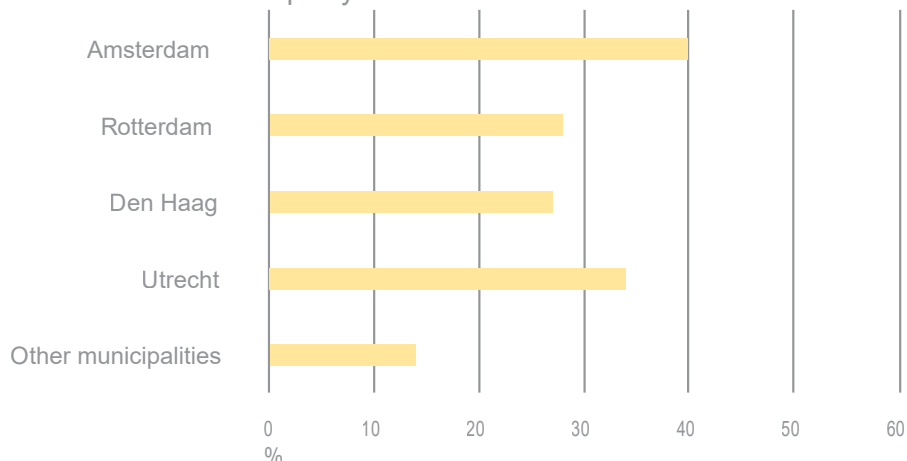


Figure 1 Source: CBS

Percentage of families living in Amsterdam



Of all households in Amsterdam, almost a quarter are families compared to 33% in the Netherlands..

Living situation



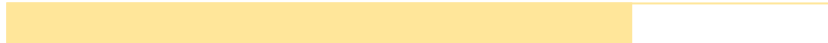
Around 40% of middle-class families live in rented accommodation compared to 14% in the Netherlands.

Unhappy



Nearly three quarters are not happy with their dwelling and want to move.

Living preference



Nearly three quarters absolutely want or prefer to live in Amsterdam.

Lack of supply



Around 40% of families prefer to stay living in their current home if they can not find another dwelling that meets their requirements.

No alternatives



Only one in five families searches for a dwelling outside Amsterdam.

Square meters



Nearly 40% of families in Amsterdam live in less than 75 square meters, compared to 6% in the Netherlands.

Sources: CBS, AM Measure, Heren 5 Architecten

consists of mainly expats and singles between the ages of twenty and forty, as stated by the urban geographer Willem Boterman from the University of Amsterdam (UvA).⁷ But why are families leaving the big cities? The main reasons given by families to leave the city are; small houses, none or limited outdoor space, too much traffic, a sense of insecurity and high dwelling prices.⁸ Looking at figures, families in Amsterdam, on average, live in relatively smaller residencies than those in other cities in the Netherlands. Nearly 40% of them live on less than 75 square meters, compared to only 6% of families in the rest of the Netherlands. Nearly three quarters of the families in Amsterdam are not happy with their current dwelling and would like to move. Although at the same time, three quarters of families absolutely want to stay or prefer to stay living in Amsterdam. Only one in five families look for a dwelling outside Amsterdam.⁹ There is a clear mismatch on both the supply and demand side on dwellings in Amsterdam. Does the municipality of Amsterdam want to keep this target group in the city? According to Jan Latten, professor of Social Demography at the UvA, and Boterman, families have an important influence on the quality of living in urban areas. They are the glue of the city, meaning that they provide strong social networks due to encounters between parents at, for example, schools and kindergartens but also extracurricular activities such as sports and hobbies. Besides, families provide social cohesion and involvement in the neighbourhoods and they have an important influence on the urban economy due to their use of many facilities. They are good for the shops in their neighbourhood, but also pay for childcare, the sports club, the music school, etc. And because of that, they influence the creation of jobs.^{10,11}

Historical Perspective

Families vs. the City

Historically, it has always been common for families to live in cities. However, as a result of suburbanisation since the end of the sixties, the amount of families living in the city started to decrease. According to a report by the Dutch Environmental Assessment Agency (PBL)¹², for a long time, families with children were seen as unusual households for the city. If families lagged behind in the city, it was explained as a result of their weak socio-economic position. However, according to the same report, since the nineties, families have started to choose the city above the suburbs. It is mainly highly educated professionals who increasingly choose to continue living in the city after the birth of their children.¹³ The so-called Young Urban Professionals (Yup hereafter) now become the Yupp's; Young Urban Professional Parents.¹⁴ Social Geographer Lia Karsten states that traditionally families with higher incomes choose a place to live outside the city because it is there that they could find dwellings that would better meet their requirements. Nowadays it is exactly the opposite; those who can afford it, will stay in the city.¹⁵ This same trend is seen in other capital cities in the world such as New York, Berlin and the capital cities in Scandinavia.¹⁶ Families in the Netherlands have traditionally been most strongly represented on the outskirts

of the city, where the supply of larger homes is the largest.¹⁷ If we look at the figures in Amsterdam in the nineties, many families live in the outskirts, which is comprised of the more suburban areas of the city. However, you can see in figure two that in 2014 many families started to move more towards the city centre, settling inside the ring road.¹⁸ But in what kind of dwellings have families lived throughout history?

Generally, in the Netherlands we think that families live in single-family dwellings with a garden and that only when forced by circumstances they live in apartments. However, as beforementioned, in cities such as Amsterdam, these days it is common for them to live in apartment buildings.¹⁹ According to Han Michel, in the nineteenth century in the Netherlands, the so-called 'urban dwelling', generally was the starting point for urban expansion plans. On a simple pattern of streets, five to six-meter-wide and ten-meter-deep plots were sold on which small developers could build a dwelling; one house per plot in the expensive streets and two dwellings in streets for the middle-class families stacked on top of each other. In the neighbourhoods for the lower class, the buildings consisted of three or four stacked dwellings. In other cities in Europe it was more common for families to live in big apartment buildings in the city. In Paris it was, historically seen, more common for the bourgeoisie to live in apartment buildings for example. However, in the Netherlands, the beforementioned urban dwelling played the main role.²⁰ It was only after WW-II, due to the housing shortage, that the stacked housing production in the Netherlands took off. Nevertheless, due to the suburbanisation since the end of the sixties, families again started choosing for the single-family dwellings. The poor quality of many post-war apartment buildings formed a negative image of living in them. Decades later, in cities such as Amsterdam, due to the reallocation of former industrial sites and harbours, new residential areas were developed. It was only then that the 'city-apartment' was properly introduced in the Netherlands. These residencies were mainly habited by Yup's, resulting in a large production of relatively small, one or two-person dwellings. As these Yup's grew older they became more family

Concentrations of families with children in Amsterdam

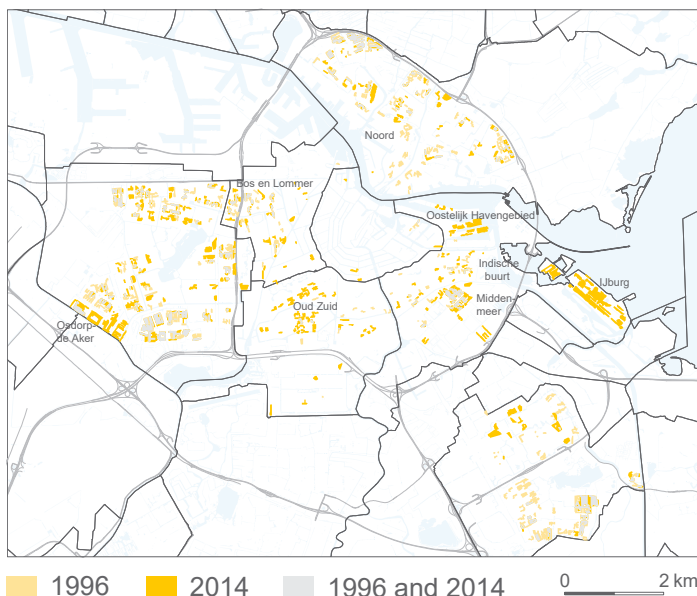


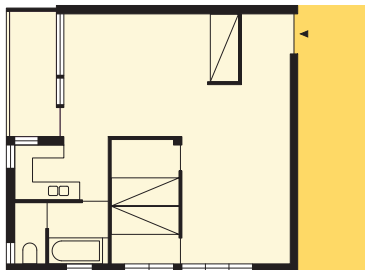
Figure 2 Source: PBL 2015

oriented and as such the city-apartment dwellings did not suffice, as they were not tailored to the family as a generic household.²¹ This leads to the question; what are family apartments? By presenting an overview of the development of the variety of floorplans throughout the years, it becomes clear what has been done before and this can lead to conclusions of what can be done now. Given that throughout history thousands of floorplans have been designed by different architects, it is unrealistic to give a complete overview of everything ever made. In the next paragraph, a brief history is given of the development of residential floorplans based on one of the volumes of DASH magazine; the residential floorplan. It also is limited to stacked housing due to my research topic on family apartments.

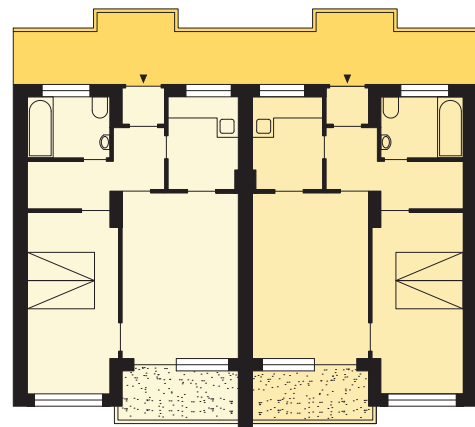
Commonly, strict regulations and limited budgets have always challenged architects to make the ideal floorplan. In their fourth edition, 'The Residential Floorplan – Standard and Ideal', DASH seeks, through several classic and more unknown projects from the twentieth century, for the optimal floorplan between standard and ideal. Even though the attempt has been made frequently to customize floorplans, standard solutions still appear to be the rule in the current building practice.²² Through these projects, in this paragraph, an attempt is made to give a brief historical overview of the residential floorplan.

The first in the timeline is Adolf Rading's floorplan of Wohnturmhaus in Wroclaw. In the late 1920's, a period of enormous housing shortage in Europe, he designed an experimental apartment building for families in which the living

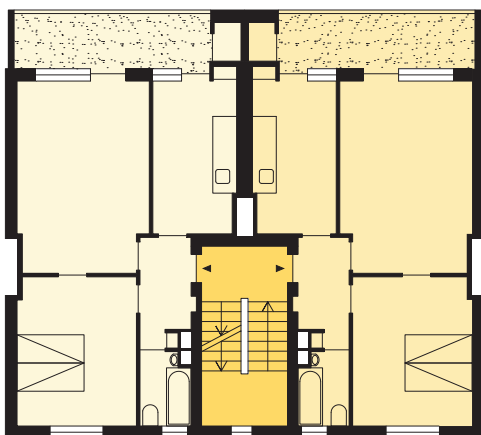
Wohnturmhaus - Wroclaw
Source: DASH



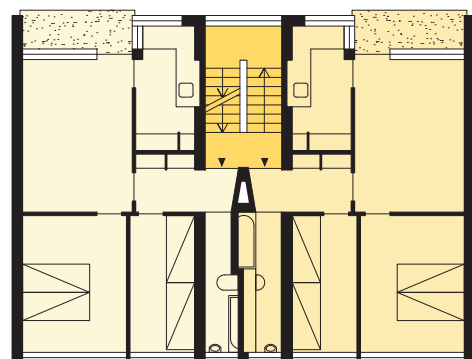
Laubenganghaus
Dammerstocksiedlung
Source: DASH



Wohnstadt Carl Legien
Source: DASH



Hellerhofsiedlung
Source: DASH



1920



area per dwelling could be reduced by implementing communal facilities. The apartments were 58 m² and situated in a steel frame building giving the opportunity for different floorplan layouts. In his floorplans the living room was placed central because in his opinion it should be the central place of the house. In like manner, forced by standardization, around the same period other apartments were developed by architects such as Walter Gropius, Mart Stam, Bruno Taut and Franz Hillinger. Gropius designed his first Laubenganghaus, or gallery-access apartment building. Mart Stam designed the Hellerhofsiedlung; two and a half room flats in east-west aligned housing blocks. And Taut and Hillinger designed the Wohnstadt Carl Legien with apartments between one and a half and three and a half rooms.²³ All these apartments were similar in size.

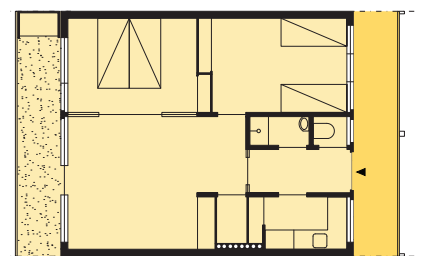
At the end of the 1930's, in Scandinavia, architects looked for opportunities to adapt the dwellings within the standardization which lead to three main types of stacked housing; the narrow block with dwellings receiving light from two sides, the deep block containing dwellings receiving light from only one side and the tower block with dwellings around a single circulation core. The Peterstorp buildings in Malmö, designed by David Helldén, Nils Einar Ericksson and Stig Dranger, are examples of these type of stacked housing containing several types of dwellings; from small studio's and two-bedroom apartments to more than 140 m² maisonettes.²⁴

Mid 1930's up to the beginning of the 1940's, Willem van Tijen designed several apartment buildings in the Netherlands. He was in search of the 'ideal standard' floorplan with minimum space and minimum budget. In 1934 the Bergpolderflat in Rotterdam, a nine-storey with gallery-access apartment building was completed followed by the Kralingse Plaslaanflat four years later. Buildings with small one- or two-bedroom apartments two side oriented. Based on these buildings he designed the Zuidpleinflat in 1940. A building with five

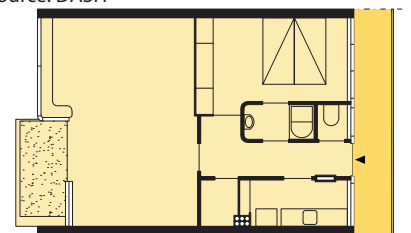
Peterstorp 3
Source: DASH



Bergpolderflat
Source: DASH



Kralingse Plaslaanflat
Source: DASH



1930

types of dwellings including family apartments. However, because the Second World War broke out throughout Europe construction was delayed until after the war ended, construction took place ultimately in a simplified version with only two dwelling types; one-bedroom apartments in a small structural bay and two-bedroom apartments in a wider structural bay. Notably, the biggest apartments were only 54 m². In that period similar dwellings were build all over the Netherlands.

Later, in the 1950's, van den Broek & Bakema developed the later on popular split-level dwellings, creating several types of its sort. In 1964 they designed the Elvirafat in Delft, an apartment building containing a variety of dwellings. By connecting studio's and one-bedroom apartments at gallery level and split-level walk-up apartments to the same corridor, van den Broek & Bakema were able to benefit from the efficiency of a gallery access and the dual orientation of a dwelling at the same time.²⁵ Around the same period, in the UK the Architects Department of the London County Council (LCC) developed several residential buildings to compensate the bad quality of the built dwellings during the huge housing shortage after the war. Several gallery-access buildings with stacked maisonettes were built such as; Alton West Estate, Sceaux Gardens and Park Hill. By combining some of the advantages of the ground bounded terraced dwellings and stacking them, they achieved the necessary higher density. The advantage of the maisonettes was that dwellings had unobstructed views on both sides without any gallery access along the front. At the beginning of the 1960's, the LCC introduced the scissor-section with the advantage of a minimum amount of space used for access. Besides, this new type of section



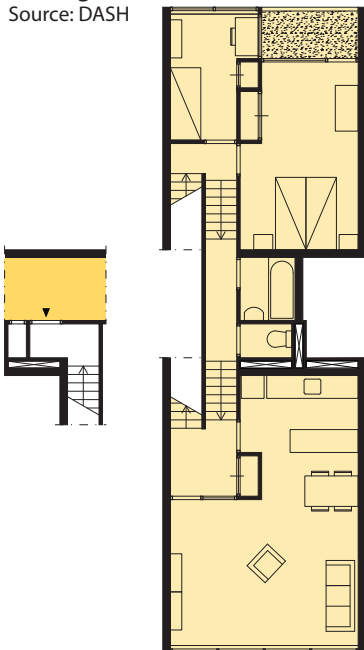
created the opportunity to exchange the position of the bedrooms with the living space making the building adaptable to any orientation.²⁶

During the 1960's, the large-scale housing production in Europe really took off. Tunnel form systems made it possible to build larger apartments without load-bearing walls and prefabrication had its advantages in construction. In this period gallery-access buildings were built such as; the ERA-flats in Rotterdam, from the architect R.H. Fledderus, the buildings in Molenwijk from architect Klaas Geerts and the well-known Bijlmermeerflats in Amsterdam from the architects, Kees Rijnboutt, Kroomhout & Groet and F. Ottenhof. However not only gallery-access flats were built but also thousands of ten-story walk-up apartments such as the Verdiweg in Amersfoort. A building made using on-site casting and prefabricated facades. The apartments in these buildings were almost double the size compared to the beforementioned buildings from van Tijen in the 1930's and 1940's.²⁷

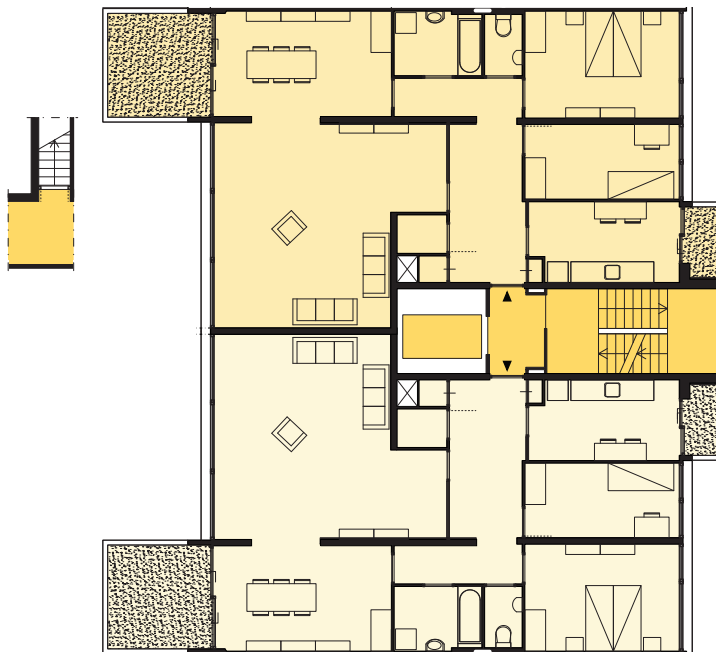
At the end of the 1960's, the German architect Hans Scharoun completed his building on the Zabel-Krüger-Damm in Berlin. A building distinctive because of its slanting walls which created a generosity of space within the dwelling despite its compact size. Despite the large-scale housing production in Europe around that time, Scharoun did not prioritize exposing the industrial building process. You can see the same organic composition in his earlier work from decades before. What is special of some of the floorplans of the Zabel-Krüger-Damm building, is that the dining room is located in the hall. According to Scharoun, the thought was that this would not create any problem for families dining at the same time together at a table.²⁸ As was common at the time, because families were all dining at the same time, the hallway became available for multiple purposes besides having dinner.

In the 1970's the Polish architects Henryk Buszko and Aleksander

Corringham
Source: DASH



Verdiweg
Source: DASH



Zabel-Krüger-Damm
Source: DASH

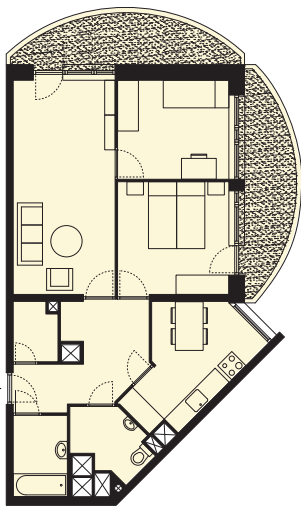


1960

Franta built five housing towers. The so called Kukurydze because of their shape, meaning corn cobs. Equal to most large housing developments in Eastern Europe and Russia, these buildings were built according to a method already used by Martin Wagner in western Germany in the 1920's, the so called Plattenbau; buildings constructed of large, prefabricated concrete slabs. Within this building method many types of buildings were designed. The types differ from each other depending on the orientation of the building or the number of dwellings on each level. The Kukurydze towers were not only different to most other Plattenbau buildings because of their shape but also because of the maximum number of dwellings grouped around one single core having good daylighting and ventilation.²⁹

Looking at the beforementioned examples in this paragraph, it is clear that strict regulations, limited budgets and new building technologies have always influenced and challenged architects to make the ideal floorplan. Up until very recent, architects are in search of the new standard or new typologies. In the 1990's for example Frits van Dongen designed Botania in Amsterdam. Due to the size of the plot, 33 by 55 meters, he was limited to either making narrow and deep dwellings or wide and shallow dwellings. However, instead of choosing the one or the other, he combined both. As a result, he made a building of a combination of wide, shallow houses and maisonettes around a

Kukurydze
Source: DASH



Botania
Source: DASH



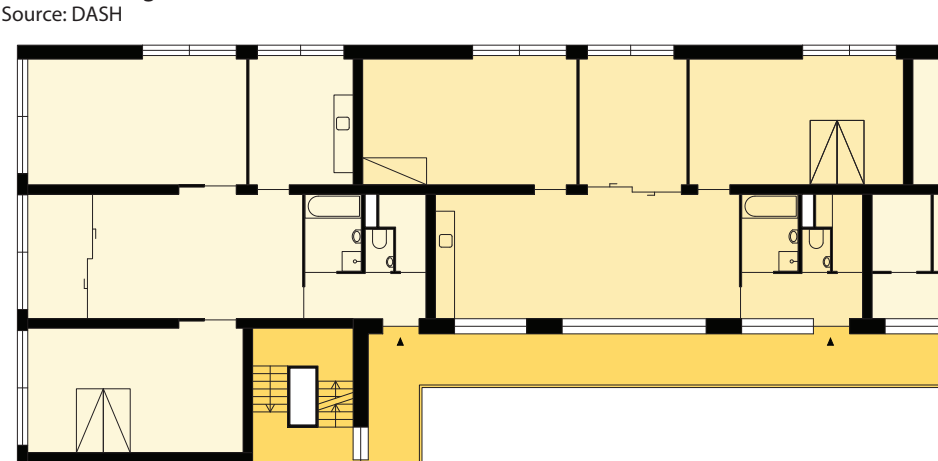
1970

1990

patio-like core in which three long narrow apartments through the block have their outdoor space.³⁰ By reinterpreting and improving existing types, he came to new solutions. Another similar example is the Hofblok Hoogwerf in Amsterdam from Diener & Diener. By combining narrow, deep dwellings in the east-west orientation of a building and wide, shallow dwelling in the north-south orientation, Diener & Diener reassure that every dwelling has enough daylight. Interesting to this building is the direction of the loadbearing walls which are all oriented east-west, whether wide or narrow.³¹ With this building, they prove that by rethinking a traditional construction method, creative new solutions can be made. Other three very different examples are the Rokade and Palladiumflat in Groningen and the Schutterstoren in Amsterdam. These buildings again are the evidence that, even though using the same construction methods, floorplans completely different than the Dutch standard can be made.

By having presented this overview of the development of the variety of floorplans throughout the years, a global impression has been given of what has been done before and how architects are constantly looking for new solutions in dense residential areas. Knowing that families do have alternatives to live outside the city, leads to the question; why then, do they choose to stay in the big city?

Hofblok Hoogwerf
Source: DASH



Palladiumflat
Source: DASH



1990

Families vs the Big City

When it comes to families wanting to remain in the city, various sources recognize the same ideals and motivations amongst them. According to a report from AM Measure,³² based on interviews with fifty families in Amsterdam, the main reasons for them wanting to stay in Amsterdam are listed in figure 3. The same reasons come back in a report from the PBL from 2015.³³ The first reason given is their economic bond with the city. They work in Amsterdam and they want to keep the commute distance short. Secondly, they have a social bond with the city. For migrant families in particular, the presence of family close by is an important attractive attribute of the city. Besides, part of these families, experience the environment of the multicultural city as safer than the mainly white 'Vinex' districts or the entirely autochthonous villages. They want to stay close to their family and friends who reside in the city as well. For Dutch families, social ties are also important, but they are mainly found in networks of friends rather than network of family members, who predominantly don not live in the city.³⁴ Jan Latten, professor of Social Demography at the UvA, describes it as 'cultural city dwellers', where couples distribute care and work fairly, enjoy culture, go out for dinner and use all the other facilities that the city offers.³⁵ And lastly, there are also families who want to live in Amsterdam because of the metropolitan culture and facilities it offers them and their children. In many cases, if families cannot find another dwelling that meets their requirements within the city, these reasons are strong enough for them to stay living in their current home, even if their current dwelling does not match their needs and wants.³⁶ It is clear that the city needs a bigger variety and other types of dwellings. But what dwelling type do families want? And do all families want the same? Who are these families?

Main reasons for families to stay in Amsterdam

- Close to work Economic bond

- Close to family Social bond
- Close to social network
- Close to a diverse range of facilities

- Presence of different cultures Urban identity
- Habituation or used to the city
- Social manners in the city
- The benefits the city offers to the child

Figure 3 Source: AM Measure

Different Groups of Families

When it comes to defining different groups of families, according to Felder & Karsten it is common to make the mistake of only making the separation between the rich and the poor. The rich families would then mainly be white and live within the ring road of Amsterdam for example, and the poor families would mainly be migrants who populate suburbs of the city. However, in their book about the new generation of city children, they attempt to show a broader differentiation and the dynamics of the groups of families in the city. Their starting point is based on the terms of sociologist Pierre Bourdieu; families differ on cultural and economic capital.³⁷ Felder & Karsten make a distinction between three groups; the group of the 'social minimum', the group of the 'social climbers' and the group of the 'wealthy families.' The group of the social minimum consist of families that have received little education and the employment rate within this group is very low. In Felder & Karsten's book, this group mainly consists of the first-generation immigrants and some families with a refugee status. The second group, the social climbers, consists both migrant families and autochthone families. They usually have a secondary school education level. Almost all parents in this group have a job and combine it with the education of their children. Finally, there is the third group in which both parents have completed university or a similar level of education and both of them work. They have the better jobs and belong to the wealthier group in the city. They have often studied in the larger cities and belong to the beforementioned Yup's which have become the Yupp's; Young Urban Professional Parents. They can afford to buy a house elsewhere outside the city, but they do not and stay in the city.³⁸

In a report made by BPD and Whooz³⁹, likewise an attempt has been made to get an overview of the different groups of families in the Netherlands. They use their so-called Mosaic System. This is a segmentation system that divides consumers into groups and types based on demographic, psychological and lifestyle characteristics that these consumers have in common. A link is made between households and neighbourhood characteristics. More than 15,000 respondents were asked about their living preferences such as; in what kind of neighbourhood and in what type of dwelling they would like to live and how this should look ideally. BPD distinguishes 14 target groups. However, due to the topic of families in this report, in figure 5 a summary is shown of only the target groups that have children. These eight groups together count for more than half of all households in the Netherlands. However, considering that only a

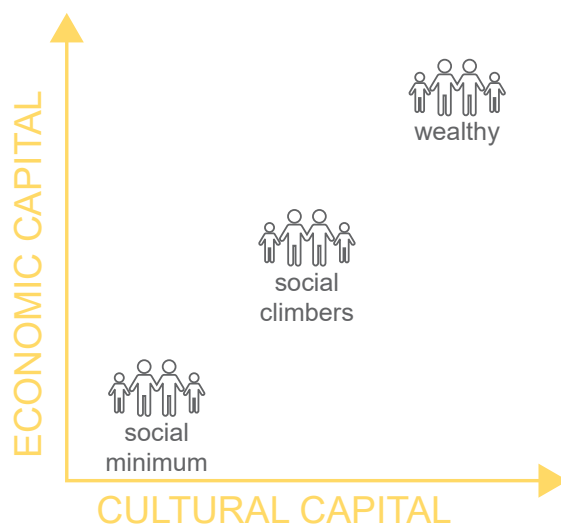


Figure 4 Own Production. Source: De Nieuwe Generatie Stadskinderen 2016

quarter of the households in Amsterdam consist of families, this means that only a selection has the preference to live in the city, or are able to live in the city. For instance, the living environment and dwelling preferences of the first four groups are easier to find in the city than the last four. This does not mean that the last four are never found in the city rather only in smaller numbers. For this reason, in the next paragraph, a description is given of the groups most likely to be found in the city.

