THE CITY - PLACE FOR ALL

Exploring the possibilities to attract families back in the city through the case of the Expat families

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PREFACE

The following report contains a conducted research in the graduation studio Advanced Housing Design. The research focuses on a specific target group - the expat family, with the goal of exploring their needs in terms of housing design. There are several methods used during the research and it results in concept design in the M4H area in Rotterdam.

CONTENT

RESEARCH PLAN

ABSTRACT

The research discusses the problems and needs of the expat family in the Netherlands with focus on housing and the process of family gentrification in Rotterdam. The goal of the research is to be a starting point of a concept design for a residential building in the M4H area in Rotterdam with a focus on social interactions and a child-friendly environment.

PROBLEM STATEMENT

In the recent decades the economies become more dependent on knowledge - based activities - scientific research, technology, trade, finance. Therefore, the industries strive to be competitive in these categories on global level. In order to achieve that, they need an international recognition which also means attracting international knowledge workers (expats). Many cities try to become an urban knowledge capital by providing opportunities for the expats - carrier and urban facilities. In the Netherlands, Rotterdam is one of the most popular destinations among expats. (Dispatches, 2019) The international companies attract knowledge workers which enjoy the lively and international atmosphere in the city. However, finding suitable housing especially for the expat families in the city is a difficult task for the new residents. There is a lack of suitable housing for families in the city of Rotterdam which forced middle class families to move out of the city. (Karsten, 2003) Therefore, the municipality of Rotterdam implemented programs on the scale of the city, neighbourhood and residential buildings to attract the middle - class families and transform the city of Rotterdam into a child - friendly city by 2030. The transformation of Rotterdam also coincide with the need of 1 million homes by 2030 announced by the government due to the housing shortage in the Netherlands. Considering this, it can be stated that the cities in the Netherlands need a suitable housing which meet the needs of the modern household and the dual - earning family.

The research focuses on the problem of the expat families which is two-fold because they are categorized both as internationals and as a family facing two different types of problems when arriving in the Netherlands. First, considering them as an expat they face the difficulties concerned with moving to a new country which include isolation, difficulties in adaptation, the language barrier, loss of identity and self - esteem and frustrations dealing with the new culture. The stress factors mentioned are in general common among all expatriates (singles, couples, and families). However, in the case of the family, there is an additional problem with the adaptation of the traveling spouse and the child/children. Therefore, the family also needs to make sure that there will be a good school where the child needs to feel comfortable and adapt quickly. Moreover, the family needs to consider the neighbourhood which also needs to be child-friendly. Here, they face the problem of the family and their place in the city. Since the design location is in Rotterdam, the research explores the problems of the families in the city and the ongoing gentrification process, which is a strategy used by the municipality to bring middle-class families in the city of Rotterdam. The expat family is a perfect match with the target group of the municipality - highly - educated parents with a high income. From the point of view of the family, Rotterdam is suitable because it is considered to be the best Expat city for 2019 and is home of 16200 expats (Bleker, 2019). There is a strong expat community, which makes communication and adaptation easier. Moreover, most expats during interviews mentioned that the language barrier in Rotterdam doesn't exist and they feel comfortable in speaking in English. Even though Rotterdam provides comfort to the expat to adapt faster, the family feels that the city is not suitable for raising their children. The freedom of the child is sacrificed in the city because of the lack of suitable housing, lack of safety on the street and parks, too much noise and traffic. Therefore, the expat family is confronted with the dilemma if they should stay in the city of Rotterdam where they feel more comfortable since they are among internationals and saves them time in travelling to work or they should move to the suburbs where their child can have more freedom.

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RESEARCH QUESTIONS

The problems mentioned above lead to questions that help to explore in-depth the problems that expat families face in the city of Rotterdam. Understanding the problems and needs of the target group also leads to better design starting points, which is the goal of the research. Two main research questions were identified:

What benefits does living in the city bring to expatriate families?

What design solutions will enhance social interaction between residents and provide a safe and child-friendly neighbourhood?

Sub - questions:

Several sub-questions were created, which help to answer the main research questions. They correspond to the sub-chapters and the different topics and approaches that are included in the research:

-What are the characteristics of the expat family?

-How the expatriate migration appeared and what is the migration history in the Netherlands?

-Why is it important for expats to raise children in the city and why is it important for the city of Rotterdam to attract young families?

-Why do families consider the cities unsuitable for raising a child and how child-friendly design approaches are slowly reversing the process of sub urbanization?

-What are the housing needs of the target group "Expat family" in terms of dwelling typology, location preferences and shared spaces?

-What are the design decisions that enhance the feeling of community, increase safety, and create a place for social interaction?

-What are the children's needs in terms of housing on neighbourhood level?

RELEVANCE AND POSITION

The research identifies the knowledge gap in the literature about the expats in the Netherlands and especially the expat families. The latest statistics from 2015 shows that there are 106,590 expats in the Netherlands of which 43% are married and have at least one child. (Bleker, 2019) The Netherlands continues to attract expats since they contribute to the international reputation of the country and they contribute to the country's economic and social development. The knowledge workers help cities to achieve a global status and become competitive in industries such as trade, communication, education, and technology. (Beckers, 2019). There are many expat centers and communities around the Netherlands, which help for the adaptation of the expat. However, little is written about the expat families and the problems they face.

The relevance of the research increases even more due to the fact that the problem of raising a child in the city is also applicable to Dutch families. Nowadays, it is common that the woman in the family also works, which means that living in the suburbs becomes more difficult for the dual-earning family as well. Living in the city in a mixed work-live environment makes it possible for the family to combine working and family duties. Therefore, the focus of the architects, urban planners, and designers should be on how the city can turn into a favourable place for the families, where they don't have to sacrifice the childhood of their children. There are a lot of discussions on the topic of family gentrification in the Netherlands and why it is important for families to live in the cities of Rotterdam and Amsterdam and the benefits of the cities to attract young dual-earning families. Looking at these discussions, the research will add the importance of why expats also need to live in the city. Another reason that needs to trigger an action of planners to make the big cities a better place.

Ethical considerations

The research uses different literature resources, questionnaire, and interviews in order to answer the research questions. Since there is not enough literature on the topic of housing needs of expat families, the interviews and questionnaire have an important role to identify the needs. The people who were interviewed volunteered for taking part of the research, and the research principles and goals were introduced before the interview started. Therefore,

they are aware that the information will used in the research conducted. On the other hand, the questionnaire was spread in Facebook groups with a description of the research. Contrary to the interviews, the research is anonymous and thus aiming to use the results in quantitative manner.

SOURCE ANALYSIS

As already mentioned there is a knowledge gap in the literature about expat families in the Netherlands. In general, literature and statistics on the topic of expat is difficult to find because sometimes international workers are wrongly categorized as expats. Therefore, the research paper includes both international literature and literature from the Netherlands and Belgium. In the literature research about the family gentrification process and problems of families in the city mainly literature by Lia Karsten and Marguerite van den Berg was used. In the research about design mostly international literature was used. The research paper adds to the available literature as it discusses in a new way the position of the expat family in the Netherlands - their problems and needs and the way they contribute to the life in the city.

Main Literature used:

The main articles used in identifying the stress factors among expats are "Determinants of effective coping with cultural transition among expatriate children and adolescents, Anxiety, Stress,& Coping" by Karen I. Van Der Zee, Anees J. Ali, and Iris Haaksma and "Dominant stressors on expatriate couples during international assignments" by Robert J. Brown.

On the topic of family gentrification and raising children in the city (in the Netherlands) research by Lia Karsten was used ("Children in the City: Reclaiming the Street. Children, Youth and Environments" and "Family Gentrifiers: Challenging the City as a Place Simultaneously to Build a Career and to Raise Children"). The papers helped in identifying the problems that families face in the Dutch cities. Moreover, they discuss the need for a change in the urban structure that would reverse the process of family sub urbanization.

In the research about Rotterdam and the strategy of gentrification, a research paper by Marguerite van den Berg was used. The paper "City Children and Genderfied Neighbourhoods: The New Generation

as Urban Regeneration Strategy" analyses the case of gentrification in Rotterdam and the plans of the municipality to create a child-friendly city in order to attract the middle - class family back to the city.

Literature used for the design includes research by Joanna Williams on co-housing ("Designing Neighbourhoods for Social Interaction: The Case of Cohousing"), "Cities Alive: Designing for Urban Childhoods. Children, Youth and Environments" by Adrian Voce, "Designing and Dreaming a Child Friendly Neighbourhood for Brooks Reach, Dapto" by Karen Malone and others. There is a lot of literature available on the topic of designing for social interaction and child-friendly environment. The literature was chosen based on the ideas and intentions that the design should follow.

The full literature list can be found in chapter Bibliography.

METHODOLOGY

The research uses several methods to identify and determine the problems and to find design-based solutions for the target group. In order to create a suitable design I conducted literature research, interviews and questionnaire, which are followed by analysis of reference project (research plan) and location analysis. (Fig.1)

Since the problem of the expat families is complex and there is not enough literature on the topic, the interviews and questionnaire gave a better overview of the problems that the expat families face in the Netherlands. The process of interviewing was parallel to the process of literature research. This is how the choice of literature was justified. The created match between literature and opinions from interviews shows that expats also manage to describe the problems they face in a way that is applicable for all of them. Of course, the analysis of the results was made with the conscious and the understanding that the opinions depend on many personal factors. The process resulted in a questionnaire that was spread among family expats. The reason that the questionnaire came after is that it was made with the intention to check if opinions and international literature is applicable to the situation in the Netherlands.

In addition to that a plan analysis is added which looks into four different reference project which are suitable for the target group. My main focus was solutions of

shared spaces, public and private zones and dwelling typologies.

Based on the literature research, interviews/questionnaire, research plan and location analysis a concept design is created which has the aim to stimulate social interactions and to create a child-friendly environment. It is important to mention that all of the mentioned methods were used simultaneously with a focus on the target group.
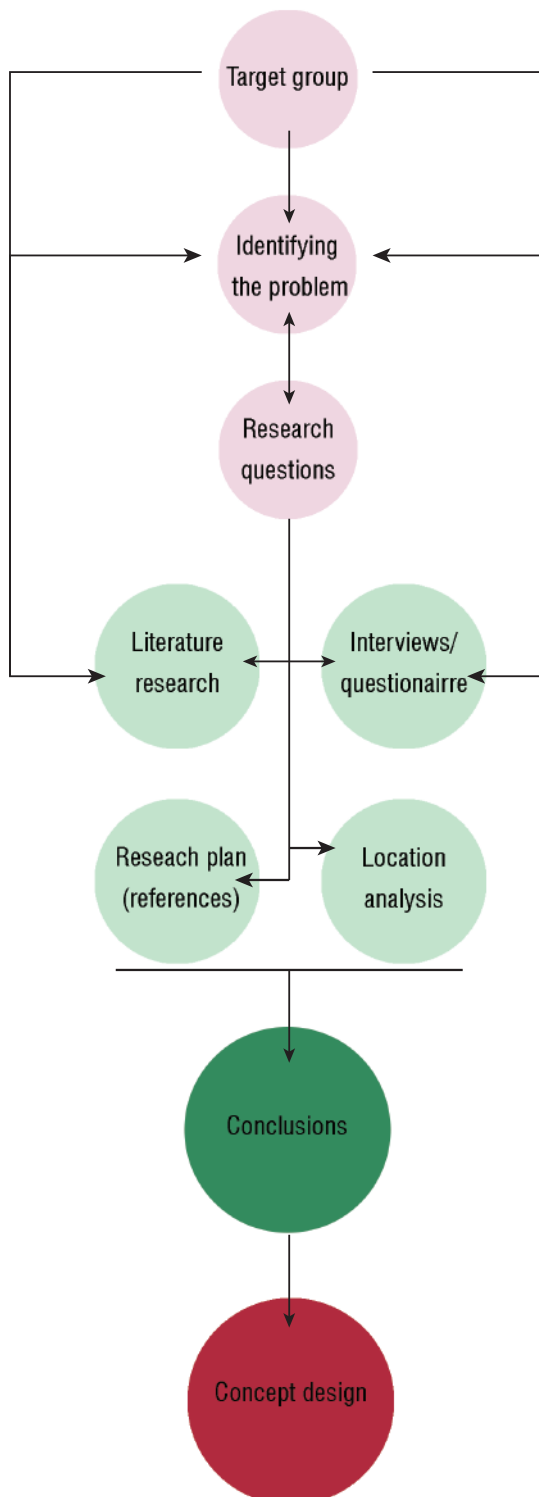

Fig. 1 Process diagram

DISCUSSION

The chapter contains literature research, summary of the conducted interviews and questionnaire results, with focus on the houses preferences of the target group. Moreover, the conclusion of the chapter contains a design tool box which acts as a base points in the conceptual design. Full report of the interviews and questionnaire can be found in the chapter of Appendecies.

LITERATURE RESEARCH

DEFINITION, STATISTICS AND DATA

The expat (or also called highly-skilled migrant and knowledge worker (kenniswerker)) is categorized by the government as an international knowledge worker who contributes to the economic and/or social development of the Netherlands and has the following monthly salary (as of 1st of January 2020): (Dutch Highly Educated Migrant. (2020)) :

- Highly skilled migrant 30 years and older - monthly salary of minimum EUR 4,612
- Highly skilled migrant younger than 30 years - monthly salary of minimum EUR 3,381
- Dutch graduates qualifying for orientation year - monthly salary of minimum EUR 2,423
- EU Blue Card - monthly salary of minimum EUR 5,403

The expats are eligible for the 30% ruling where they don't pay taxes on 30% of their salary. The Highly Educated Migrant (with a university degree from a ranked university) also can get a visa for one year to find a highly skilled job.

In total there are 106,590 expats in the Netherlands (statistics from 2015), which was an increase of 28 583 people from 2009. (Bleker, 2019) Most of the expats are concentrated in Randstad with around 70% of expats living there (North-Holland (37%), South Holland in 2015 (26%)) followed by Noord-Brabant (13%). (Bleker, 2019) In the city of Rotterdam for 2015, there are 16 200 expats. (Bleker, 2019) Predominantly expats are coming from Germany, Belgium, the United Kingdom, France, and Poland and 31% of them are under the age of 35. (Bleker, 2019) It is interesting to see that 43% of them are married and have at least one child. The statistics prove the need for the research since there is a knowledge gap on the topic of housing needs of Expat families in the Netherlands, while they are the largest percentage of expats. Only 26,175 of them own a home, while 75% live in rented accommodation. (Bleker, 2019) In Rotterdam, there are 24 400 kids of international workers and 30 % of them are children of expatriates (7400).
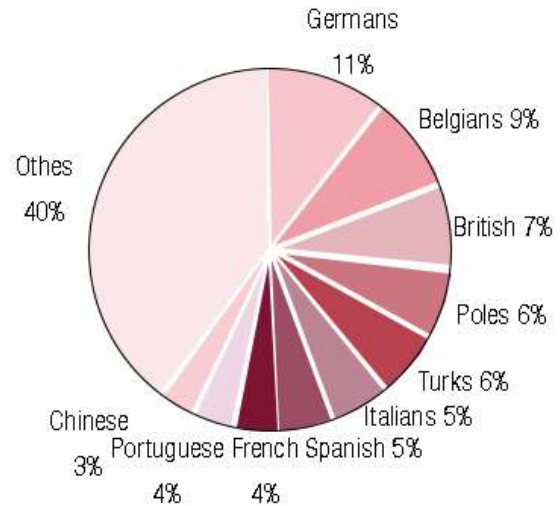

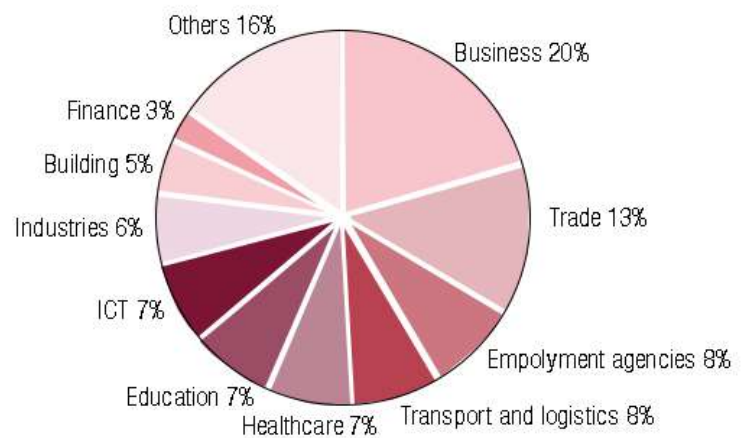Fig. 2 Nationalities of expats (Blecker, 2019)
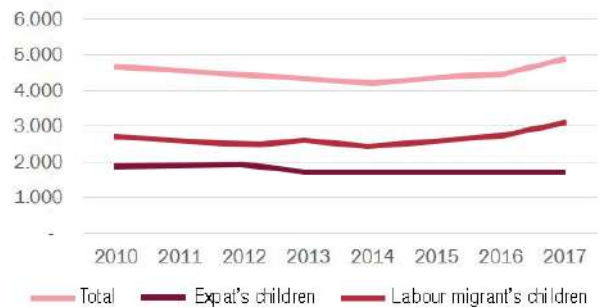

Fig. 3 Expats and work sector (Blecker, 2019)

Fig. 4 International children in the region of Rotterdam (Blecker, 2019)
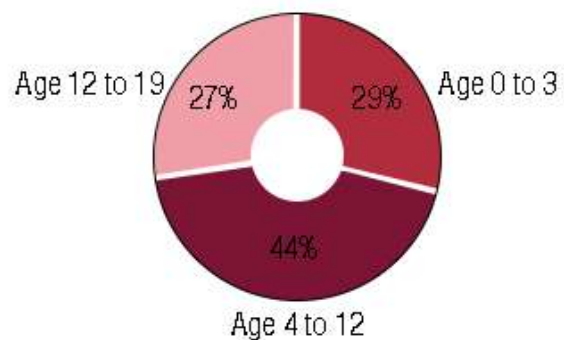

Fig. 5 Age of the international children in the region of Rotterdam (Blecker, 2019)

THE DIFFERENCE BETWEEN LABOR MIGRATION AND EXPATRIATE

People often wrongly recognize themselves as expats when they are labor migrants and society often miscategorizes the expat and considers him as a labour migrant. In general, the difference doesn't come only from the salary categorization. The expats most of the time are people coming from good social and cultural status families and are with a Bachelor's or Master's degree. (Gatti, 2009) They speak several languages and already had experience abroad. They are not motivated by the basic needs but by professional reason or they are looking for new experiences. Usually, the expat is considered to be a positive immigrant (Gatti, 2009). On the other hand, labor migrant is often the stereotype of violence and crime as they were forced to leave their countries because of bad working conditions. In cities, they have their zones which they occupy while expats are usually merged in the population. (Gatti, 2009) The low - skilled immigrant and the expat (highly - skilled immigrant) are two different groups with people with different motivations. However, when it comes to integration in society, both groups have difficulties. Expats create their strong communities which hardly merge with the local residents.

HISTORY OF THE TARGET GROUP (GLOBALLY)

Here, we need to make a difference again between the labor migration and the expat migration. The labor migration was a popular movement during the 60s when low - skilled migrants were coming to Western Europe to work in mines and fields from Morocco, Italy, Turkey. (Berg, 2013) This type of migration is still popular with adding countries from Eastern Europe.
However, the concept of being a highly-skilled migrant didn't appear in literature until the 1950s. It became popular with globalization during the 60s when companies tried to grow on the international market. (McNulty, 2017) Therefore, this sparked the interest towards the multinational firms, inter-cultural and cross-cultural transitions, and students who go to study abroad. (McNulty, 2017) By then the expat was called "overseas personnel", "overseas executives", "overseas Americans". (McNulty, 2017) There are some literature studies from 1925 where this concept appeared as well. (McNulty, 2017)There

was a particular interest in the overseas military personnel during WWII, and their adaptation. Even though the concept of the expat migrant started during the 50s and 60s, it gained popularity with the rapid globalization and need for international workers in the past 30 years.

HISTORY OF IMMIGRATION

In this chapter I looked the overall trends of immiration in the last centuries. This includes labour and mostly in the last decades expatriate immigration. The statistics are based on the book "Cultuur en migratie in Nederland. Veranderingen van het alledaagse 1950-2000" by Hester Dibbits, Isabel Hoving, Marlou Schrover.
During the 17th and 18th centuries, the west of the Republic was one of the most developed regions so the country needed different labour migrants (agriculture, sailors, fleet, servants etc.) (Dibbits, 2005) Most of the immigrants were from the neighbouring countries with the exception of a group of Portuguese Jews in Amsterdam, who were systematically discriminated. The immigration started to decrease because of the economic downturn and after the Napolenic era. The
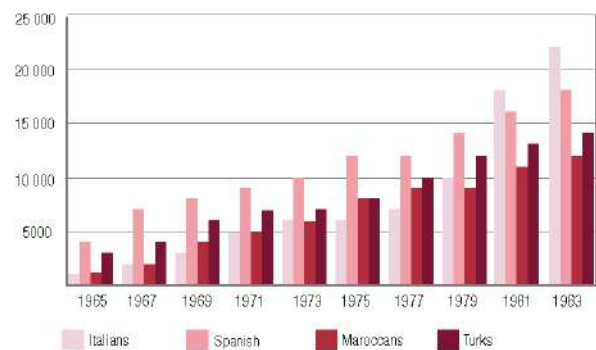

Fig. 6 Mediterranean migrants in Rotterdam 1965 - 1984 (Dibbits, 2005)
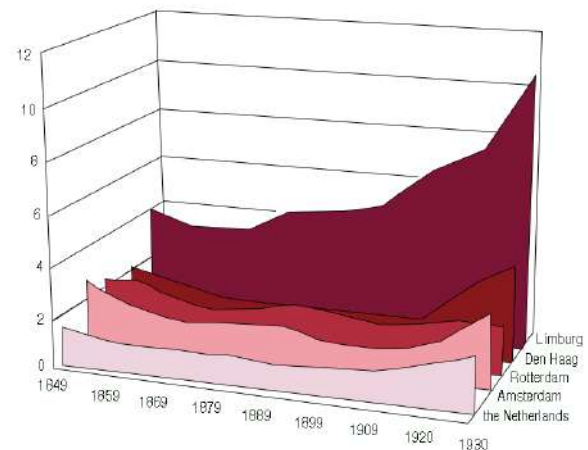

Fig. 7 Percentages of foreigners in the Netherlands 1849 - 1930 (Dibbits, 2005)

lowest point of immigration was during the 1890 (fig.7).
(Dibbits, 2005)

20th century

The immigration started to increase again after the decline in the 19th century. In 1930 Amsterdam had 3.1% internationals and The Hague 3.6% internationals but Rotterdam still was not so attractive for the immigrants and it had 2% of immigrants (Fig.). (Dibbits, 2005)

During the First World war most of the immigrants were Belgians and Germans. Jews (mostly diamond workers) only passed through Rotterdam but settled mainly in Antwerp and some of them in Scheveningen. The chaos which was result from the war led to many immigrants from Germany, Poland and Hungary. Regardless, the global economic crisis which started in 1929, in 1930 there were 12 000 foreign workers in the Limburg mines which were from Germany, Poland, Italy and Slovenia. (Dibbits, 2005)

After the War, there was a housing shortage, which changed the position of the government and the immigration was considered as undesirable. However, between 1946 and 1964 due to the decolonization of Indonesia there was a huge immigration wave. Around 300 000 Dutch - Indies immigrants and 12 500 (in 1951) settled in the Netherlands. (Dibbits, 2005)

During the 70s after the independence of Suriname, a second wave of immigrants started. Most of the immigrants were labour workers and small group of students and high - skilled immigrants.

At the same time (1950s) there was an additional recruitment of guest workers from Southern Europe - Italy, Spain, Greece, Turkey and North Africa. The guest workers were unskilled and semi - skilled and most of them were male. In 1973, the government stopped recruiting labour migrants but the tendency of immigration continued to rise. The main reason for that was because of family reunification of Turks and Moroccans. This migration changed the demographics of the main cities. Some of the neighbourhoods such as Rotterdam Spagen had almost 70% of immigrants. (Dibbits, 2005)

In the last 20 years, the tendency of immigration still continues. In 2019, 269,064 people immigrated to the Netherlands, and 50,8 % were from Europe and 19.4 from Asia. (CBS, 2019) The reasons for migration didn't change much. The labour migration is one of the most common reasons and after it is family. However, compared to the last century the reason for migration for studying is new. In 2018, around 14% of the immigration was because of education reason (fig.10). (CBS, 2019)
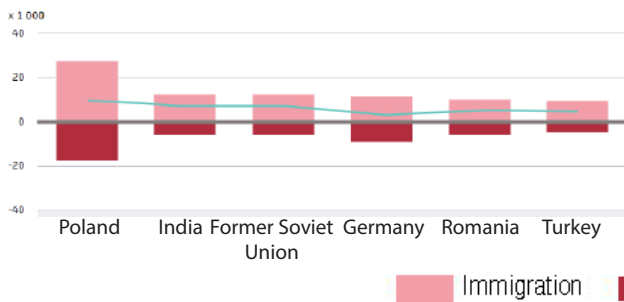

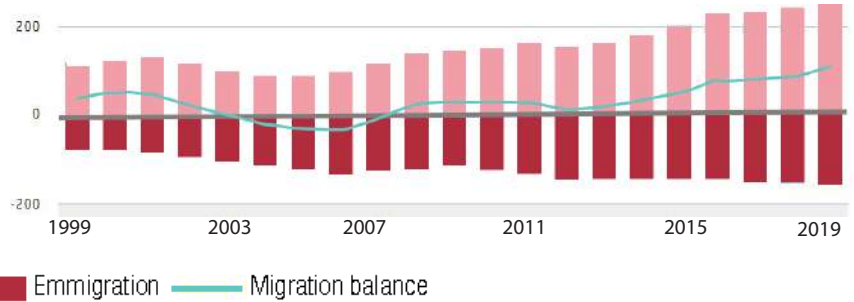Fig. 8 Nationalities of migrants (CBS, 2019)
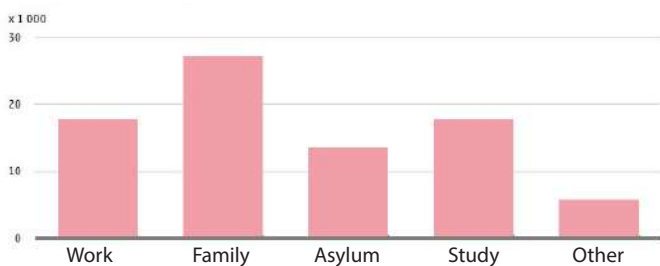

Fig. 9 Migration in the Netherlands (CBS, 2019)

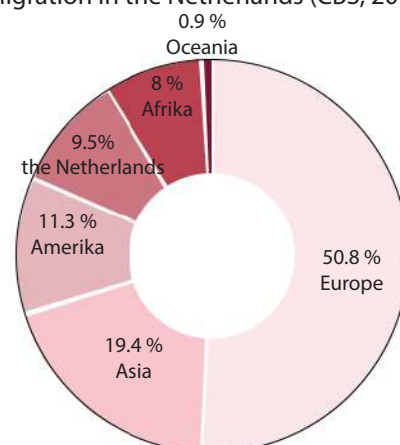Fig. 10 Reasons for migration of Non -EU migrants (CBS, 2019)

Fig. 11 Background of immigrants in 2019 (CBS, 2019)

TYPES OF EXPATS

The target group of the expat can be broken up into different categories depending on the motivation of migration. Research by InterNationals, which is the largest community of expats - 4 million people with more than 420 locations of communities, shows that 90% of the expats can be categorized into 10 types. (InterNationals, 2017) The other 10% of the expats gave reasons for migration such as political reasons or missionary work abroad. (InterNationals, 2017) The diagram from the website explains the reasons for migration, and statistics of how they adapted - relations with locals, family status, language, feelings, etc. Expat Families can have various reasons for migration. Even though they are a family they can fall under the different categories of The adventurer, The Foreign Assignee, The Career Expat, etc. For this research, it is interesting to take a closer look at the traveling spouse, usually the woman (87%) who migrates because of the international work of their partner. From them, 45% work part-time and 48% raise a child abroad. It is interesting to see that 72% of them send their kids to a private school which might be because of the language barrier and most of the English schools are private.

Regarding the reason for moving to the Netherlands, in the research, I am focusing on the expat family. I consider that there can be different variations between the expat family. The research explores the needs of families with children, however the design will also contain smaller size dwellings which will provide housing for starting families (without children).

Household type: married/unmarried couple without children Work: requires a working space (due to work from home especially during pandemics)	Household type: married/unmarried couple with 1 or more children (family) Work: requires a working space (the woman works from home, not only because of the pandemics)
Dwelling type: one or two - levels (loft) Dwelling size: 50 - 80 m^2 Bedrooms: 1- 2	Dwelling type: one or two - levels (loft) Dwelling size: 85 - 160 m^2 Bedrooms: 2 or more
Shared spaces: kitchen, event space, shared working space, exercise room Facilities: shops, cafe *sometimes they don't want to be close to children	Shared spaces: playgrounds, play rooms, multifunctional zones, exercise room Facilities: children daycare, shops

10 Types of Expats

The Romantic

"I moved for love."

12%

40% male | 60% female

Typical countries of residence:
Finland, Greece, Philippines, Denmark, Sweden

> 76% in a relationship with a local
> 48% completely happy with their relationship
> 25% have acquired local citizenship
> 17% mainly friends with other expats

The Family Expat

"I moved for family reasons."

3%

38% male | 62% female

Typical countries of residence:
Kuwait, Chile, Israel, Canada, Greece

> 34% earn less than they would at home
> 34% negative ratings for career
> 51% have lived in current country for > 10 years
> 79% feel at home there by now

The Dream Destination Expat

"I wanted a personal challenge / to live in this country."

4%

38% male | 62% female

Typical countries of residence:
Israel, Cambodia, Italy, Spain, Thailand

> 24% completely satisfied with life abroad
> 75% have (more than) enough for all expenses
> 57% very happy with travel opportunities
> 78% feel at home in local culture

The Greener Pastures Expat

"I moved for a better quality of life / financial reasons / retirement."

14%

50% male | 50% female

Typical countries of residence:
Cyprus, Costa Rica, Portugal, Ecuador, Malta

> 36% staying abroad for the first time
> 28% retirees
> 64% positive ratings for cost of living
> 58% saw personal health as a benefit

The Adventurer

"I simply enjoy an adventure / living abroad."

10%

40% male | 60% female

Typical countries of residence:
Vietnam, China, Turkey, Peru, Argentina

> 60% have lived in ≤ 1 other country
> 22% want to improve language skills
> 74% satisfied with socializing and leisure
> 17% mostly friends with locals

The Foreign Assignee

11%

"I was sent here by my employer."

61% male | 39% female

Typical countries of residence:
Myanmar, Nigeria, Kenya, Singapore, Poland

> 43% work as managers
> 44% gross household income p.a. ≥ 100,000 USD
> 81% knew no one in their destination before
> 40% are mostly friends with other expats

The Career Expat

14%

"I found a job or wanted to start my own business here."

52% male | 48% female

Typical countries of residence:
Luxembourg, Kuwait, Qatar, Oman, Bahrain

> 11% business owners or entrepreneurs
> 17% teachers, academics, or researchers
> 57% saw the local economy as a benefit
> 50% have lived in ≤ 1 other country

The Foreign Recruitee

"I was recruited by a local company."

6%

61% male | 39% female

Typical countries of residence:
Saudi Arabia, Switzerland, Qatar, UAE, Kazakhstan

> 38% saw local taxes as a benefit
> 40% very likely to return home
> 16% aren't living with their children
> 60% little or no local language skills

The (Ex-)Student

"I moved here in order to go to school or university"

5%

37% male | 63% female

Typical countries of residence:
Ukraine, Denmark, Hungary, Netherlands, Austria

> 43% still enrolled in higher education
> 33% gross household income p.a. ≤ 12,000 USD
> 55% good or great local language skills
> 37% planning to stay for 1–5 years

The Traveling Spouse

10%

"I moved here because of my partner's job or education."

13% male | 87% female

Typical countries of residence:
Singapore, Luxembourg, Hong Kong, India, Uganda

> 42% moved due to partner's foreign assignment
> 45% work part time
> 48% raising children abroad
> 72% of parents send kids to private schools

Expat Insider www.internations.org/expat-insider

Fig. 12 Types of Expats (InterNationals, 2017)

EXPAT PROBLEMS AND STRESS FACTORS (SPOUSES AND CHILDREN)

There are different problems that expats face when moving abroad. A lot of the expats are being relocated for some time from the company they are working at while others choose to settle in a different country because of a job opportunity. International assignments in general are linked to increased psychological stress, which concerns the whole family. (Robert, 2008) Researchers show that 8% of the expats who are sent to an international assignment quit the work and 20% return earlier because of intolerable stress. (Robert, 2008) However, there are different problems that expats face based on the country they have relocated themselves to. The problems and stress factors are different for the spouse and the employee and vary depending on the length of the stay. (Robert, 2008) The longer the family stays, the more they can adapt to the country. (Robert, 2008)

Regardless of the location, common problems are loneliness, isolation, cultural adaptation, and stress of relocation. (The Stress Less Clinic, (n.d)) The loss of contacts and the difficulty to make new friends leads to feelings of loneliness even in the case of families. Cultural adaptation is a struggle which most expats underestimate in the beginning. However, a lot of them face the problem with learning the language and cultural norms and differences. There is a concern about the future after the international assignment/job. After a lot of traveling abroad or a long - stay in another country, the expats are feeling worried about the adaptation in their county. They lose the strong connections with friends at home and there is a different attitude after a return. To all of that, the families add the complication of raising a child in a different culture. The parents need to make sure to find a good school for their children, and that their children will be able to adapt and make new friends. It gets even more complicated in the case of the traveling spouse, where in most of the cases the woman has sacrificed a career which leads to low self-esteem and depression. (The Stress Less Clinic, (n.d)) When the traveling spouse is also not satisfied with the current situation, they get the feeling of discrimination, high - expectations to organize everything and often feel that they are neglected because they don't spend enough time with their partner who is always working. (Robert, 2008) In general, the families are doing better on some of the stress factors such as isolation compared to single expats. (Robert, 2008)

The stress factors of the working expat (Robert, 2008)

Lack of preparation and relocation support
Dealing with host country bureaucracy
Gender barriers for females
Children's education or adaptation
Partner's loneliness and loss of contact with families and friends
Effect on employees and partner's career employment/ security

Employee's efficacy and decision - making capability
Language and communication barriers and dependency
Unmet expectations of the company
Housing and personal security concerns

The stress factors of the traveling spouse (Robert, 2008)

The main stress factors of the traveling spouse are the reduced self-esteem, the feeling of not being valued as a result of the time that the couple spends together, the local pressure from the everyday difficulties with the new country, and the isolation. (Robert, 2008) The woman is considered to be the key member of the family network, therefore the feeling of isolation increases when she is not capable of creating such in the new situation. (Robert, 2008)

Lack of a clear - cut spouse role or activity
Loss of identity, self - esteem, and autonomy
Acceptance or rejection of home - make role
Tasks of daily living

Most stress factors :
Not spending enough time with my partner
Not having close friends to confide in
Feeling isolated and cut - off

Frustrations with dealing with the culture
Daily tasks

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The stress factors of the child

The stress factors of the child depend primarily on the family characteristics and the ability of the child to adjust to different situations. (Karen, 2007) If the family has a strong family cohesion and there is a strong bonding between the members, then the child feels more comfortable to start communication outside the family. (Karen, 2007) This is also true if the child sees that the parents are happy. Then, it is more likely that it reacts positively towards the host county. However, in the cases of stressed parents, it is more likely that the child reacts negatively. (Karen, 2007) In general, the children are much more open and less prejudiced, so their adaptation mostly depends on their emotional stability. Another factor that plays a role is the language. There is a lot of literature written on the topic of bilingual children. Usually, the expat parents look for English spoken kindergarten/school especially in cases where they are not planning to settle down in the country.

The stress factors described are based on literature research about the adaptation of expatriate families and especially the adaptation of the traveling spouse and the child. It is important to mention that the stress factors depend on the situation (the host country, the new work position, bonding of the family, etc.) and the personality of the expat. I have conducted additional research, that explores how applicable are these stress factors on the family expats in the Netherlands.
(See sub - chapter Interviews and Questionnaire)

ROTTERDAM AS AS A CITY FOR EXPATS

Rotterdam was ranked as the best expat city for 2019 by Dispatches Europe. The ranking is based on different criteria such as housing, affordability, opportunities, the usage of English by the locals (more than 90% are English fluent), schools, corruption. (Dispatcheseuro, 2019) Even though Rotterdam scored the highest, the ranking recognizes the problem of finding proper housing. (Dispatcheseuro, 2019) It is considered as a good expat city as well for families due to the international schools that Rotterdam can provide to the expat children: the American International School, the Rotterdam International Secondary School at Wolfert, and the International Department of the Blijberg Primary School. (Dispatcheseuro,

2019) Moreover, there is also education in specific languages: Korean School of Rotterdam, Japanese School of Rotterdam, Foundation Matryoshka (Russian), SzkołaSchool (Polish), Danhua Chinese School (Mandarin). (REC,2020)

Rotterdam is one of the cities which holds most internationals and also has many organizations and communities that support coming expats. The biggest one is the Rotterdam Expat Center which helps with administration, housing, applications and has all the information which the expat needs when moving to the Netherlands. Other websites such as Internationals and MeetUp provide a place to share your interests and find people. MeetUp also includes the page Expat Republic Rotterdam, one of the communities which organize drinks and other informal gatherings. The Venture Café for example organizes events every Thursday evening which aims for connecting the expats with the locals. (REC,2020) There are communities specifically for Expat parents such as Intouch, Access, and Nomad parents. There, families can find other parents in similar situations and exchange experiences. There are also communities specifically for women and communities of the different nations (Indian, Indonesian, Japanese, Chinese, Brazilian, etc.) (REC,2020)

ROTTERDAM IN THE PROCESS OF GENTRIFICATION

In this sub-chapter, Rotterdam is discussed as a city for the families and since the target group is also a family, it is important to understand the ideas and plans of the municipality to attract the middle-class family.

In 2006 Rotterdam was rated to be the worst city in the Netherlands to raise a child. (Berg, 2013) After this, a program for improving the amenities for children was initiated by the municipality. The goal of the program is to improve housing, amenities, and public spaces so the families can be attracted to the city of Rotterdam. The strategy to make Rotterdam a "child-friendly" city by 2030 is backed up by the strategy of gentrification. (Berg, 2013)It has become a tendency of the west to replace the current stock (small dwellings) with more expensive and bigger dwellings. The process of gentrification can be also defined as the process of buying land in poor neighborhoods where the occupants are displaced by new developments and the new target group. This is a

strategy that also moves away from the industrial past of Rotterdam into a spatial organization that supports and attracts the families back to the city. (Berg, 2013) The spatial organization has a different approach than the modernist approach which was used after the War. Back then the residential areas were separated from the working areas which lead to the formation of gender zones. The spatial organization of the city was mirroring the patriarchal structure. However, now Rotterdam has the aim to reverse this organization and mix housing and working which will lead to a decrease in car usage and will make it more convenient for the household to combine work and family duties. (Berg, 2013) The suburbanization process started during the 60s and 70s when the city was considered unsuitable to raise children. Therefore, most of the families leave the city as soon as they start planning a child. (Karsten, 2003) This way the city has a prominent population of young people, elderly, or families without children. Rotterdam has reconsidered the target group and they use the young middle-class family as a catalyst. The dual-earner families would prefer to live in the city because the proximity to amenities has a positive outcome on the way they combine family and work. On the other hand, by having more families in the city, the municipality can assure that amenities are affordable. (Berg, 2013)

However, to reverse the process of suburbanization, Rotterdam should make sure to provide a safe environment for families and their children. There are safety concerns that are connected to the topic of migration. As already mentioned Rotterdam has suffered out-migration of families during the 60s which was at the same time when in-migration of post-colonial migrants (Suriname and the Netherlands Antilles) and labor migrants from Turkey and Morocco happened. (Berg, 2013) The city has the youngest population but because of the ethnically diverse groups, this is often connected to a negative stereotype. The youngest population is considered both as an opportunity because it is the future of the municipality and as a problem because of the nuisance that it creates. (Berg, 2013) The children of the low - class are the ones considered as "opportunity" poor (causing the problems in the city) while the children of the middle and high - class are considered as "opportunity" rich (well educated and the future of Rotterdam). (Berg, 2013) Therefore, to deal with this problem of the young and to ensure a safe environment for the families, Rotterdam has been applying stricter measures for behavior in public

spaces. Moreover, the city aims to relocate the lower - income group to the suburban municipalities by destroying 3000 social homes each year and building 4000 new homes. (Berg, 2013)

The program of the municipality also includes a guideline of the dwelling for the ideal target group (middle - class families with highly educated parents). The dwelling should be 85 m2 or bigger with private outdoor space and a separate bedroom for each child (from 3 to 5 bedrooms). (Berg, 2013) Attracting the family to the city means building parks and daycares in a short distance to the residents. Rotterdam is working on 4 different scales: housing, public space, amenities, and routes and at the same takes into consideration 3 aspects of the target group: dual income, gender equality, and the nuclear family. At this moment some neighborhoods provide only 10% of adequate housing as it is defined in the guideline. (Berg, 2013)

FAMILY GENTRIFICATION

Nowadays as the woman also takes part in the labor economy, more families prefer to live in the city. For the period between 1990 and 2001 the mothers with young children with paid jobs increased from 39 to 53%, while the statistics show that 77% of highly -educated mothers continue to work after they have a child. (Karsten, 2003) Having a dual-earning family means that the family has many more possibilities but for them, it is difficult to travel and combine all the daily tasks concerning raising a child. Therefore, for them, it is much more likely to choose the city as a place for residence. On the other hand, if the family is patriarchal it is more likely that they move to the suburbs.

Choosing the city as a place to raise children can be a difficult decision since it has many limitations. In big cities such as Amsterdam, Rotterdam, Den Haag, there is a concern of the parents over safety. (Karsten, 2003) The places for the kids are rare and the children should always be accompanied by the parents. Once the child becomes more active and starts to practice sport, visit clubs, etc. - this means more time commuting for the parent. (Karsten, 2003) In the article by Lia Karsten, a research of a former Port District of Amsterdam is performed where the area has been transformed into a residential area with 8500 houses, workplaces, and other facilities such as shopping centers, school, cafes.

The residential complexes attracted families with children, therefore she researched the reasons behind why would a family invest in a house in a former district. The primary reason among the residents was the distance to work, which saves them money and time in transport to work. Another important aspect is the liveliness of the city and the access to cultural events, and being able to bike to the city center. Almost all respondents were dual-earner families and it is noticeable that work is as important to men as it is important to women, therefore there are difficulties with combining the family duties when childcare cannot be found. Even though women are working as well they work fewer hours or have days that they work at home which makes it possible to combine the duties of a mother with a career. (Karsten, 2003)

The research of Lea Karsten proves that having families in the city together creates a community where members can trust each other. Respondents shared that they often help each other with looking after children. Here, it could be added that the profile of the family that would like to live in the city fully corresponds to the expat family who is seeing the city as the only way to solve its stress factors (communication and activities).

RESEARCH ABOUT DESIGNING FOR THE NEEDS OF THE TARGET GROUP

The specificity of the target group Expat Family is that it qualifies for the needs of a family and the need for an expat at the same time. The needs of a family home are greatly influenced by the needs of a child - safety and amenities in and around the building. Creating a "child-friendly" building is one of the main goals of the design. As considering the expats' needs - there should be close attention to interaction and communication between residents. From the literature research and interviews/questionnaire, a conclusion can be drawn that expats have difficulties in communication and they need and want to connect with people in the same situation as theirs. Therefore, a design that enhances the social interaction between the residents will help solve the problem of loneliness and integration.

The chapter explores techniques for enhancing social interactions through design (cohousing) and techniques to create a child - friendly building.

Cohousing (designing neighborhoods for social interaction)

The concept of co-housing provides a design that encourages social interaction and the creation of social networks within a residential building/neighbourhood. The design (physical factor) is one of the factors that influence the interaction, others can be personal motivation, the informal and formal social factor. (Fig. 13) In the case of the Expat families, personal motivation is even stronger than in the case of the local family. The expats need a place where they can freely and without "guilt" speak to people (other parents) in the same situation in English. Research by Gans (1967), Gehl (1987), and Abu-Gazzeh (1999) show that the homogeneity within a community reinforces social interactions. The same group of people with the same interests may have a positive influence on communication but at the same time, there is always a variance (such a specialty/profession, culture, etc.) which increases, even more, the interest in communication. This is due to the fact that people can help each other and learn new things.

In general, social interaction within a community is enhanced when the residents have the opportunities to have formal or informal communication. One of the factors to determine the informal contacts is by having higher density, good visibility, clustering, parking outside the community (walk to your door), and close proximities. The proximity influences the socializing pattern because it encourages contacts as the immediate neighbors have much more communication than the ones that are living far away from each other. (Homans, 1968) Density determines in a way proximity but extremely high densities often have a negative impact because they interfere with the privacy of the residents and this makes them redraw from the community. Therefore, there should be a balance between the density (too low and too high is not contributing to communication) and privacy. One way to enhance privacy is to create semi-private / buffer zones (gardens, verandas) which will provide a smooth transition between the public and private space. (Abu-Gazzeh, 1999) The buffer zone can protect the residents' privacy and can act at the same time as in interaction space. During its usage, it increases the surveillance of the public space and also increases the possibility for interaction. The surveillance is determined by the floor plan of the community and plays a role in the safety and the interaction. Once people/kids see others in the common areas they

are inclined to go there as well. The communal areas should be in good quality and should be positioned so the residents can see from their dwelling and are strategically positioned on communal paths. The shared paths also activate informal interactions (paths to shared spaces, parking, dwelling). In between these factors, there should be a balance so that both privacy and interactions are considered.
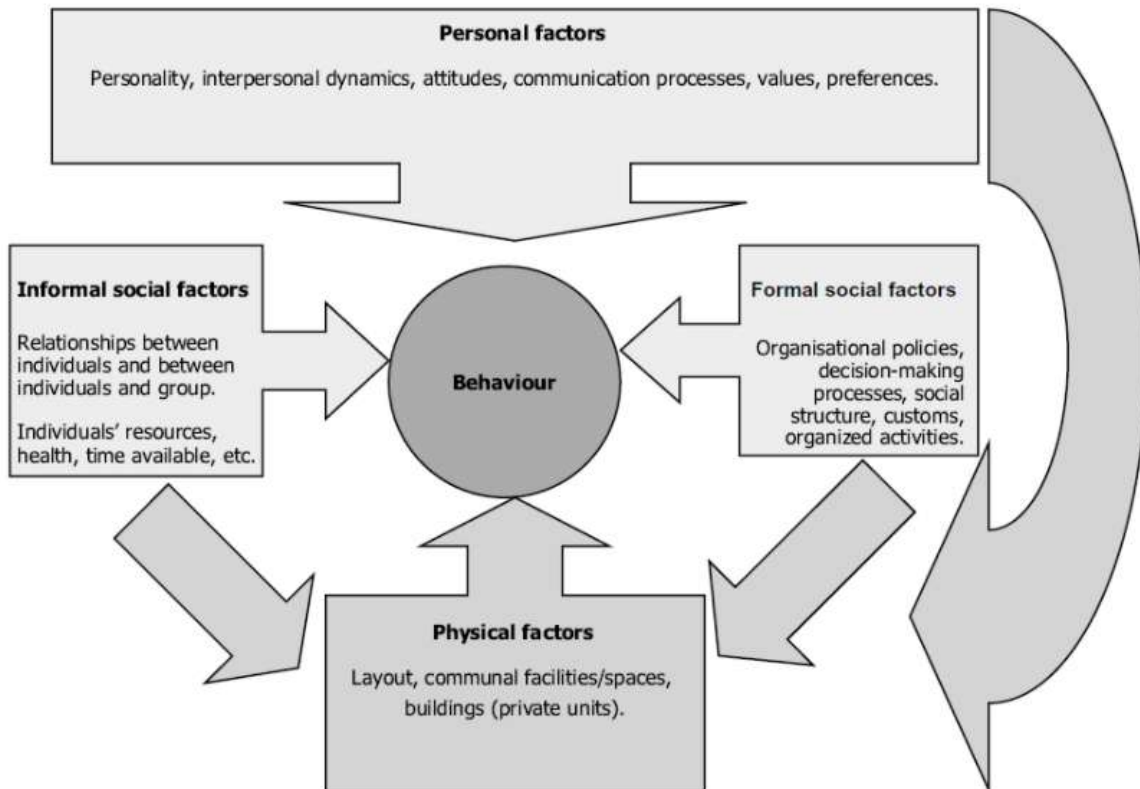

Fig. 13 The interaction between physical, personal and social factors and impact on behaviour (Homans, 1968)

Clusters and social interactions

The cluster can be defined as several elements (in this case dwellings) which are gathered closely together. In a big residential community the clusters are needed in order to provide a closer communication between the residents. It is difficult to know everyone but communication with the immediate neighbours is essential. However, here come the questions of how big is the optimal community and what should be the size of each cluster?