The first group, the so-called Urban Balancers, usually live in rental apartments in the city. This group is usually of Turkish, Moroccan, Antillean or Surinamese origin. A village living environment certainly does not appeal to this group and prefers to live in the city, in the neighbourhoods around the centre. However, they also have a larger preference for a child-friendly neighbourhood with facilities specifically aimed at children.⁴⁰ The second group, the so called Starting Together group, are usually young couples with a low level of education. Their ambition is focussed on other things than making a career. This group likes to live in the neighbourhoods around the city centre. Usually they are strongly dependent on social housing.⁴¹ The third group in the Mosaic are the Modal Families. These families usually have more than one child and live in owner-occupied dwellings. Generally, they live in suburban environments or areas in the city where you can find a playground, a supermarket, a nursery or a school. For this group, other people in the neighbourhood are of an important part of their social life and they have a strong preference for social cohesion in their close nit environment. For example, they go to each other's birthdays and take care of each other's children. For the fourth group, a good career is very important. They consider it the main prerequisite for them to be assured of enough income to afford a pleasant city life. But security for the family is at least as important. That is why there is a good balance between work and quality time. They do not

	Urban Balancers (Stedelijke Balanceerders)	Starting Together (Samen Starten)	Modal Buying Families (Modale Koopgezinnen)	Child and Career (Kind en Carrière)
Age	25 to 45	25 to 45	25 to 45	30 to 55
Kids	One kid up to 5 years old	One or more kids until 19 years old	One or more kids until 12 years old	One or more kids until 19 years old
Education	Low / intermediate	Low / intermediate	Intermediate / high	High
Income	Below modal	Low to modal	Modal to 2x modal	2x modal or more
Dwelling	Apartment or rowhouse	Rowhouse	Corner- or rowhouse	Semi- or detached dwelling or rowhouse
Size	<90 m2	90 - 135 m2	90 - 135 m2	90 - 135 m2
Rent	€500 - €700 / month	€400 - €600 / month	€700 - €1000 / month	-
Buy	-	€ 150.000 to € 250.000	€ 200.000 to € 250.000	€ 200.000 to € 600.000

	Mature Middle Class (Rijpe Middenklasse)	Freedom and Space (Vrijheid en Ruimte)	Golden Edge (Gouden Rand)	Elitist Top Class (Eitaire Topklasse)
Age	45 to 75	40 to 60	45 to 65	45 to 60
Kids	One or two kids older than 13	One or two kids from 6 to 18	One or two kids from 6 to 19	Two or more kids older than 6
Education	Intermediate	Intermediate / high	High or University	University
Income	Modal	2x modal or more	2x modal or more	2x modal or more
Dwelling	Corner- or rowhouse	Semi- or detached dwelling	Semi- or detached dwelling	Semidetached dwelling
Size	90 - 135 m2	90 - 135 m2	> 135 m2	> 135 m2
Rent	-	-	> 1000 / month	-
Buy	€ 150.000 to € 350.000	€ 250.000 to € 450.000	€ 250.000 to € 600.000	> € 700.000

Figure 5 Own Production. Source: BPD Mosaic 2016

live in the middle of the city centre, but around it and close to the school of the children.⁴² When compared with Felder & Karsten's groups, the two first groups of the Mosaic could be classified in the social minimum group and the last two in the group of social climbers and the wealthy. However, there are many things that these families have in common. They all want a child-friendly neighbourhood with facilities aimed at children. Also, in terms of the ideal housing type, the preference is similar. According to another research from BPD on families in Amsterdam, most of them desire to live in a townhouse either in the form of a rowhouse or a single or semi-detached dwelling.⁴³ However, if we look at the current housing stock in Amsterdam, most dwellings consist of apartments.⁴⁴ It is logical that in a city with limited space to build, piling up dwellings has the priority rather than spreading them on a horizontal plane. Are so many families leaving the city because the apartments do not meet their desires? Are apartments just not big enough? Or are they missing something else? According to the urban planner Jeroen Niemans, many people now often think they are entitled to a house with a garden and with a parking space in front of the door. Niemans states that we have to start thinking differently about this especially if we want to live in the city.⁴⁵ But how can we make apartments that meet the desires of families?

Two Parents vs Single Parents Households in Amsterdam

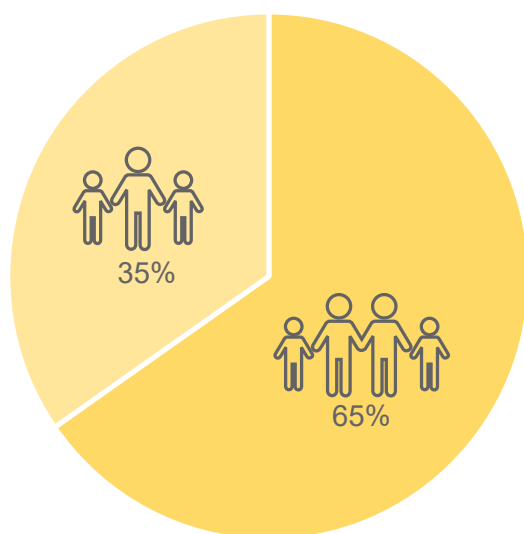


Figure 7 Own Production. Source: CBS

Number of Children per Household in Amsterdam in 2018

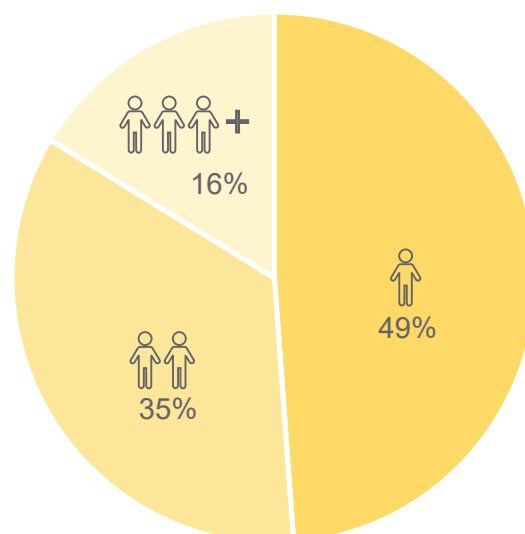


Figure 8 Own Production. Source: CBS

Households with Children in Amsterdam

	Two Parents Household			Single Parent Household		
	1 child	2 child	3 or more	1 child	2 child	3 or more
2000	26291 45%	21808 37%	10539 18%	22091 61%	9946 27%	4136 11%
2005	26943 44%	23150 38%	11181 18%	23132 60%	11076 29%	4398 11%
2010	27765 43%	24999 39%	12000 19%	23622 61%	10841 28%	4268 11%
2015	29637 42%	27907 39%	13423 19%	24700 62%	10941 27%	4333 11%
2016	29856 42%	28198 39%	13633 19%	24962 62%	10941 27%	4335 11%
2017	30167 42%	28412 39%	13924 19%	24753 62%	10940 27%	4402 11%
2018	30420 42%	28520 39%	14118 19%	24967 62%	11018 27%	4385 11%

Figure 9 Own Production. Source: CBS

Family Dwellings

First of all, not all families are the same in size. In Amsterdam, almost half of all the households with children only have one child and more than one third of the households are single parent households.⁴⁶ Secondly, not all children are of the same age or require the same necessities. According to several authors for instance, children of different ages need different ranges of distance in which they can develop themselves.^{47,48,49} In comparison to older kids, the younger children will stay closer to home. As a designer, it is these kinds of factors, among many others, you must take into account to make a suitable living environment for each child. For example, the youngest children aged 0 to 4 years, who are just learning how to walk, need a range of 30 meters in order to develop their motor skills. For this group solutions can be searched within the dwelling or just outside the dwelling. Children aged 4 to 8 years need a range of 150 meters, for example to develop their social skills. For this group, design solutions should be looked for on a larger scale, for example on the scale of the building block. Finally, the older children, aged 8 to 12 years need an action radius of 500 meters to be able to develop independence. For them, facilities from adjacent neighbourhoods will also belong to their habitat.⁵⁰ In general, for all families, it comes down to the question of whether the neighbourhood is safe or not. In the city, families look for neighbourhoods with a minimum number of cars on the street and nearly no criminality. The number of cars on the streets today in comparison to 70 years ago, is eminently different. According to Carolien Bouw and Lia Karsten, in the 1950's in Amsterdam, twice as many children were seen on the streets as cars. In the year 2000 it was exactly opposite.⁵¹ For this reason, families today prefer living in the more peaceful, low on cars, neighbourhoods of a city. This is what Karsten calls 'urbanity in the lee'. According to Karsten, an attractive neighbourhood is a neighbourhood, and preferably a street, where other families with children can be found. Furthermore, it is essential to have a variety of facilities close to home that are aimed at children such as; schools,

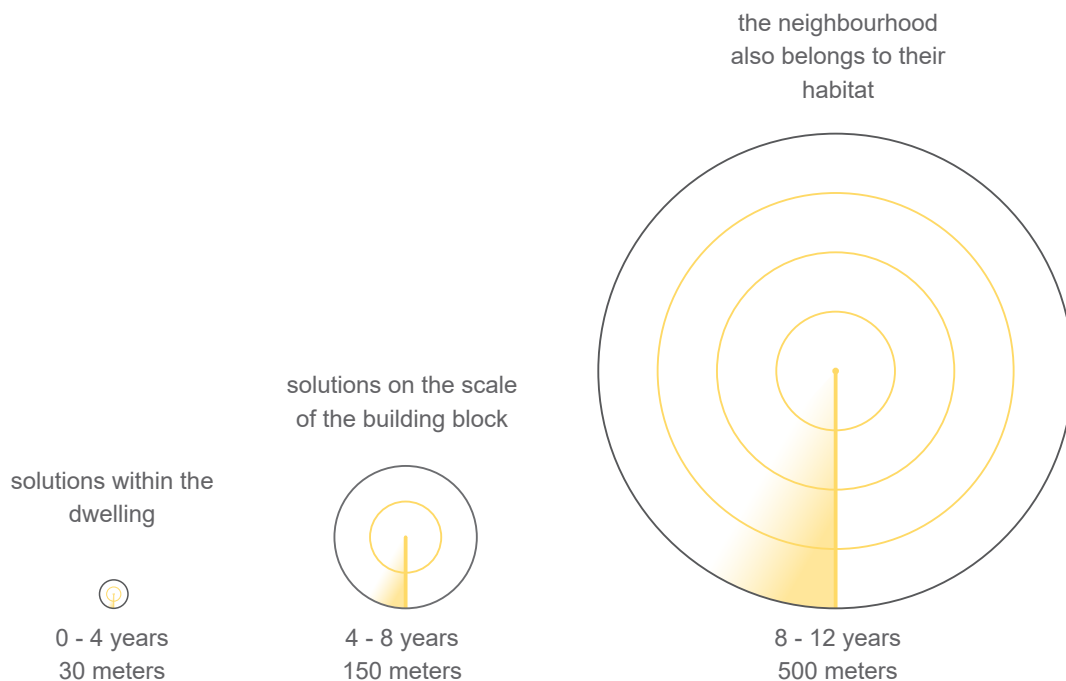


Figure 10 Own production. Source: Heren 5 Architecten

playgrounds or parks. The so called urbanity in the lee also concerns broad sidewalks and the absence of the beforementioned cars on the streets or big traffic flows.⁵² This is what Jan Gehl calls the 'safe city' in his book *Cities for People*.⁵³ Regarding the traffic flows, Gehl states that is not necessarily crucial to make roads car-free, as long as the quality of the pedestrian area is high enough. He states that according to accident statistics, already only by mixing types of traffic in the same street by the heading of 'shared space', they become much safer.⁵⁴ In their book 'De Stoep', Eric van Ulden and his co-authors confirm that broad sidewalks and the way they are furnished can be of great influence on the safety of the street.⁵⁵ In their research they state that for residents it is not just about having the broad sidewalk but also being able to make use of it. They call this the transition zone between the public street and the house.⁵⁶ If parents can reside on the streets on this transition zone, they can keep an eye on their children at the same time, making it safer. However, these transition zones have more advantages. According to a research done in Norway, more than eighty percent of the informal contact moments between local residents take place in this transition zones. The sidewalk thus contributes to what sociologists call public familiarity; knowing the faces of neighbours and people living in the same street or block. Public familiarity contributes to the sense of security and trust in the own street and neighbourhood.⁵⁷

Concerning the house itself, according to Karsten, the post-war large-scale housing production has led to an excess of small three or less rooms apartments in which a large group of families have their home. In one of her studies, Karsten shows that families adjust their housing requirements. Although a house with many rooms still remains a prerequisite, the demand for a house on the ground floor and a private garden is no longer a requirement. This is however, only valid on the condition that there is an attractive collective outdoor space instead as a substitution. In other words, the challenge is to design apartment buildings consisting of dwellings with enough rooms and with good access to a collective outdoor space which can also be used by children.⁵⁸ According to urban researcher Ivan Nio from the UvA, the challenge includes an exploration of the spatial consequences of the changing lifestyles and relationships within a family. He describes the relation between collectivity and individuality.⁵⁹ Both children and parents demand their own space and possibilities for private moments in the house. On the one hand there may be a wish to share a room with the whole family, on the other hand there is the desire for more privacy and a place of their own. Therefore, according to Nio, multiple rooms ensures flexibility and the ability to move indoors depending on the phase a family is at or whether the parents work at home or not. Most families proliferate with limited budgets and little space. Therefore, they combine several functions within the dwelling meaning that some rooms or spaces will have multiple functions. At the same time, the use of certain rooms or places in the house are also arranged in time. For example, during the day, the living room can be the domain of the children and in the evening of the parents. Or, the kitchen and living room can both be used collectively or individually during the day or the evening.⁶⁰ Furthermore, Nio states that it is not only the dwelling which will influence the quality of family life, but also the interaction between the private, the collective and the public domain. Being at home does not only take place in the dwelling. Being at home also includes the neighbourhood and the city. By making collective

gardens more attractive for children, apartment buildings can respond better to the desires of families. For example, a city apartment or maisonette, perhaps without a garden and large trees but with the beforementioned wide sidewalk where the children can play.⁶¹ In another research, Heren 5 Architecten confirm that rather than creating few big rooms in an apartment, the preference should go out towards creating several more smaller ones which would allow family members to retreat and have more privacy.⁶² The same applies to diversifying the use of each room, giving them more than one purpose. For example, a larger hallway could simultaneously provide space for children to play as well as other purposes. Furthermore, families have the tendency to change in size and composition which creates a demand for extra space or different spaces. As families grow, they acquire more stuff, and this requires more storage space but also different sizes of rooms and number of rooms. The design of an apartment should therefore become flexible to adapt to and interact with the composition of family throughout time.⁶³ Another alternative could be the addition of space outside of the dwelling but inside of the collective domain, ensuring the safety of their children. By creating a big gallery or a large portico for example, younger children are provided with the opportunity for safe grounds for playing near the dwelling.⁶⁴ If the street is then also made car-free, families could completely be satisfied in their need for save outdoor environment in a city.

Tools to Design Family Apartments

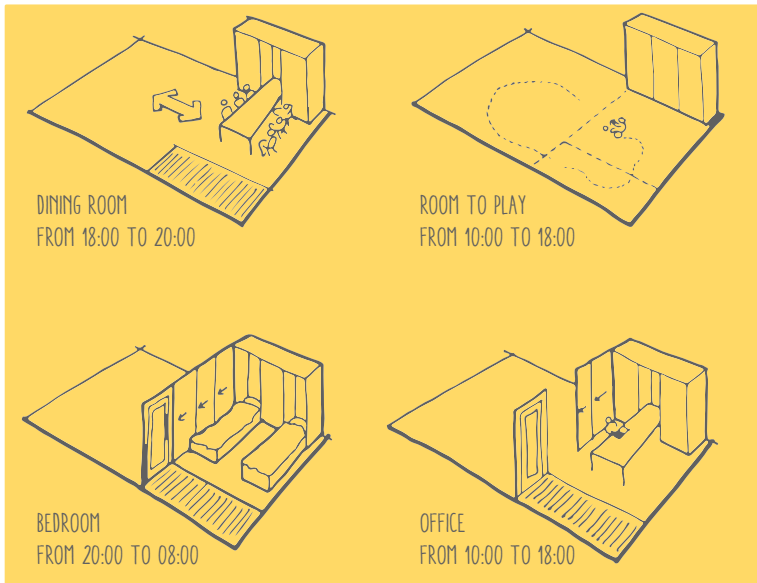
Based on the research described above and inspired by mainly the two books 'Apartments for families' and 'the new generation of city children', a selection of design tools that can be used in the next step of my graduation process, are shown in the following pages.



Source: BNA Onderzoek - Nestelen in De Stad

Enough Storage Space

Almost all families today have a structural lack of storage space. De biggest challenge is to design something so that families can get more storage space, which they can decide for themselves where it will go and what it will be used for. One family might want to use it for clothes and toys, while the other might use it for seasonal stuff such as the things they only use on a vacation.



Smart Floorplans

The smaller the area of an apartment, the more it comes to search for possibilities to give spaces more than one function. The challenges are for instance to reserve space for a bigger hallway, making adaptable spaces and giving everyone in the family its own space with privacy. The room designated for playing or doing homework during the day, can be the dining room in the evening and the bedroom at night. As long as there is a place to receive guests, a place to have sleepovers, a place to work or to do the homework or a place to play inside with bad weather outside, living small is not that bad.

Source: BNA Onderzoek - Nestelen in De Stad

Adaptable to the Growth of the Family

For families it is characteristic that they are always in transition. After their birth, children take more and more space at home. Not everything in the house needs to be adapted to the children as long as there is enough space in the hallway or in the living room to play. However, playing starts taking less space as they get older, but then instead, the need for more privacy grows. It is therefore useful if a dwelling can change with the size of a family and the age of the children. The challenge is designing a dwelling with space for eventually two or three children and with the potential to combine it with a home office.



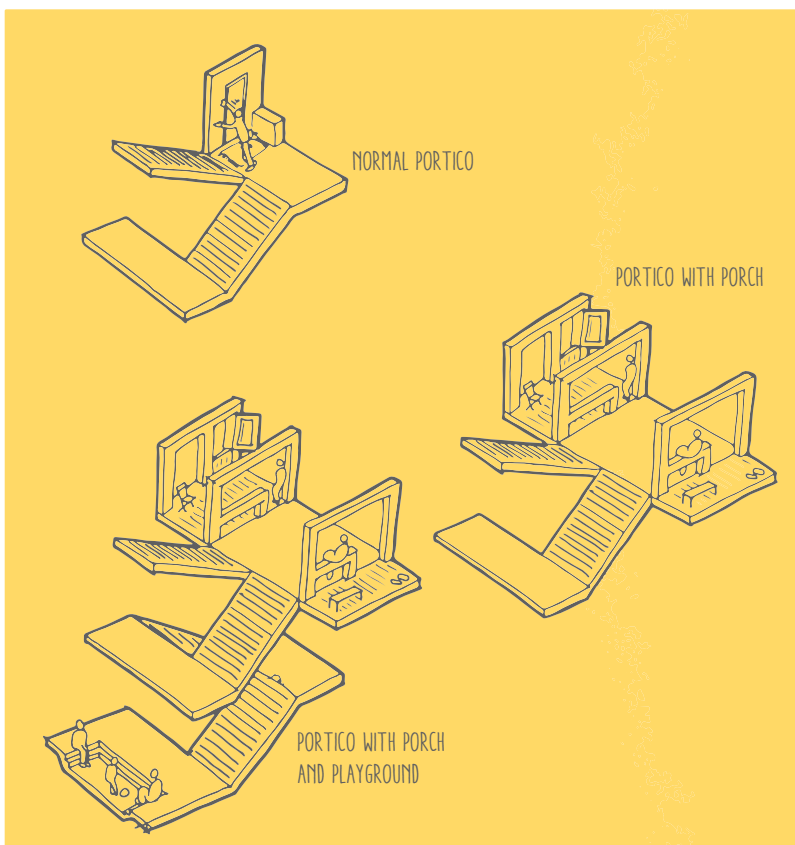
Source: BNA Onderzoek - Nestelen in De Stad

The Right Sizes

A general assumption can be made that once a house is being lived in, you will never change it again. If spaces are designed in a way that they can only be furnished in one way, they probably will be furnished in only one way. By choosing measurements or sizes for dwellings and/or rooms which make it possible to furnish them in various ways, flexibility is created automatically. The challenge is making sure the house can adapt to the family rather than the family adapting to the house.



Source: BNA Onderzoek - Nestelen in De Stad



Source: BNA Onderzoek - Nestelen in De Stad

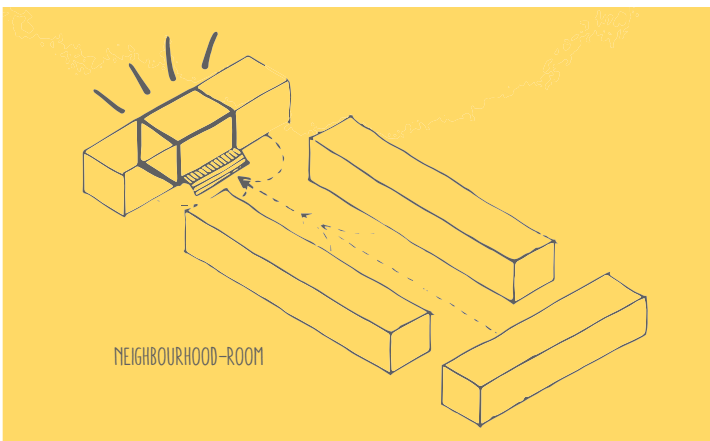
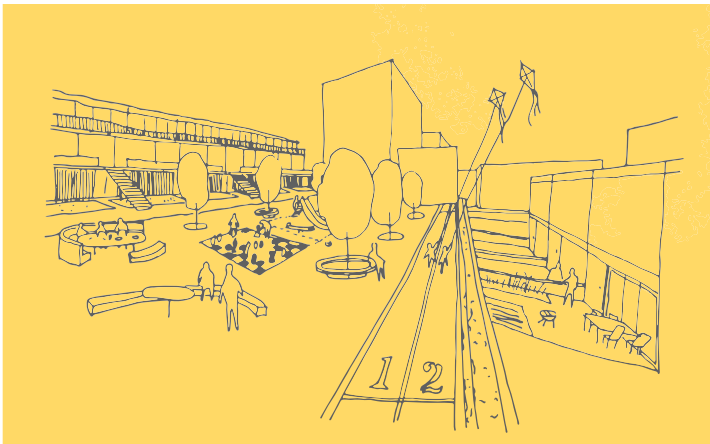
Between Inside and Outside

Those who live in apartment buildings often have more than one front door: in addition to their own front door, there is the outer door of the complex. The area in-between can be short or long and impersonal or anonymous, depending on the size and layout of the building. In any case, residents of apartments have to share stairs, elevators, portals and sometimes also hallways with storerooms. These common areas are primarily intended to get from A to B as quickly as possible. However, by finding solutions for children to play or meet each other in this transition zone, will make the building more attractive for families.



A Family-Friendly Environment

In general, for all families, the safety of the neighbourhood is the most important. They search for Karsten's 'urbanity in the lee'; a neighbourhood with a minimum number of cars on the street, and preferably a street where other families with children can be found. It is essential to have a variety of facilities close to home that are aimed at children such as; schools, playgrounds or parks. Another alternative is a so-called neighbourhood-room from Naomi Hoogervorst and Jasper Druiven; an extra space in an apartment block that families can use for different purposes. Solutions can also be found by simply designing attractive spaces within the collective domain of an apartment block such as a collective garden or collective terraces or rooftops.