In order to access the size of the clusters, I used first the Dunbar number and a case study of six different cohousing communities by Clare Marcus.

Based on the research of Dunbar, three main group sizes can be identified 30 - 50 (small living groups),

100-200 (medium level of grouping) and 500 - 2500 (settlement). (Dunbar, 1993) The number 150 is the threshold which he found to be the casual social network of the human being. The number is defined through series of investigations of brain size, and communication networks. It can be found in many different modern communities such as companies, farming communities, villages. (Dunbar, 1993) If the population of the community exceeds this number, it is often split to daughter communities. The reason for this is that if the number exceeds 150, it is difficult for the people to maintain social cohesion. (Dunbar, 1993) Therefore, a top -down approach should be implemented, so that it reassures a proper behaviour by its members. In business structures, the flow of

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information and task giving goes smoother if the company is below 150 members.

However, 150 is our personal network, within which we have closer relationships. The sociometric studies show that our "sympathy group" is in between 10 to 15 members. In other words these are our close friends. However, in the case of strong/intimate relations we can have only around 5 people in the so called "support clique". In order to have a better bonding and social cohesion between the residents, clusters need to be formed in the means of more private social networks. The clusters will help the residents to maintain a closer relation which will create trust and liability in the community. In his study Clare Marcus suggests that the optimum community is based on smaller clusters which are grouped around a bigger social area. In the Dutch tradition of cohousing, usually 5- 6 units are grouped around a common kitchen/community space. (Marcus, 2000) In the Danish tradition, these clusters are grouped around a shared community house including guest room, kitchen, playroom etc. The small clustered spaces which are serving the smaller group are used by the families for informal gatherings, while the big communal space is used by the whole community for formal gatherings and events. (Marcus, 2000) In his reasearch Marcus also mentions that the success of the community is based in between the balance of community and privacy. (Marcus, 2000) One way to achieve that is not only to provide a specific places for residents to communicate but informal spaces which will enhance the interaction between all members of the community. A good example is the project at Thorshammer which has a glass corridor for informal interaction between the residents:

"The glass corridors ! Community depends on informal life , and the weather here wouldn't permit such social life without the corridors. There is a lot of casual and informal neighboring in spring and summer and that's good! Meeting in the corridor , we have different , less formal rules of conduct than in the house. .." (Marcus, 2000)

The informal social interactions are positively rated by the residents in cohousing communities. Moreover, by having a surveillance towards the shared spaces, it is more likely that the residents take part of the activities. In general, the residents feel more omfortable in having informal interactions in the small clusters where they have closer relationship with each other.

Communication within the whole community needs to be formal, and organized by the residents.
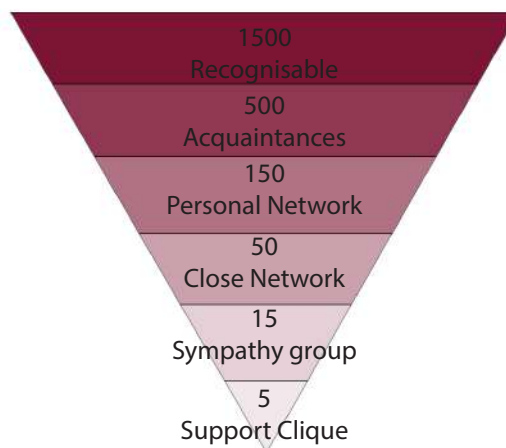
Fig. 14 Dunbar numbers

Fig. 15 Transition zone as place for interaction (Marcus, 2000)

Design factors to be considered:

Layout: Row vs. Cluster

In a row layout, there is a formation of clusters at both ends and in the middle. In this layout, it is difficult to create good surveillance and create path interactions between the residents.

In the cluster layout, better surveillance is created. Small clusters create more engagement as residents know each other and also it provides a view towards the shared space. It is important to create paths in between the different clusters so residents informally meet residents from another cluster. One way to achieve that is having each cluster with a different shared space which will motivate them to go to another cluster.
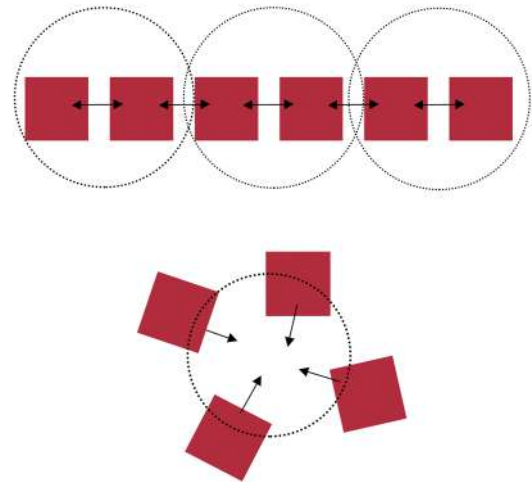
Fig. 16 Row vs. Cluster layout

Density

Low vs. High density of the community

The low - density community and the small size community have a negative effect on interaction. The reason is that the low - density community cannot provide spontaneous interactions while small size communities interfere with privacy. The high - density communities can also interfere with privacy but provide much more informal interactions. Therefore, the project will aim to create a balance by creating a middle - density of the community.
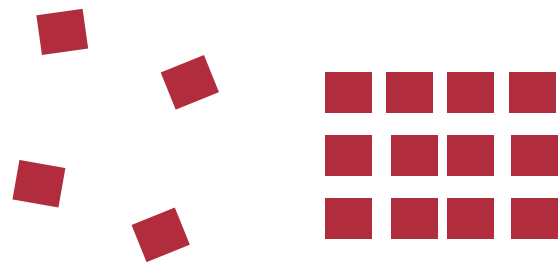
Fig. 16 Low vs. High density

Transition spaces

The transition Public - semi-private - private stimulates the social interaction. It is also a way to deal with the privacy issues in a community. The semi - private zone stimulates interaction since the resident feels more comfortable by claiming the territory. The space can be used by the residents for flowers and place to sit.
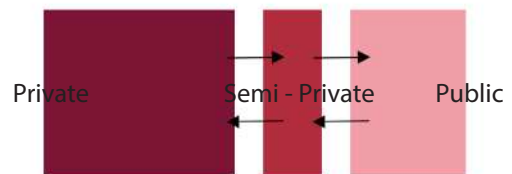
Fig. 17 Transition zones

Clusters

As already mentioned, the creation of clusters will create better bonding between the residents. Each cluster should have a specific shared space (ex. gym, playground, kitchen, study room) which will stimulate the interaction of the residents with other clusters. The clusters will work if they are serving 5 to 6 families, which will create closure in between the residents.
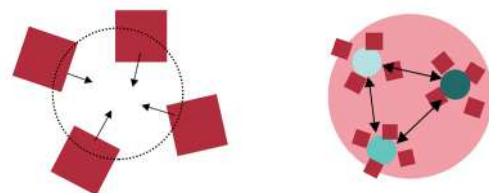
Fig. 18 Interaction between clusters

Surveillance

The surveillance is an important aspect which ensures the safety of the building complex and the neighborhood. It also increases social interaction since people are more inclined to visit a shared space when they see it is used. It also makes it safe for the children, so parents can look at their children while staying at home.

Fig. 19 Surveillance in row layout

DESIGNING FOR CHILDREN

In order to create a child-friendly community, the children's rights and needs should be at the centre of the planning and design. (Malone, 2011) The dutch child has a change in time-space behavior compared to decades ago. (Karsten, 2006) In the past, children played independently in their own neighbourhoods, but now they have less time available because their free time is occupied with extra activities and their parents don't have the time to bring them outside. (Malone, 2011) The child cannot be unaccompanied in the outside play and his freedom is certainly limited. Children lost the freedom to explore their environment alone, which also helps with their development. (Malone, 2011) Therefore, the child games moved from outside to the inside. The reason behind this shift is that parents find parks not that accessible and too dangerous for the child to explore on his own. (Karsten, 2006) There is also the fear of traffic and crime. The street has lost its characteristic as a child-friendly street (woonerven) and it has turned into an adult - orientated space where the child must be accompanied. (Karsten, 2006) Parents realize that it is important for their kids to play outside - they need fresh air, it's good for their health and communication. Research shows that being around nature and playing outside helps develop children social play, concentration, and physical abilities(Fjortoft, 1999; Jorgensen, 2001). However, urban families are facing the problem that these places are not available in the cities or they take a lot of time to access. Families that are able to afford it move to the suburban areas but in the case of expats or dual-earning families, this is almost impossible. On average the child in the Netherlands under the age of 12 travels around 17 kilometres per day of which 14 kilometres are with a car. (CBS 2003)

Lia Karsten performed research in Rotterdam and Amsterdam among parents to find out what are the reasons that children are not allowed by the parents
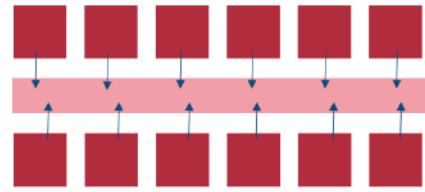

Fig. 20 Drawing "My dream neighbourhood, Bridget, 11 (Malone, 2011)

to play outside. The research primarily distinguished three reasons: lack of green, a lot of cars, and a lack of play space. (Karsten, 2006) In order to create a "child - street": both the physical and social aspects are important. (Karsten, 2006) Including more green on the streets make the neighborhood much more welcoming and friendly. On the other hand, having fewer cars makes it safer for the child. A lot of parents perceive the streets as dangerous and noisy and they are concerned about speeding and the number of cars that pass. The playgrounds make the street much more child - friendly but the problem is that as the street is not safe most of the time the children can't go there alone so the parents suggest that these places should have a range of activities: roof terraces, courtyard gardens, and sidewalks. This will help the parent to do something else while the kid plays. The most important social aspects that the parents consider trust and having enough kids in the neighborhood. An excellent example of a child - friendly community is Rotterdam's Stadstuinen neighborhood where parents opened their back gardens so that children can visit other children and move freely through the gardens. (Karsten, 2006) This allows the parents to have their own activities and not be concerned about the safety of their child because they all know each other and look after the children. This wouldn't be possible if the neighbors don't trust each other. Trust is achieved when the community is homogeneous ("people like us.")(Gans 1961). For urban and especially

expat families this is really important since they need each other for emotional support, social control, and many other practical reasons. Research among parents shows that around 60% of the parents strongly agree or agree with other neighbors to take care of their child. (Fig. 23) Therefore, if they trust the neighbors they are more willing to let the child play alone. (Malone, 2011) They have the interest to create social networks that will help to raise a child in the urban environment. In the past, everyone was taking care of the children on the street but it seems that now parents have been isolated and not supported. (Karsten, 2006)

In the process of designing a child - friendly neighborhood, the opinion of the children is also important. Research by professor Karen Malone is used, where the children's wishes are understood by the approach of a workshop - questions, drawings, descriptions. The research is performed in Australia but literature shows that children's wishes are applicable in different countries. Moreover, the target group is an international expat community, therefore the research can be international as well. From the survey about the favorite places of the kids, it can be seen that children enjoy most parks (22%), community - outdoor (20%) indoors (13%), and the wild (14%). 45% of the children who are in kindergarten mention that their favorite place is the park/playground. However, they would desire more freedom when playing outside (74% of the boys and 52% of the girls). It is interesting to see that children realize that outside of their garden is dangerous because of cars (32%), strangers (31%), and getting hurt (19%). This shows that the fears of the children correlate with the fears of the parents. During the workshop, the children were asked to draw their dream neighborhood/town. The researchers analyzed their drawings and analyzed the reappearing elements. From the table, it can be seen that children are dreaming of a clean, green space where activities within a community can take place. They find important the paths - want them to be safe so they can go alone on the street.

If you were allowed to get about alone at a younger age than you would allow your child to do so, what are the main reasons for this?
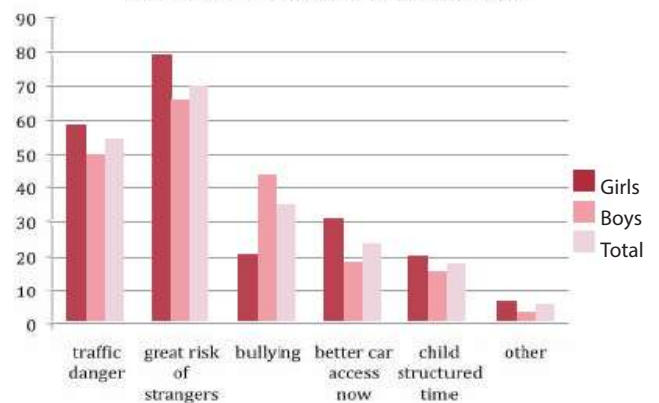
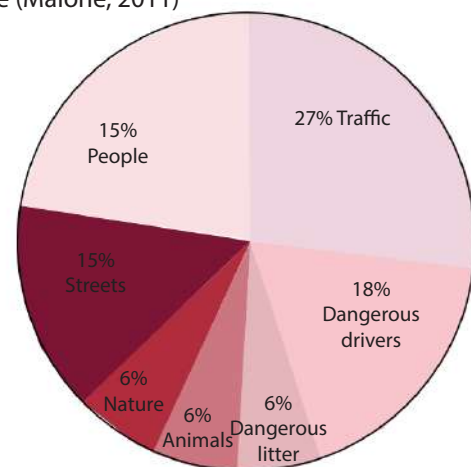Fig. 21 Parents reasons for not allowing the child alone (Malone, 2011)

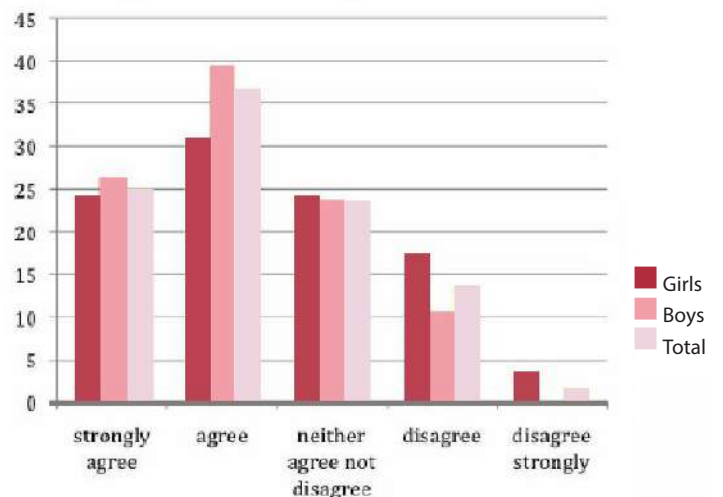Fig. 22 Issues for children in the neighbourhood (Malone, 2011)

Fig. 23 Parents perception about other adults caring for their children (Malone, 2011)

Intergenerational spaces
can become community hubs that increase interaction and exchange between the young and the old.

Traffic measures
such as colourful crossings or shared spaces redefine use and aid driver awareness of pedestrians and street activities.

Playable spaces
look beyond basic design functions, take a balanced approach to risk and provide facilities for families to spend time together for longer.

Pedestrian priority
removes or calms traffic to create a safe environment for everyday street play and socialising.

Community gardens
provide opportunities for intergenerational activities, socialising, skills development and outdoor physical activity.

Sense of ownership
of public space through co-creation and increased activity can help to decrease vandalism and maintenance costs.

Neighbourhood mapping
led by children, provides deeper insights into an area's issues and opportunities.

Play streets
temporarily closed to through traffic allow communities to use the space while reducing air pollution and traffic danger.

Cultural and heritage spaces
can become assets for inclusive and playful city life when combined with sensitive conservation.

Wild spaces
are flexible and adaptable areas that reactivate vacant or underused plots and bring nature back into the community.

Multifunctional gree infrastructure
caters for multiple purposes, such as stormwater parks that enable play in both floor and dry conditions.

Construction sites
can become engaging places and educational assets for the local community, e.g. by hoarding design that makes works visible.

Multi-use community spaces
make smart use of space around schools, and other community facilities and enable out of hours use.

Playful encounters
such as public art or creative bus or tram stop designs invite playful interaction as part of everyday journeys and activities.

Fig. 24 14 design strategies for a child - friendly neighbourhood (Voce, 2018)

INTERVIEWS AND QUESTIONNAIRE/
HOUSING PREFERENCES

Parallel to the process of literature research, I conducted research among family expats in the Netherlands. I joined different Facebook groups (Expats in Rotterdam, Expats in Holland, Expats in the Netherlands, Expat Ladies in den Haag, Rotterdam Mamas and others), where I managed to provoke comments under the posts and people texting me to share their stories with the willingness to help with my research.

It was a two-phase process - first, there were personal interviews where I either talked, exchanged messages, or questions through emails. This approach helped me to get to the essential problems of the target group - communication, raising a child in a different culture, and the difficulties of raising a child in the city in general. During the conversations, I tried to have the person talking rather than me asking questions.

Talking to the expats helped me to get to the essential problems that they face and to choose the right literature to support my design. It is a two-way process: on one hand, I managed to confirm that international literature is applicable in the Netherlands and that problems of family expats are also not individual problems.

Based on the personal interviews and the literature, I created a survey so I can check if the stress factors, location preferences, housing preferences, etc. are applicable for most of the expats. Therefore, I published the survey in the same groups and managed to collect 99 responses confirming the literature and interview research.

Disclaimer:

I am aware that the opinion of the individuals can be biased and cannot lead directly to conclusions. This is the reason the process of interviewing and talking with people was at the same time researched and proven with scientific research. Since there is no specific research done among expat families in the Netherlands, the interview and questionnaire aimed to fill in the gap of housing preferences and problems of the target group.

Reflection on Phase 1 (Interviews):

I performed 8 interviews of which 6 of them were matching fully with the target group of the research. I talked only to women and one of the explanations might be that men don't have time because of work or in general women are more active on social media and they can be considered as "the network of the family" (Robert, 2008) Most of them can be considered as the travelling spouse who continued to work remotely for their company or found work in the Netherlands. Most of them mentioned that combining family duties with work is easier when working from home but now as it is not possible to work from a cafe it is also really isolating (Marnie). Another interesting thing is the language barrier, which according to the interviews doesn't exist in the big cities - Rotterdam, Amsterdam, Den Bosch. The big city helps the expats to find people "like them" as they can join different expats events and clubs. On the other hand, the parents are faced with the dilemma should they stay in the city or move to a smaller city where their child can have more freedom. Marnie mentioned that she was not comfortable with living in Rotterdam because of traffic, too busy parks, and the problem of dangerous objects (glass bottles, etc.) She also finds it really difficult to go out with the baby in the city because there are not enough facilities like changing rooms. However, in Rotterdam, she "doesn't have any guilt" when talking English at the peuterspeelzalen school when taking her child because there are so many internationals while in Schiedam, she feels different. So, from the interviews, it seems that the family gentrification problem is still difficult because families need to sacrifice the child's freedom in a way. About their housing preferences, they all mentioned an outside space, 3 bedrooms, and integration of the living room and the kitchen as space where the child can play. Rachalle also mentioned that she would prefer a one level house because it is difficult for her with the children who always climb the stairs.

The conversations helped me to get a better focus on the problems and design issues in cities and neighborhoods. A short summary of the quotes based on the important topics can be found in Appendices.

Reflection on Phase 2 (Questionairre):

The second phase of the research was spreading a questionnaire where I wanted to check if the literature (especially stress factors) and the opinion from the personal interviews are applicable in the situation in the Netherlands. The questionnaire was taking on average 4 mins and it was filled by 99 people, where women were 90% of the respondents. One of the reason can be that I got almost half of the responses from the group Rotterdam Mamas (group for expat mothers). Most of the respondents are living in Rotterdam (39%) but there is no pattern to where they come from because they are 38 different nationalities. First the questionnaire starts with general questions: age, sex, family status, country of origin and city of current residence. Then there were several questions related to the stress factors. The answer is given by rating 1 - 10 (1- not causing stress and 10- causing a lot of stress). The third section was about the housing preferences, and the fourth and fifth sections were again rating of location preference and shared facilities. The full question report can be found in the Appendices.

Housing preferences

The housing preferences of the families mainly depend on the needs of the children. In the chapters above, I discussed the needs of the target group in terms of different literature resources, and examples. In this sub- chapter, I would like to focus on the housing needs of the people that interviewed or filled the questionnaire, which it total is 105 people. The discussion is made with the caution that the results might not be fully representative but the conclusions will be made based on both literature research and questionnaire.

In the questionnaire, I divided the preferences in several categories based on the scale: city-scale (location), building block (shared facilities) and dwelling preferences. In the ratings of the stress factors, causing stress turns to be "Finding a proper house with 49% of the people rating it with 8, 9 and 10.(Fig.) It is followed by the stress factors of "Missing Family and friends back home, which is rated with 41%. The stress factors "Cultural differences" (36% really low stress) and "Language barrier" (33% - really low stress) seems equally distributed in the low to medium stress.
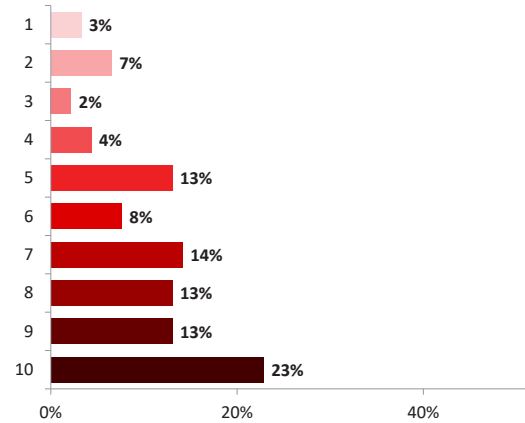
Fig. 24 Stress related to finding proper housing

In terms of the dwelling, the questionnaire shows that most of the families would like to have 3 or 3+ bedrooms. The questions in this section allow for multiple response. The people who chose 2 responses answered both 3 and 3+ bedrooms. There are only 10% who would like to have only one bedroom and these are several couples without children. During the interviews, people mentioned that they would like to have an extra bedroom for guests or to dedicate it to an office space since all of the worked from home.

In terms of square meters, most of the responses are in the range 75-100 and 100-125. The other preferred category is 125 - 150 or 150 +. Not many people responded that they would like to have a dwelling under 75 square meters.

On the question of dwelling type, most of the respondents (45%) preferred a house (row house) in close proximity to city centre.
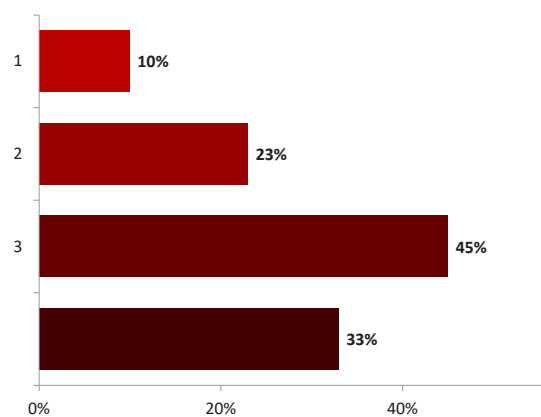

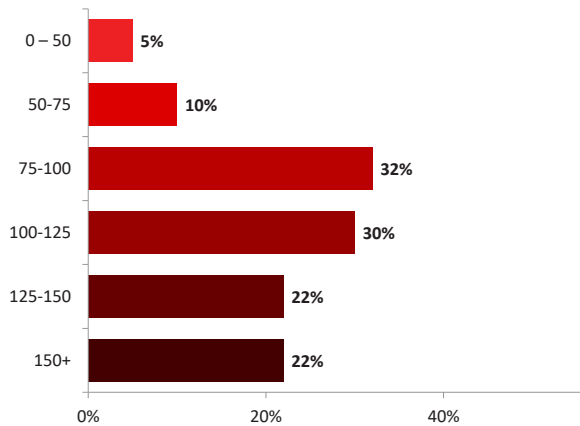Fig. 25 Responces to the question "How many bedrooms do you need?

Fig. 25 Responces to the question "How many square meters do you need?
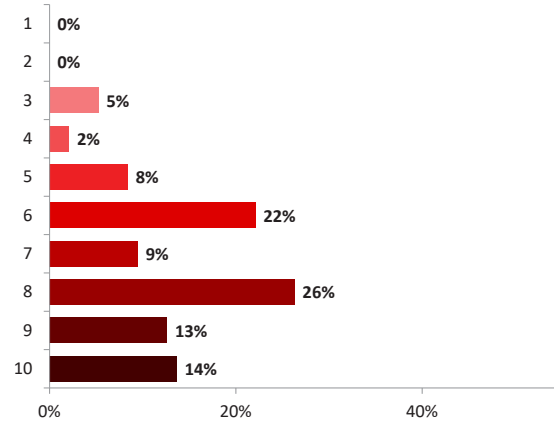

Fig. 26 Results from rating (1 - 10) the importance of living close to work

The location preference shows that 46% would like to live in close proximity to the city centre (10 mins with a bike). This also matches the research results from Lia Karsten, where she points out that the dual - earning family would like to live in a close proximity to the city centre. During the interviews Elaine Miller also mentioned several times that the close proximity to the city centre gives a possibility for a lot of activities. However, the questionnaire shows that the people who chose to live in close proximity to city centre would also like to live at the edge of the city (20 - 30 mins with bike to the city). These are the places where the streets are not so busy so they are suitable for raising a child.

The literature research by Pascal Beckers shows that the neighbourhoods that are appealing to the highly - skilled migrants are the one with diverse housing (higher quality), higher rents or higher share of owner occupants, and close proximity to amenities (children facilities, recreation facilities, cafes, restaurants) However, the carrier opportunity is much more important for the expats compared to facilities. (Beckers, 2019) This is also what my research shows. The most important factor turns to be to live close to work and public transport. (Fig.) Other studies mentioned by Beckers state that expats prefer living in the big cities and for them is important to live in well - established knowledge communities with close proximity to good schools and work. The research shows that the couples prefer more central locations while the families with children more peripheral locations. (Beckers, 2019) The location preference of the expat families match with the design location - M4H.
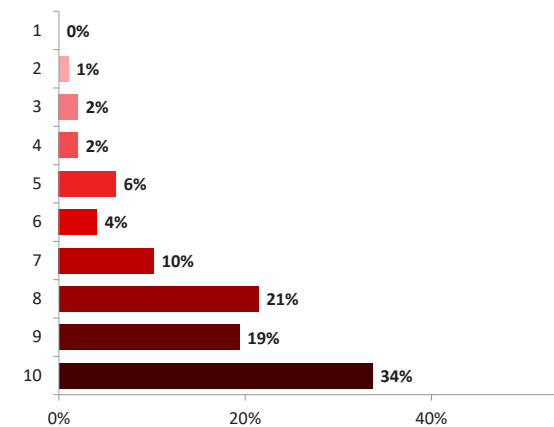
Fig. 27 Results from rating (1 - 10) the importance of living close to public transport

The last section of the questionnaire looked for what type of spaces the expats are looking for in a residential complex. The most important one turns to be the private outdoor space (green balcony/ garden) which was rated by 78% of the respondents as important. The respondents also showed interest in playgrounds (51%) and outdoor shared space (46%). All of the interviewed people showed interest in a private outdoor space and mentioned it as important for their children or dogs. The ones that have children mentioned common areas and playgrounds more often since the common areas allow for communication between the parents.

Overall, the questionnaire and interviews gave a good overview of the needs of expats in terms of housing. The results will be used as a starting point for the design of the shared spaces and dwellings in the conceptual design.

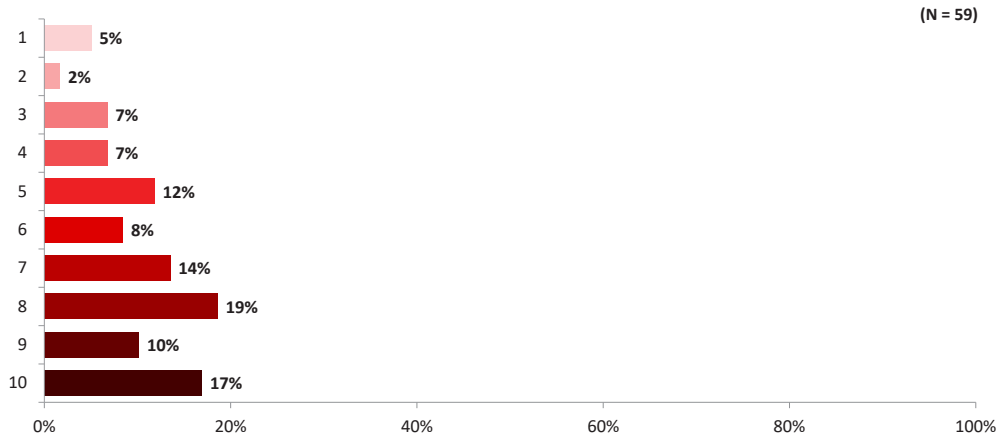MSc 3 Advanced Housing Design Graduation Studio

Fig. 28 Results from rating (1 - 10) the importance of having a shared outdoor space
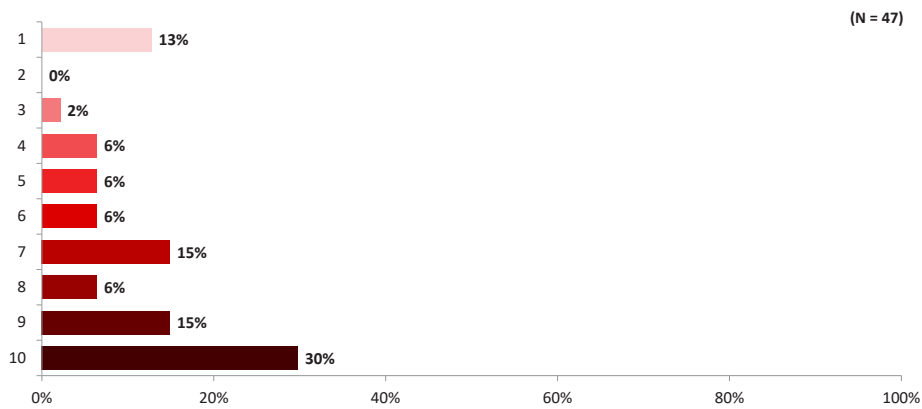
Fig. 29 Results from rating (1 - 10) the importance of having playgrounds as shared facility
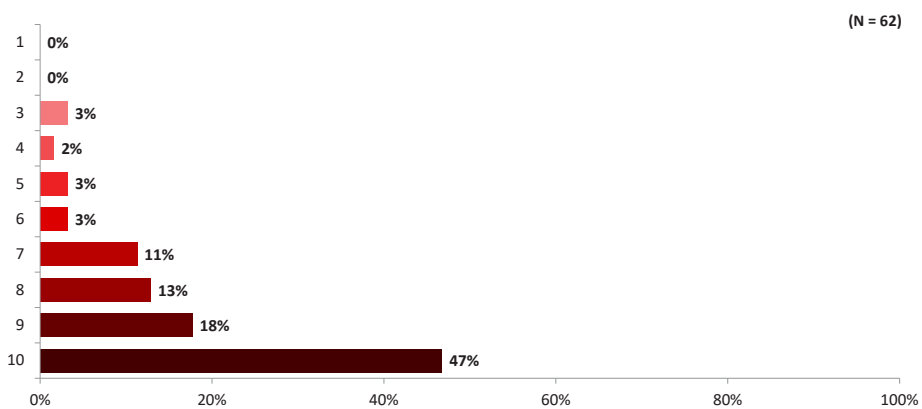
Fig. 30 Results from rating (1 - 10) the importance of having a private outdoor space

CONCLUSIONS

The research proves that the expat family can be considered as the modern household which is influenced from the globalization and the internationalization of the companies around the world. When the family moves to the Netherlands, it faces and experiences the problems of the expat and the modern dual - earning family. Nowadays, as society moves away from patriarchal norms and women are also part of the economy, we need suitable housing in the city which will make it possible for the family to fulfil both their duties as parents and at work without sacrificing the children's freedom. Transforming the city and the neighbourhoods into a child-friendly environment, will give the possibility of the expat families to adapt faster as they can be part of expat communities, events and find friends easier since the city of Rotterdam makes all of this possible. This way the city will profit since expats contribute both to the international reputation and economic development of the city. Moreover, the expats as families also contribute to the liveliness and keeping the amenities affordable.

Overall, the needs of the target group in terms of neighbourhood can be considered as - place for communication, child-friendly environment, and close proximity to amenities. In terms of the dwelling, the expat family needs at least 85 m², one bedroom for each child, and private outside space. The research shows that there are different design decisions that will enhance the communication between the residents. It is important to mention that the homogeneity of the target group will make interactions possible. In order to summarize the findings, I have created a design toolbox which show the main starting points of the design. These starting points are the base which will be used to create a child - friendly community. During the design process, I will look into how a combination between these tools is possible so that they enhance the social interaction without violating the privacy.

Design tool box:
The tools that I am going to use in my design are considering the needs of the children and the parents and are based on the conducted research. They aim to create a child - friendly community which gives the freedom to the kids to play outside while reassuring safety.

Clusters
It is important that the dwellings form small clusters which will reassure that residents have a close connection with each other. The clusters can build on trust and reassure the safety of the small children. The size of the cluster should be approximate 5-6 households or 20 - 30 people. The cluster itself should have a common space where child can play and parents can gather.

Transition space
The building should provide a smooth transition between public and private. In order to balance the sense of community and the level of privacy of the residents - a semi - private space is needed. The space will allow residents to feel secure and it will stimulate the interactions.

Surveillance
The surveillance is important aspect for the children and the parents. The design will make sure that the orientation of the kitchen/living room will be towards the shared spaces and paths so they can be safer. This will allow parents to watch their children playing and at the same time children will have the freedom to play alone. In general safe environments allow more freedom to the children.
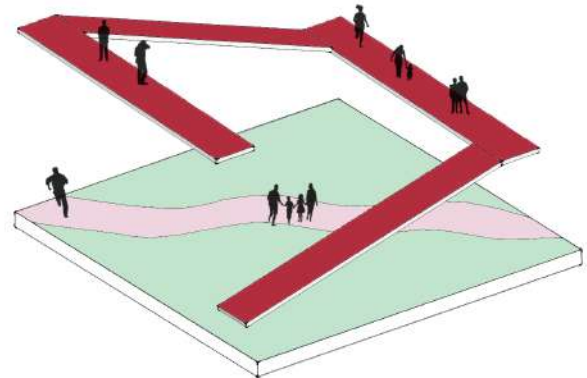
Multifunctional zone

The multifunctional zones allow interactions between parents and in between children. The literature research shows that parents would like to have something to do while watching their children play on the playground. Therefore, the multifunctional zone can give them the freedom to work, interact with other parents, do sports or relax.
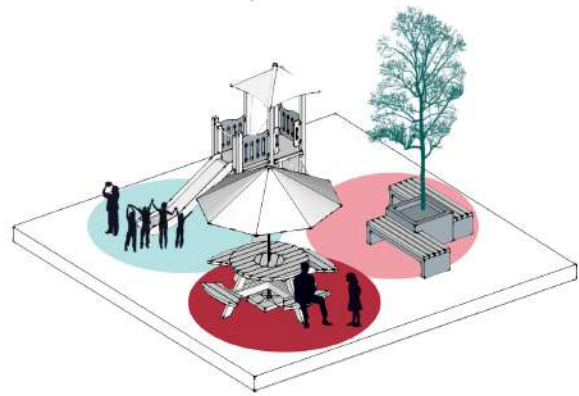
Paths

The paths are interesting way to stimulate the interaction between the residents. The design for M4H allows for both horizontal and vertical paths. In the research by Marcus, residents say that the corridors allow for informal social interactions which makes them closer to their neighbours. On the other hand, the children's ideal neighbourhood also includes a lot of paths, which they see as opportunity of exploration.

Playgrounds

The playgrounds are zones purely designed for children. However, they should be part of multifunctional zones where parents can do something else as well. The playgrounds can hold children in different age groups but in general only children up to 12 years old are interested in the play grounds.

Wild zones

The wild zones will also be designed for children and specifically for their curiosity and desire to explore. The idea of the wild zone is to provide a green space where children can connect to nature. There are a lot of positive aspects which green brings to development of the children - better concentration, friendliness, healthy environment.
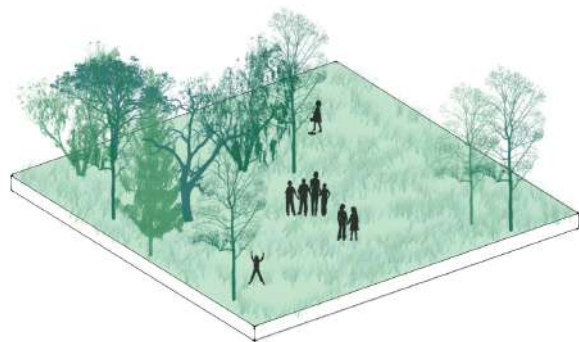
Study/office space

The study and office space will be designed for parents and older children which can study together and invite friends. From the interviews it can be concluded that most of the mothers work from home, not only during the pandemics. Therefore, a working space which is visually connected with the play room can allow better working environment for the parents who work from home.
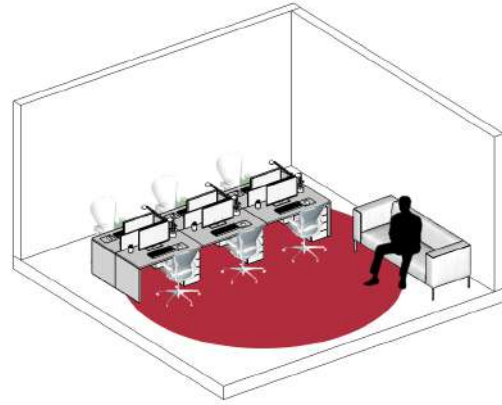
Multi- functional zone

The inside multifunctional zone has the same principles as the outside multifunctional zone. It should allow parents and children to gather together. The space can be designed as flexible, therefore it can also be used as an event room for the community. For example it can be used as a National day celebration of the different cultures, International food event etc.

Exercise room/gym

The exercise room will be a flexible space dedicated to sport and sport classes. It is mainly for the parents but can be designed as such to have a visual connection to the play zone. This way parents can have an activity while their children are playing.
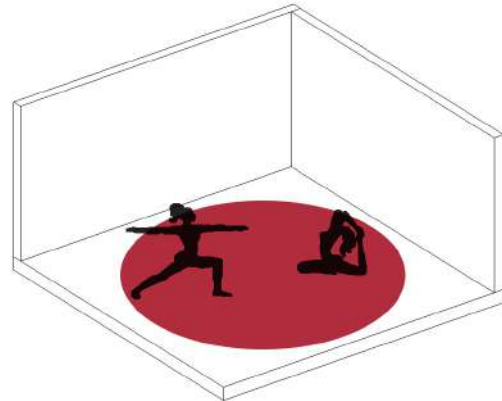
Kitchen/event place

The kitchen will be the place for families to gather together. The kitchen can serve the cluster and can be also used as an event space. In most cohousing projects the cluster kitchen is used for informal gatherings and communication, while when there is an event for the whole community, then the multi - functional zone will be used.
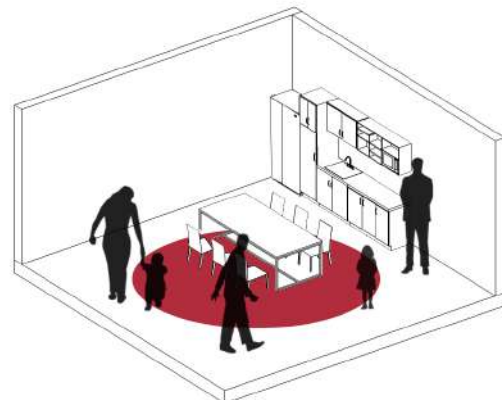
Parking and car - free area

It is important the area is car - free because it forces the residents to walk towards their door and have informal interactions between each other. On the other hand, a car - free area creates a child - friendly environment.
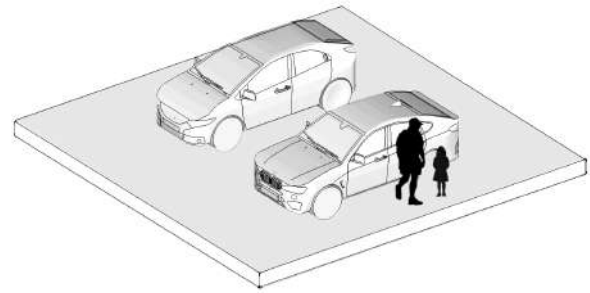
Design hypothesis:

The conclusions based on the problems of the expat families and the solutions provided by the literature research lead to a design hypothesis. The design of the building will aim to provide spaces for both formal and informal interactions. The idea is that the building will dwell expat families which are homogenous group in terms of household type and heterogenous group in terms of nationality. The complexity of the target group asks for two main approaches. The first one is based on their need as a family and mainly a child -friendly design in the city. Then, they also need a space for interactions and to create connections with the people who are in the same situation.

The idea is that the building will be applicable not only for the international family but as well for the Dutch family. Since, the dual - earning family is looking for a place in the city, the design aims to solve the problems that they face in big cities.

Overall, the design will create a space in the city, which is car - free, provokes communication and at the same time reassures privacy. The design will pay close attention to children and their needs, so they will have the possibility to explore, play and feel free in the safe environment of the building. The design will create a win - win situation for both municipality of Rotterdam and the expat family. The topic of gentrification is an important aspect that we as an architects need to consider because in the recent decades the cities doesn't promote a family environment but the target group of the families are the one that keeps amenities affordable and makes it lively.

PLAN ANALYSIS

The chapter contains analysis of four reference projects which are suitable for the target group. The information for the projects was taken from the websites of the architectural companies. The research focuses on shared facilities, private and shared outdoor spaces.

PLAN ANALYSIS

In the plan analysis I looked in four different projects (Babel , Fenix, Querbeet and Republica) which suit the target group and promote interaction and shared spaces for the residents of the building. Three of the buildings are in the Netherlands and one in Austria (Querbeet). The buildings are comparable in its concepts but not in their scale. This is because I wanted to analyse also bigger scale building in terms of routing and complexity of the shared spaces.

One of the buildings (Fenix) has a court yard typology similar to my design site based on the masterplan.

All of the buildings have outside and private shared spaces and two of them namely Babel and Republica have loft typology of dwellings.

The interest in analysing these four specific buildings came from the idea that they all share: collectiveness and possibilities for interaction between the residents.

This resulted in a research question:

How do the following reference projects deal with routing, shared and private outside space?

In order to answer this question, I have analysed the floorplans of the buildings by coloring the shared and private outside spaces, corridors and dwelling typologies. I also have marked the routing and entrances to the dwellings and access to the buildings. For each building, I chose two different dwellings where I looked into the distribution and size of the rooms.

Babel by Laurens Bootd Architects

Fenix by mei architects

Querbeet by Synn architecten
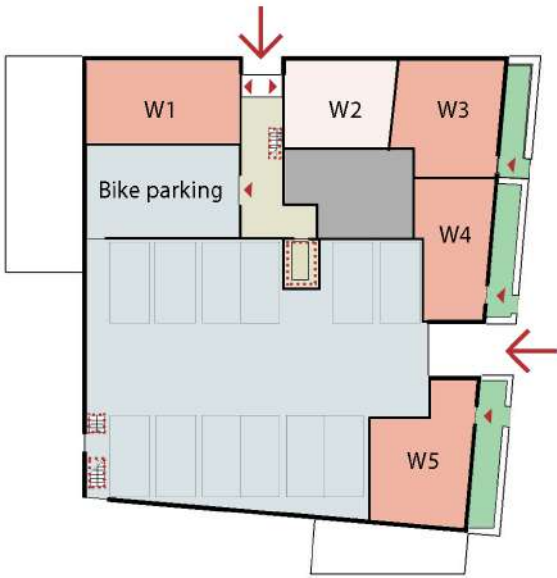

Republica by Marc Koehler Architects
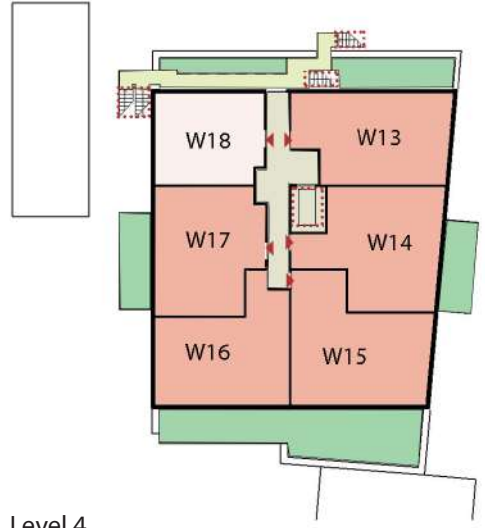
BABEL

General information

Location - Lloydpier, Rotterdam, the Netherlands
Architects -Laurens Bootd Architects
Number of dwellings - 24 double height apartments
Size of the dwellings - 80 to 155 square meters and
190 (penthouse)
Functions - dwellings
Area -
Number of floors - 11
FSI
Year of building - start construction 2018

The building was designed by Laurens Bootd
Architects in 2016 for a competition organized by the
municipality of Rotterdam for a new family typology
apartment building. The targetgroup of the building
is families which are looking for place in the city.
The area Lloydpier was the location of the company
Rotterdam Lloyd, which is a shipping company. Now,
the area is transformed to a high - quality living area
with a possibility of work - live environment.

Legend:

Common areas

- Parking space
- Common areas
- Corridors

Outside space

- Shared
- Private

Dwelling typology

- Two bedroom apartment
- Three bedroom apartment
- Three bedroom + office apartment

Symbols

- Dwelling access
- Staircase/ elevator
- Main entrance

Level 0

Level 1

Level 2

Level 4

Level 6

Level 8

Level 10

0 5 10 20 50

Mihaela Tomova

35
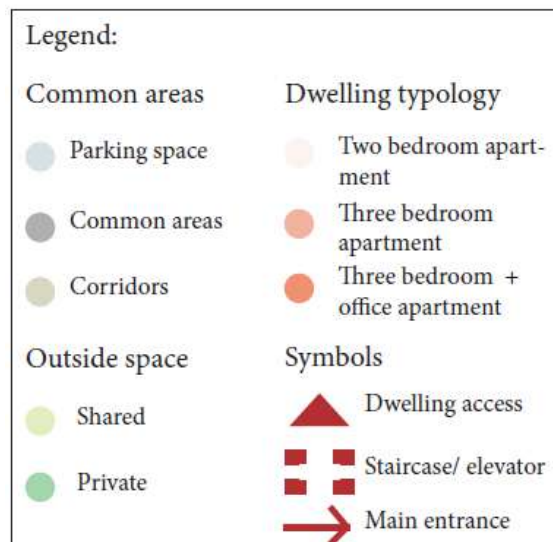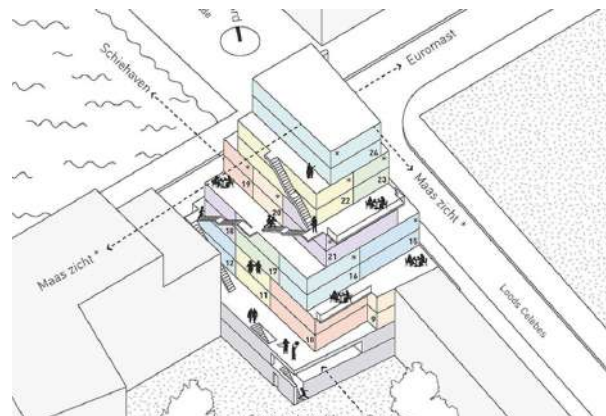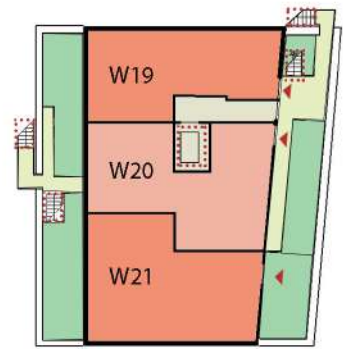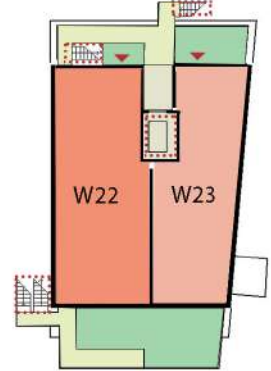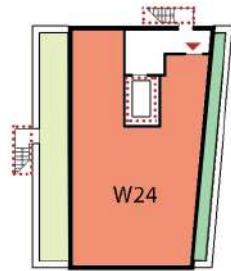
Accessibility

The entrances to the building are situated on the north side. This is the main entrance to the internal corridor of the building. On the east side there is entrance for cars and bikes which gives access to the parking. Moreover, there are private entrances for the dwellings on the ground floor (W3, W4 and W5). Each dwelling can be accessed only from one of its two levels and sometimes the entrance is from outside. Therefore, not all levels of the building has accesses. There are corridors on level 0, +1, +2, 4, 6, 8 and 10. Level +1 is a special one because there is no access to dwellings but there are shared spaces for the residents

Location

The building is situated next to the water - Schehaven. It is in close proximity to the city center of Rotterdam which is around 10 minutes with bike.