Source: BNA Onderzoek - Nestelen in De Stad

Notes

- ¹ Josje Hoekveld and Suzande de Jong, "Binnen of Buiten De Ring?," (Utrecht: AM, 2017), p; 2.
- ² Centraal Bureau voor de Statistiek CBS, "Veel Jonge Gezinnen Verlaten De Grote Stad," <https://www.cbs.nl/nl-nl/nieuws/2017/45/veel-jonge-gezinnen-verlaten-de-grote-stad>. [accessed 13 November 2018]
- ³ Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, *Steden Van Morgen, Keuzes Voor Vandaag* (The Hague: Ministerie van Binnenlandse Zaken en Koninkrijksrelaties Directie Communicatie en Informatie/ Grafische en Multimediale Diensten, 2006). p; 34-35
- ⁴ Jolanda Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen* (Amsterdam: BNA Onderzoek, 2013). p; 6-7
- ⁵ CBS, "Veel Jonge Gezinnen Verlaten De Grote Stad". [accessed 13 November 2018]
- ⁶ Hoekveld and Jong, "Binnen of Buiten De Ring?," p; 2.
- ⁷ Michiel Cozy, "Gezinnen Met Jonge Kinderen Verlaten Amsterdam," Het Parool, <https://www.parool.nl/amsterdam/gezinnen-met-jonge-kinderen-verlaten-amsterdam~a4506453/>. [accessed 11 November 2018]
- ⁸ Jeroen Atteveld et al., "Het Gezin in De Stad," (Amsterdam: Heren 5 Architecten, 2010), p; 5.
- ⁹ Hoekveld and Jong, "Binnen of Buiten De Ring?," p; 2.
- ¹⁰ Atteveld et al., "Het Gezin in De Stad," p; 5.
- ¹¹ Cozy, "Gezinnen Met Jonge Kinderen Verlaten Amsterdam".
- ¹² Willem Boterman and Lia Karsten, "De Stad: Magneet, Roltrap En Spons," (Planbureau voor de Leefomgeving, 2015). p; 118
- ¹³ Ibid. p; 119
- ¹⁴ Lia Karsten. "Family Gentrifiers: Challenging the City as a Place Simultaneously to Build a Career and to Raise Children," *Urban Studies* 40, no. 12 (2003) p; 2573–2584
- ¹⁵ Han Michel, "Recepten Voor Het Nieuwe Wonen Met Kinderen," in *Nestelen in De Stad: Apartementen Voor Gezinnen* (Rotterdam: NAI Publishers, 2013).p; 59-65
- ¹⁶ Boterman and Karsten, "De Stad: Magneet, Roltrap En Spons." p; 118
- ¹⁷ Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen*. p; 22
- ¹⁸ Boterman and Karsten, "De Stad: Magneet, Roltrap En Spons." p; 118-127
- ¹⁹ Michel, "Recepten Voor Het Nieuwe Wonen Met Kinderen." p; 60
- ²⁰ Ibid. p; 61
- ²¹ Ibid. p; 64
- ²² Frederique van Andel et al. (eds), *Dash the Residential Floorplan – Standard & Ideal* (Rotterdam: NAI Publishers, 2010). p; 63-64
- ²³ Ibid. p; 63-64
- ²⁴ Ibid. p; 73-74
- ²⁵ Ibid. p; 99-100
- ²⁶ Ibid. p; 107-107
- ²⁷ Ibid. p; 127-128
- ²⁸ Ibid. p; 91-92
- ²⁹ Ibid. p; 117-118
- ³⁰ Ibid. p; 135-136
- ³¹ Ibid. p; 143
- ³² Hoekveld and Jong, "Binnen of Buiten De Ring?," p; 14.
- ³³ Boterman and Karsten, "De Stad: Magneet, Roltrap En Spons."
- ³⁴ Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen*. p; 21
- ³⁵ Cozy, "Gezinnen Met Jonge Kinderen Verlaten Amsterdam".
- ³⁶ Hoekveld and Jong, "Binnen of Buiten De Ring?."
- ³⁷ Naomi Felder and Lia Karsten, *De Nieuwe Generatie Stadskinderen* (Rotterdam: nai010 uitgevers, 2016). p; 14
- ³⁸ Ibid. p; 14-15
- ³⁹ BPD, *Bpd Mosaic 2016 Doelgroepsegmentatie En Woon(Milieu)Voorkeuren* (Amsterdam: BPD afdeling Research, 2016). p; 1-64
- ⁴⁰ Ibid. p; 10-13
- ⁴¹ Ibid. p; 14-17
- ⁴² Ibid. p; 18-49
- ⁴³ BPD, "Consumentenonderzoek Woonwensen Amsterdam," BPD ontwikkeling B.V. Regio Noord-West, <https://bpdwoonwensenonderzoek.nl/gezinnen-met-kinderen>. [accessed 12 December 2018]
- ⁴⁴ Centraal Bureau voor de Statistiek, "Maatwerktafel Kenmerken Woonvoorraad 20120101," <https://www.cbs.nl/nl-nl/maatwerk/2013/04/kenmerken-woonvoorraad-2012>. [accessed 10 November 2018]
- ⁴⁵ Laura Steenbeeke and Jorn Kompeer, "Mensen Denken Recht Te Hebben Op Een Rijtjeshuis Met Tuin, Dat Moet Anders," Nederlandse Omroep Stichting, <https://nos.nl/artikel/2256301-mensen-denken-recht-te-hebben-op-een-rijtjeshuis-met-tuin-dat-moet-anders.html>. [accessed 15 November 2018]

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- ⁴⁶ Centraal Bureau voor de Statistiek, "Particuliere Huishoudens Naar Samenstelling En Grootte, 1 Januari," <http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=37975&D1=a&D2=0&D3=0,5,10,15,20-23&HDR=T&STB=G1,G2&VW=T>. [accessed 10 November 2018]
- ⁴⁷ Atteveld et al., "Het Gezin in De Stad." p; 24-25
- ⁴⁸ Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen*. p; 13
- ⁴⁹ Felder and Karsten, *De Nieuwe Generatie Stadskinderen* p; 149-159
- ⁵⁰ Atteveld et al., "Het Gezin in De Stad."
- ⁵¹ Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen*. p; 13
- ⁵² Ibid. p; 22-23
- ⁵³ Jan Gehl, *Cities for People* (Washington: Island Press, 2010). p; 91-104
- ⁵⁴ Ibid. p; 93
- ⁵⁵ Eric van Ulden and Sander van der Ham, *De Stoep* (Rotterdam: nai010 Uitgevers, 2015). p; 18-41
- ⁵⁶ Ibid. p; 28-30
- ⁵⁷ Ibid. p; 35
- ⁵⁸ Keesom, *Nestelen in De Stad: Apartementen Voor Gezinnen*. p; 24
- ⁵⁹ Ivan Nio, "Met Kinderen Stel Je Andere Eisen Aan De Stad," in *Nestelen in De Stad: Apartementen Voor Gezinnen* (Amsterdam: BNA Onderzoek, 2013). p; 115
- ⁶⁰ Ibid. p; 115-117
- ⁶¹ Ibid. p; 109-117
- ⁶² Atteveld et al., "Het Gezin in De Stad." p; 149
- ⁶³ Ibid. p; 147-160
- ⁶⁴ Ibid. p; 162

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URBAN PRECEDENT ANALYSIS

Borneo-Sporenburg



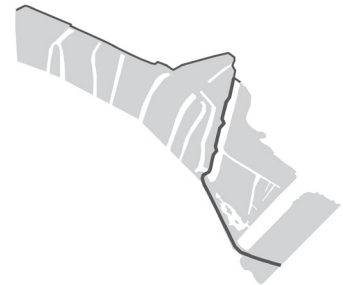
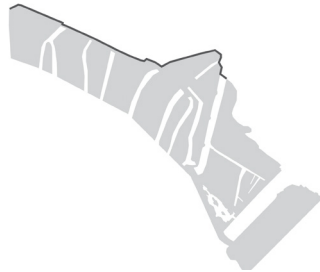
Robbie Gerbrandij - Teun Kakes - Erik Hoekstra - Moraad Anas

History

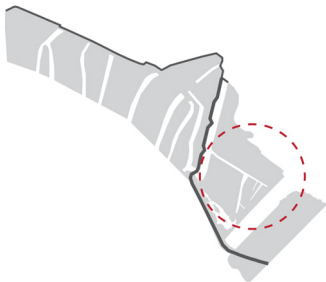
1550-1650: Growth



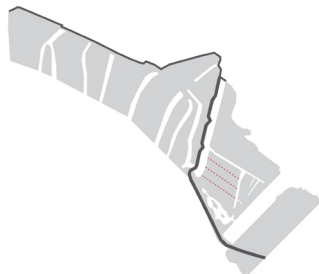
Zeedijk protects the city from the sea water



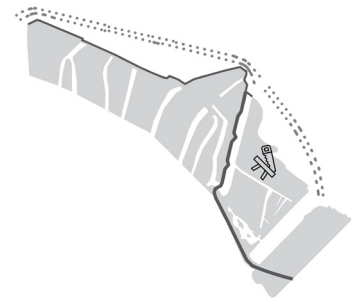
Eastern wall separates the city



The Lastage, one of the first important harbour of Amsterdam



For the first time in the harbor a system of urban planning based on mathematics, with straight streets and orthogonal parcelisation



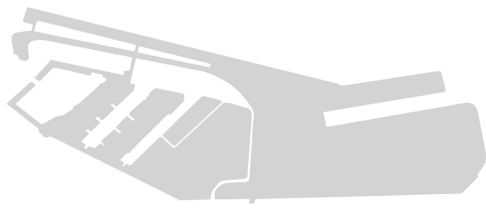
In the Lastage carpenters, lanes and other companies related to shipping were established. The IJ was with a double poles row (the 'trees') closed to make ships a safe berth to bed. These pile rows also had a military function, as fortification of the port.



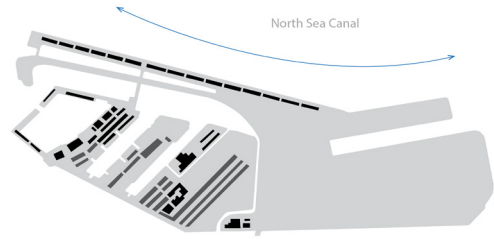
The port expanded strongly in the 17th century. Around 1660 the Eastern Isles were created



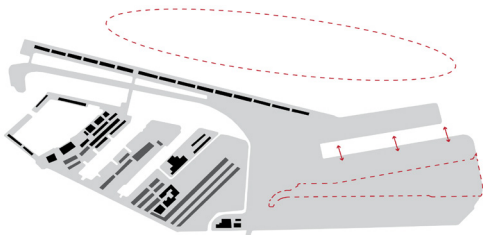
Construction of the Eastern Docklands in 1826. With the growth of the city, an archipelago of port islands developed on the east side of the city, which became more and more spatially and functionally separated from the city. Beginning of a new era



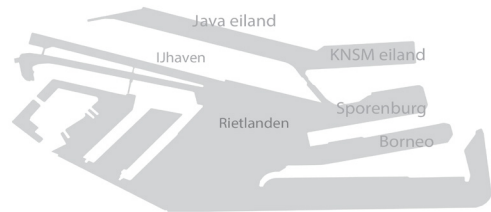
The North Sea Canal (opened in 1876) makes the port of Amsterdam finally easily accessible. And the canal is large and deep enough for the new-fashioned steamships, which have already almost displaced the sailing ships.



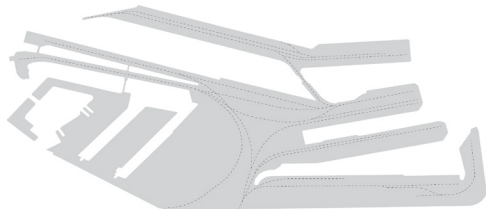
The Amsterdam economy is booming and the city is growing sensationally. After two centuries, the urban area will finally be extended again, with new residential areas such as the Kinkerbuurt, De Pijp and Oosterparkbuurt.



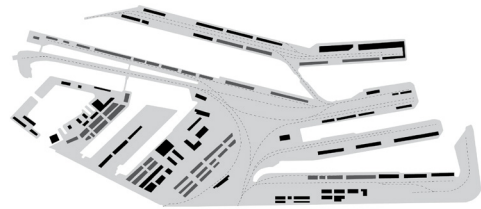
Due to the increasing trade, more and more quays are needed. In 1874, the Railroad Basin was dug in the grubby Rietlanden: tracks along the quays were built on the peninsulas that formed on both sides (later 'Borneo' and 'Sporenburg').



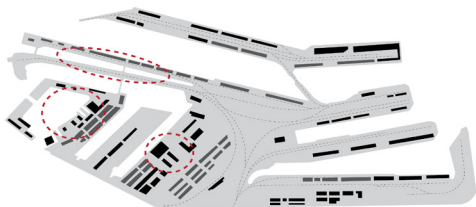
The connecting dam between the IJkade and the Handelskade was equipped with a fixed bridge.



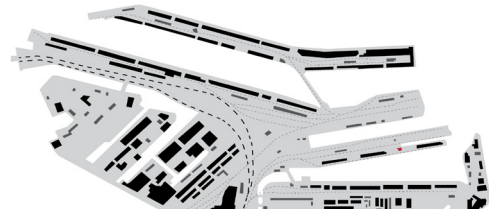
The Eastern docks an important transport area with the construction of the railways with the ships, quays, warehouses and sheds



After a short but intense bloom, after the Second World War it went downhill with the eastern harbor area. The new bulk transport and container shipping industry required larger quay lengths than were available in the Eastern Docklands.



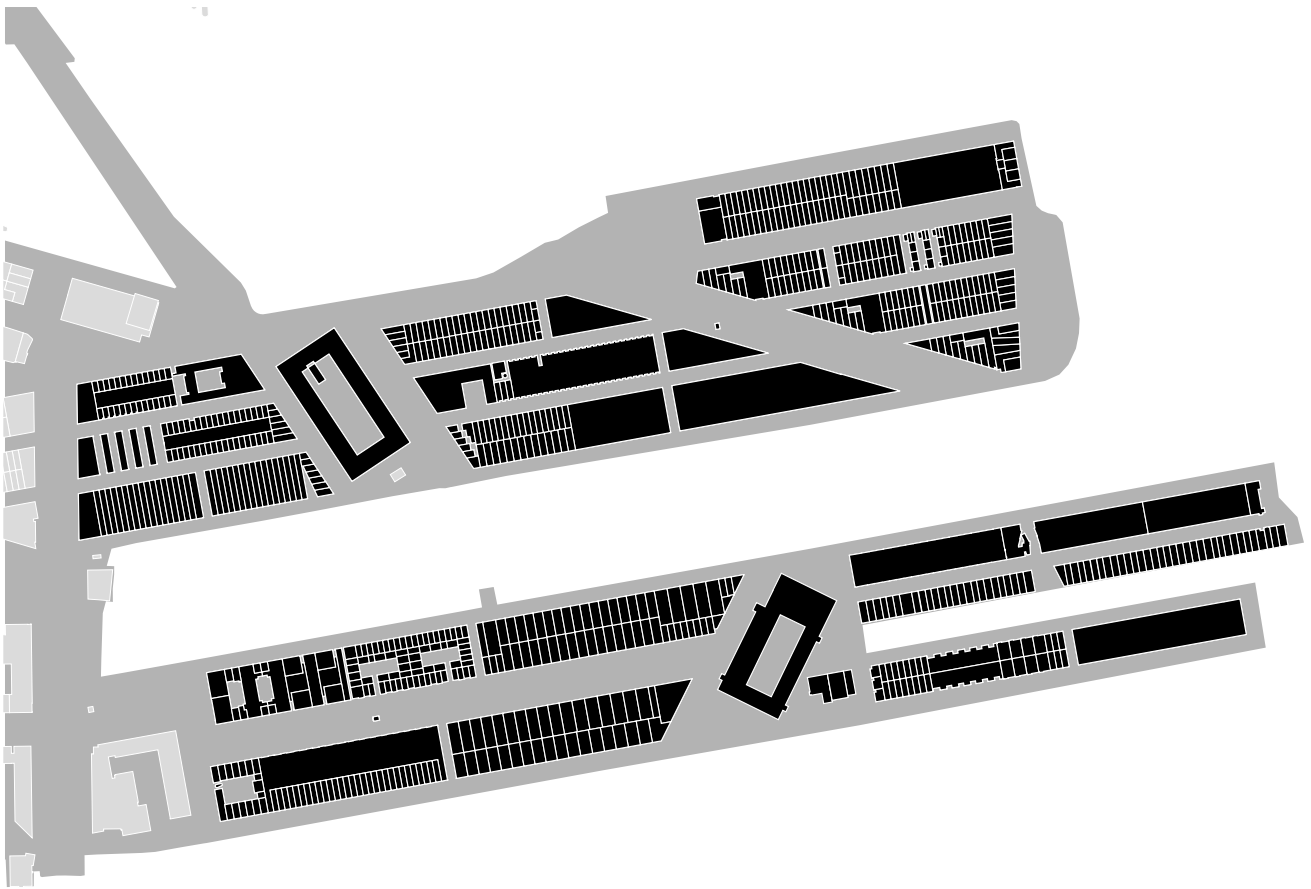
The Eastern Docklands was not very favorable to the North Sea Canal. The rise of aviation did the number of passengers on the high speed greatly reduce. The Western Dock had a greater potential for growth with a bigger area for unlimited possibilities.



The Eastern Dock area was eventually sold to the municipality. It was designated as residential area

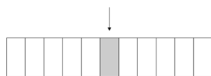
- warehouses, sheds, containers
- cranes & other dock machinery
- Only remaining building on the current site

Urban analysis

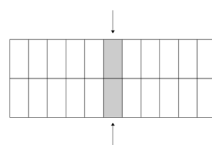


Urban morphology of Borneo Sporenburg (no scale)

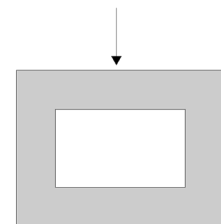
Within the design of Borneo Sporenburg by West 8, three urban typologies can be identified namely: Single row houses, Back-to-Back houses and the Perimeter block. The perimeter blocks are placed diagonal on the conventional street pattern. The Single row houses and back-to-back houses are enclosed within these conventional street pattern. These typologies translate the idea of West 8 that the focuss should be on the private realm. This also comes back in the new developed housing typology.



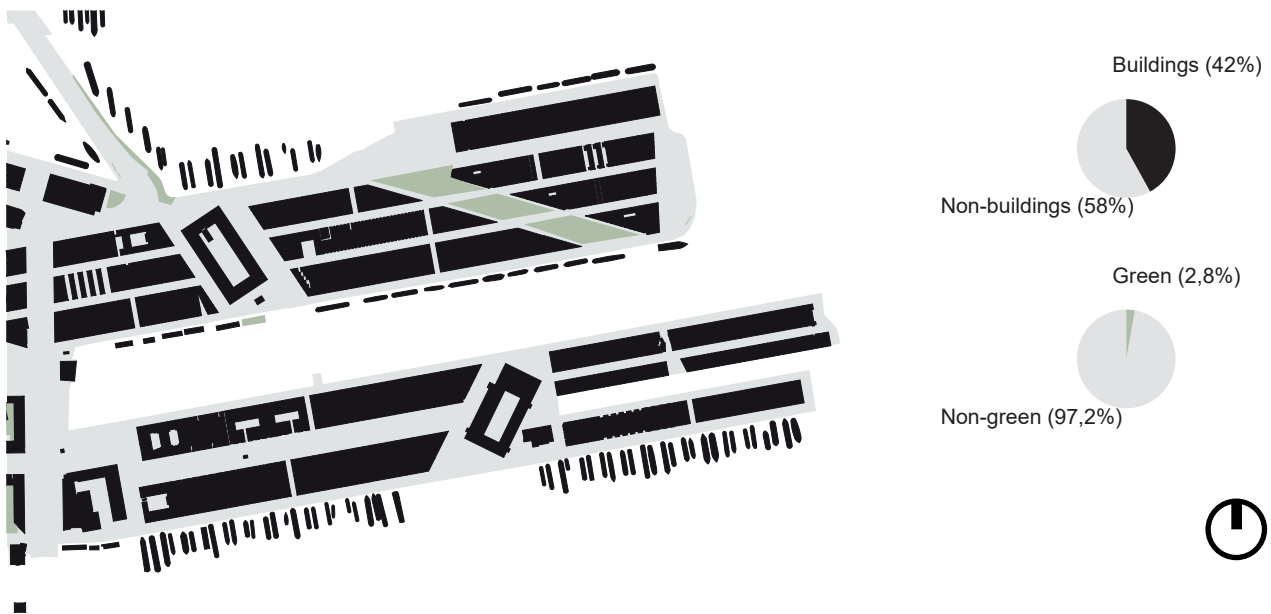
Single row



Back-to-Back



Perimeter block

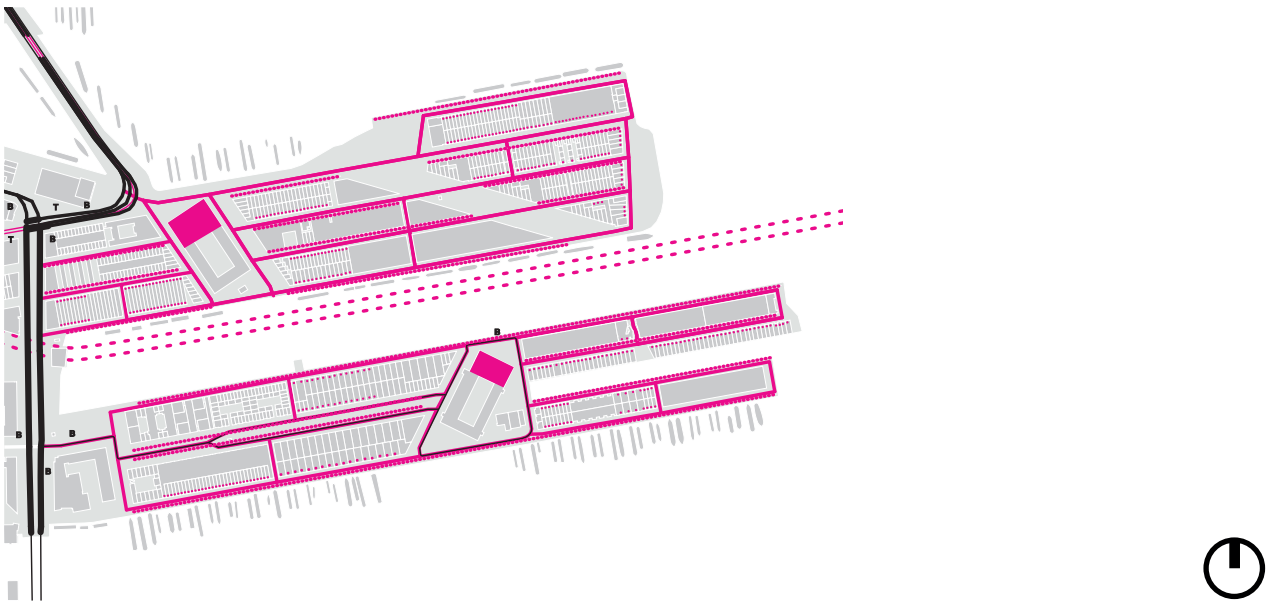


Urban morphology of Borneo Sporenburg (no scale)

Within the design of Borneo Sporenburg, different ways of building are to be found. This is the building of buildings, but also the building of non-buildings. The ratio of building and non-building is approximately 42-58. With this ratio in mind, Borneo-Sporenburg can be used as a reference when designing a whole new site.

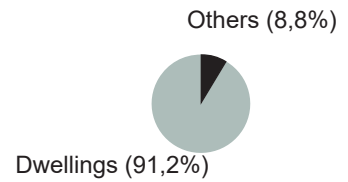
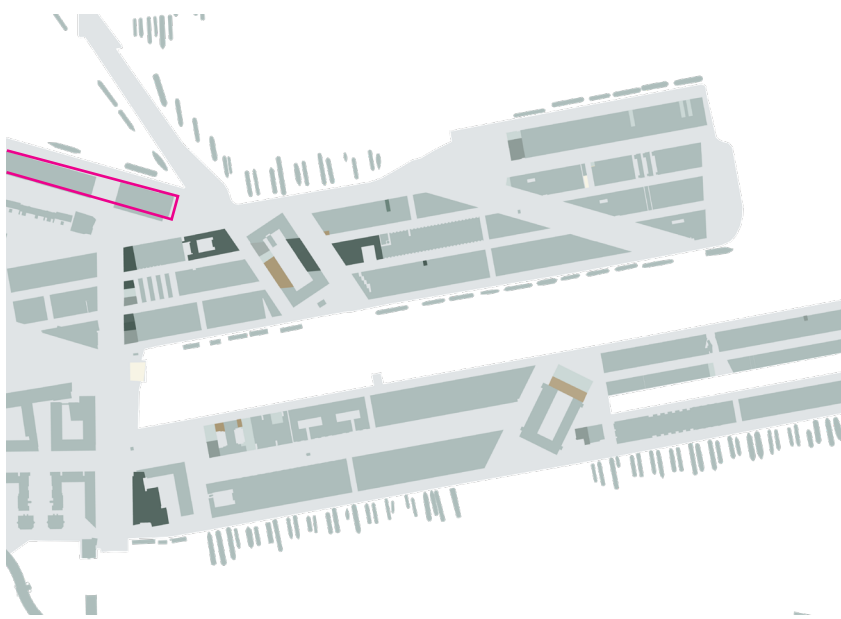
Presence of green of Borneo Sporenburg (no scale)

In the analyzed area not a whole lot of green is to be found in the plan. Just one real presence is to be found in the diagonal line of a park shaped area, as shown on the image above. The percentage shows there is just little green. But the vast amount of water in the area takes over the role of the greens quality of processing precipitation.



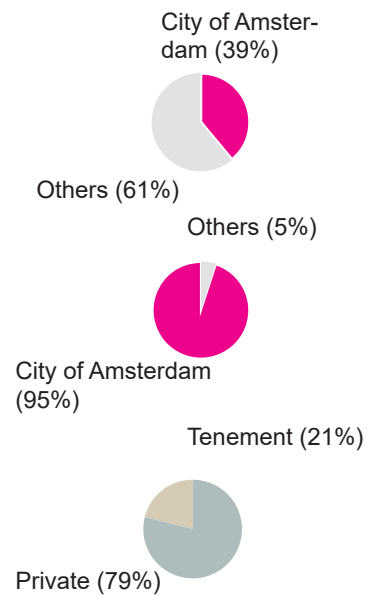
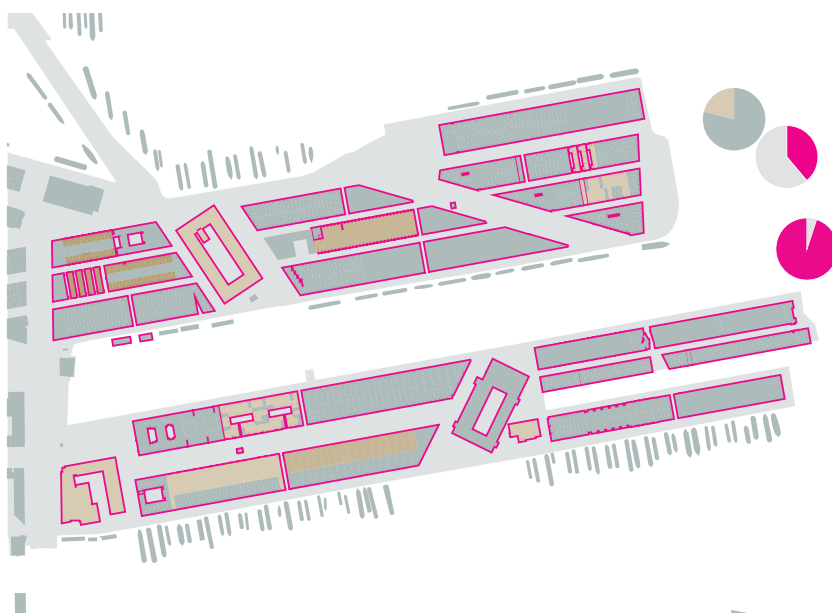
Infrastructure of Borneo Sporenburg (no scale)

The area is accessible by car, bus (limited), bicycle, most other transport devices, and foot. Notable is the way cars get parked in the area. This happens in three different ways. Namely: in a parking garage (marked with rectangles), on the street (marked with dots) and under houses (also marked with dots)



Functions of Borneo Sporenburg (no scale)

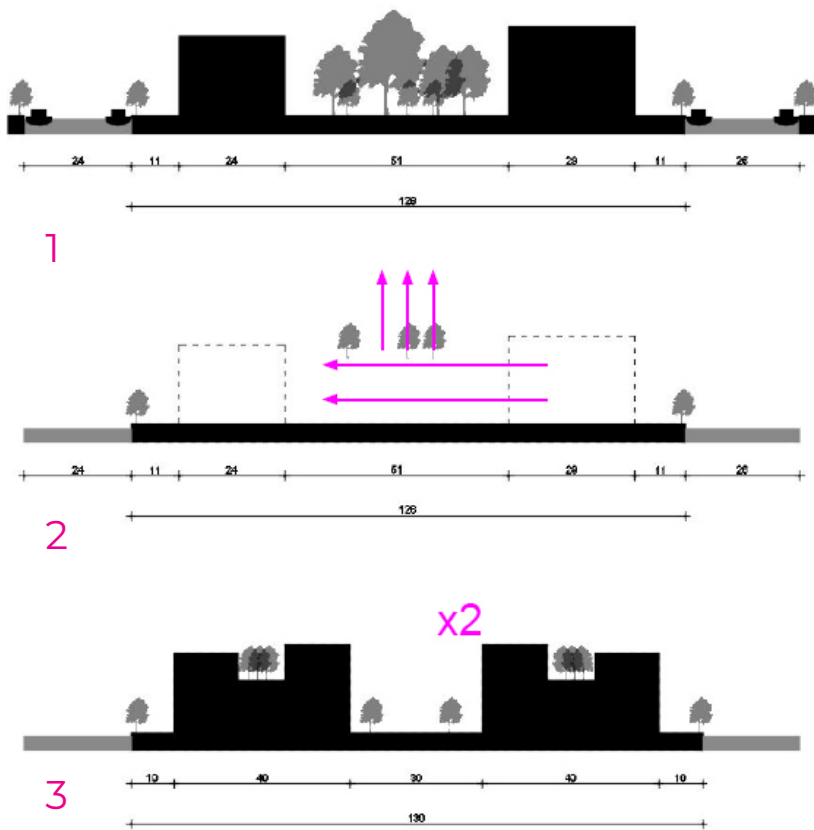
Several functions are to be found in the area. But the biggest part of the program is dwelling. A whopping 91,2% of the buildings are appropriated to dwellings. Amenities are to be found outside the area. These are marked on the map with a magenta line.