Shared spaces

The building has a lot of shared spaces. There is parking garage, and bicycle parking on the ground level. There are also storage rooms and common areas on the first level. Moreover, there is outside common space. The building is designed as such that the routing through can provoke a lot of interactions since there is no rigid border between the private and common outside space.

Routing

The routing through the building is possible through stairs and elevator. The elevator is situated in the inner part of the building - the corridor. However, the stairs are situated in the outside space of the building. Therefore, the routing happens outside. The stairs give the possibility for routing in between the private outside space which enhances the interaction and diminishes the border between private and public.
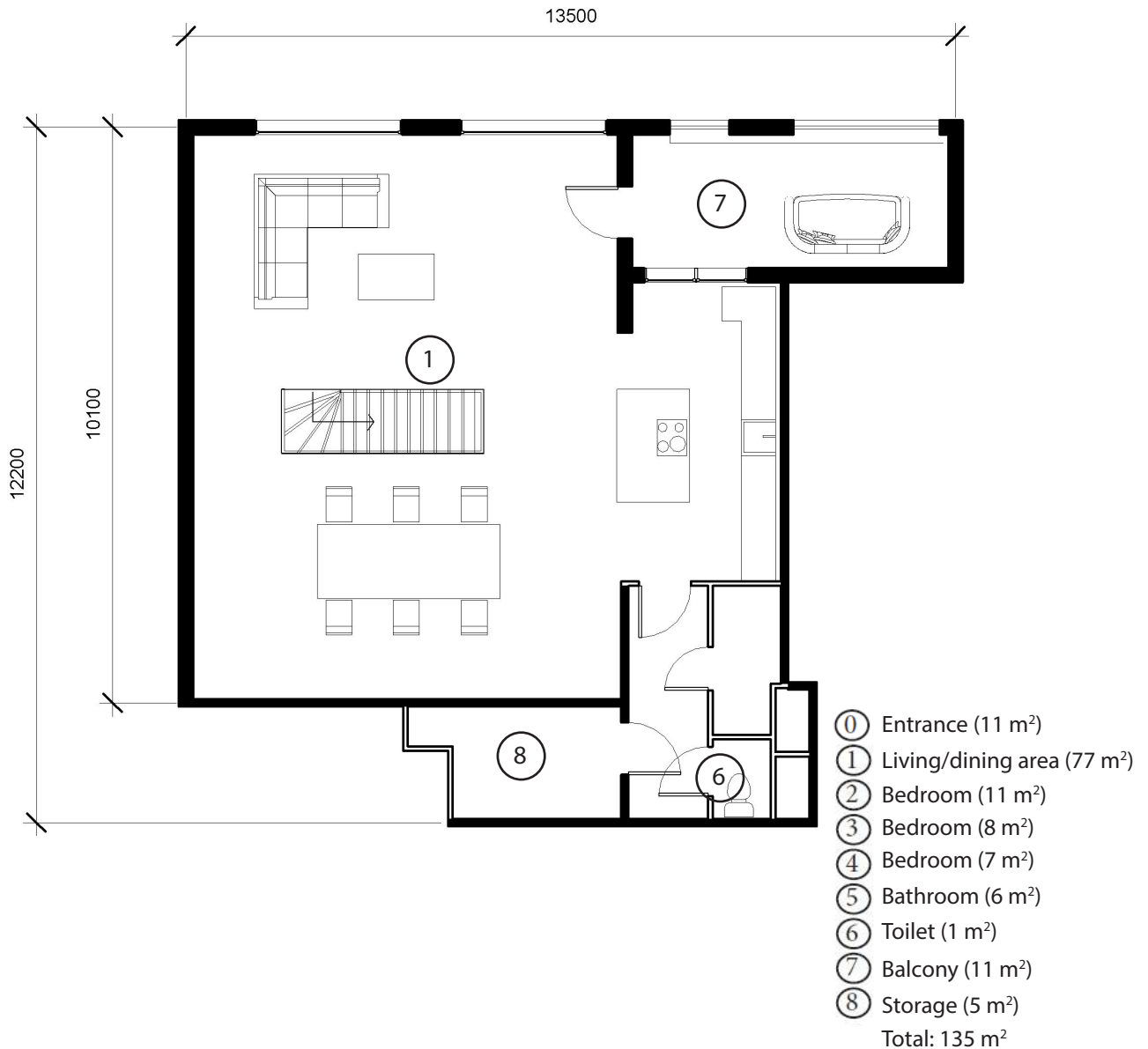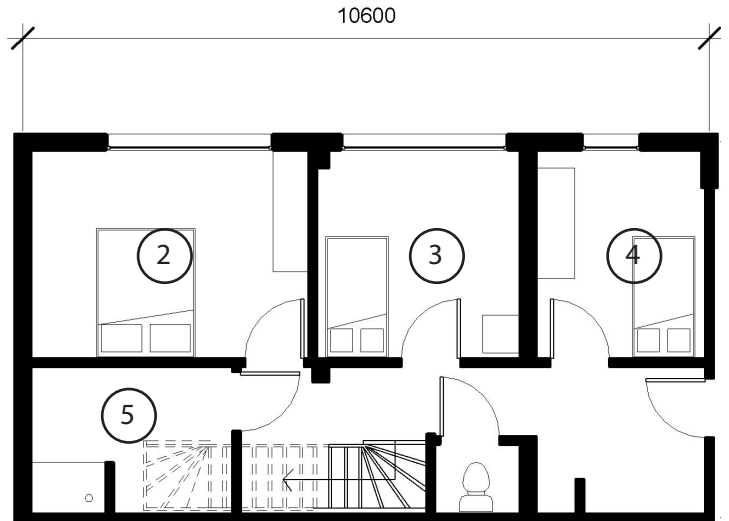
Outdoor space

The outside spaces can be characterized as shared and private and it surrounds the building giving the possibility of a routing around it. The shared outside space is a playing and leisure space for the residents. On some levels it is bigger and allows for gatherings. The dwellings have a lot of private outside space where in between there is the routing, characterized as shared outside space. The outside space is in range between 5 to 38 m2.. The outside space gives the possibility for interaction between the residents and a possibility for a view towards Maas, Schiehaven and the Rotterdam city.

Dwelling 1 (W1)

The dwelling is situated on the ground floor and level 1. The access to the dwelling is from the corridor of the building. On the first level there are three bedrooms (11, 8 and 7 m^2) and a bathroom (6 m^2). The stairs lead to the living area on the second level of the dwelling, which is an open space of 77 m^2 and consists of kitchen, dining and living room zone. There is a balcony of 11 m^2, a toilet and storage rooms on the same level.


⓪ Entrance (11 m^2)
① Living/dining area (77 m^2)
② Bedroom (11 m^2)
③ Bedroom (8 m^2)
④ Bedroom (7 m^2)
⑤ Bathroom (6 m^2)
⑥ Toilet (1 m^2)
⑦ Balcony (11 m^2)
⑧ Storage (5 m^2)
Total: 135 m^2

Dwelling 2 (W10)

The dwelling is situated on level 2 and 3. It is a bigger typology with 3 bedrooms and an office/bedroom. The access to the dwelling is on level 2 from the common outside space. On this level there is a private space on the terrace which is 35 m² and a big open space for cooking, living and dining, which is 66 m². There is also storage and toilet. On the upper level there are three bedrooms 17, 15 and 13 m². And there is an extra room for an office space or a fourth bedroom of a 6 m². The bathroom is also on the same level.

0 Entrance (3 m²)
1 Living/dining area (62 m²)
2 Balcony (35 m²)
3 Bedroom (17m²)
4 Bedroom (15 m²)
5 Bedroom (6 m²)
6 Bedroom (13 m²)
7 Bathroom (5 m²)
8 Storage (4 m²)
Total: 150 m²
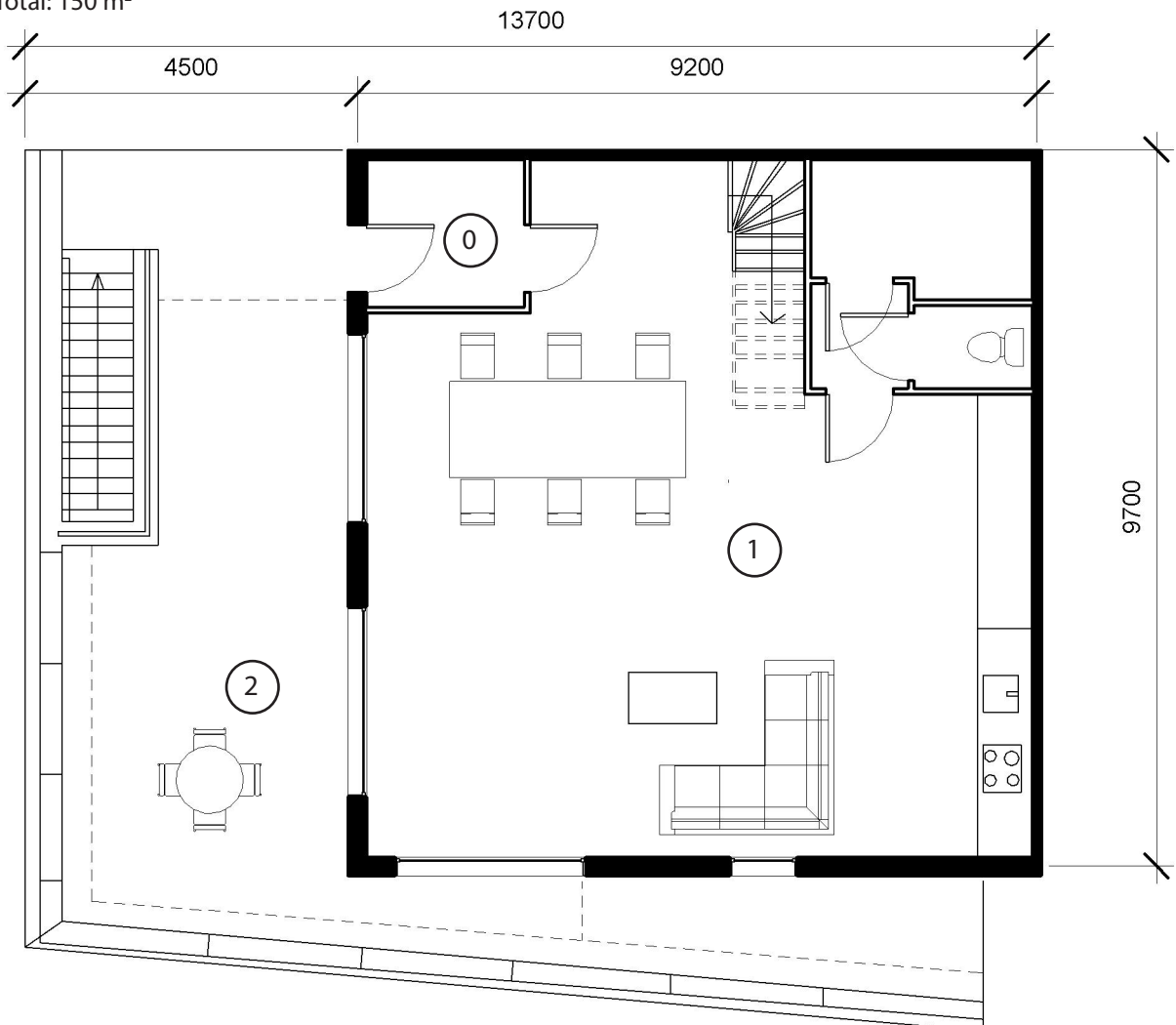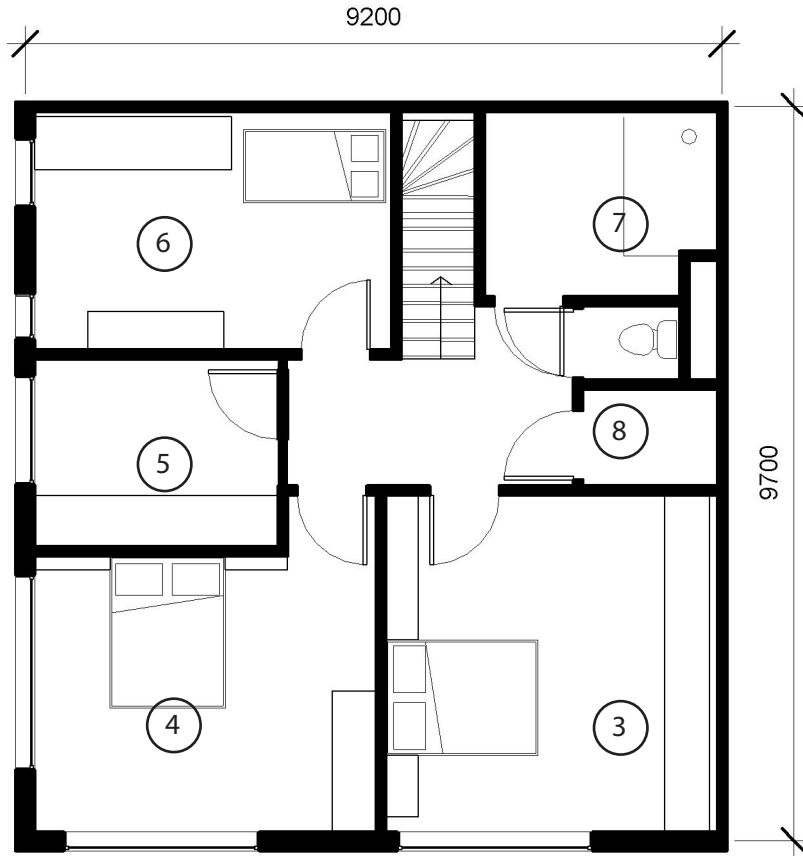
FENIX I

General information

Location - Veerlaan, Rotterdam, Netherlands
Architects -Mei architects and planners
Number of dwellings - 212 loft apartments
Size of the dwellings - from 40 to 300 m2
Functions - mixed - used (cultural, offices, catering facilities, parking) and dwellings
Area - 45 000 m2
Number of floors - 9
Year of building - 2013 Mei architects won the tender

The Fenix building is designed by Mei architects for a tender for transforming an old warehouse to an apartment building. The building is situated in the district Katendrecht. Since 2007 the municipality of Rotterdam is transforming Katendrecht from old industrial area into a cultural and famous hotspot in the city. In 2009, Heijmans started planning the redevelopment of Fenix warehouse and it was decided that a new building will be positioned on top. The warehouse was built in 1922 because of the considerable expansion of the fleet and routs of the

Holland America line. The warehouse was long 360 meters making it the biggest terminal at that time. There were two rail lines going through the building and an elevator for the freight. Later on the building was split in two parts Fenix I and Fenix II with a canteen in the middle. Now, in order to support the load of the concrete building on top a steel structure of one kiloton was build. This allowed for 212 loft apartments built on top. From them only 78 are for rent and the rest 134 are for sale. The floorplans of the building was left open so the buyers and future residents were able to choose the layout of the apartment. The height also allows for mezzanine layout.

Fenix I has won and has been nominated for a lot of architectural prizes and has won twice the prize for the best residential building in Rotterdam.

Legend:

Common areas

⬤ Parking space

⬤ Common areas

⬤ Corridors

Outside space

⬤ Shared

⬤ Private

Symbols

▲ Dwelling access

▣ Staircase/ elevator

➔ Main entrance

MSc 3 Advanced Housing Design Graduation Studio

Location

The building is situated in the district Katendracht opposite the New York hotel. It is right next to the Rijnhaven and gives a beautiful view towards the water. The highest point of the building is towards the north, which allows for more sunlight in the inner court and the dwellings on the north side.
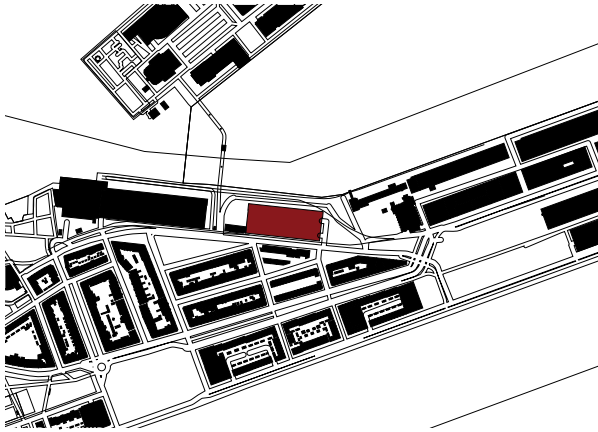
Accessibility

The building has two main pedestrian entrances on the ground floor - one from the North side and one from the South side of the building. The entrance to the parking space is situated on the east side of the building. The entrances on the ground floor give access to the stairs and elevators leading to the upper floors. The elevators and stairs are as well situated on the North and South side of the building. The access to each dwelling happens from the gallery situated around the inner court of the building. This way the accesses give the possibility for more social interaction between the residents since there is a social control over the front doors (each resident has a view towards the other entrances).

Shared and outdoor spaces

The ground floor of the building is public. There are different amenities such as culinary catering, public parking, offices and cultural facilities. However, on top of the warehouse is the more private shared space for the residents of the building. It is the green courtyard. It has some glass windows which lets the sunlight on the ground level. Moreover, the galleries can also be considered as shared outdoor space because they are designed with small "balconies" which allow for social interaction.

Routing

The routing in the building is quite simple compared to Babel. All the dwellings are situated around a courtyard with a gallery typology. The elevators and the stairs are in the middle of the courtyard which makes the routing in circle / loop.

Dwelling and typology

The dwelling typology of Fenix is qute interesting because the layout was designed as such that the buyer can alter it and change it. In my analysis, I have distinguished three types of dwelling depending on the size and how much it takes of the grid. Therefore the smallest ones (Type 1) are the ones taking a single space in between two columns. Type 2 is taking 2 grid portions and Type 3 is the biggest one - taking 2 and a half or more.

Structure

The structure of the building is a grid structure with concrete columns. The distance from column to column is 4 meters.

Corner dwelling

The first dwelling that I looked at was corner dwelling, which I found on Funda. The dwelling has a huge outside space of an area of 60 m². The dwelling itself excluding the balcony is 63 m². The dwelling has a big dining/ living space of 36 m² with an access to a bedroom which is not fully enclosed and is 6 m². There is a storage room which can be used as a cabinet (4 m² and a bathroom of 4 m².. The target group of the dwelling would be a single person household or a couple. The focus is on the outside space that it provides which is also with a nice view towards the Maas.

(0) Entrance (8 m²)
(1) Living/dining area (36 m²)
(2) Bedroom 1 (6 m²)
(3) Bathroom (4 m²)
(4) Storage (4 m²)
(5) Balcony (60 m²)
In total: 123 m²
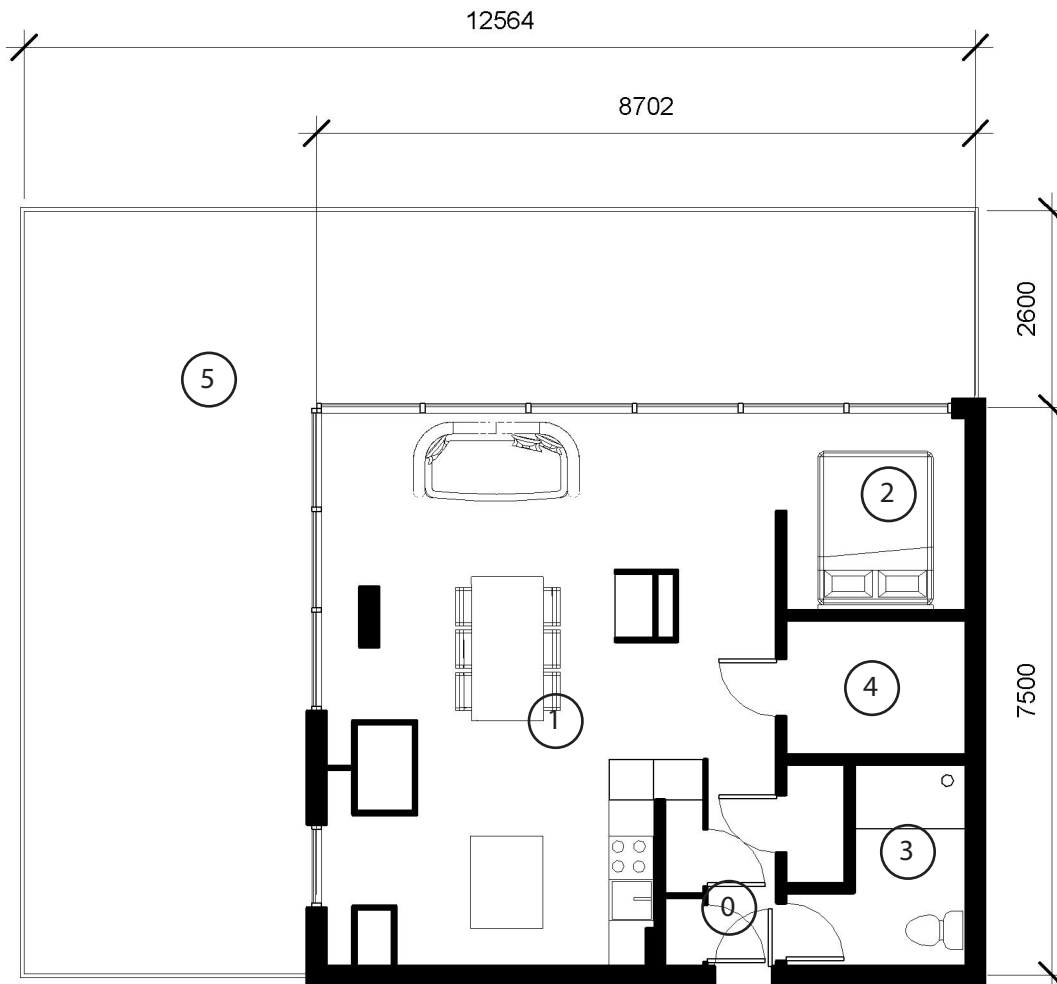
Medium size dwelling

The dwelling is positioned right next to the stairs and it can be considered as medium sized dwelling with a total of 110 m². The balcony is 24 m² with a view towards the water but it is positioned on the North side of the complex. Therefore, most of the light is coming from the South side windows, where the kitchen is positioned and the small bedroom. The dwelling is suitable for a couple with young kid or starters.

0 Entrances (6 m²)
1 Living/dining area (36 m²)
2 Bedroom 1 (19 m²)
3 Bedroom 2 (12 m²)
4 Bathroom (6 m²)
5 Toilet (2 m²)
6 Storage (4 m²)
7 Balcony (24 m²)
   In total: 110 m²
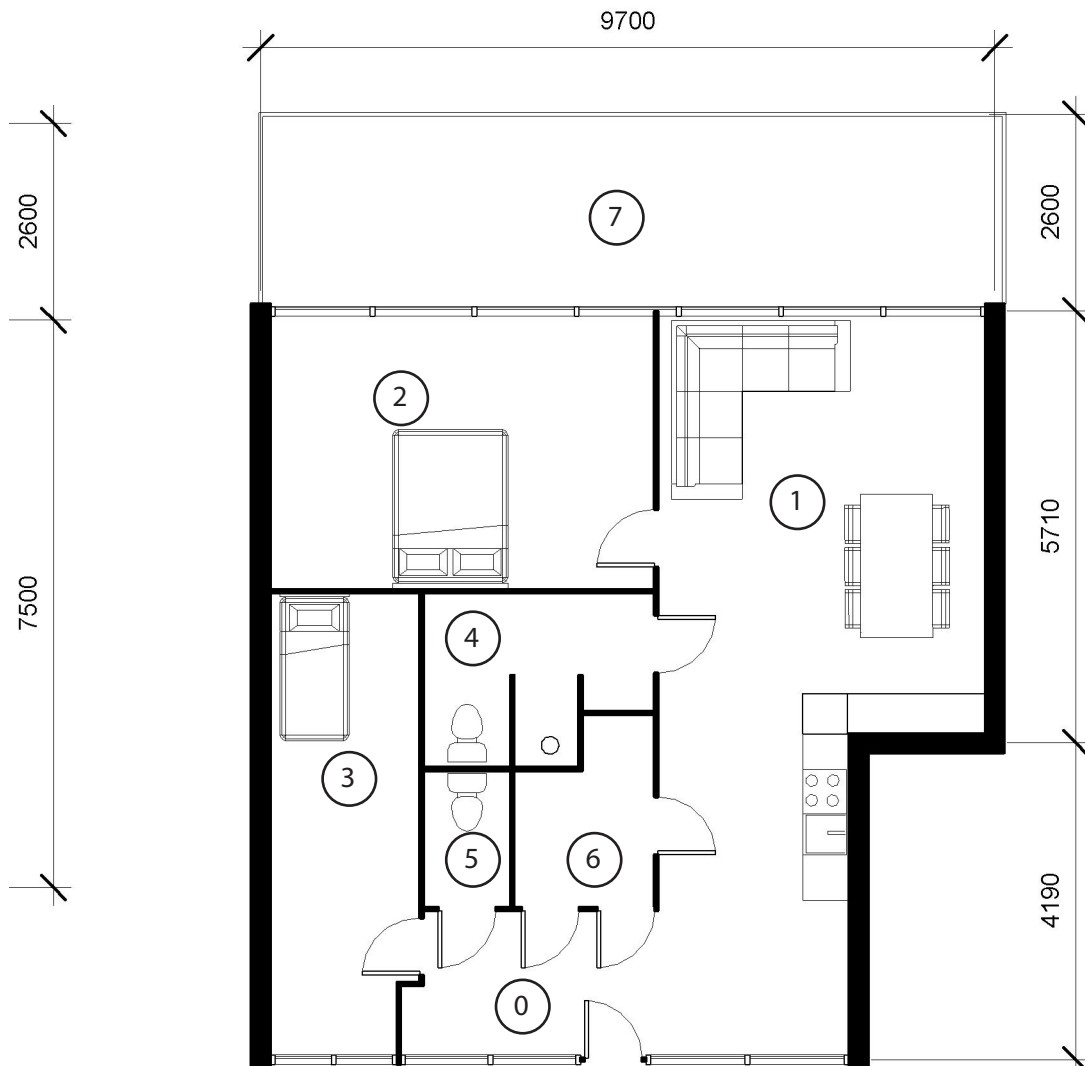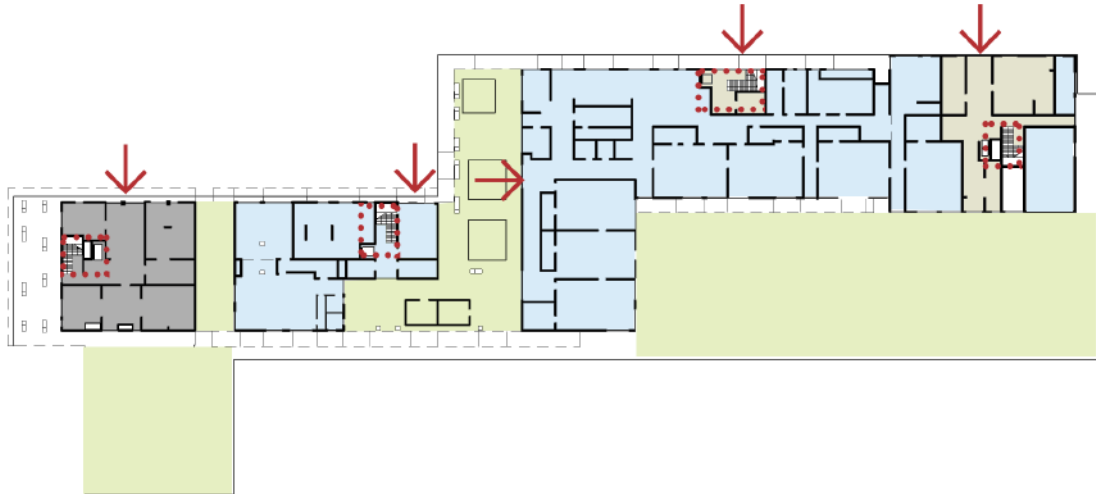
QUERBEET

Location

The building is situated in between two residential complexes - Alt - Erlaa on the north and Areals on the south. The building is a friendly gesture mediating in between the two very different residential complexes. It is at the borders of Vienna but the area provides easy connection with public transport and all public facilities such as school and kindergarten in close proximity.

General information

Location - Vienna, Austria
Architects - Synn architekten
Number of dwellings - 243 apartments
Size of the dwellings - from 50 m² to 153 m²
Functions - 7 - group kindergarten and dwellings
Area - 17 000 m2
Number of floors - 11
Year of building - competition 2016, completed 2019

The building was completed in 2019 and is located in the 23 district of Vienna, Austria. It was designed by Synn Architecten and the main concept that the building holds is "Urban gardening". It is mainly reflected on the roof gardens, where the residents can design their own garden, and take care of the garden together. Moreover, the concept is applied also to the interior spaces of the building and on the balconies where flower pots are integrated in the balcony structure which can give the feeling of a green facade. The building also has a 7 - group kindergarten, small market and shared facilities (kitchen and exercise room).

Legend:

Common areas

Parking space

Common areas

Corridors

Outside space

Shared

Symbols

Dwelling access

Staircase/ elevator

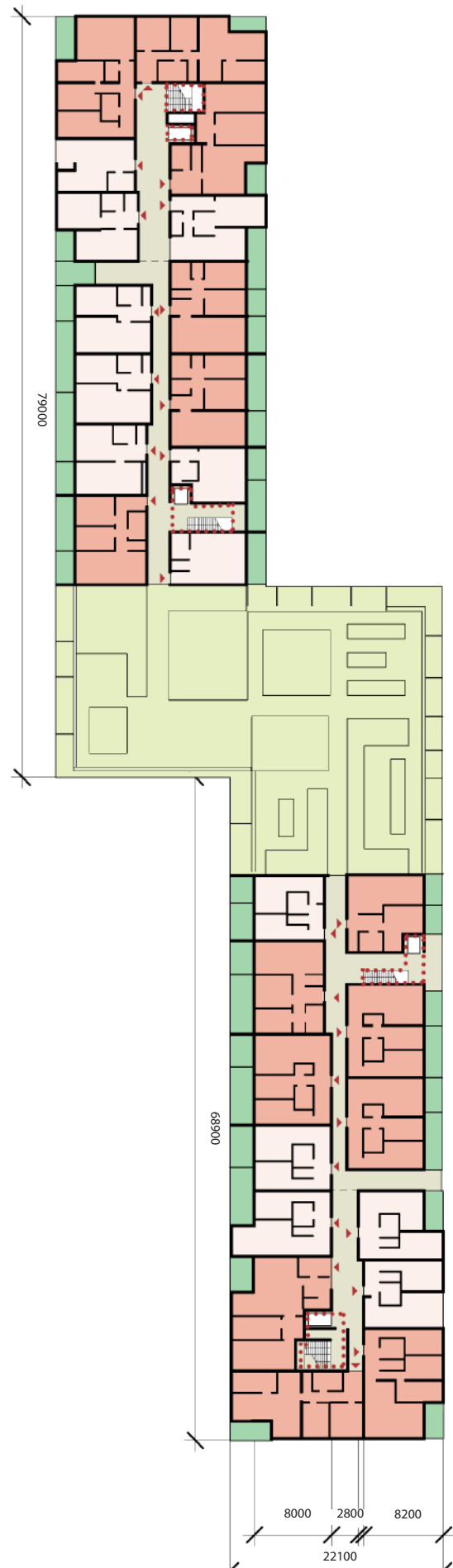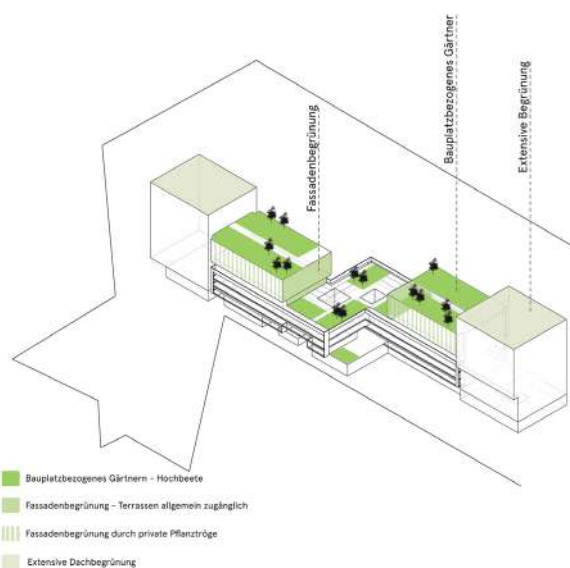Main entrance

Private
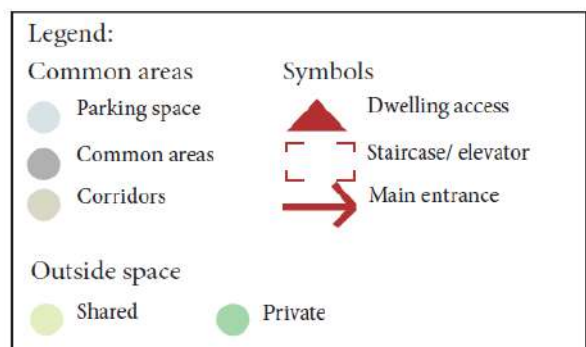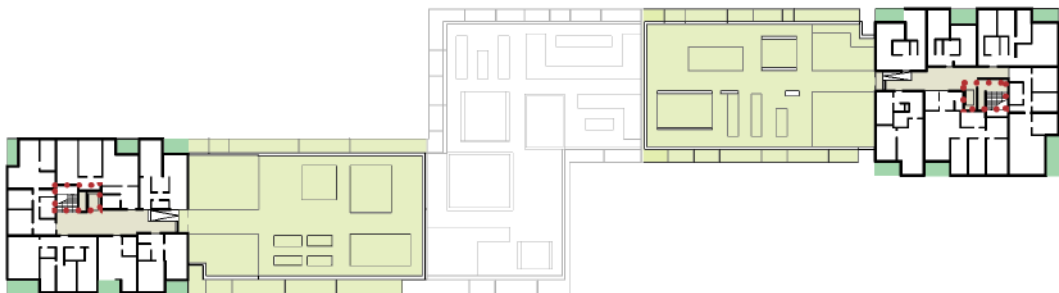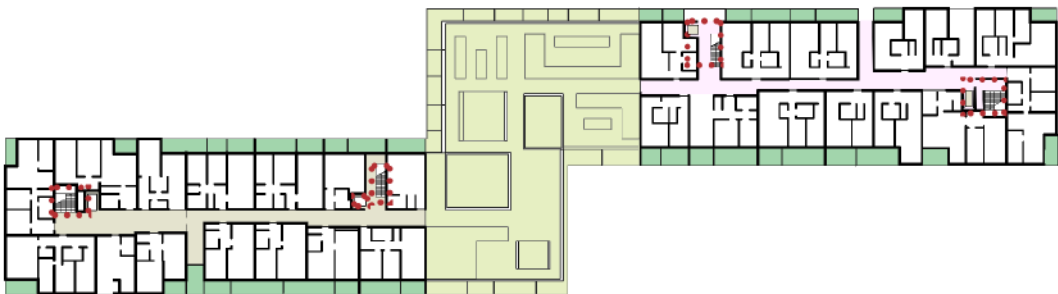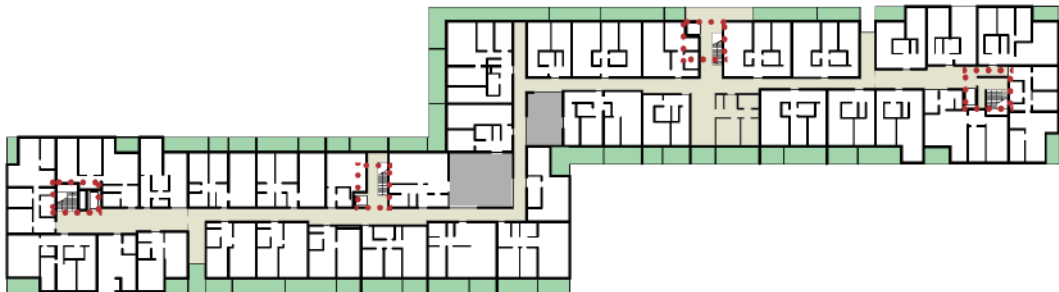
Accessibility

The building on the ground floor has four entrances for the residents on the North side. They all lead to the staircases and the elevators of the building. On the first three levels the whole building is connected through a corridor. However, on the upper levels there is no connection in between the south and the west blocks. There are separate entrances for the kindergarten.

Outdoor shared spaces

In the design of the building there is a big focus on outside shared spaces. There are several roof terraces which provide space for the residents to have a common garden, where kids can play, and their parents can gather together. There is also internal shared place - a common kitchen and room for exercises. They can be found on the ground level and on first floor.
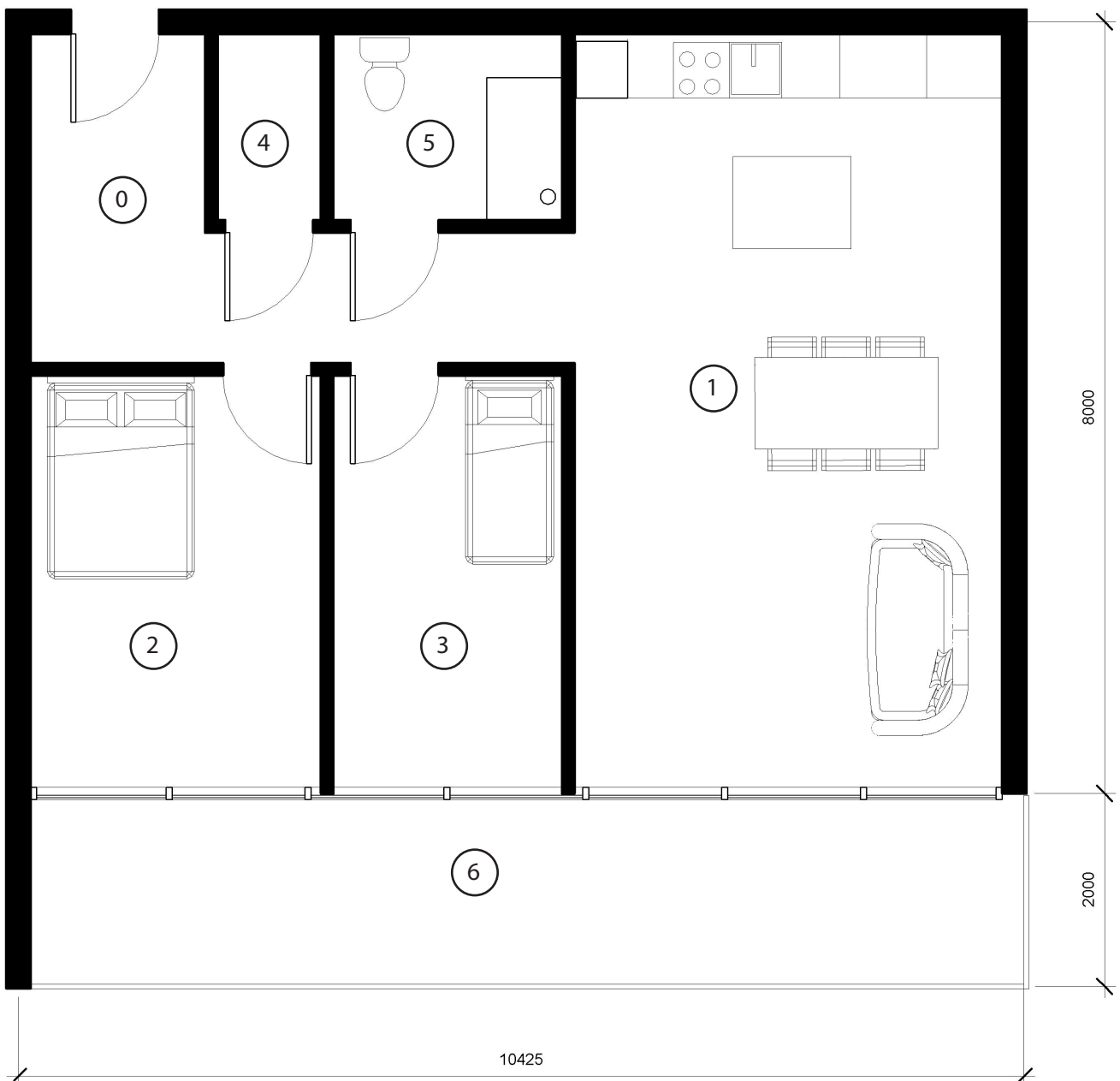
Routing

The typology of the building is corridor typology which means that the dwellings are situated on both sides of the corridor. However, the two sides of the building are disconnected on the upper levels, which means that the main connection remains the vertical one. The two shared gardens on level 8 are also disconnected.

Bauplatzbezogenes Gärtnern - Hochbeete
Fassadenbegrünung – Terrassen allgemein zugänglich
Fassadenbegrünung durch private Pflanztröge
Extensive Dachbegrünung

Medium size dwelling

The dwelling is positioned right next to the stairs and it can be considered as medium sized dwelling with a total of 110 m². The balcony is 24 m² with a view towards the water but it is positioned on the North side of the complex. Therefore, most of the light is coming from the South side windows, where the kitchen is positioned and the small bedroom. The dwelling is suitable for a couple with young kid or starters.

0 Entrance (11 m²)
1 Living/dining room (35 m²)
2 Bedroom (13 m²)
3 Bedroom (10.3 m²)
4 Storage (2 m²)
5 Bathroom (4.6 m²)
6 Balcony (21 m²)

8000

2000

10425

Medium size dwelling

The dwelling is positioned right next to the stairs and it can be considered as medium sized dwelling with a total of 110 m². The balcony is 24 m² with a view towards the water but it is positioned on the North side of the complex. Therefore, most of the light is coming from the South side windows, where the kitchen is positioned and the small bedroom. The dwelling is suitable for a couple with young kid or starters.

0 Entrance (7.5 m²)
1 Living/dining room (24.5 m²)
2 Bedroom (14.5 m²)
3 Bathroom (4.3 m²)
4 Balcony (15 m²)

7500

2000

7425
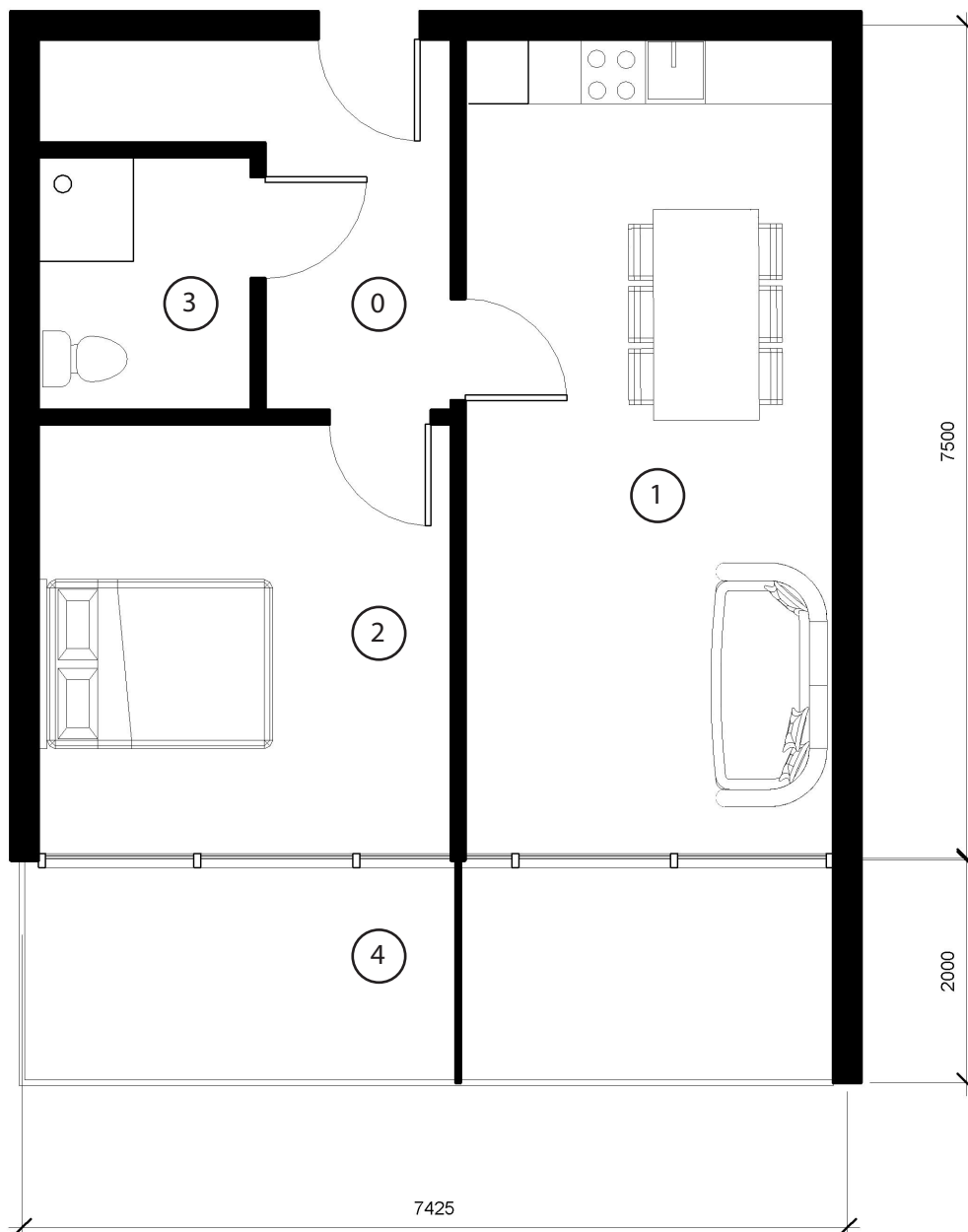
REPUBLICA

Location

The project is part of the transformation of Buiksloterham from an industrial harbour area to a residential mix - use area. It is in close proximity to the city center of Amsterdam (around 20 minutes with a bike).
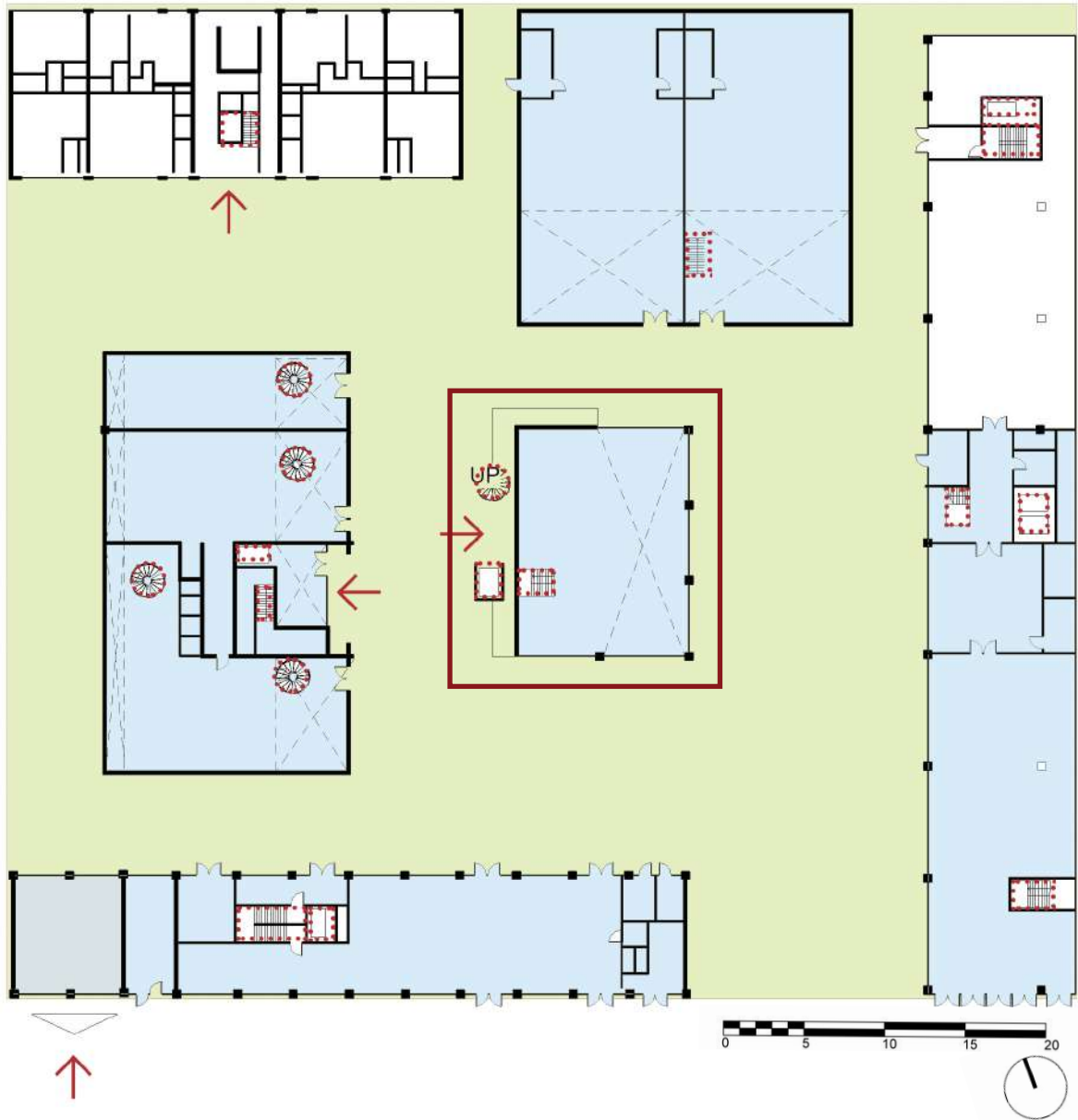
General information