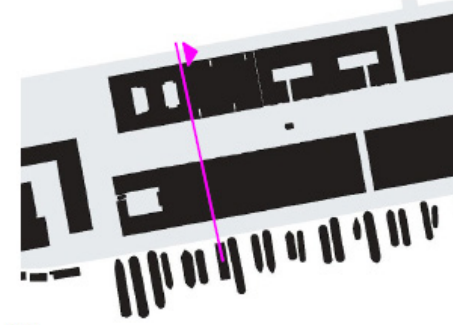
Ownership of Borneo Sporenburg (no scale)

Notable regarding the ownership of Borneo Sporenburg is the ownership of the ground where buildings are placed. Almost all of this area is in ownership of Amsterdam. This means Amsterdam owns 39% of the area and 95% of the ground where buildings are placed. Within the area buildings are built 21% is Tenement and a whopping 79% is private.

Comparison concept Stuurmanskade, Borneokade and Herengracht, Keizersgracht.



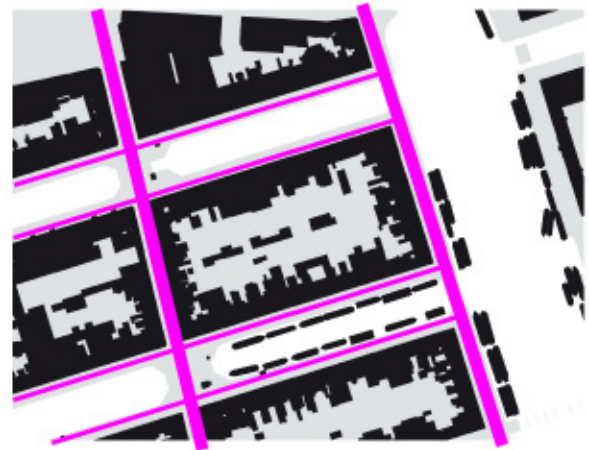
A: Herengracht, Keizersgracht



B: Stuurmanskade, Borneokade



B: Stuurmanskade, Borneokade

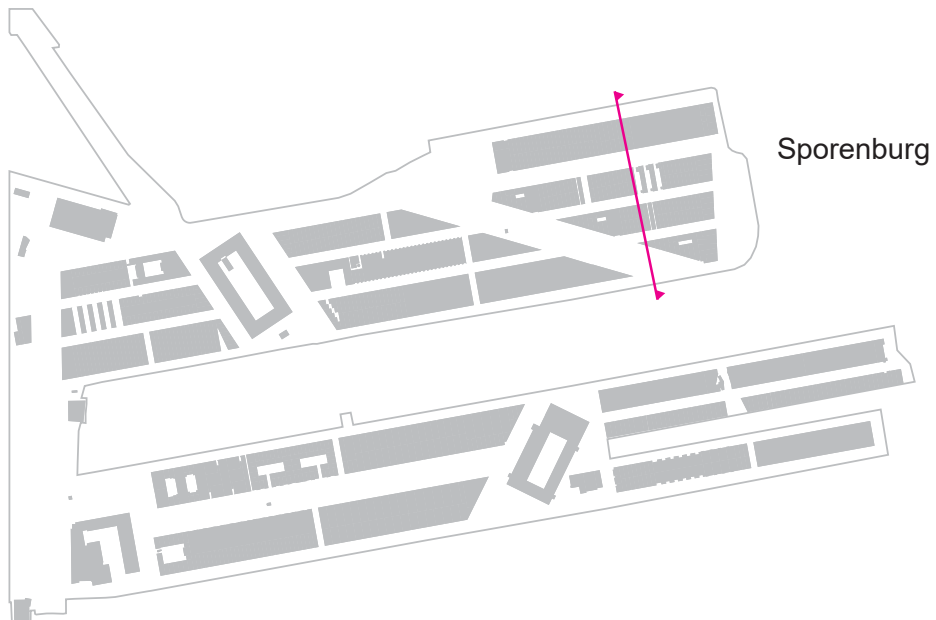
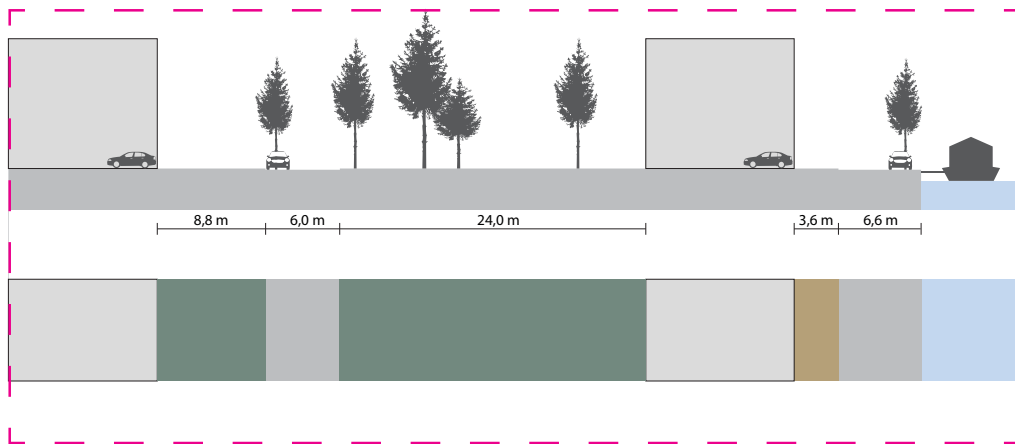
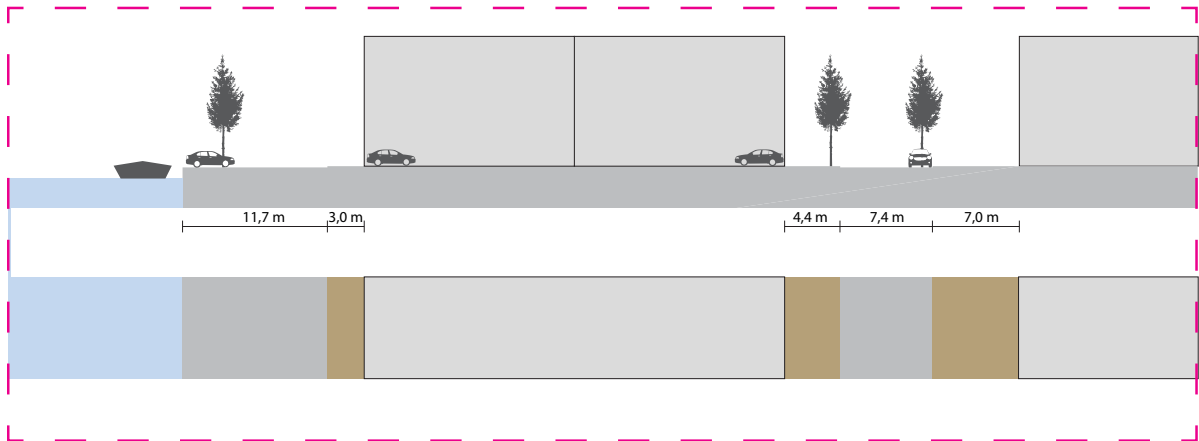


A: Herengracht, Keizersgracht

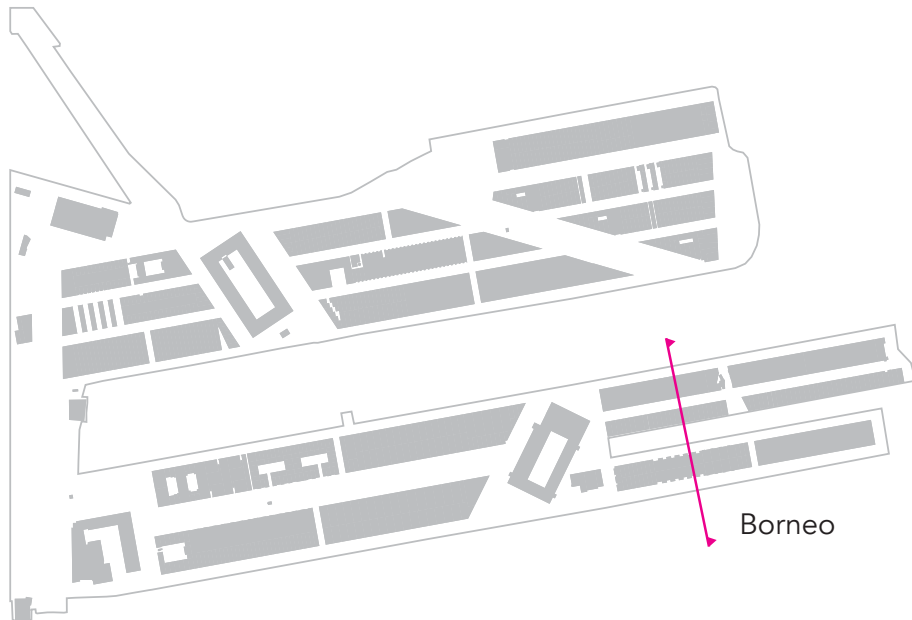
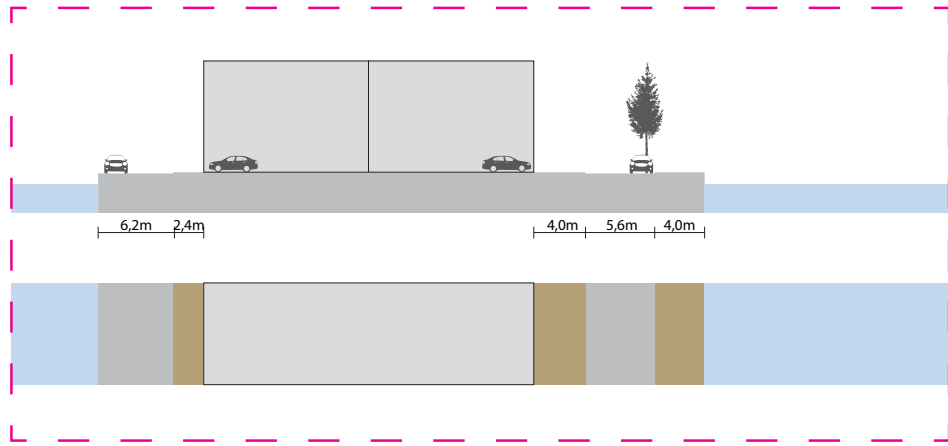
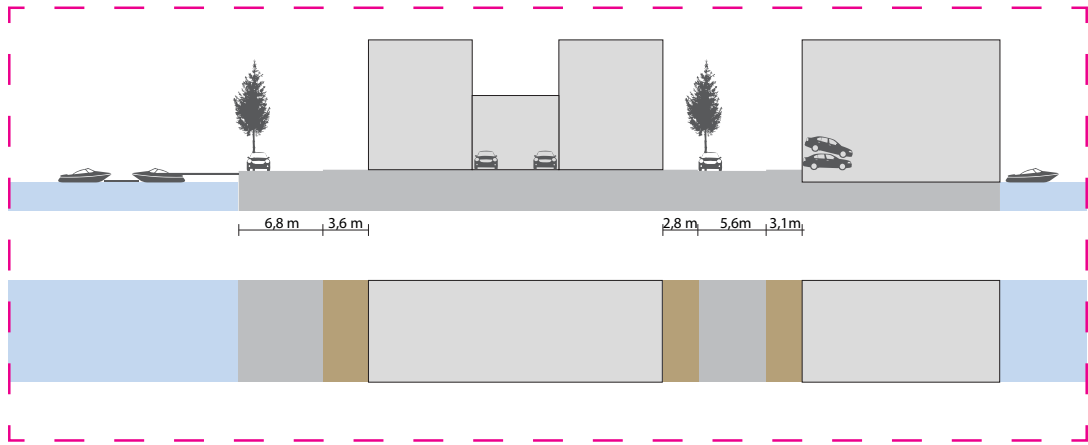


In comparison to a typical Amsterdam perimeter block surrounded by canals, one can state that the typology was has acted as a base for the block on Borneo and Sporenburg. As the three images on the top left indicate the two blocks of the Amsterdam perimeter block are attached to each other as back to back whereas the courtyard is moved upwards (to the roofs). This back-to-back block times two creates the section of Borneokade and Stuurmanskade. The reasoning for placing two blocks instead of one has to do with the role of the area. The Amsterdam perimeter block acts as a connection over two axes whereas the block on Borneo on one ax. Apart from that, the developed typology gave the opportunity to built more dwellings/ha.

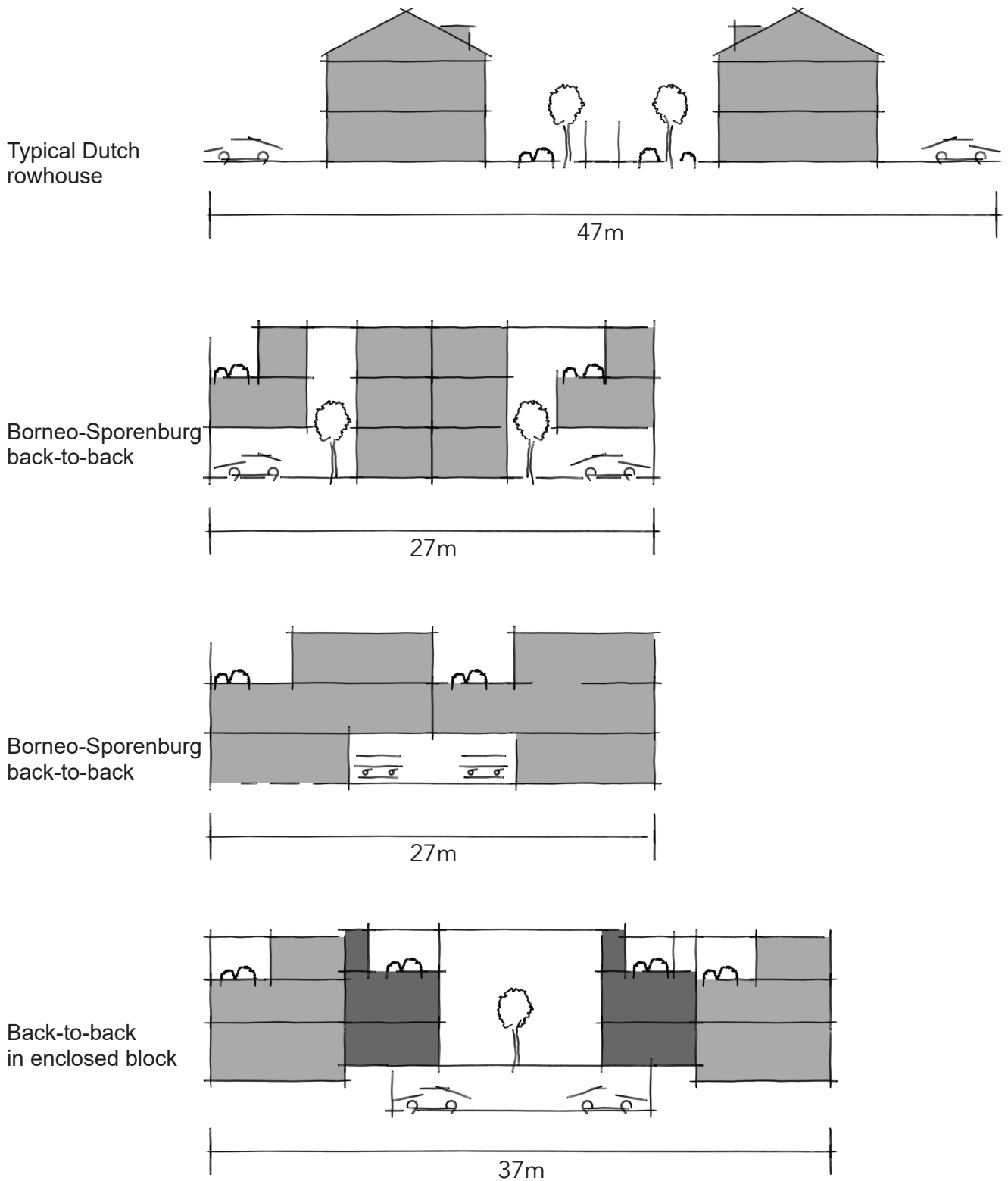
Street profiles



All the street profiles are similar, consisting of only pavers on both road and sidewalk. The building heights are three storeys and all dwellings have their access at street level creating including a car garage on the ground floor. Cars dominate the street views together with relatively small trees.



Dwelling Types



To be able to reach the expected residential density with similar qualities of the typical Dutch rowhouse, on Borneo Sporenburg gardens and parking have been implemented within the territory of the back-to-back dwellings.

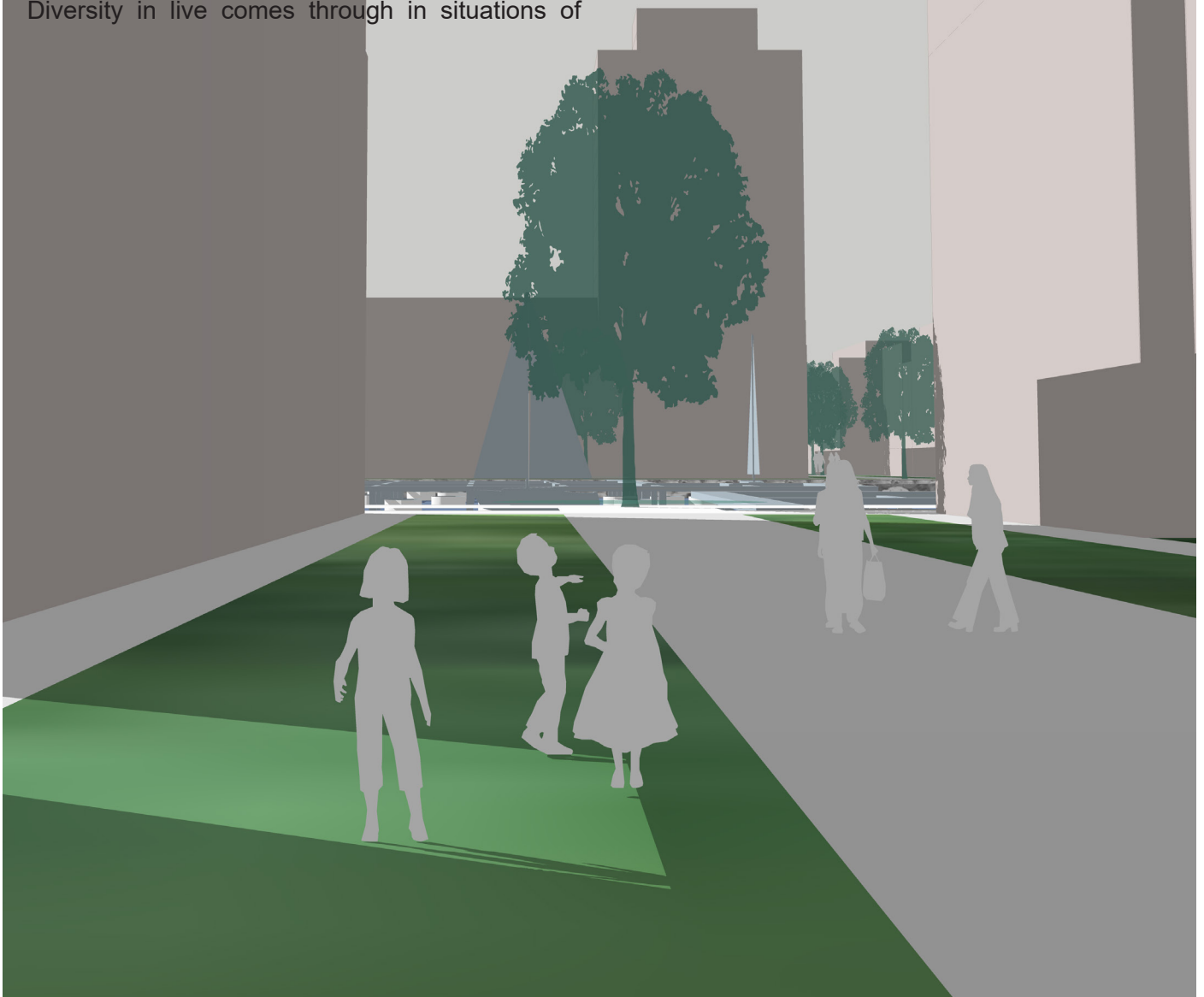
URBAN DESIGN PROPOSAL



Today one third of humanity is on the move. The most significant form of this migration is urban migration. The movement to cities in search of opportunities. Cities are the places where those without powers can become a part of history. In his book *Arrival Cities*, Doug Saunders states that cities largest migrations create new urban spaces that are this centuries vocal point of conflict and change. So migration affects population patterns and characteristics, social and cultural platforms, patterns and processes, economies and physical environments. As people move their cultural trades and ideas defuse along with them, creating and modifying new cultural landscapes.

Our global reality holds a great challenge for a new design approach or for designing our future environment, that considers the full range of our human diversity. A design that is guided by an appropriate response to our diverse population. Migration is only solved collectively, by inclusive means. Otherwise there will be only active integration or exclusion. Diversity in live comes through in situations of

multiplicity and heterogeneity, but often one in which the recognition of difference and the integration of migrants have been successful. As spaces of agglomeration and intersection, cities are often at the center of debates on diversity. The diversity in cities comes through in both a cultural and an economic dimension. The ambivalence of the term is what makes it both so appealing and ultimately self-contradictory. The problem with such a conflated understanding of diversity is that it renders what are essentially social questions of equality and justice into debates on discourse and identity politics. Trading off redistribution for recognition distracts from the actual issues at stake and, more than that, offers a legitimization strategy for processes that even aggravate the situation for urban residents. The basis for the new city was in the case of the Minervahaven drawn from creating a neighbourhood that would stand on itself, while giving the oppurtunity for others to make use of the qualities of the neighbourhood.



PLATFORM FOR A NEW CITY PART



"Above all, the bourgeois public sphere must be understood as the atmosphere: private individuals come together as an audience (...). The medium of this political confrontation was remarkable and without historical precedent: that people used their public." (Havermas, 1962, p.27)

In our vision cities should be formed by a smaller and bigger number of independent quarters, finite, and a neighbourhood should be part of one of these quarters. The city provides these functions which overburden and overcrowd the daily life of the one city. These activities should be placed in parks, squares, halls and malls, which separate these different metropolitan quarters. Within the ever extending metropolis that is Amsterdam, place must be reserved for boundaries, that connect and distance different quarters.

A quarter should consist of a countable amount of neighbourhoods. Thus it can provide the functions that are needed for any within a reachable distance. Activities should take place within the

centre of these neighbourhoods, and between these quarters. They must have a centre.

For the new expansion and restructuring of the Minervahaven area, we have set out various elements for bottom-up that are important for the use and occupation of a neighborhood. From this line of thought and with the starting point to create life in this new neighborhood, we have decided to build upon the historical essentials of the neighbourhood which consists of a lively soft industry of developers and businesses and adapt our new neighbourhood upon the local local economy that is present in the Area. This becomes the identity and history in the area.

We enhanced upon that by introducing what is in our opinion missing in the area, a diversity in use. This meant that the area is not only for working, but should now also become important for dwelling and living. This has to do with a human scale, urban vitality, active facades, public spaces, green and places to activate social contact.



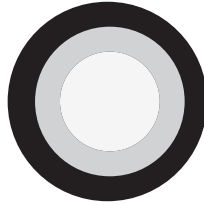
DIVERSITY OF USE



ACTIVE FACADE



URBAN VITALITY



HUMAN SCALE



LOCAL ECONOMY



IDENTITY HISTORY



PUBLIC STREETS



GREEN



SOCIAL COHESION

FORM	IDEAL	TARGET GROUPS	PLANNING PHASING	SCALE	STREET	DWELLING TYPES	ACCESS	AESTHETICS
Building block Tower Accent (Inner city)	Create community spirit. - Mixed-use - Social equality - Inclusiveness - Diversity Ideal	Target audience: - Everybody Family stages: - Starters - Single people - Elderly - Small / large family	- Large-scale urban expansion (inner city) - Building block projects (inner city) The development will be spread over a few decades, in which the large-scale urban expansion will gradually be added to the city on the basis of building block projects.	Design: District level - Unity - Rehearsal Design Living level - The (closed) Building Block - No repetition	- The street is no longer the domain of the car - Social interaction also takes place within the blocks - The street as a collective domain	Multi-family homes for singles and families 0 Different Household types.	Collective porch, own front door or gallery. Open access possibilities - Expansion - Porch - Open Gallery - Private front door Closed access possibilities - Indoor porch - Corridor - Private front door	Monumental collectivity - Building block / Association central - Courtyard / Individual centrally District Central / Neighborhood is Unit

For the morphological interpretation of urban design, we have set up a program that could provide an interpretation of the city both visually and informatively, and attempted to create a form that could be repeated without making total copies in the cityscape.

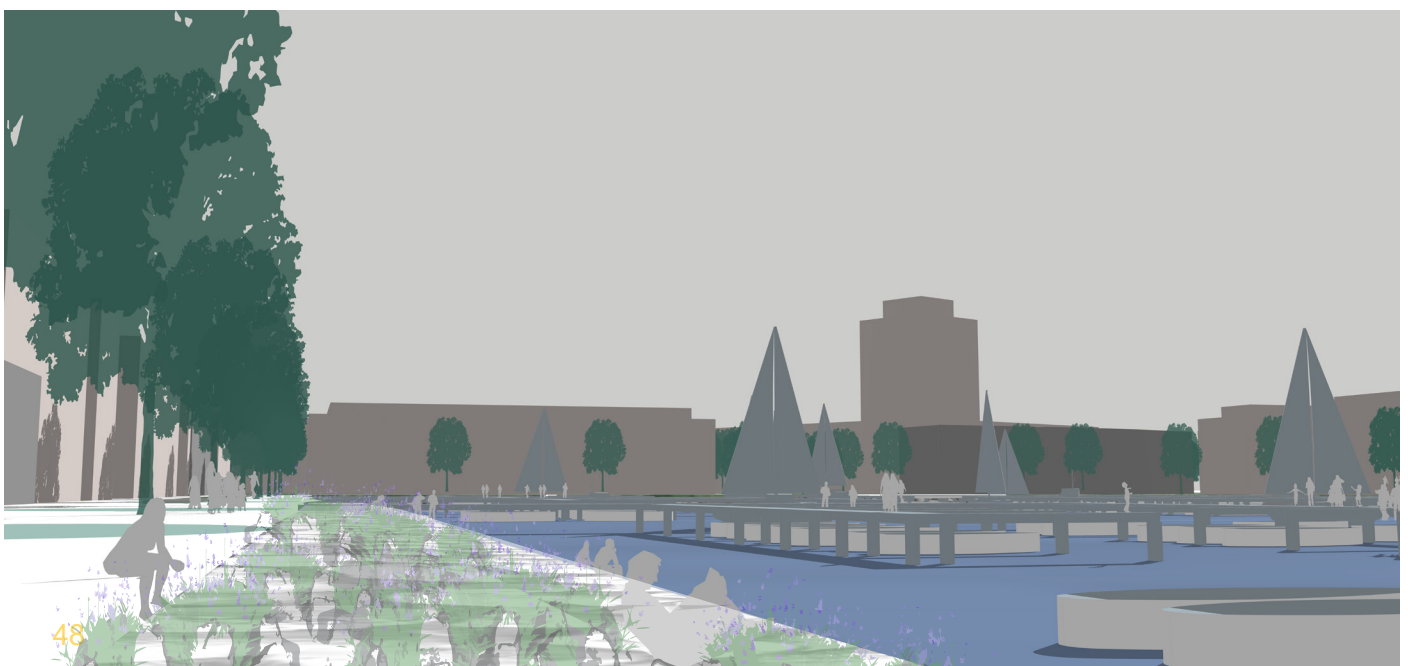
In doing so, we have set up an ideal image that should apply to the entire district, with everyone being welcome in the neighborhood. This not only means that there is room for everyone within the neighborhood, and a varied and social environment is created, but amenities are also realized that could be of interest to outsiders. This involves, among other things, that this unique location on the IJ should be there to share.