Location -Amsterdam, the Netherlands
Architects - Marc Koehler Architects
Number of dwellings - 10 (Skinny Lad)
Size of the dwellings - 108 - 165 m² (Skinny Lad)
Functions - Housing, Office, Commercial, Hotel, Cafe, Restaurant
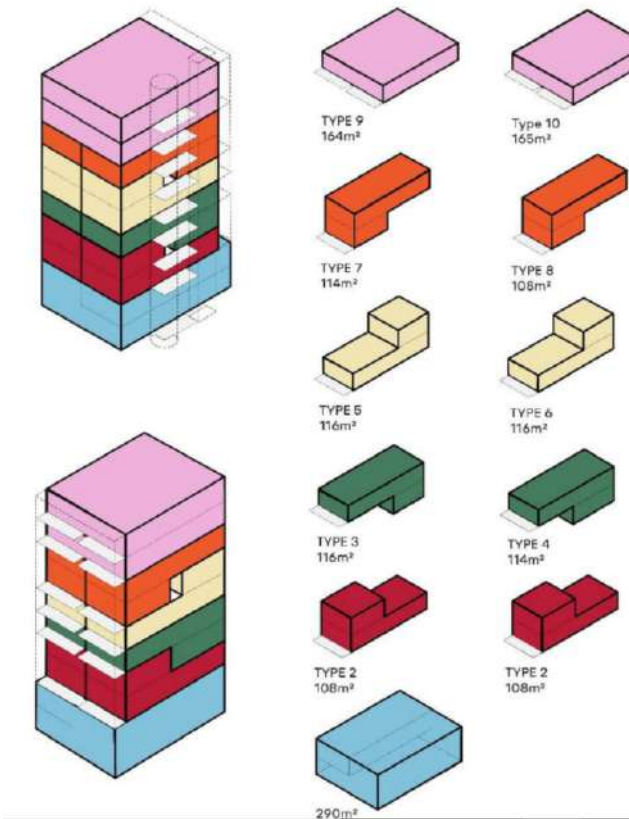Number of floors - 9
Year of building - 2017 - under development

The project Republica is considered as mix-use city: "city in the city". The project is developed by Marc Koehler Architects and is currently under development. The residential complex consists of six blocks of lofts for rent and sale, hotel part, retail nad works spaces. The residents share a green pedestrian zone, co-working space, roofdeck, spa and gym. In this research, I have analysed the Superlofts micro tower(Skinny lad) which consists of 10 lofts.

Legend:

Common areas
- Parking space
- Common areas
- Corridors

Symbols
- Dwelling access
- Staircase/ elevator
- Main entrance

Outside space
- Shared
- Private

0   5   10   15   20

7000

1200

5800

1780

5700   5700

Level 3

14530

1780

5700   5700

Level 4

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Routing

As already mentioned the routing in the building is really simple. It happens through the staircase and elevator on the west side of the building.

Dwelling and typology

The dwelling typology of Skinny Lad are the super lofts which Marc Koehler Architects are known for. The lofts are two levels. Some of them have their living/dining area on the first level and bathrooms on the second but some of them also have bedrooms by the entrance and living/dining area on the second level. The top floors are occupied by one level dwellings.

Structure

The building has a concrete structure which allows for maximum flexibility of the spaces. The distance between the columns is 4900 mm. The architects also provide to the buyers an opportunity to choose between option in the plans of the dwellings.

Accessibility

The building has one entrance from the west side. There is an elevator and a staircase which lead to the dwellings. Some of the dwellings are directly accessed from the outside, so they have their front door "on the square", while others have their front doors in the corridor which is every two floors. Therefore, the routing in the building is quite simple. The loft typology has allowed for minimizing the corridor area.

Shared and outdoor spaces

In the building itself there are no shared ourdoor spaces. However, the complex is designed as such to promote shared facilities. Therefore, the ground floor is a shared outside space for residents and visitors. It is a pedestrian zone which allows kids to play freely. Moreover, there are outside shared spaces on the roofdecks created in the other buildings. The building stimulates interaction through creating shared spaces such as gym, spa, and co - working space.
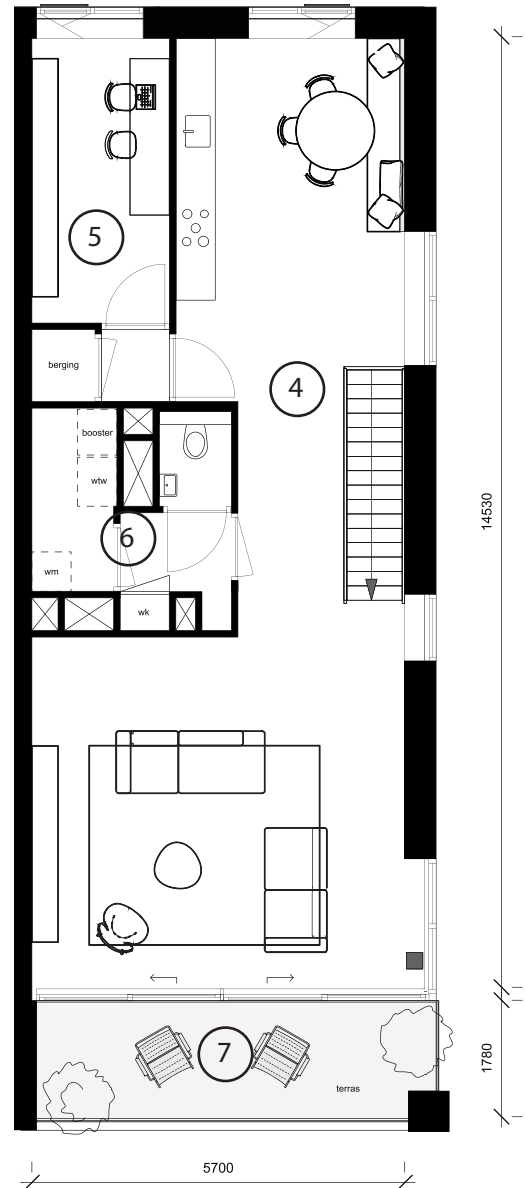In the building, each dwelling has its own private outdoor space. The area of the private outdoor space varies between 10 and 26 m^2.
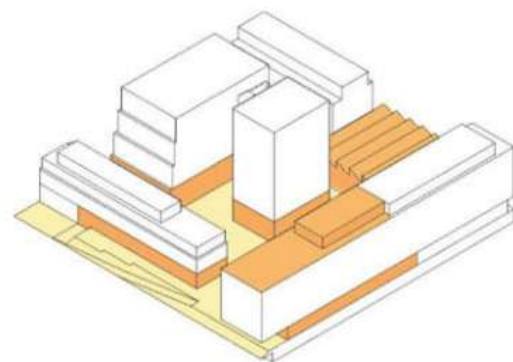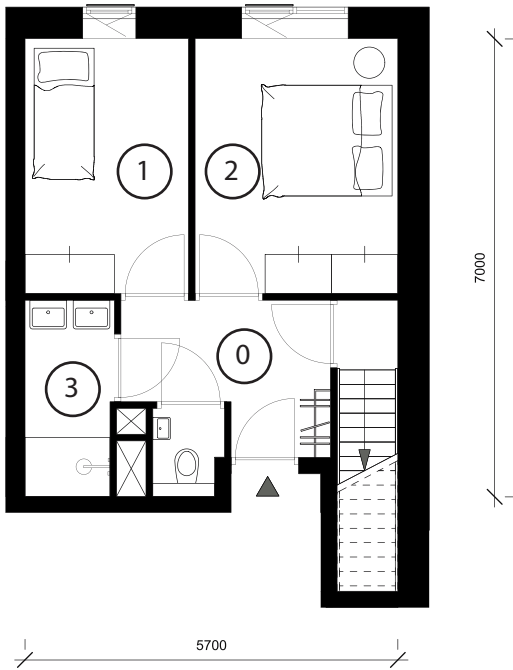
verdieping 3

⓪ Entrance (9 m^2)
① Bedroom (9 m^2)
② Bedroom (11 m^2)
③ Bathroom (3.5 m^2)
④ Living/dining area (54 m^2)
⑤ Office (11 m^2)
⑥ Toilet and Storage (9 m^2)
⑦ Balcony (12 m^2)
　Total: 116 m^2

Dwelling Type 3

The dwelling has an access on level 3 through the corridor. It is a two - bedroom loft where the bedrooms are situated on the level of the entrance. The second level consists of an open living and dining area which is 54 m^2 , office room and storage and toilet area. The balcony is also on the same level on the south side.
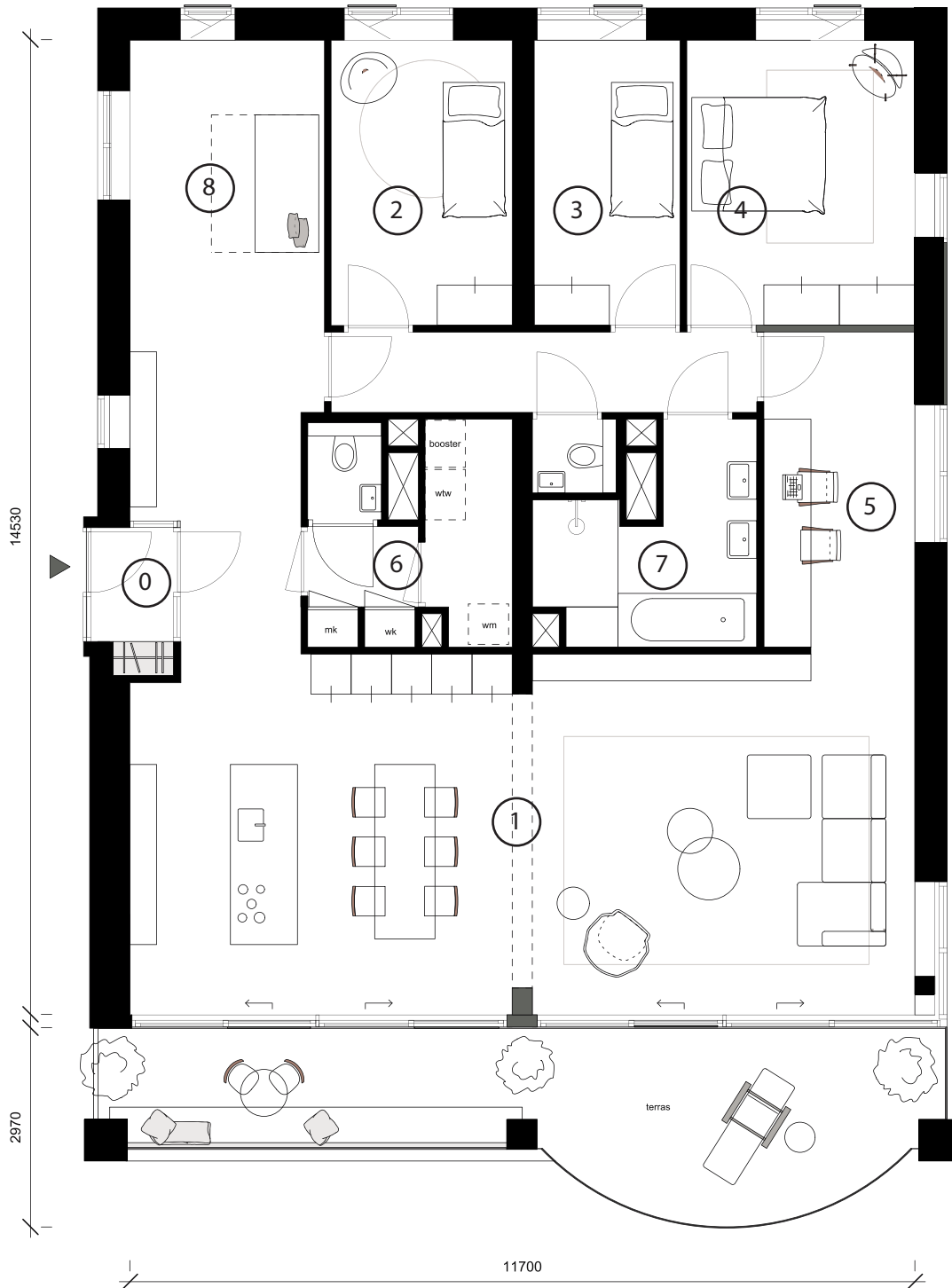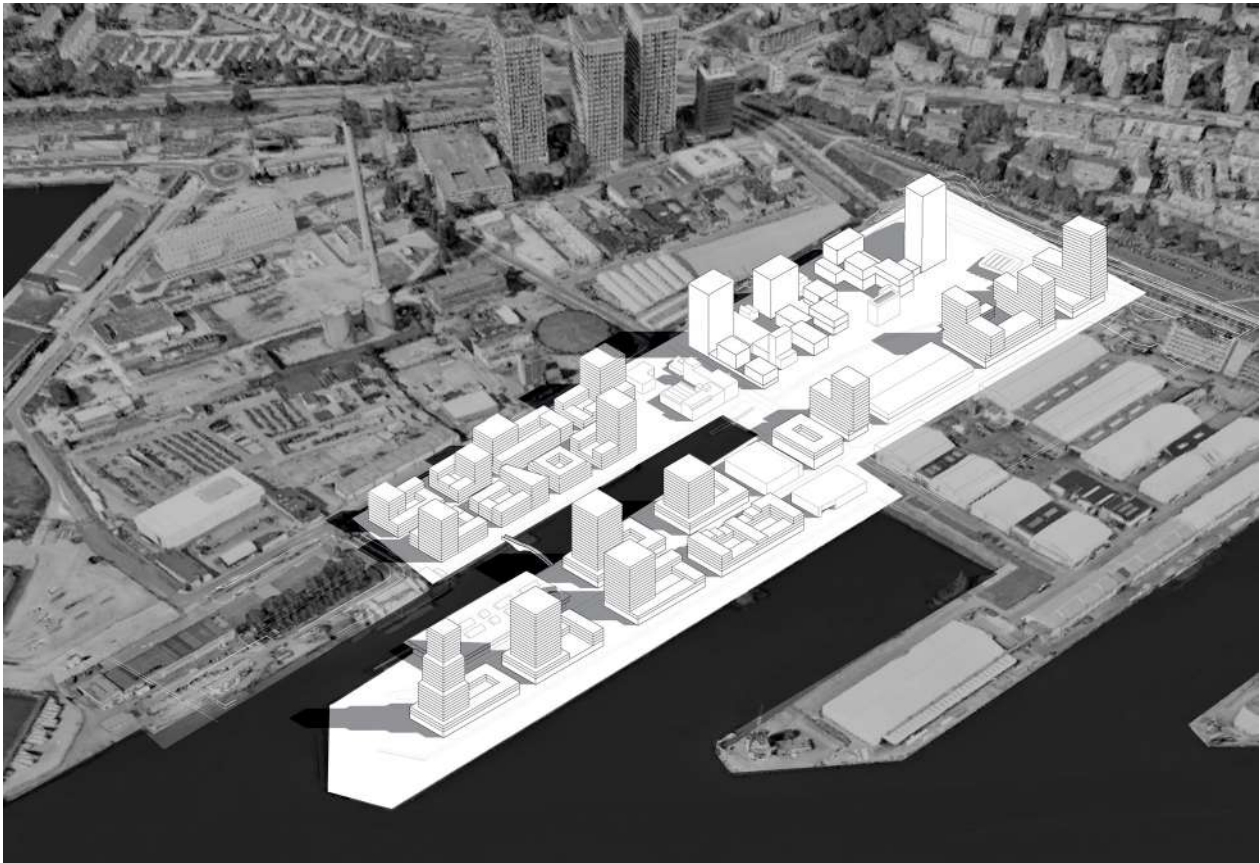
Dwelling Type 9

The dwelling is positioned on level 9 and is one level dwelling. It is 165 m² and is bigger than the two level dwellings. It has three bedrooms and an integrated office space in the living area which is 62 m². The dwelling has the possibility for an extra bedroom (area 8). The access is direct from the staircase/ elevator space.

0 Entrance (1.6 m²)
1 Bedroom (11.7 m²)
2 Bedroom (15 m²)
3 Bathroom (10.5 m²)
4 Living/dining area (62 m²)
5 Office (11 m²)
6 Toilet and Storage (9.5 m²)
7 Balcony (26 m²)
   Total: 165 m²

MASTERPLAN

The chapter contains a summary of the masterplan which we created as a group in the beginning of the semester. The design area of the project is the Merwe-Vierhavens (M4H) in Rotterdam. M4H is an area that will be further developed by the municipality into a mix-used area.

Overview of the masterplan

M4H, ROTTERDAM

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typology of buildings but they are all a transformation projects - from industry to a mix - used residential areas. I was working at the development of Quadrant B, but later I chose to work on building from Quadrant D. Therefore, in this report, I am including a summary of the masterplan of Keilekwartier with a focus on Qudrant D.
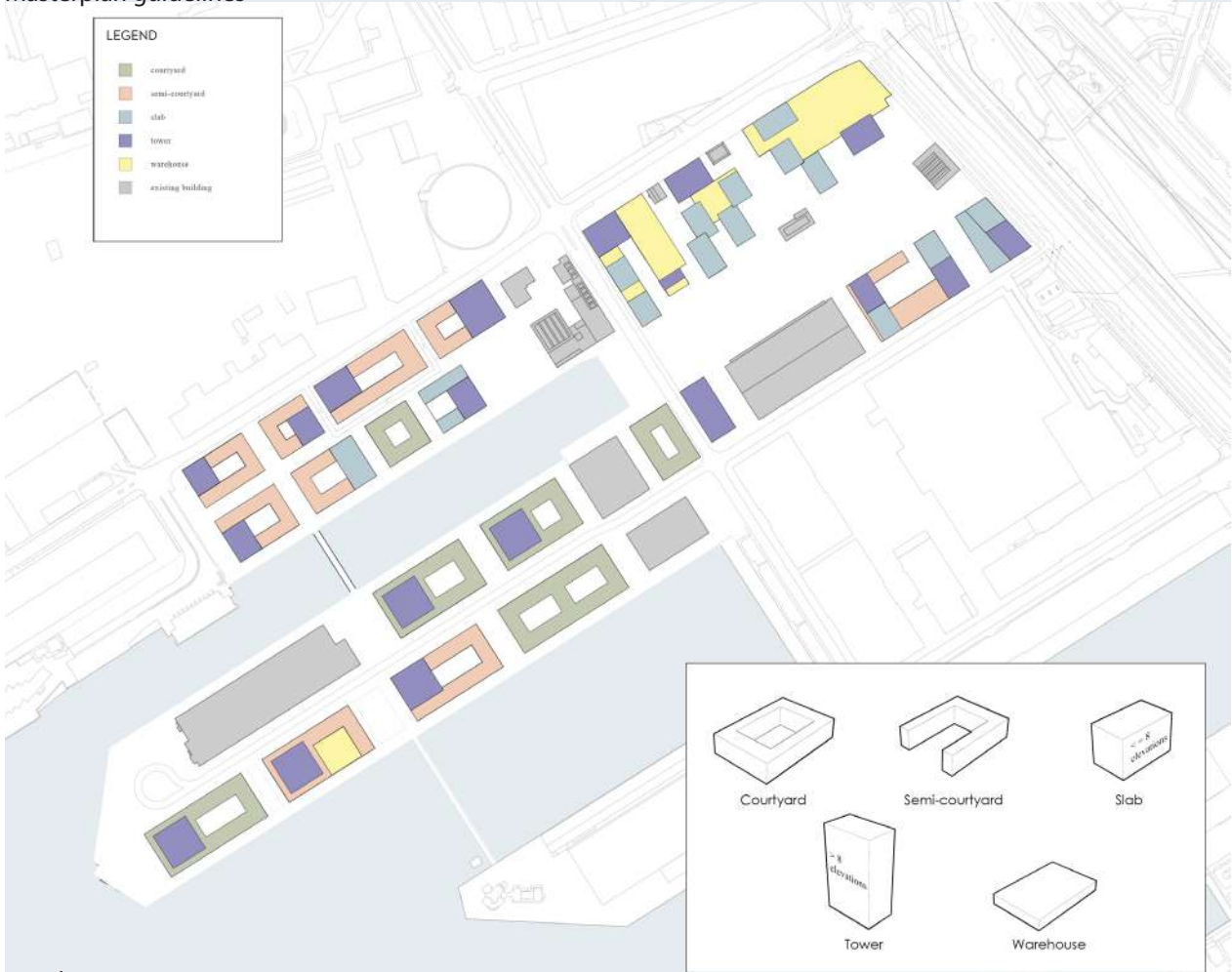
Location

The design area is the Keilekwartier in M4H, Rotterdam. The area is currently an industrial zone in the city which houses different businesses connected to the port. The strong point of the area is that it is situated in between the city and the port . The vision of the municipality is that the area will turn into a mix -used area which has housing, industry and cultural life together. This would result into further development of the city, as it will attract residents, businesses and entrepreneurs to M4H. In the vision, the area will turn into the innovative zone of Rotterdam.