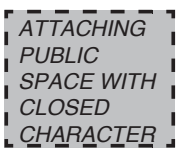
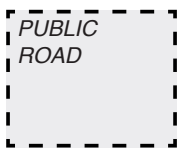
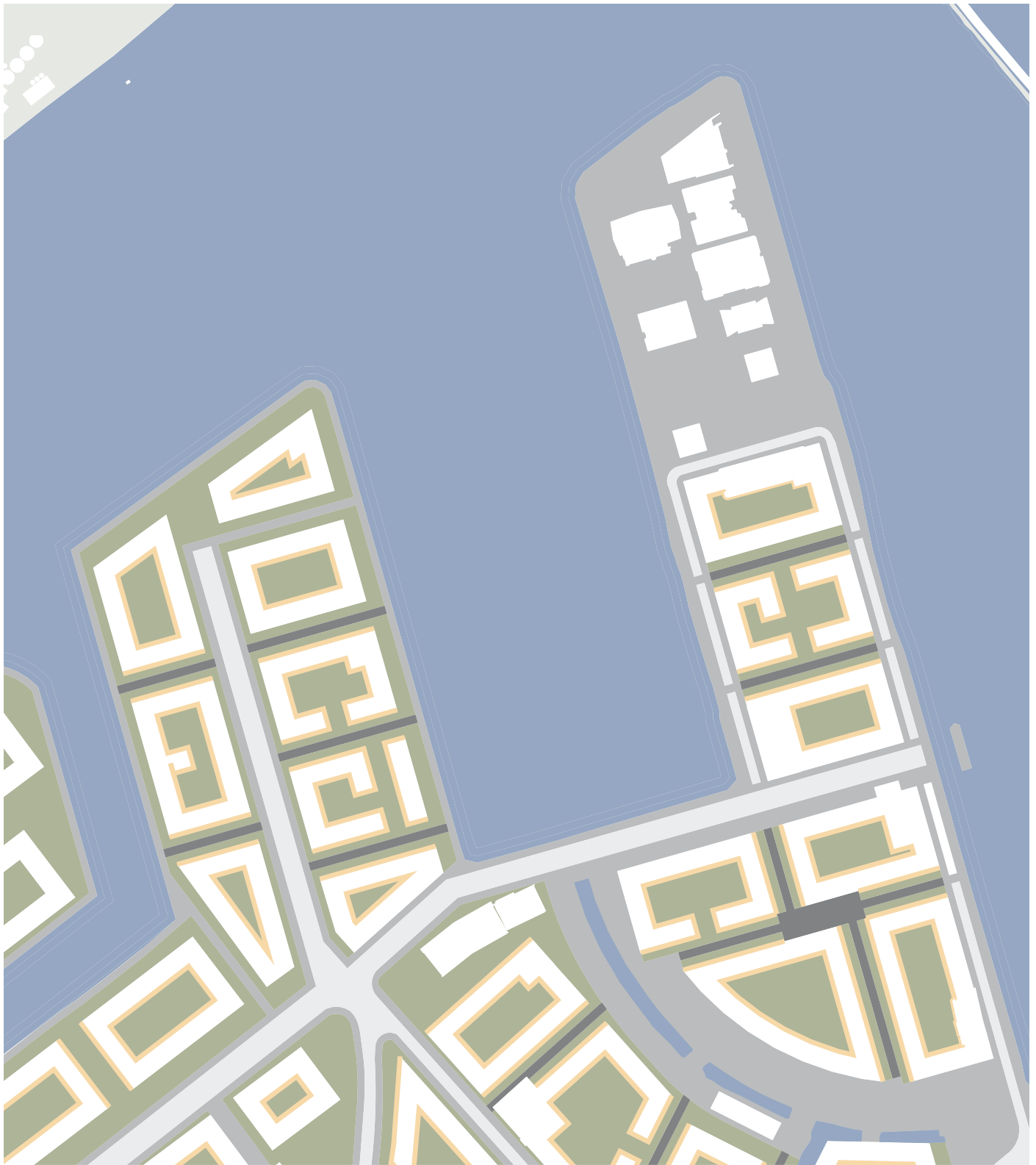
In the planning and phasing (which will be talked about later) we took into account that this is an area that is in use. This means that we have to understand which value the area has to the city at this point, and what we destroy when take away different functions in the area. For the city this means

the different industrial as well as creative and knowledge based companies that are stationed in the Minervhaven. To this account we found it important to keep most of these characteristic companies or give them a new place in the redevelopment.

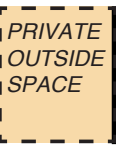
Toward creating a more living and dwelling friendly environment we tried be more selective in carstreets and create a more pedestrian and bicycle friendly street in which the car is mostly a visitor. Through this we produced places that became more varied for living and dwelling and different scales of publicity in the area. This also made it possible to give the quarter different neighbourhoods and building areas that define the area.

For the building typology we sought a form that enhanced the idea of the collective an individuality in the area. The buildings should be monumental wholes as part of the whole Minervahaven, while the courtyard make it possible to create more privatised individual zones for the dwellers there.





THE RESIDENTIAL BUILDING



Public road
Road users



Public
Pedestrians



Public with closed
character



Collective
For everyone

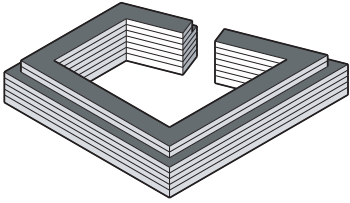
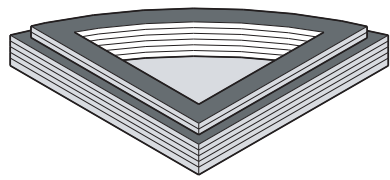
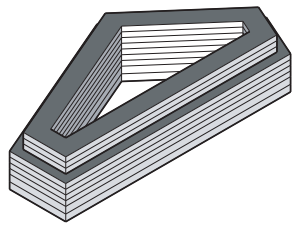
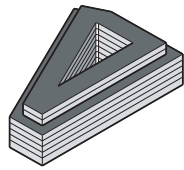
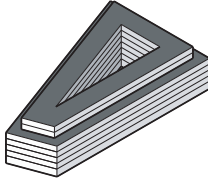
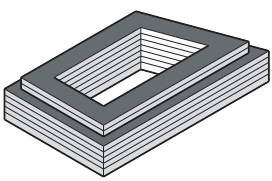
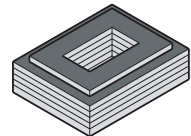
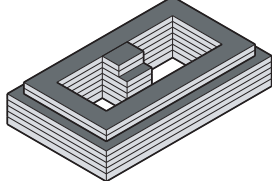
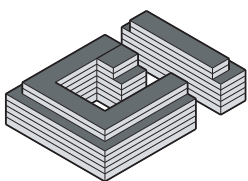
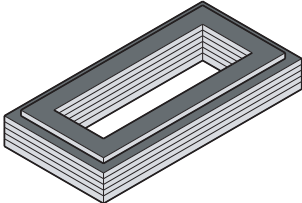
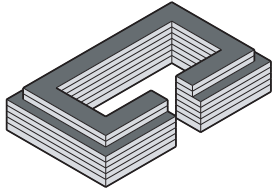
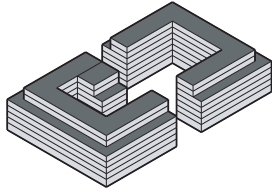
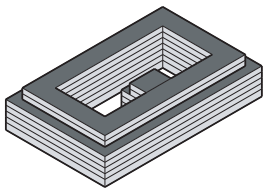
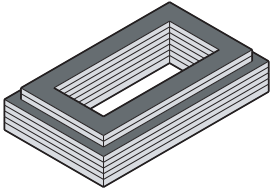
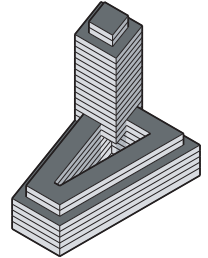
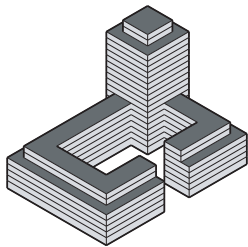
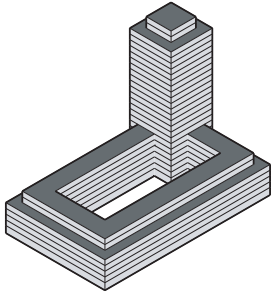
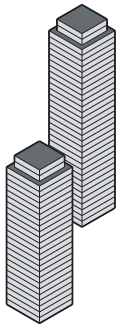
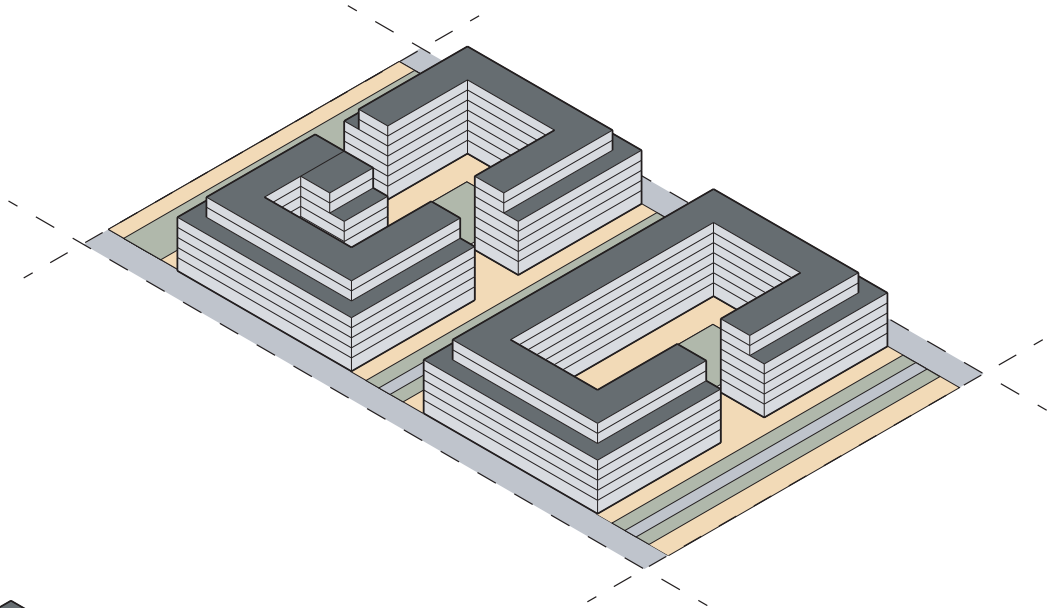


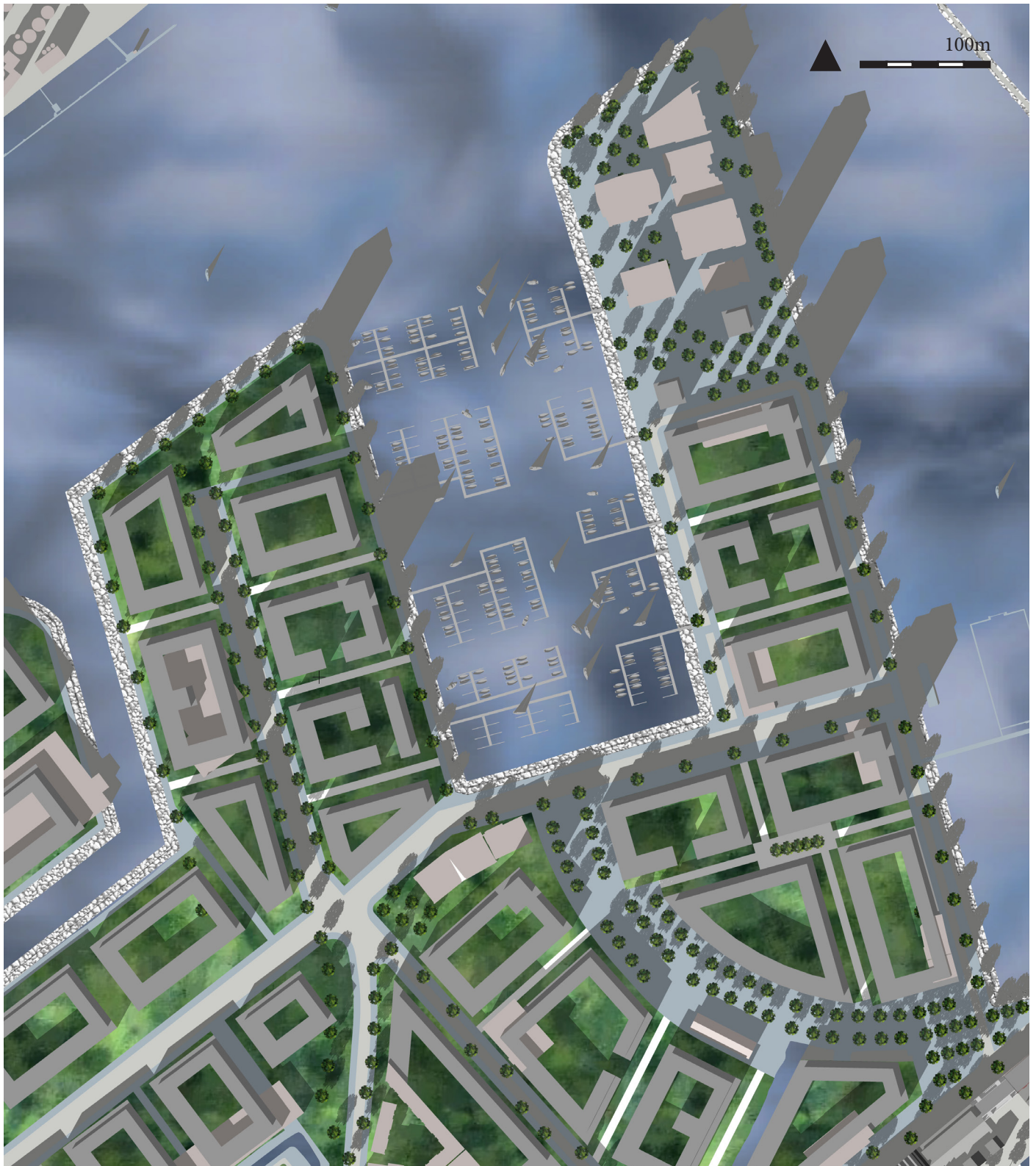
Collective with
private character



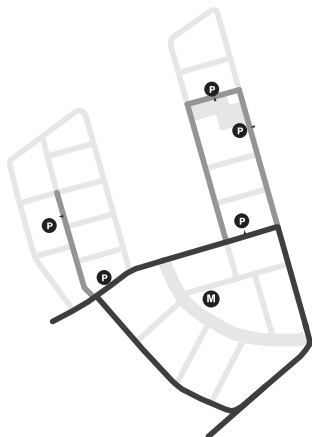
Private

CITY BLOCK TYPOLOGY

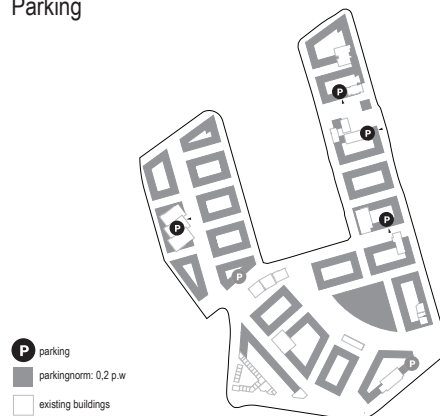




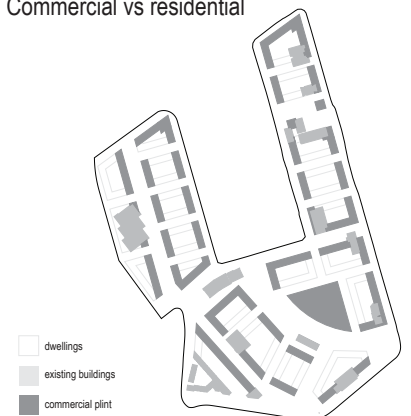
Traffic



Parking

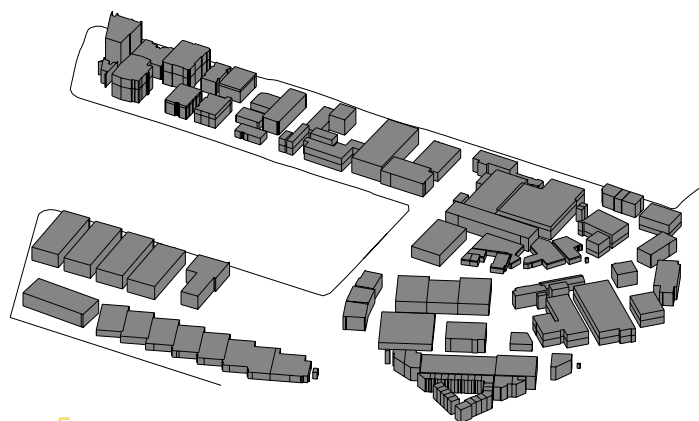
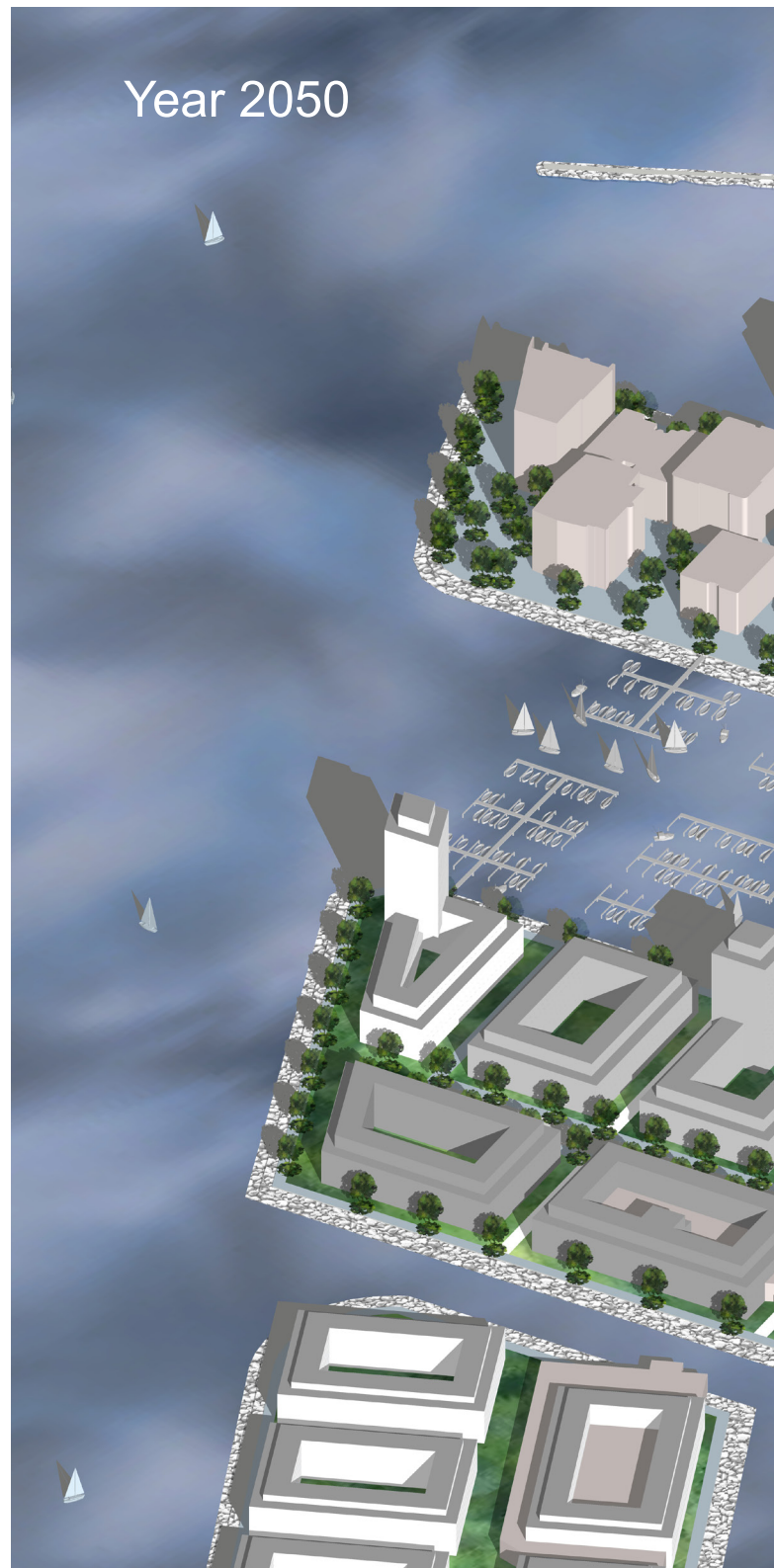


Commercial vs residential

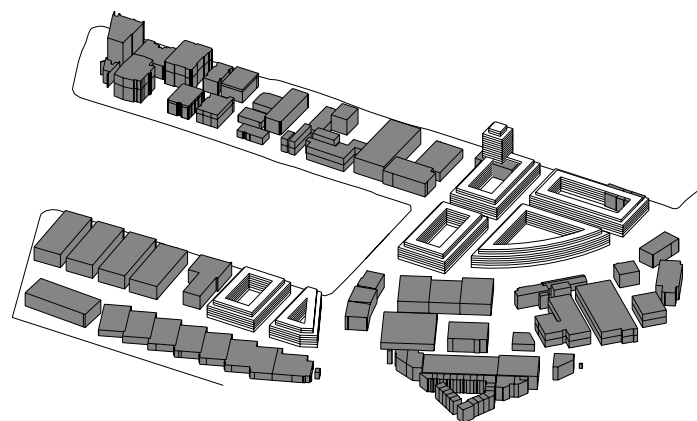


PHASING

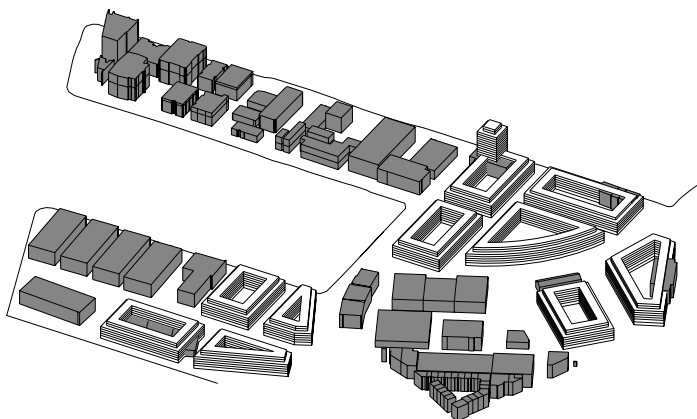
With regard to the implementation of this urban plan, this will take place in a number of different phases. The idea is that the current structure of streets and buildings has been taken into account as much as possible, so that the execution can be simplified. Since there is still an existing industry in the area that could actually remain, it is important to gradually replace it through the new urban plan. In this way the neighbourhood does not lose its current identity and can also be retained in the long term. By maintaining this industry from an early stage, the attraction to the neighbourhood remains and the public domain stays activated also during the day. In a first phase it is about keeping the current industry, in the phases after that a new industry will be attracted. By keeping several buildings at various strategic points in the plan, the history and the various architectural expressions through history will be remained but at the same time the new residential buildings will blend in.



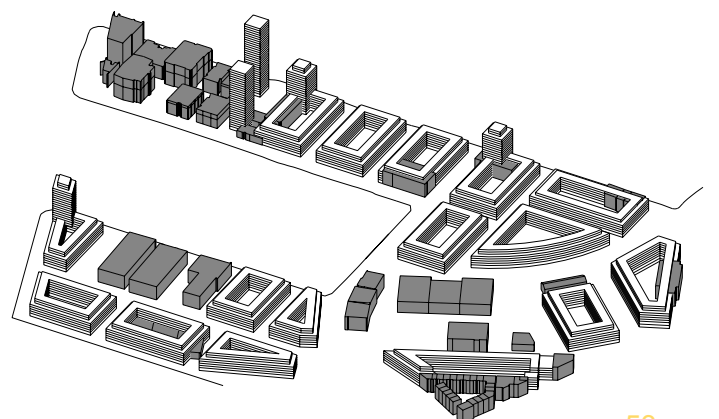
2018



2020



2030



2040

Dwellings

Block	Area per level in m2	nr of levels	total area in m2	avg dwelling size in m2		nr of dwellings
				netto 80	bruto 104	
1	625	21	13,125	80	104	126
2	3,977	5	19,885	80	104	191
3	3,900	5	19,500	80	104	188
4	400	30	12,000	80	104	115
5	400	26	10,400	80	104	100
6	625	25	15,625	80	104	150
7	3,375	5	16,875	80	104	162
8	3,900	5	19,500	80	104	188
9	3,900	5	19,500	80	104	188
10	625	16	10,000	80	104	96
11	3,375	5	16,875	80	104	162
12	3,900	5	19,500	80	104	188
13	4,500	5	22,500	80	104	216
14	8,309	0	0	80	104	0
15	4,769	5	23,845	80	104	229
16	3,749	5	18,745	80	104	180
17	4,833	5	24,165	80	104	232
18	3,900	5	19,500	80	104	188
19	2,831	5	14,155	80	104	136
20	3,451	5	17,255	80	104	166
21	3,451	5	17,255	80	104	166
22	3,451	5	12,485	80	104	120
23	2,497	5	3,125	80	104	30
24	625	19	68,381	80	104	658
25	3,599	5	19,500	80	104	188
26	3,900	5	16,610	80	104	160
27	3,322	5	19,420	80	104	187
28	3,884	5	19,420	80	104	187
Total area			509,146	Total nr of dwellings		4,896

Businesses

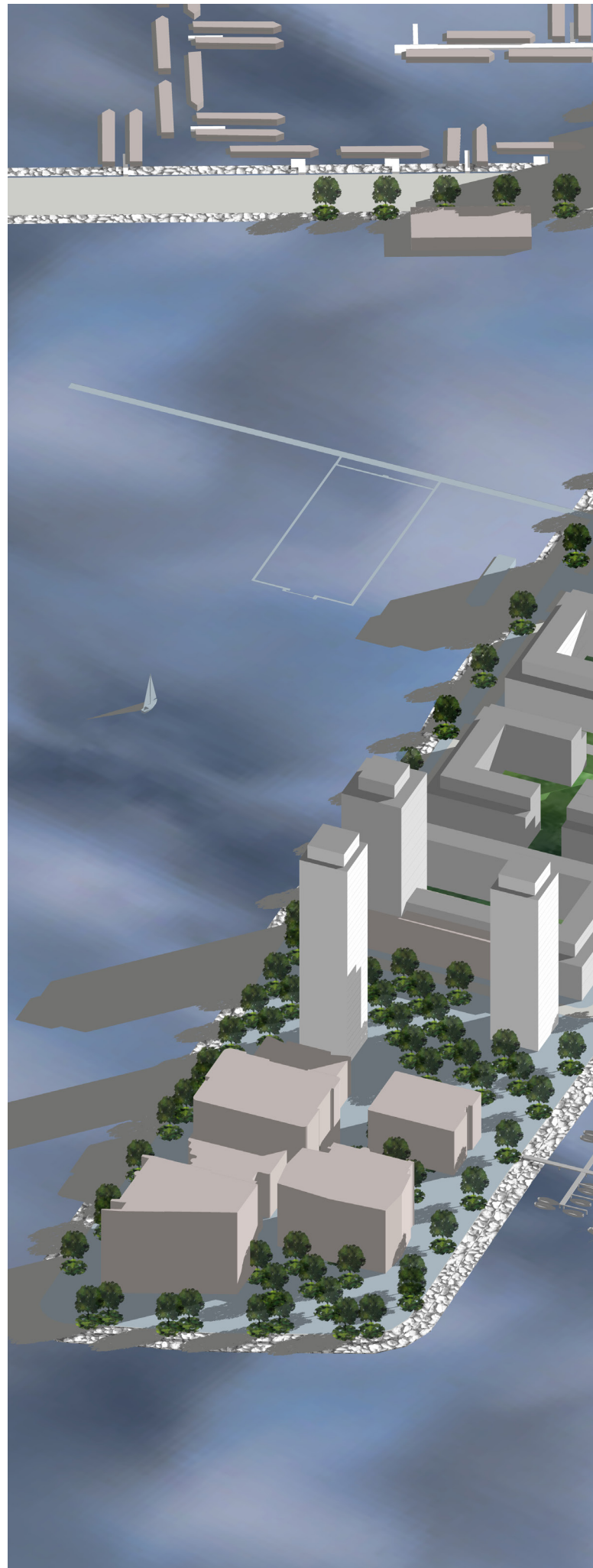
	Area per level in m2	nr of levels	total area in m2
1	625	1	625
2	2,926	1	2926
3	1,800	1	1800
4	400	1	400
5	400	1	400
6	625	1	625
7	1,413	1	1413
8	1,800	1	1800
9	2,850	1	2850
10	625	1	625
11	1,413	1	1413
12	2,175	1	2175
13	2,475	1	2475
14	8,309	2	16618
15	2,091	1	2091
16	1,800	1	1800
17	2,655	1	2655
18	2,850	1	2850
19	2,018	1	2018
20	1,800	1	1800
21	1,800	1	1800
22	1,800	1	1800
23	1,440	1	1440
24	625	1	625
25	1,459	1	1459
26	1,500	1	1500
27	1,425	1	1425
28	2,767	1	2767
Bestaand	17,309	4	69236
	3,884	Total area	131411

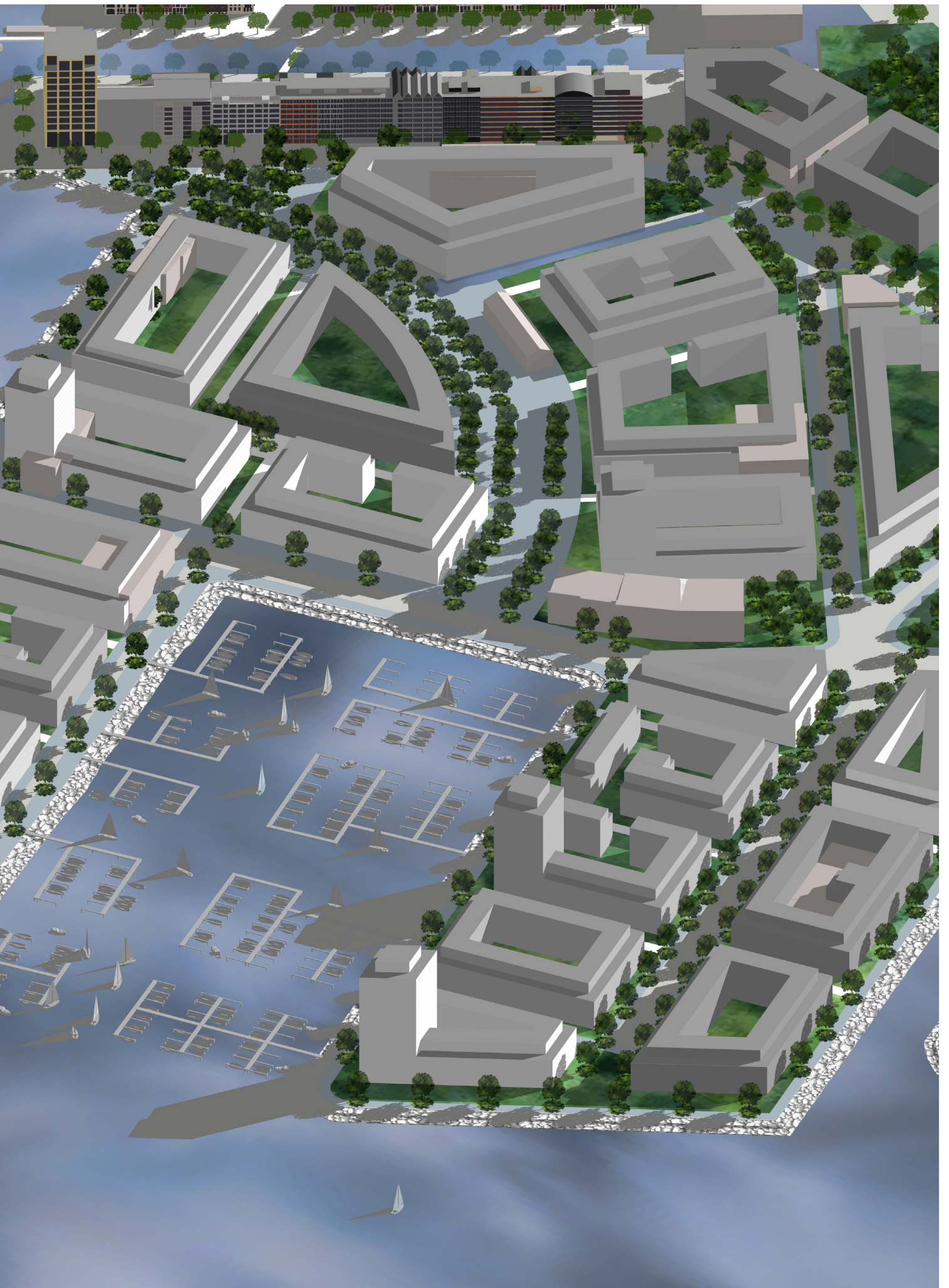
Area whole terrain	294868	
Area with no buildings	204886	69.48%
Built area	89982	30.52%

% Dwellings	% Businesses
79.48%	20.52%

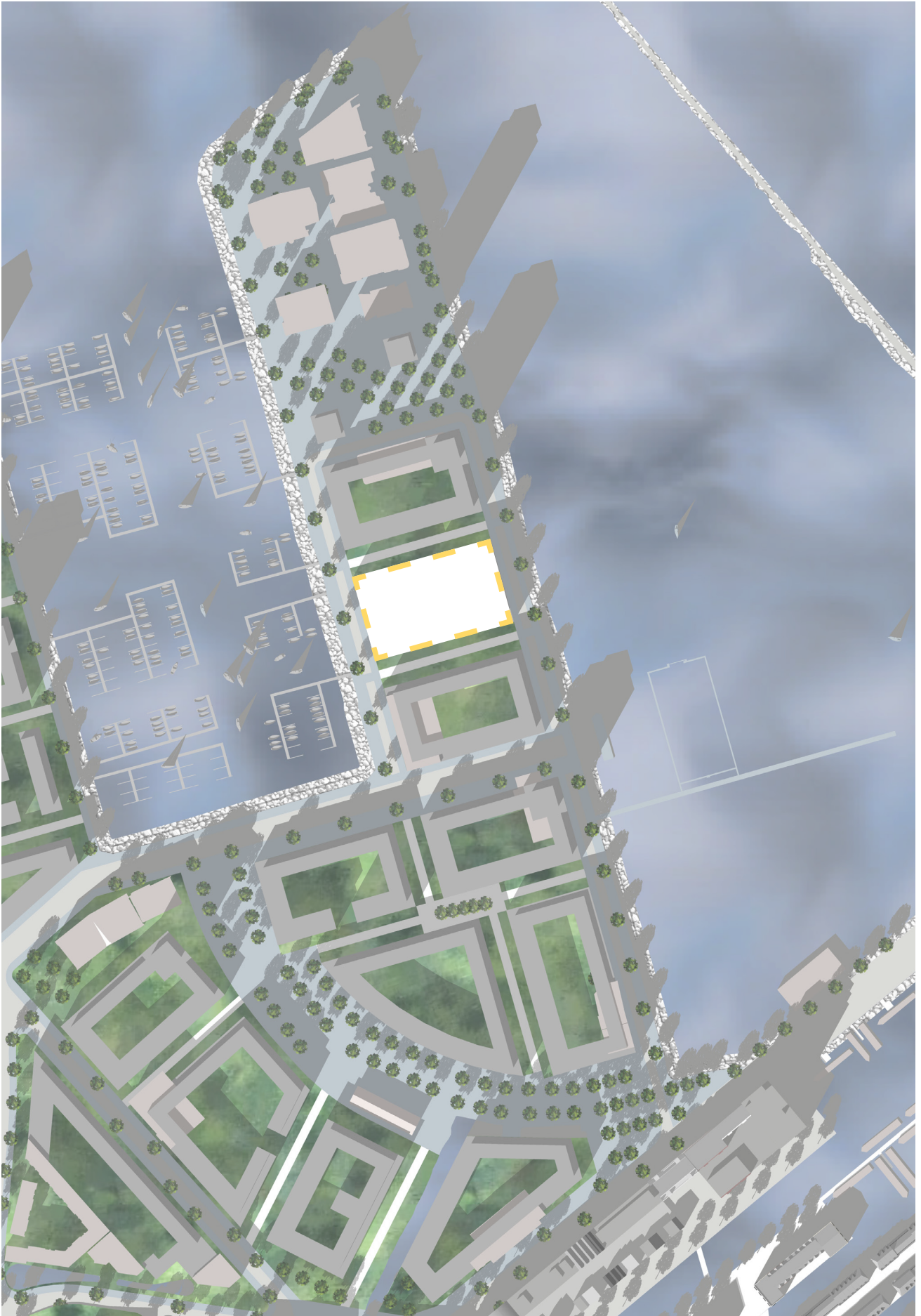
Nr of dwellings per hectare
166

FSI
2.17

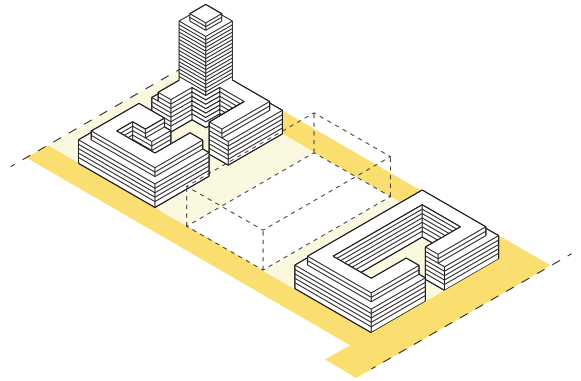




SITE ANALYSIS

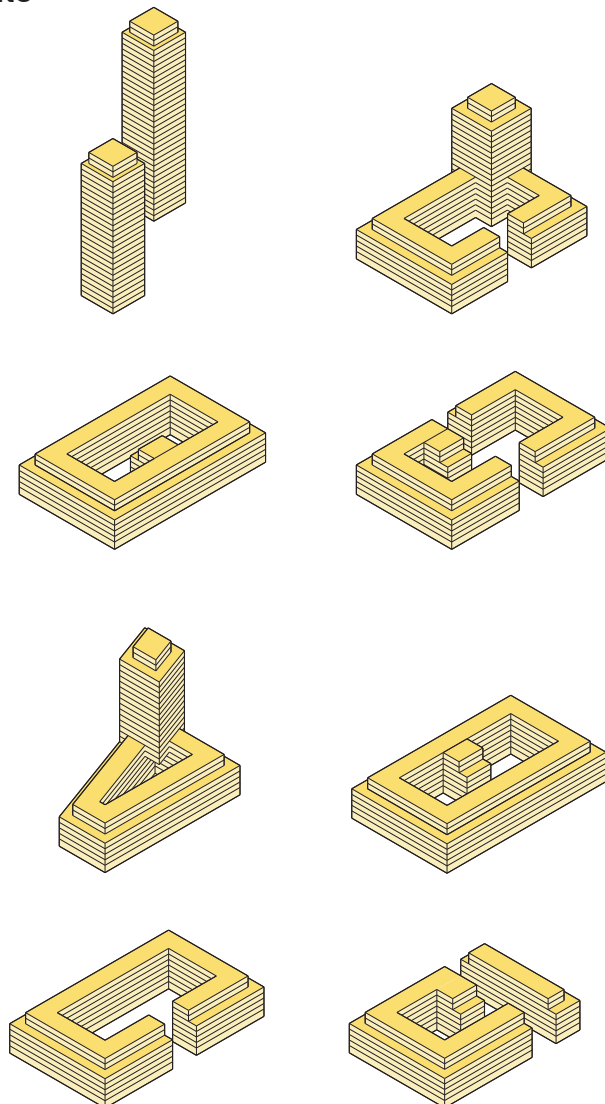


Traffic around the site



Typology around the site

Towers and city blocks



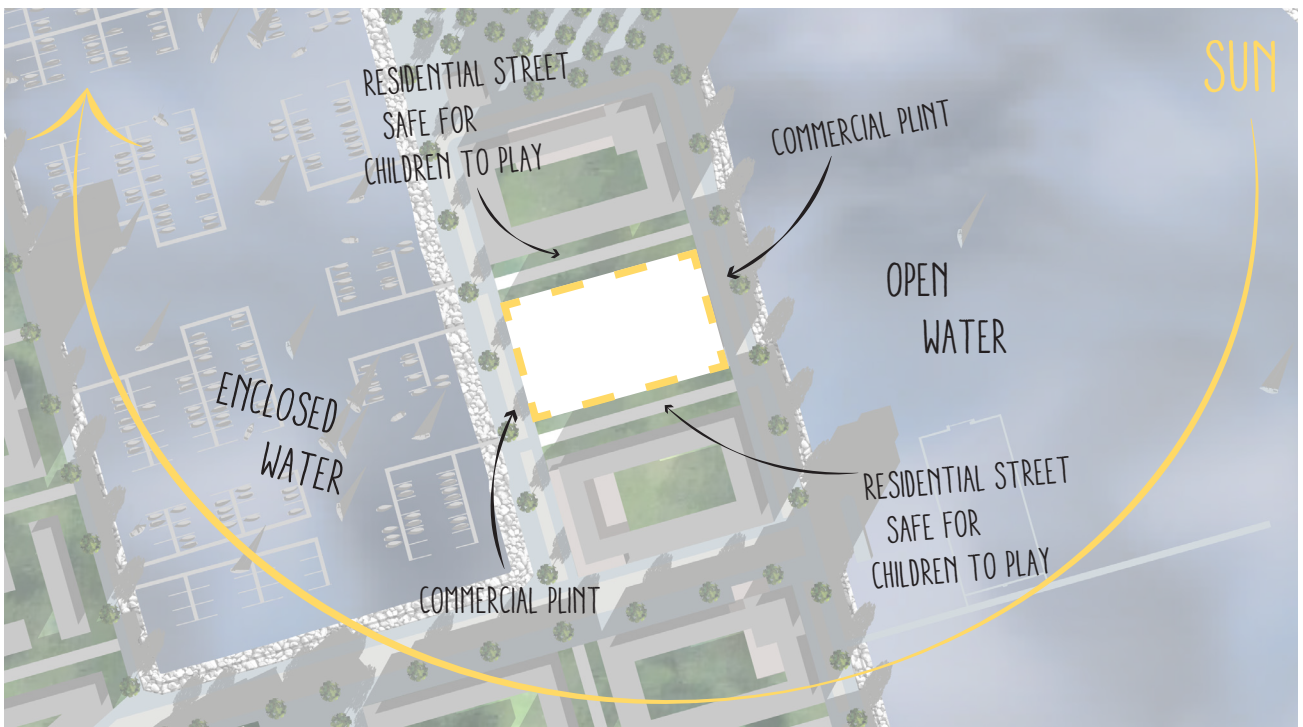
Views around the site



View to the West



View to the East



PLAN ANALYSIS

CASE STUDIES

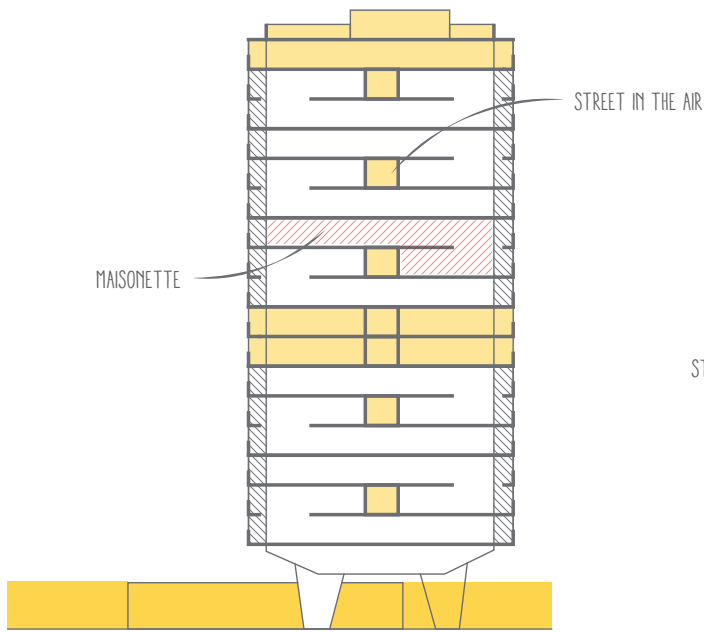


Plan Analysis

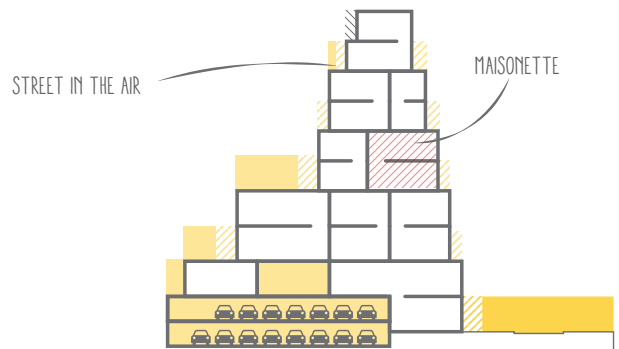
Families leave the city due to the lack of desired dwellings and unsafe streets for their children. Kids are generally not allowed outside on their own because the safe outdoor space isn't close to the dwelling. In order to get a better understanding of what to design for families, a typological research has been done into four buildings with its surrounding streets and accessibility. This multi-case study has allowed me to analyse the conditions under which families are willing to live and what other types of dwellings can substitute those of typical single-family ground level dwellings. These conditions are not only of economic, sociological, environmental, ecological and political nature but also of measurable sizes and shapes. This research should provide precedents on which conclusions could be drawn to further aid and guide in the design. In this research the main question is; how can we improve the living environment of apartment buildings to make them suitable for families with children? To get an answer to this question, four buildings have been analysed on two aspects; first, the relation between the private and the public domain, including the transition zone between the two. And secondly, accessibility; how architects have introduced a second street above ground level; the street in the air. Therefore, the four chosen projects all have in some way an elevated street and are examples of buildings designed for families. Based on the results that can be found in the following pages, it can be concluded that when it comes to designing outdoor space or collective space for family homes, it is important to pay attention to what the program is that is adjacent to this space. In all four cases, architects have tried to give families an alternative outdoor space, either directly to the front door or completely private. This is to substitute the not necessarily required private garden adjacent to the house. In some cases, it succeeded more successfully than the others. Aspects that certainly influence how this outdoor space is used are; the chosen program that is adjacent to the outdoor space and how transparent the boundary is between the dwelling and that outdoor space. When residents are given the opportunity to extend the program of the home to the outdoor space, the chances that they will actually use them are much greater. This makes the transition zone between the public, the collective and the private domain a lot more attractive. In other words, it is important to give the street or gallery to the home not only the function to get from A to B, but rather to find a way that it will also be used for other purposes. In the following pages the results of this analysis are presented.

Hypothesis

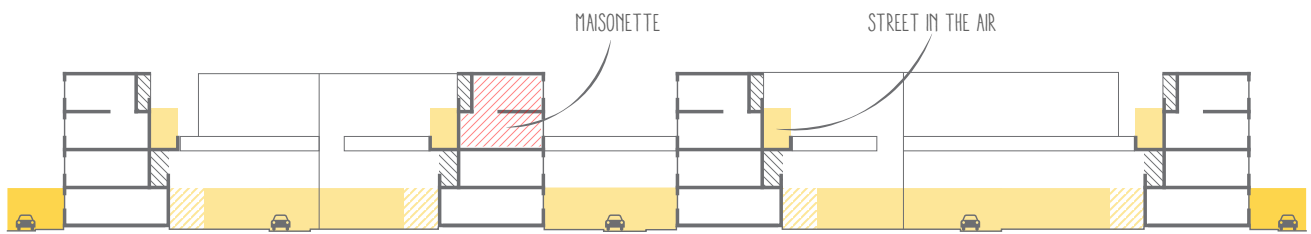
Introducing a second street life above the ground level will cater to a type of outdoor spaces as an extension of the private domain that will allow children to safely play outside.



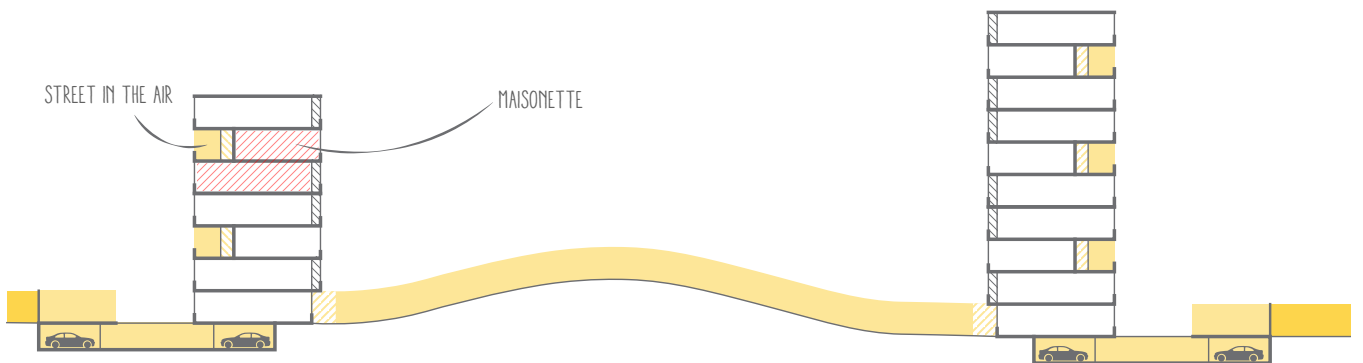
Unité d'Habitation



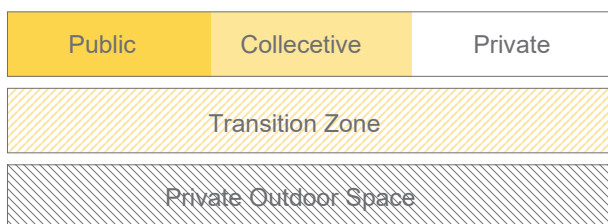
Babel Rotterdam



Justus van Effen

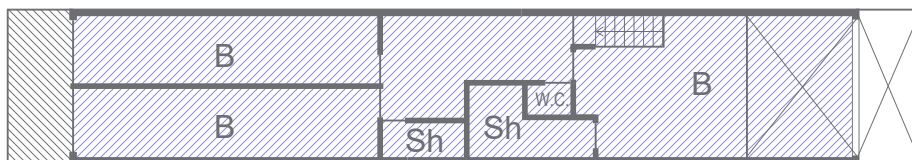


Robin Hood Gardens

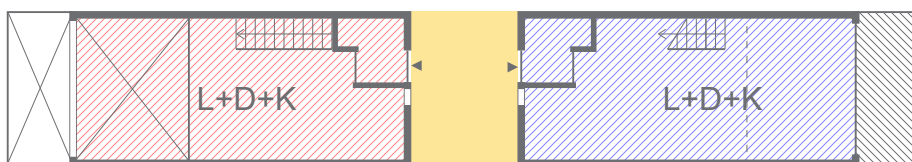


Unité d'Habitation

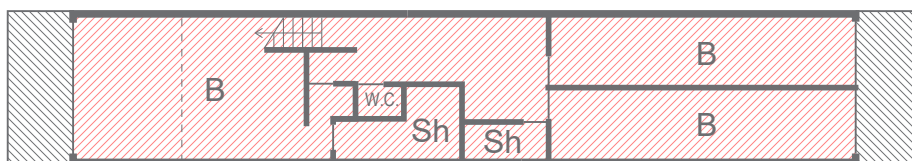
1952 - Le Corbusier



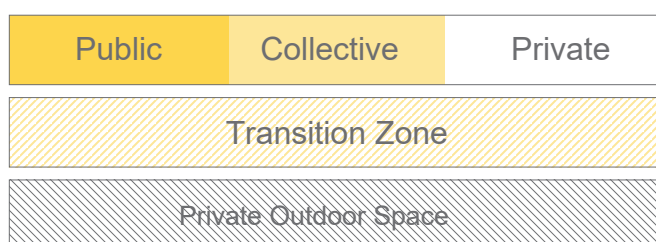
Level 3 - 6 - 11 - 14 - 16

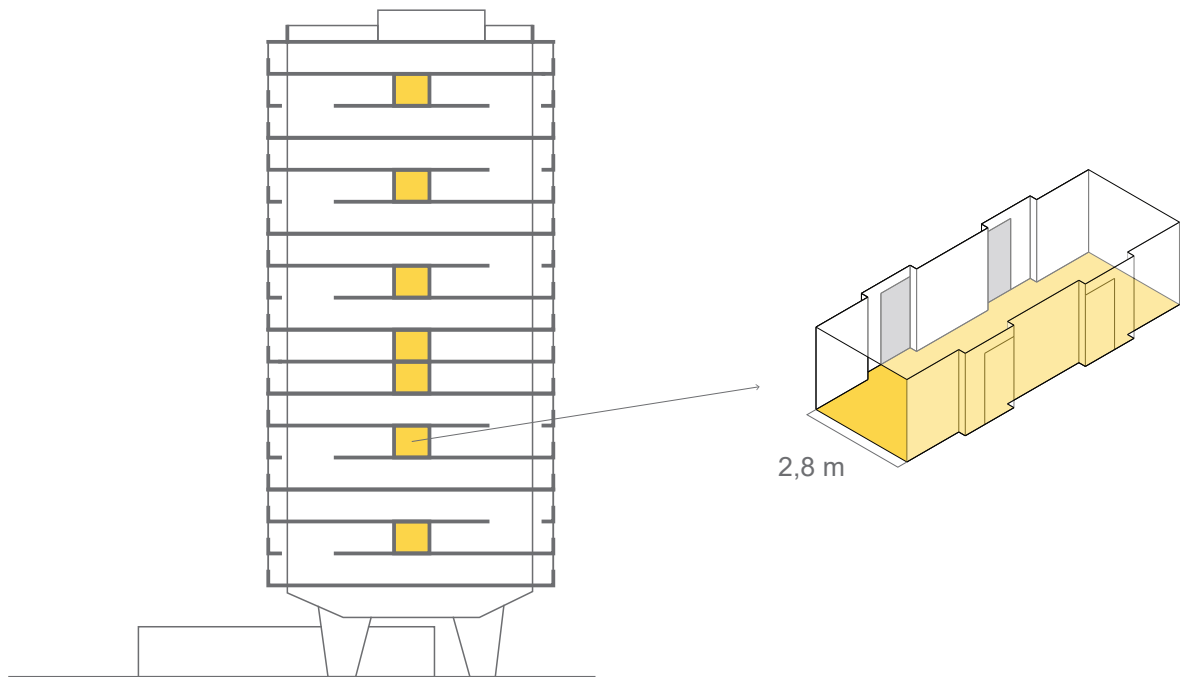


Level 2 - 5 - 10 - 13 - 15

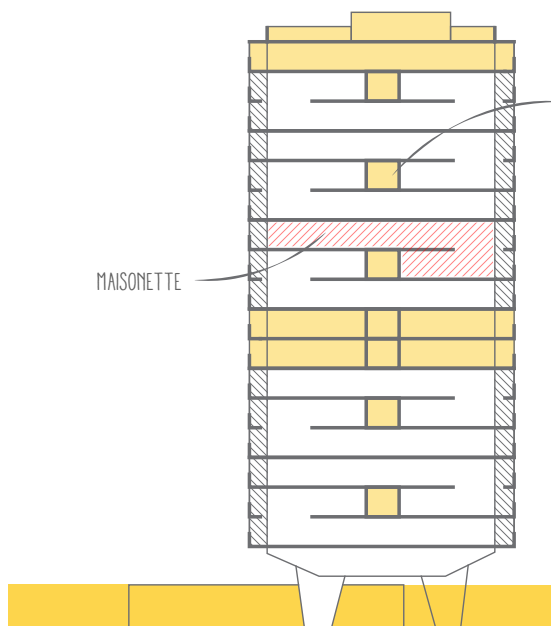


Level 1 - 4 - 9 - 12 - 15





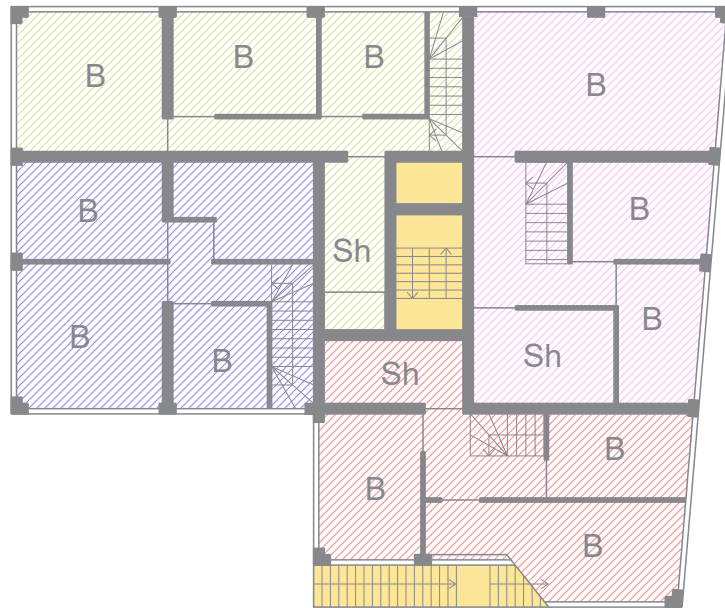
The Unité d'Habitation is a residential complex from 1952 designed by Le Corbusier. A concrete apartment flat of 18 floors with 337 apartments. The apartments are maisonnettes occupying two floors. As collective space, the building has inside shopping streets and various facilities on the seventh and eighth floors and the roof serves as a sun terrace. The enclosed galleries, in this analysis the so-called elevated streets, give access to the dwellings. Except for the front door, there is only a hatch for the groceries making the access gallery very anonymous and impersonal. In this case, the elevated street only has one purpose; to go from A to B. Even though the program that is adjacent to the gallery inside the dwelling, has the potential to activate this gallery, the opposite happens because there are no windows oriented to it. Having windows facing this, would give parents the opportunity to watch over their children while they play.



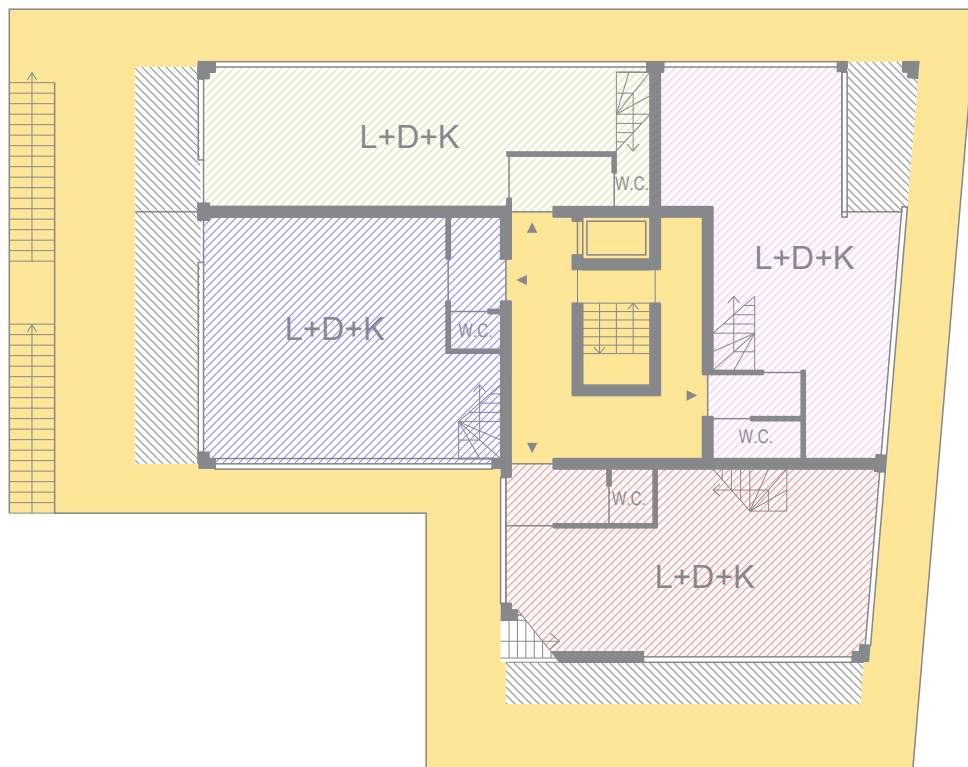
Source: <http://modernistarchitecture.blogspot.com>

Toren van Babel

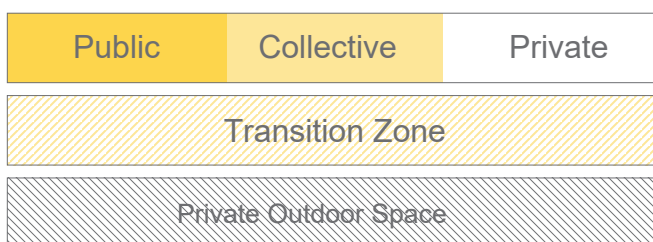
2018 - Laurens Boodt Architect / AM / Bartels

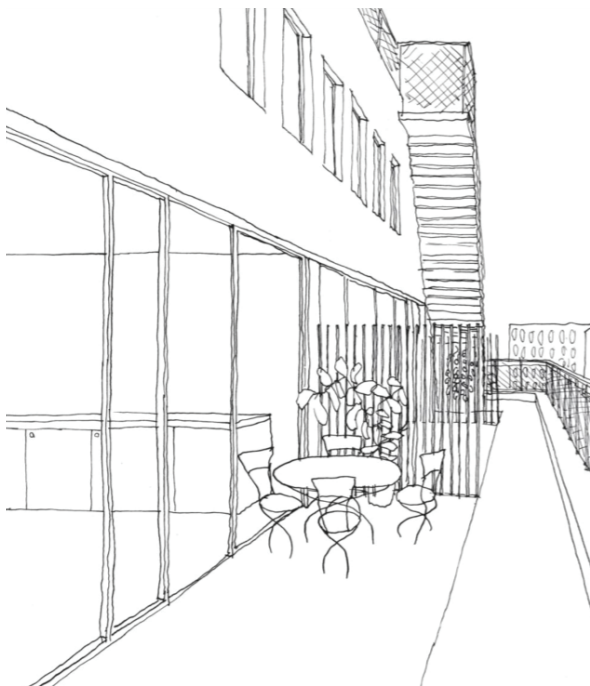
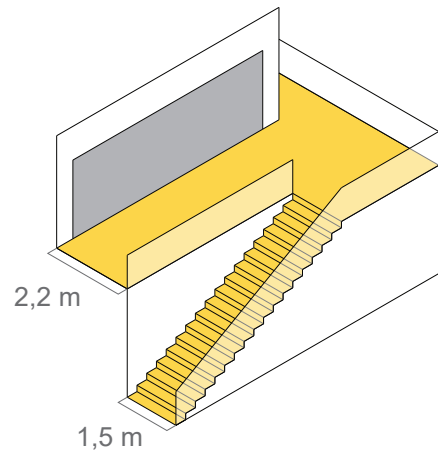
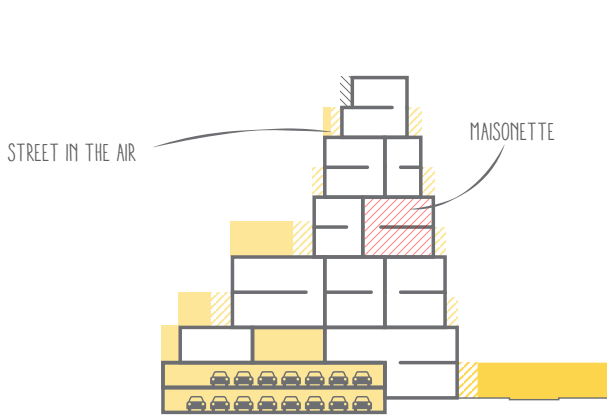


Level 7



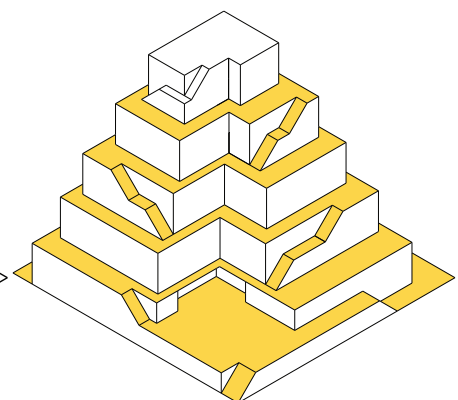
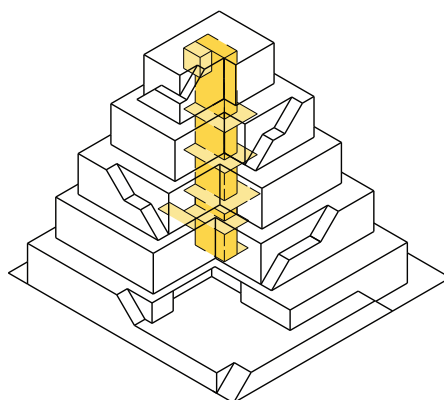
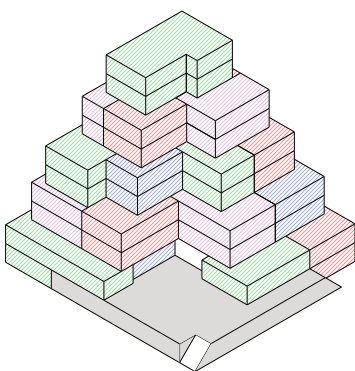
Level 6





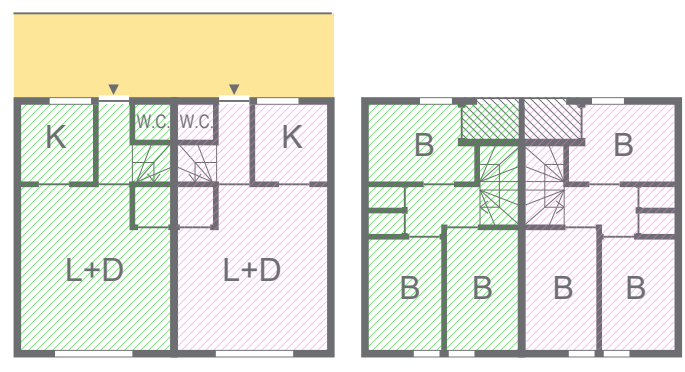
Source: <https://www.woneninbabel.nl/>

The Toren van Babel (still under construction) is a new construction project on the Lloydpier in Rotterdam. The 23 apartments in the 10-storey residential tower are maisonettes occupying two floors. The dwellings vary between approximately 90 m² and 145 m². As collective outdoor space, a street runs up around the building, in this analysis the so-called elevated street. Because this street is adjacent to the private terraces of the dwellings it is an attractive transition zone between the collective and the private domain and gives children the opportunity to play safe outside. It becomes more attractive since the living room and kitchen are adjacent to it, and the boundary is almost entirely made of glass. In the core of the building an elevator and stairwell connected to hallways provide front entrances to the dwellings making the elevated street around the tower the back gardens. The transition zone at the front entrances is much more anonymous than outside because there is only a door dividing the collective and the private domain.



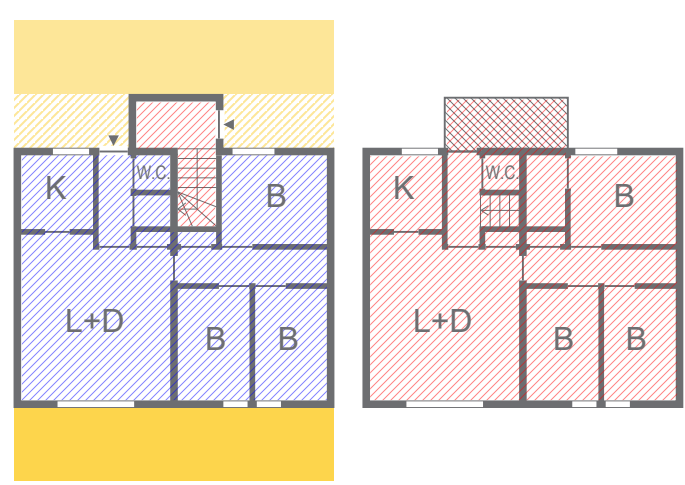
Justus van Effenblok

1922 - Michiel Brinkman



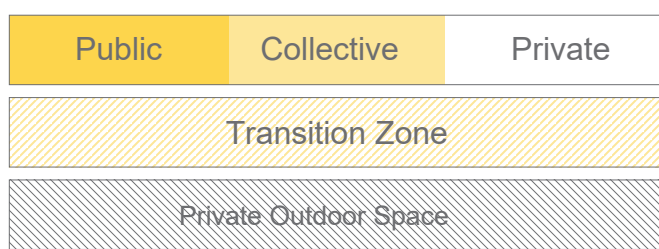
Level 2

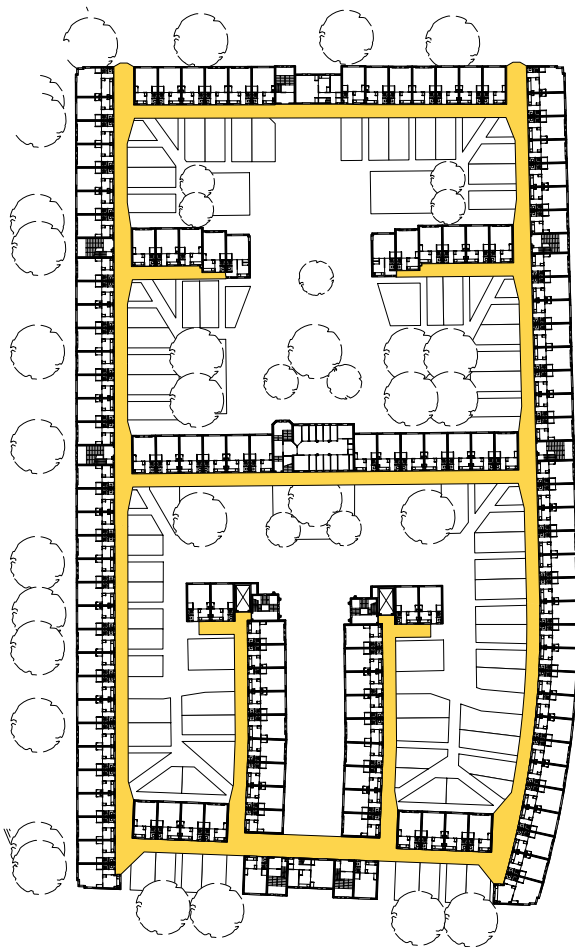
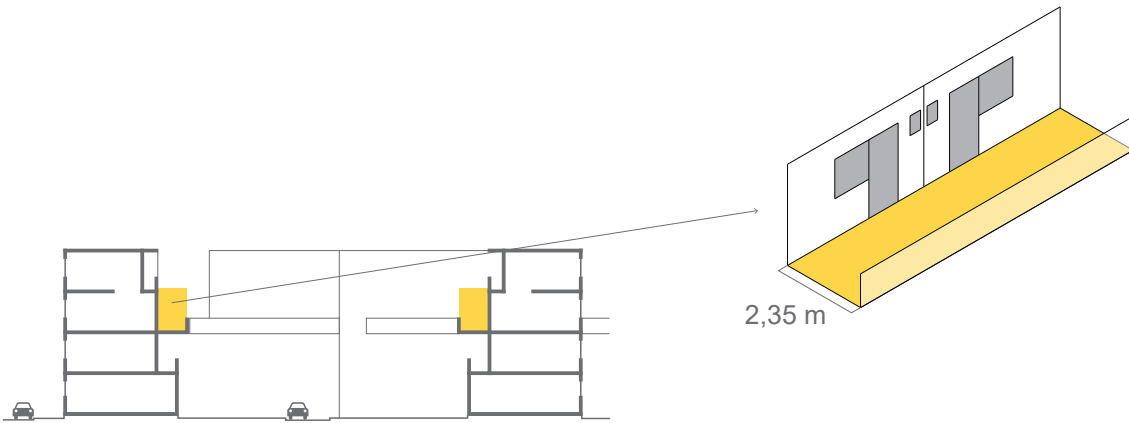
Level 3



Groud level

Level 1





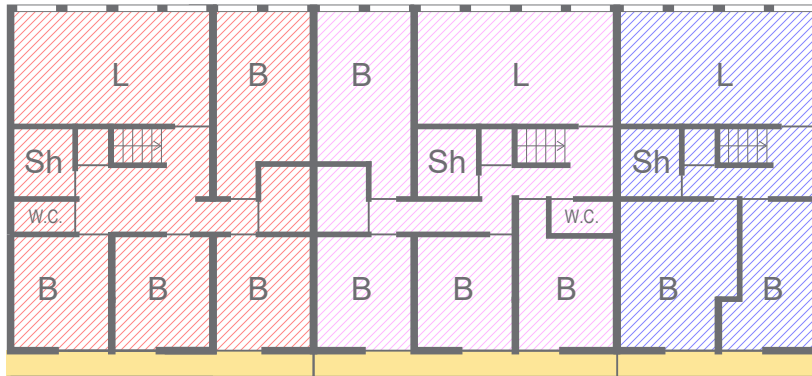
The Justus van Effenblok is a residential complex in Rotterdam-Spangen designed by the Dutch architect Michiel Brinkman. The residential block with 264 dwellings was completed in 1922, it has green inner areas and a at that time so-called 'upper street': a more than two-meter-wide gallery, adjoining the front doors of the upper dwellings. Such an elevated residential street had never been done in the Netherlands before. The block consists of one level apartments on the ground floor and the first floor, both with access on the ground floor, and of maisonettes with their entrance on the elevated street. In this way, all dwellings have their own front door on the street. By placing the kitchen adjacent to the inner street, the transition zone between collective and private becomes attractive for families; parents can keep an eye on their children while they play outside. Notably, it would be even better if the program could be extended outside the dwelling, so that the parents could make more use of the outside space as well. This could happen for example by having the living room with a big opening adjacent to this street.



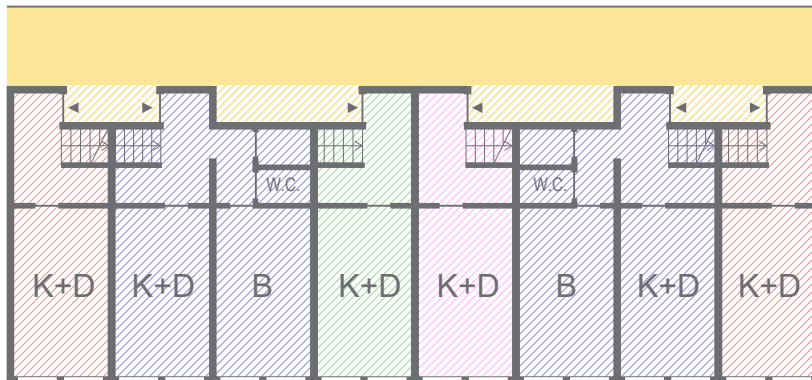
Source: <https://nl.pinterest.com/pin/291115563393052969>

Robin Hood Gardens

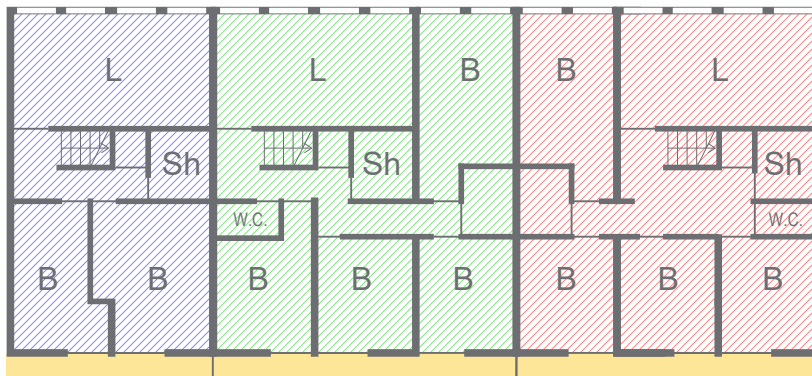
1972 - Alison and Peter Smithson



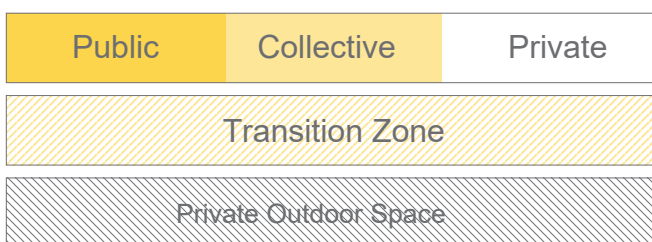
Level 3 - 6 - 9

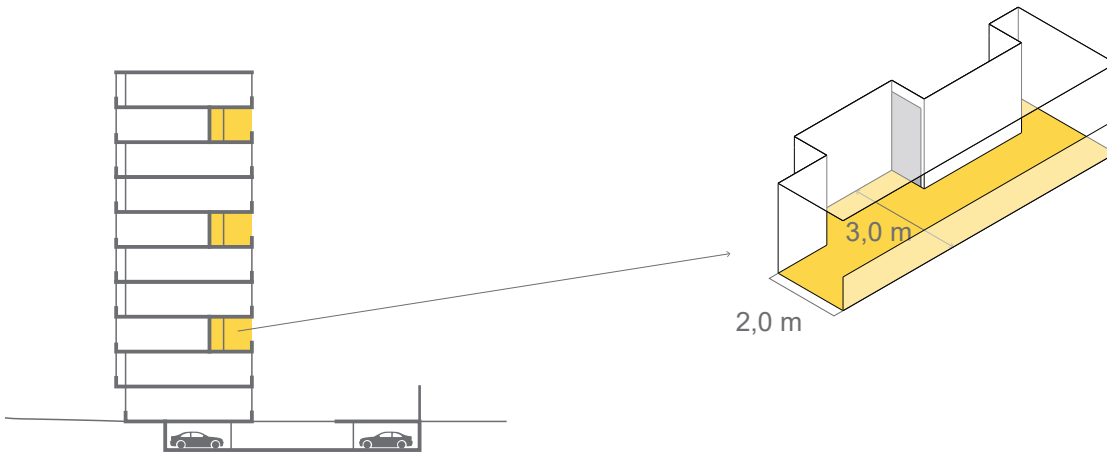


Level 2 - 5 - 8



Level 1 - 4 - 7





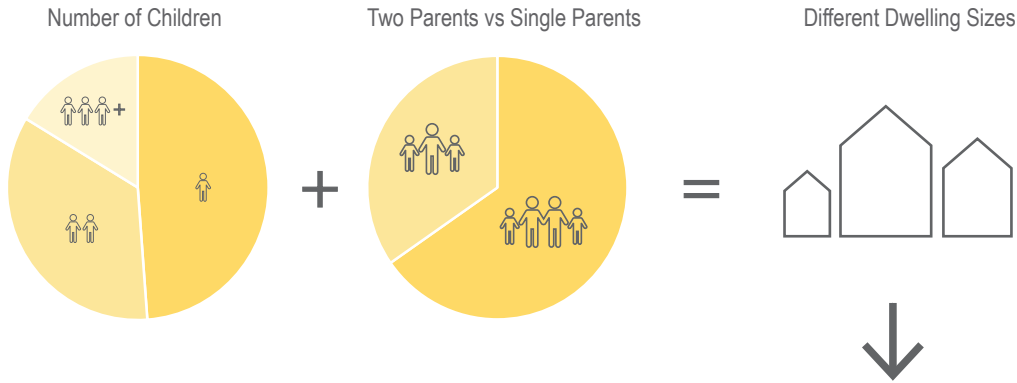
The Robin Hood Gardens apartment buildings in London were designed in the late 1960's by architects Alison and Peter Smithson and completed in 1972. They were built as a council housing estate with homes spread across 'streets in the sky': social housing characterised by broad aerial walkways in long concrete blocks. Robin Hood Gardens consisted of two blocks of 10 and 7 storeys with maisonettes occupying two floors. The elevated streets have a width of 2 meters with an occasional inlet that makes it 3 meters. Even though the streets are wide enough to be used as outside space for the dwellings, they are not used as intended. This could be due to the fact that the space adjacent to the street is not a living space but only a hallway. If, for example, this had been a living room or kitchen, it would probably have been used by residents for many more purposes rather than only as a route from A to B. For this reason, this transition zone stays rather anonymous and unused.



Source: <https://municipaldreams.wordpress.com>

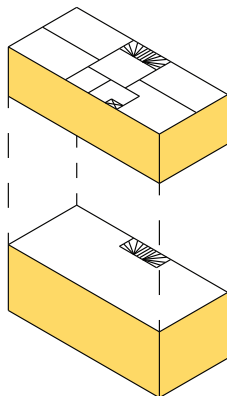
BRIEF OF OWN PROJECT

Dwellings



Approximately 150 dwellings between the 40 and 100 m²
 50% 2 to 3 bedroom dwellings between 40 and 65 m²
 50% 3 to 5 bedroom dwellings between 65 and 100 m²

Dwelling Types



Maisonettes on ground floor
 Maisonettes with gallery access

All dwellings should have a private or semi-private outdoorspace
 - Front garden
 - Terraces



Additional functions



Collective outdoor space safe for children to play



Commercial plint on the East and West of the building +/- 500 m²

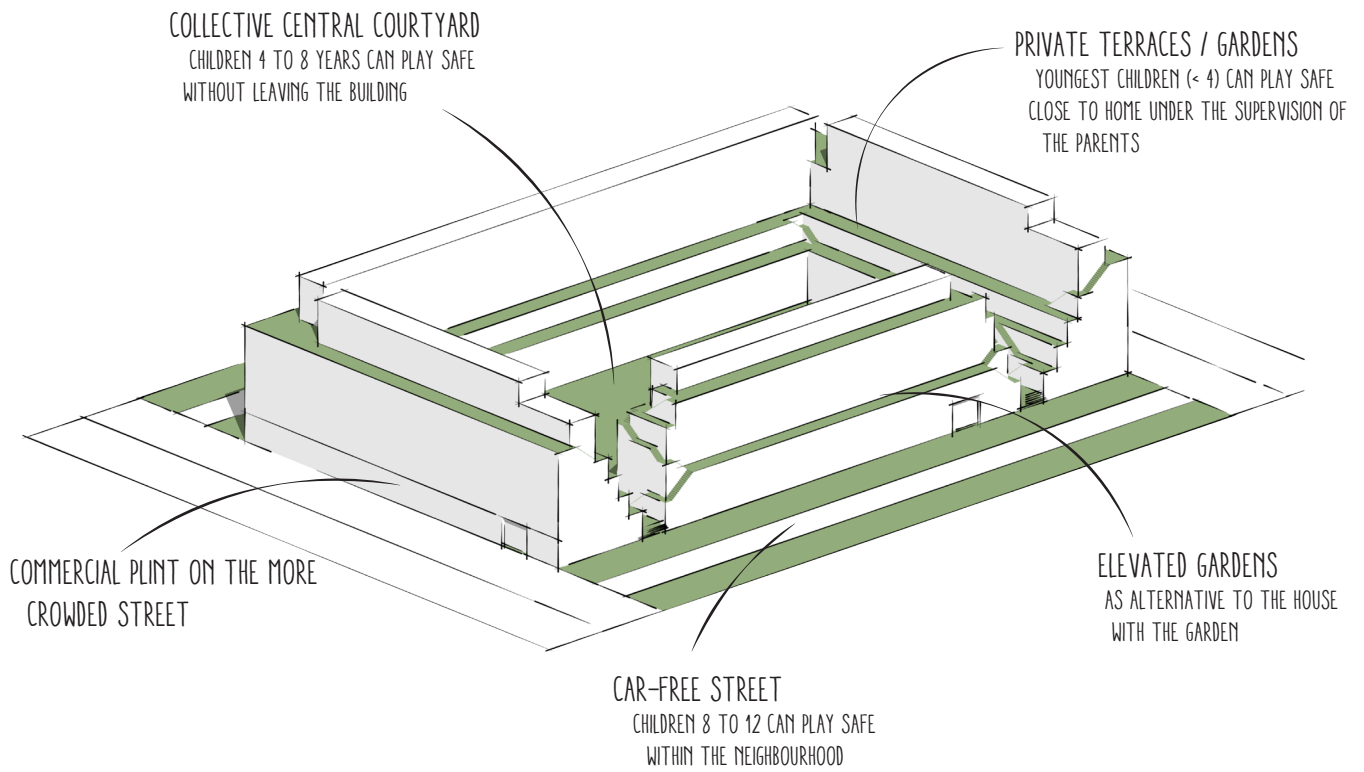


Child care facility in the complex



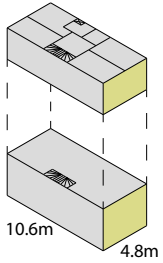
Bicycle parking - space for 4 bikes per dwelling on average

CONCEPTUAL DESIGN FAMILY DWELLINGS IN THE CITY

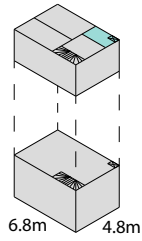


Six dwelling sizes

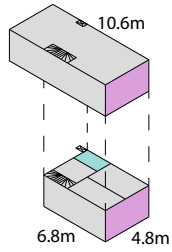
100 m²



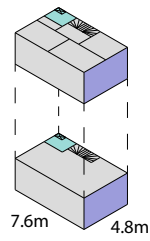
65 m²



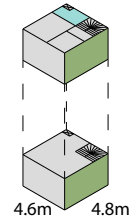
80 m²



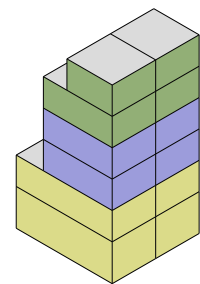
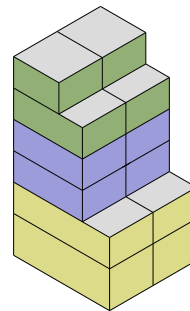
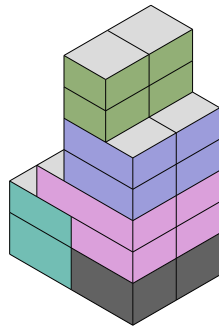
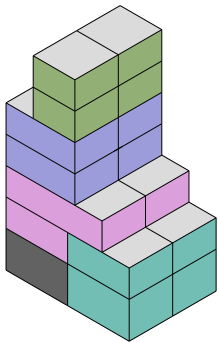
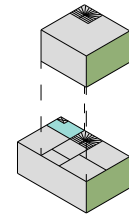
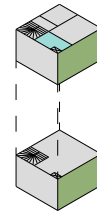
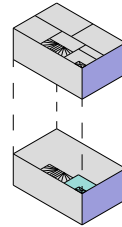
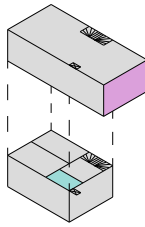
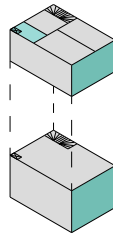
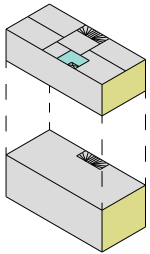
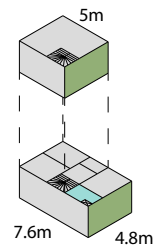
70m²



40m²



55m²

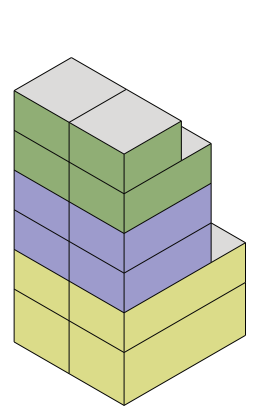
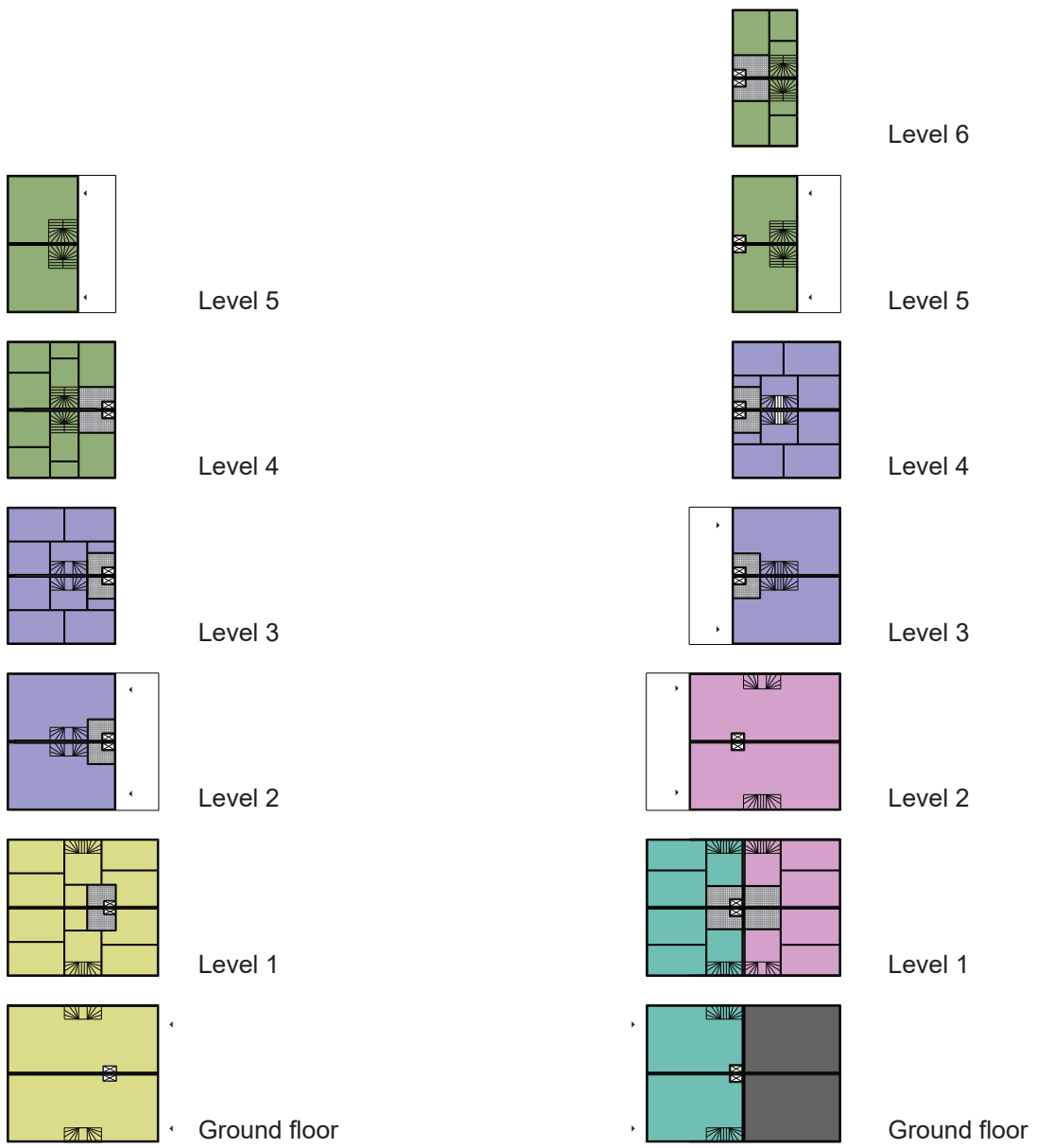


price/m² € 6,000.00 to € 7,000.00

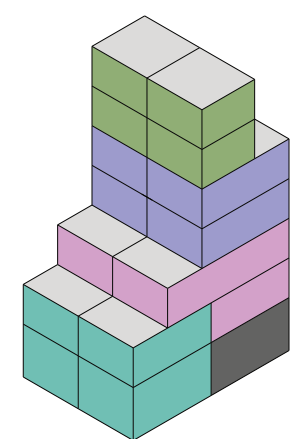
m²

40	€ 240,000.00	€ 280,000.00
55	€ 330,000.00	€ 385,000.00
65	€ 390,000.00	€ 455,000.00
70	€ 420,000.00	€ 490,000.00
80	€ 480,000.00	€ 560,000.00
100	€ 600,000.00	€ 700,000.00

Floorplans 1:500

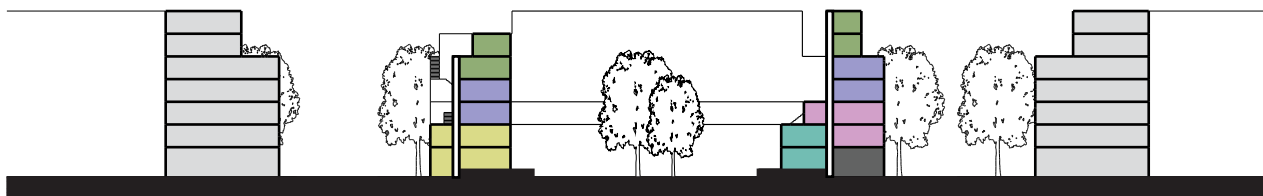
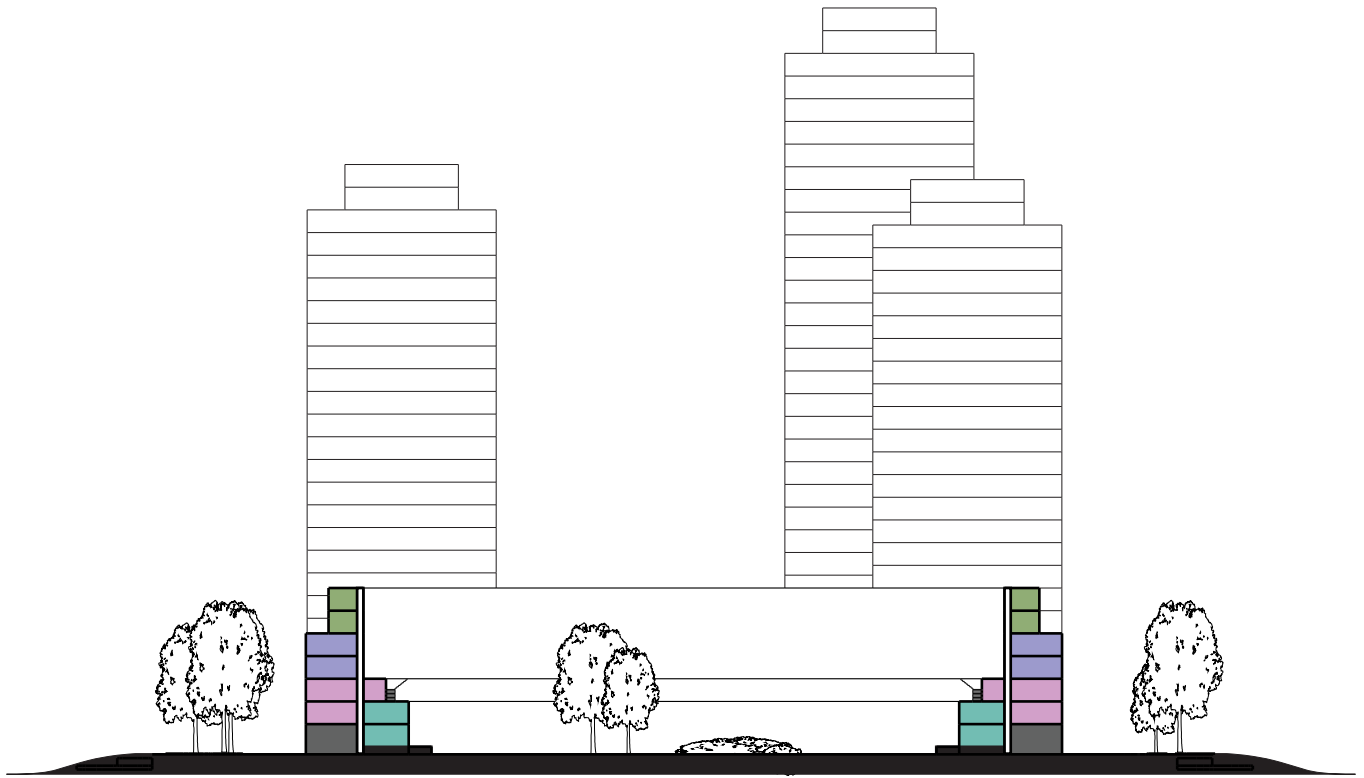


Dwellings on the South

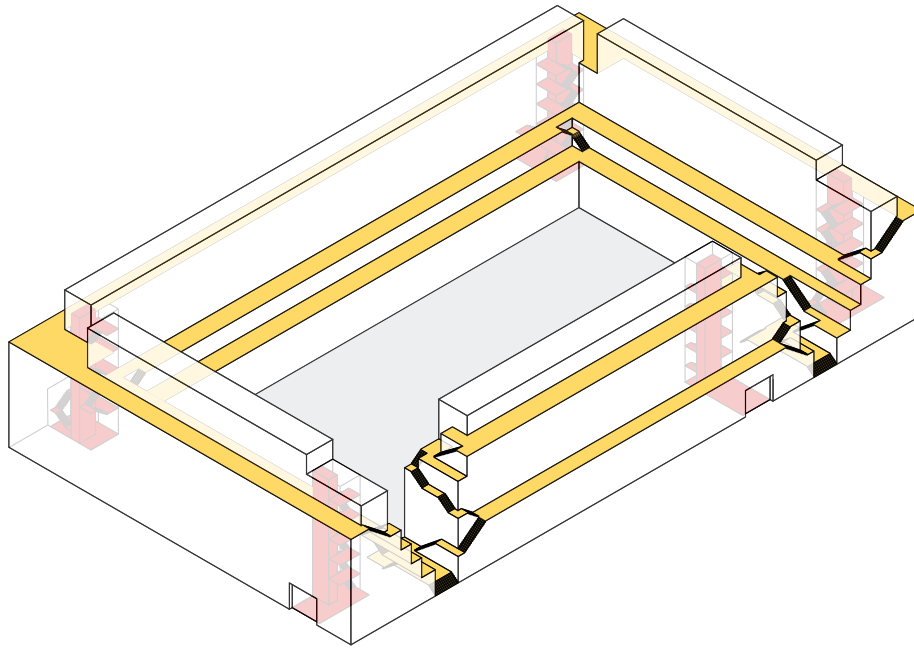


Dwellings on the East, West and North

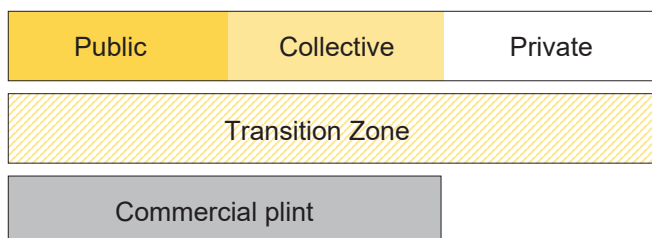
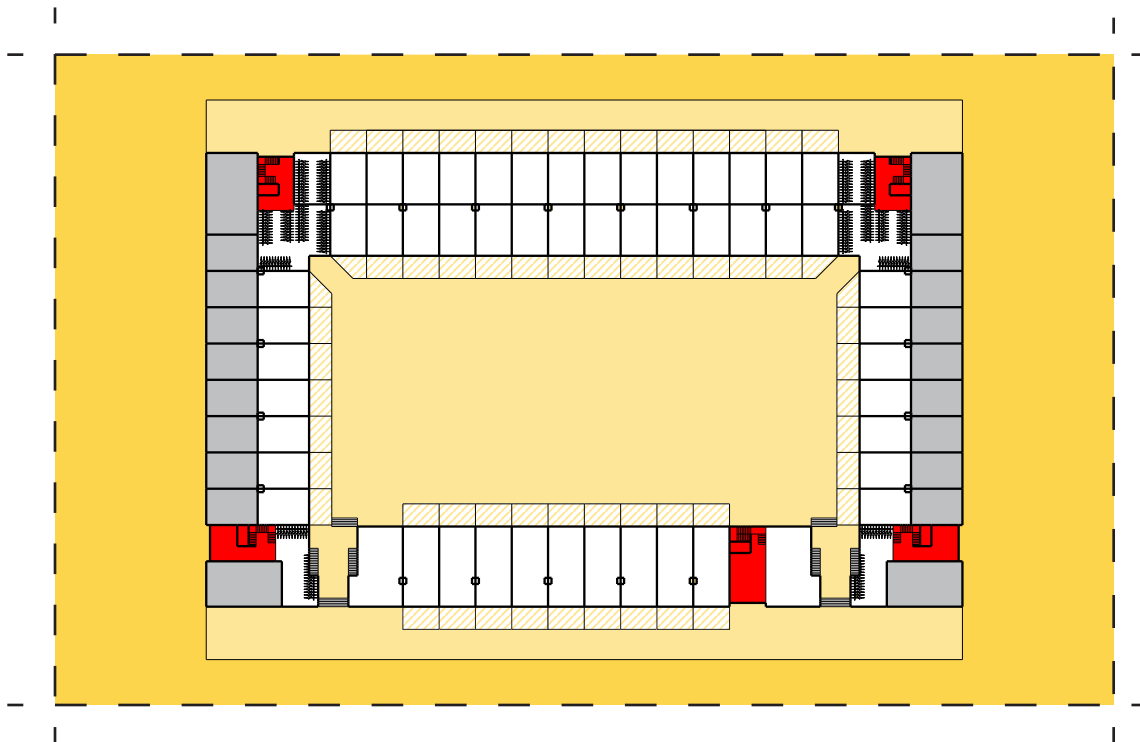
Sections 1:1000

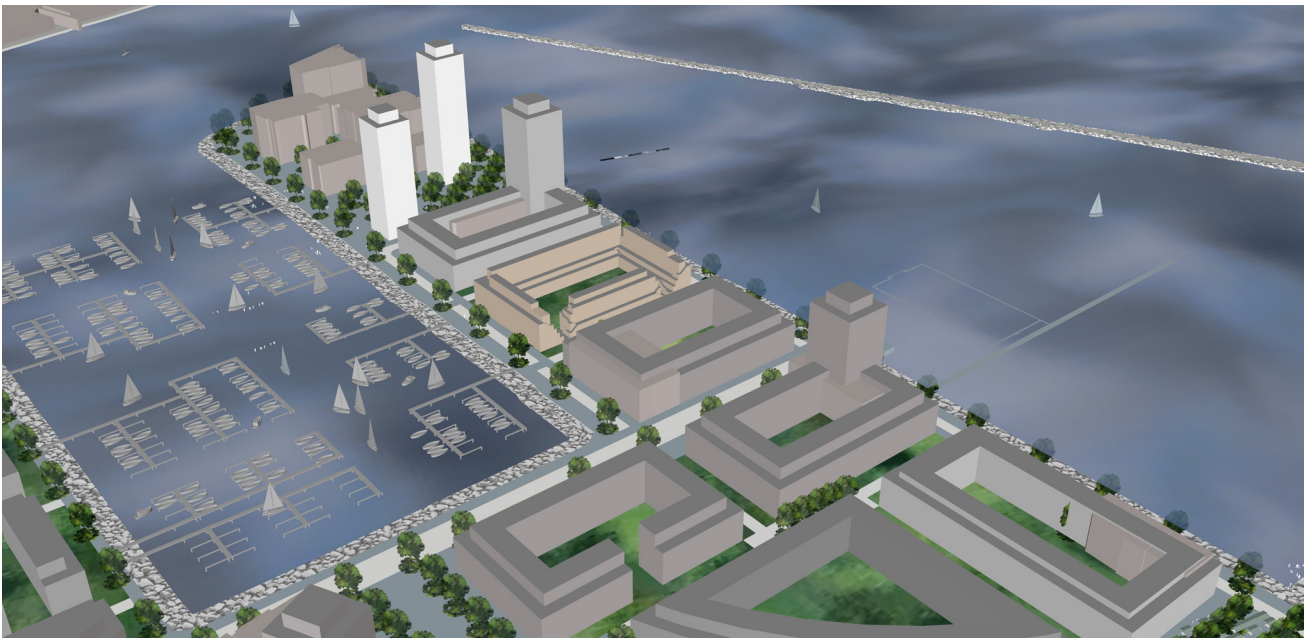


Access points



1:1000





Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Robbie Gerbrandij
Student number	4366387
Telephone number	0638382692
Private e-mail address	robbger@gmail.com

Studio	
Name / Theme	Dutch Housing Graduation Studio
Teachers / tutors	Theo Kupers, Pierijn van der Putt
Argumentation of choice of the studio	Throughout the course of my bachelor, the projects that interested me the most were all dwelling related. However, for my MSc1 studio I chose Architecture & Heritage because during the bachelor I had not done anything concerning this topic in Architecture thus far. Even though I learned a lot and enjoyed this studio, I came to the realization that I take more pleasure in designing for dwelling related projects. As a result, I chose Dwelling for the MSc2 and as my graduation studio. My plan/goal is therefor also to start working in an Architecture firm in the Netherlands that is mainly oriented in the residential building industry.

Graduation project	
Title of the graduation project	Urban Families in Dense Cities
Goal	
Location:	Minervahaven Amsterdam, Netherlands
The posed problem,	With the population growing worldwide and the ideal number of squared meters used per person increasing, cities such as Amsterdam are facing new expansion challenges; needing more dwellings whilst less buildable space is available. This dichotomy causes several groups in our society to move out of the cities. One of these migrating groups are families. Recent research has shown that many young families in Amsterdam are dissatisfied with their homes and with their living environment and as a result many of them move away from the city. As a consequence, the diversity within cities decreases, resulting in the segregation of the population. However, families indeed want to stay living in the city, but the problem is that the housing supply is not sufficiently tuned to their needs. In other words, the right housing is missing. Families with a modest income are usually dependent on the outdated housing stock. As a result, they either stay dissatisfied in their current dwelling or move away from the city. A straightforward solution is building enough suitable dwellings for families. However, building dwellings with gardens for everyone is not feasible due to the lack of space and the high land prices.

research questions and	<p>How can we design affordable and good quality family apartments in dense areas such as in a city?</p> <p>How can we design dwellings with the right size, the right layout, the right number of rooms and the right costs?</p> <p>What are the reasons for families to leave a city such as Amsterdam?</p> <p>What are the reasons for families to stay in a city such as Amsterdam?</p> <p>How can we make neighborhoods in cities attractive for families?</p>
design assignment into which this result.	<p>A new approach has to be explored in which families have the adequate environment to live in and which is at the same time is affordable. This will result in safe and family friendly building block or neighborhood. Introducing a second street life above the ground level will cater for a type of outdoor spaces as extension of the private domain that allow children to safely play outside. Different dwelling sizes will ensure that different family sizes and families with different cultural or economic capital can get a place to live. The larger houses provide financing for the smaller houses.</p>

Process

Method description

The research has been done using several methods and techniques of research and design. First, using the study of precedents, analysis has been done on different scales; the scale of the urban plan and the scale of the residential building. Subsequently, with the result of this analysis, an urban plan has been made to eventually make an analysis of the location. In addition to the case studies an extensive literature research has been done. In the next phase, on the basis of the results of this research, a final graduation design will be made.

Literature and general practical preference

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- Atteveld, Jeroen, Bas Liesker, Wai Ming Lam, and Immanuel Fäustle. *Het Gezin in De Stad*. Amsterdam: Heren 5 Architecten, 2010.
- Boterman, Willem, and Lia Karsten. *De Stad: Magneet, Roltrap En Spons*. Planbureau voor de Leefomgeving, 2015.
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Karsten, Lia. *Family Gentrifiers: Challenging the City as a Place Simultaneously to Build a Career and to Raise Children*. *Urban Studies* 40, no. 12 (2003): 2573–2584

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Nio, Ivan. *Met Kinderen Stel Je Andere Eisen Aan De Stad*, In *Nestelen in De Stad: Apartementen Voor Gezinnen*, edited by Jolanda Keesom, 108-117. Rotterdam: NAI Publishers, 2013.

Steenbeeke, Laura, and Jorn Kompeer. *Mensen Denken Recht Te Hebben Op Een Rijtjeshuis Met Tuin, Dat Moet Anders*. Nederlandse Omroep Stichting. <https://nos.nl/artikel/2256301-mensen-denken-recht-te-hebben-op-een-rijtjeshuis-met-tuin-dat-moet-anders.html>. [accessed 15 November 2018]

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Reflection

Relevance

According to several sources from 2017, many young families in the Netherlands are leaving the big cities. Since 2013 this number has increased. Amsterdam has the biggest percentage of emigrating families, whilst it already has a relative low number of families living there compared to the rest of the country. Of all households in Amsterdam, only a quarter are families compared to 33% in the Netherlands. The main reasons given by families to leave the city are; small houses, none or limited outdoor space, too much traffic, a sense of insecurity and high dwelling prices. Nearly three quarters of the families in Amsterdam are not happy with their current dwelling and would like to move. Although at the same time, three quarters of families absolutely want to stay or prefer to stay living in Amsterdam. Only one in five families look for a dwelling outside Amsterdam.

Families have an important influence on the quality of living in urban areas. They are the glue of the city, providing strong social networks thanks to encounters between parents at, for example, schools and kindergartens but also extracurricular activities such as sports and hobbies. Besides, families provide social cohesion and involvement in the neighbourhoods and they have an important influence on the urban economy due to their use of many facilities. They are good for the shops in their neighbourhood, but also pay for childcare, the sports club, the music school, etc. And with that they create jobs.