The masterplan process

We did the masterplan as a group and we split the Keilekwartier in 4 quadrants (A, B, C, D). The quadrants were developed based on four different reference areas - Strijp S in Eindhoven, Binckhorst in the Hague, Kop van Zuid in Rotterdam and Katendrecht in Rotterdam. All of the reference areas have different

Quadrant Zoning

Site Location(Rotterdam Makers District, Brightspace)

LEGEND

- plot border
- obligatory facade
- facade can't cross this line
- possible overhang
- commercial ground floor
- plot number
- building's max. height
- tower placement
- residential
- workspace
- existing building
- green/open space

Masterplan guidelines

LEGEND

- courtyard
- semi-courtyard
- slab
- tower
- warehouse
- existing building

Courtyard   Semi-courtyard   Slab

Tower   Warehouse

Typologies

Circulation

Overall masterplan

In order to preserve the atmosphere of the area, the masterplan pays a close attention to the existing buildings which some of them are monuments and working industries. The waterline is extended and creates a green park area in between Quadrant A and B. Moreover, the masterplan sets rules of the plot of the buildings, height, overhangs and plinth. We envisioned that the plinth will be mainly commercial with a mix - used facilities. The height of the buildings vary depending on the typology and sun analysis preformed through the process.
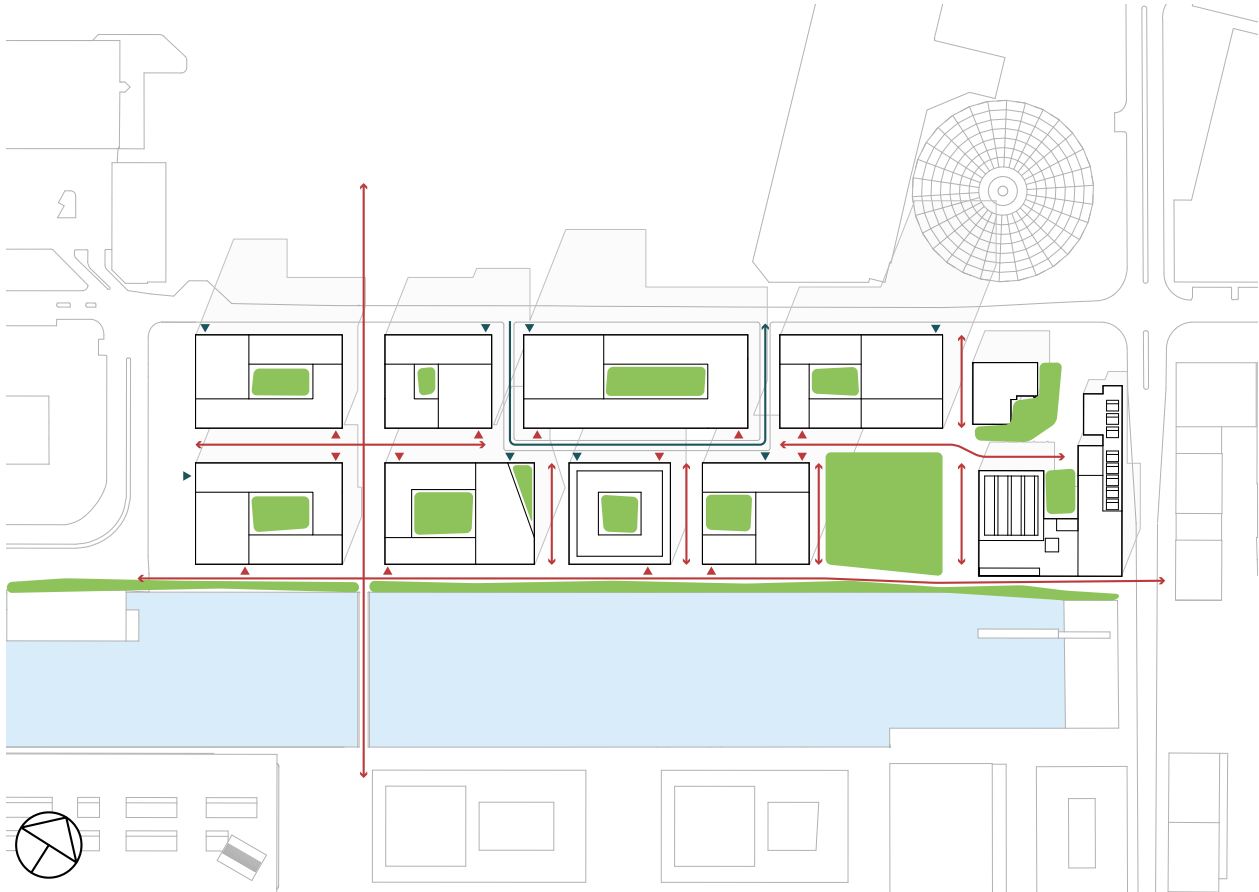
Typologies

The masses of the buildings were designed through a typology transfer from the reference areas. The buildings were literally transferred with some alternations of the sizes. In the masterplan we identified 5 different typologies: courtyard, semi - courtyard, slab, tower and warehouse (the existing buildings). All of the buildings are a combination between the mentioned typologies.

Circulation

The circulation trough the area focuses on creating a pedestrian and bicycle friendly network. The area in between the quadrants and in the quadrants themselves is a car - free zone. This means that cars are allowed only on the periphery of the quadrants.
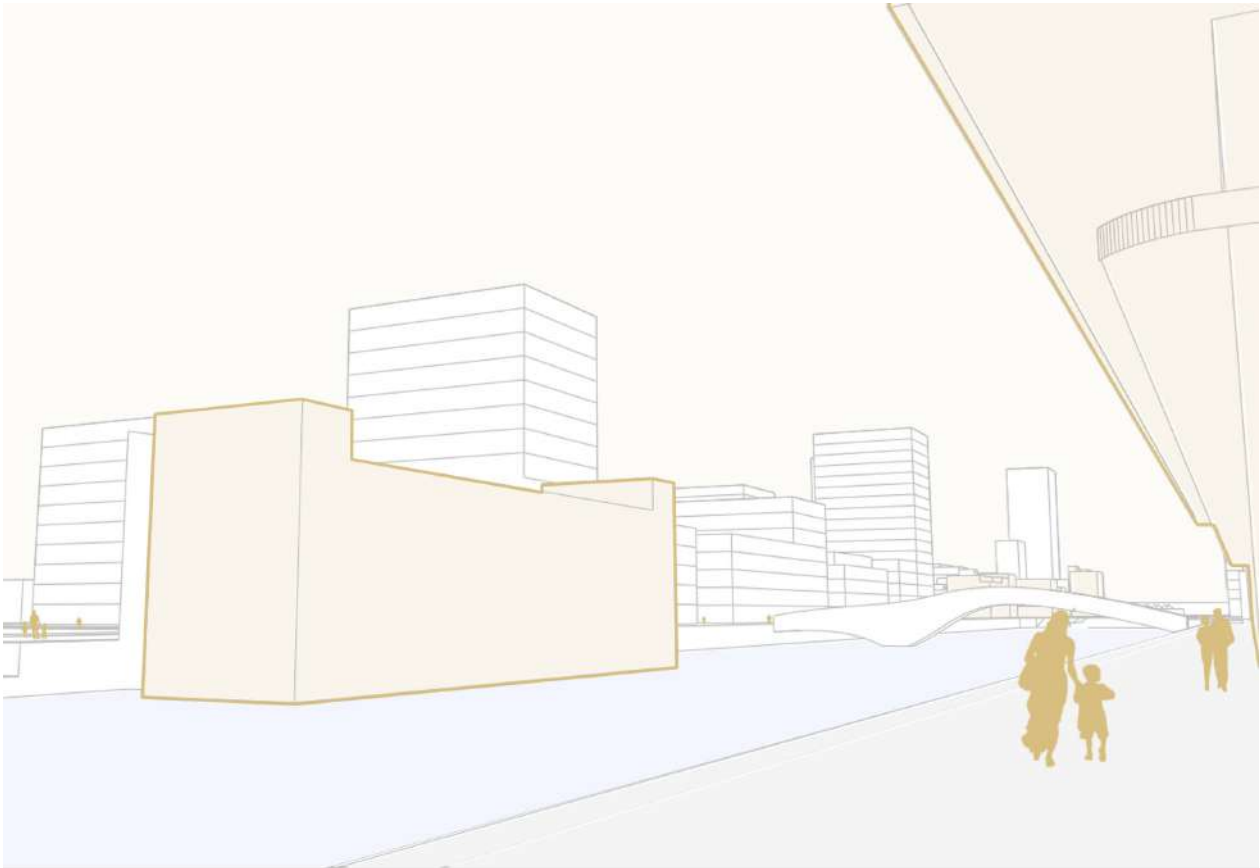
Monuments

Mihaela Tomova

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Circulation and Green Quadrant D

Summary Quadrant D

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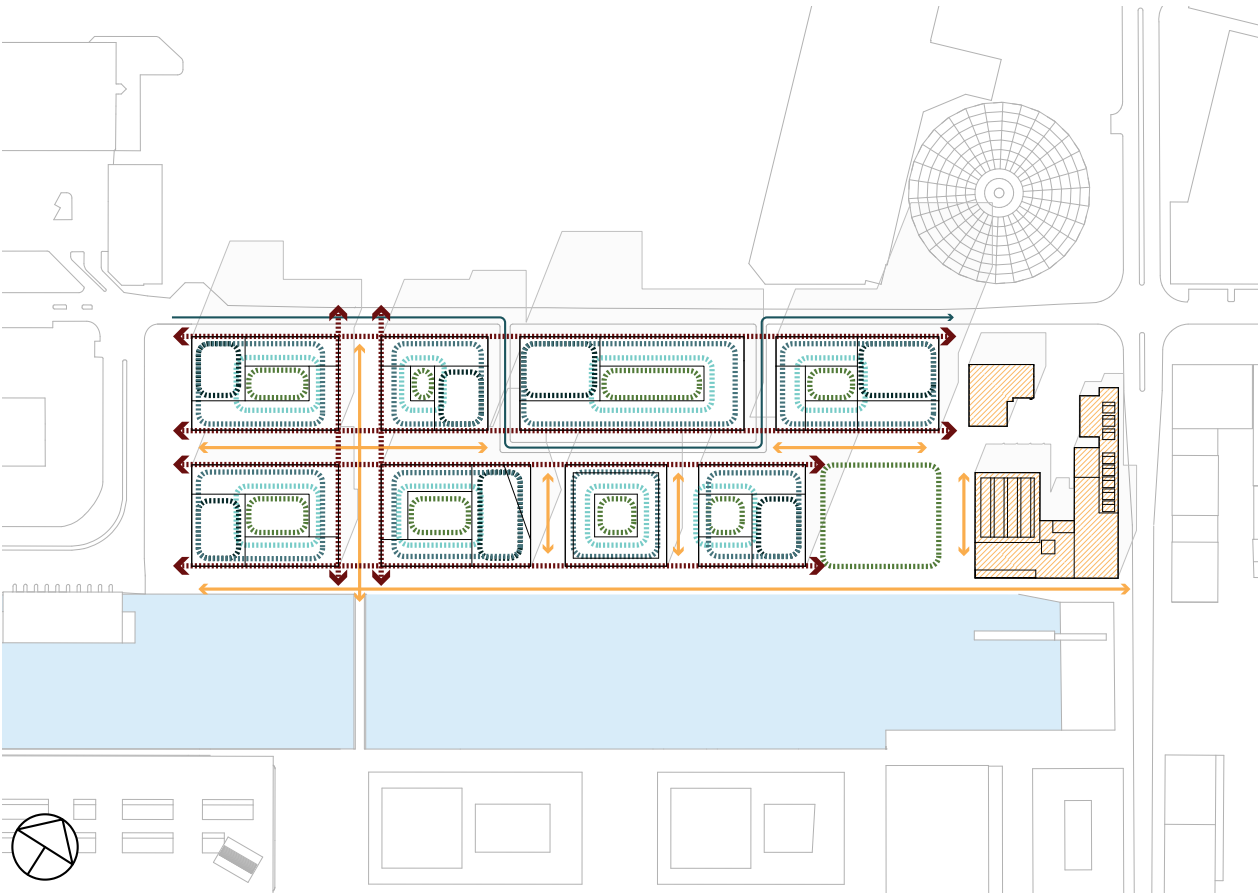
View towards Quadrant D

Quadrant D

The plan of the quadrant was inspired by the area Katendrecht in Rotterdam. The building typologies are mainly a combination of courtyard with a tower, which leaves a green space in the building block. The plinths of the buildings are envisioned to have a commercial function. The buildings have two entrances and a car entrance to a parking garage on ground level.

Circulation

The plan envisions a pedestrian friendly zone which is achieved by accessing the building blocks through the peripheral streets and an extra car road in the middle of the plan (blue line on the plan of circulation). The rest of the streets are pedestrian friendly zone. Moreover, there is a pedestrian bridge which creates a connection between Quadrant C and D. The Quadrant also have two main roads - from east to west and north to south.
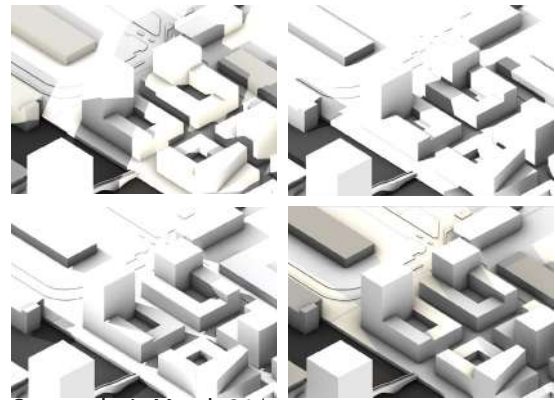
Green space

The plan also envisions a green alley next to the water and a green park next to the existing building. Moreover, each building will have an inner courtyard which can also e a green zone.
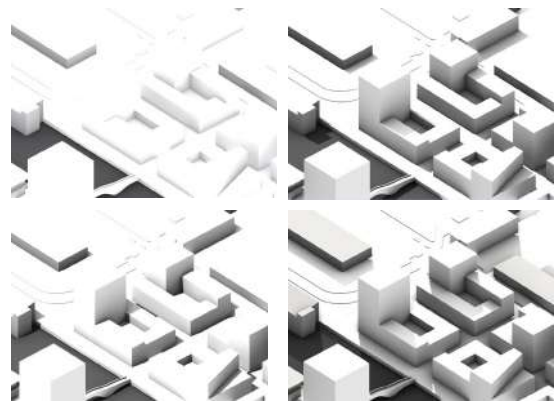
CONCEPT DESIGN

The chapter contains the concept design which is a result of the literature research, plan analysis and master plan. The concept design is in progress, therefore it contains a volume and floorplan proposal. The design will be further developed for the P2 presentation.

Sun analysis

First, I started with a sun analysis of the building outline provided by the masterplan. The typology of the building is a courtyard with a tower. However, the sun analysis shows that the position of the tower doesn't allow for good light conditions in the courtyard since it gives shadow to the courtyard in the afternoon hours when it is used by the residents. Therefore, I decided to change the position of the tower by placing it on the north - south and north - east side. This results in a maximum sunlight in the courtyard and the roof terraces created by the volumes.

Volume

The volume of the building is created though the concept of outdoor space. In order to provide the residents with qualitative outdoor space, I shaped the building in "steps: providing both private and public space. This allows also for outdoor routing and a lot of green, which can be used as collective spaces. The courtyard and the big roof terrace will be used for community activities - children's playgrounds, sports, and gatherings. The diagrams on the next page show the concept behind the volumes - sun light, green and views.

Sun analysis March 21st
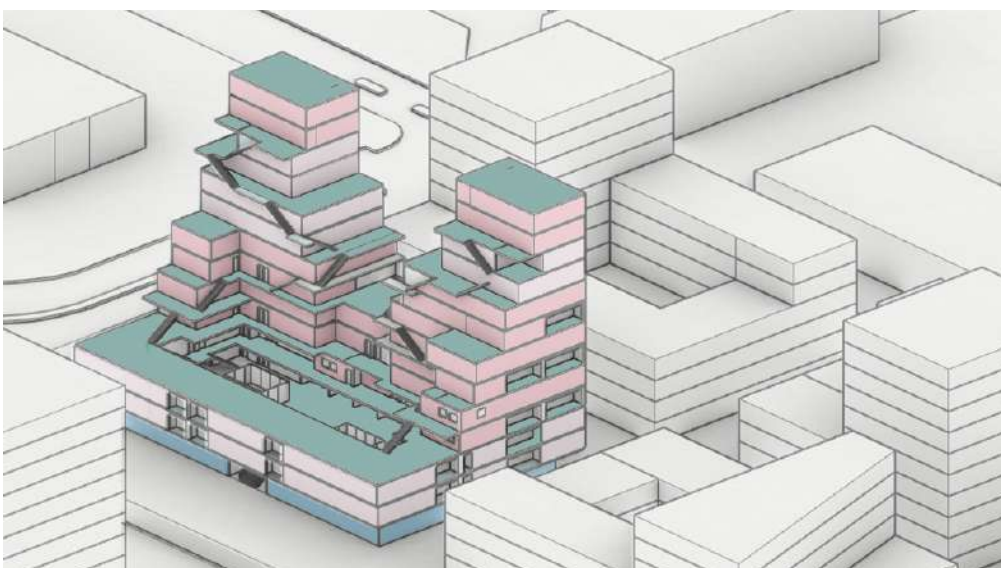
Sun analysis June 21st
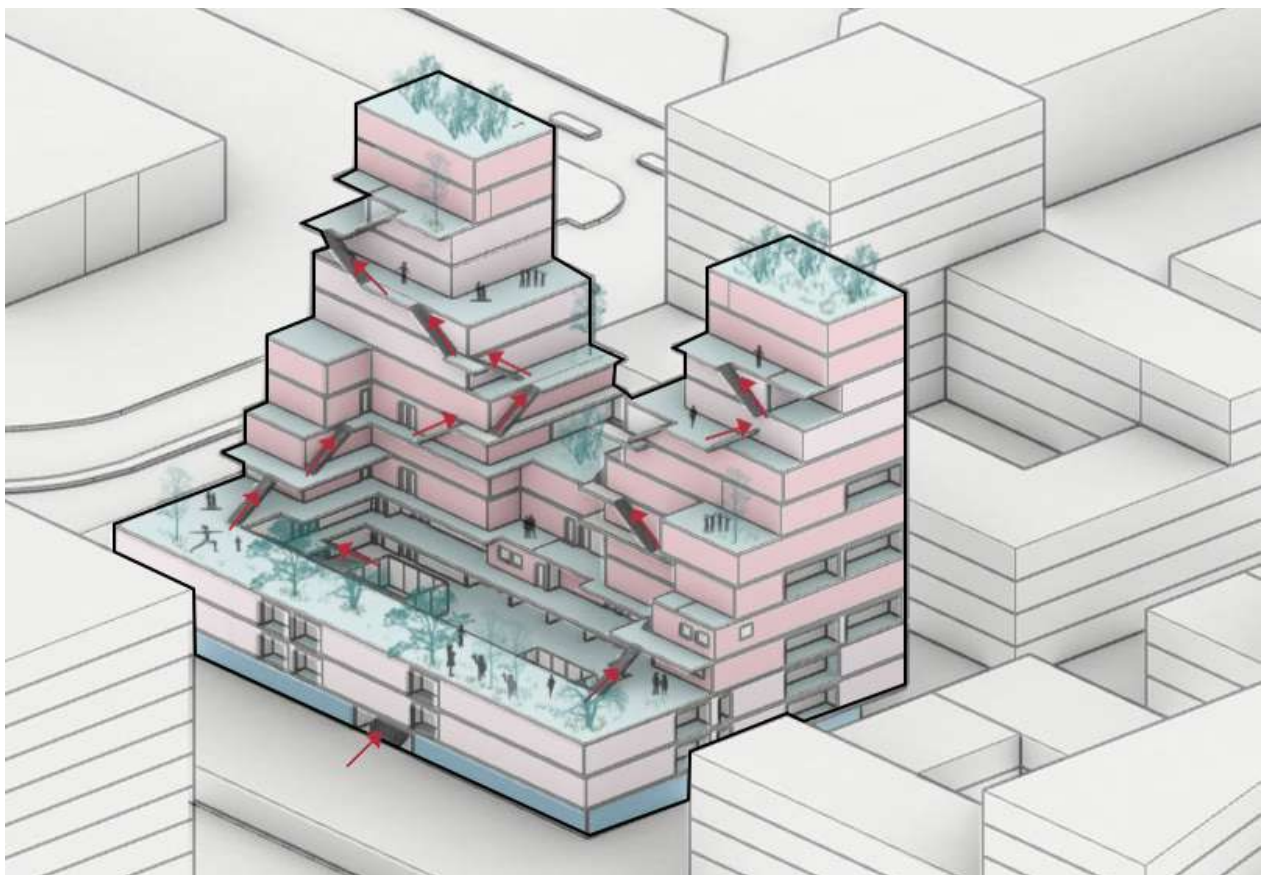
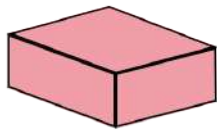Overview concept - green space, dwelling typologies, routing
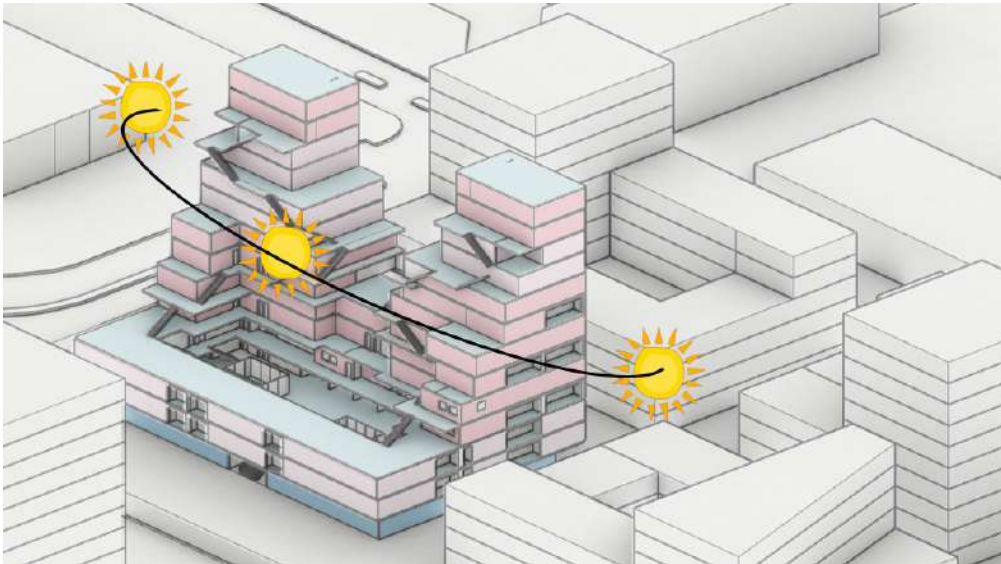
Maximum daylight
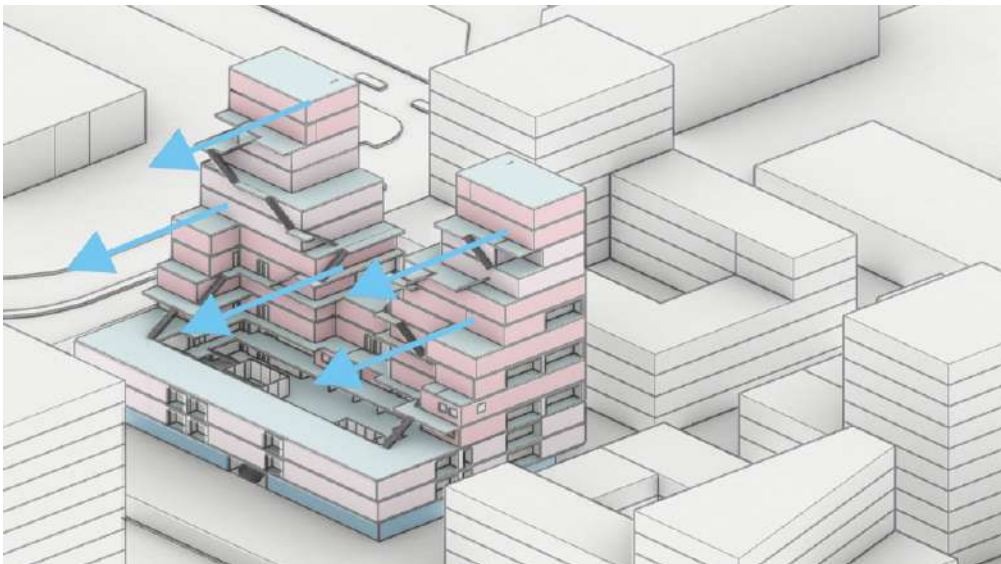
Maximizing views towards the water

Maximum green spaces - both public and private

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Design brief
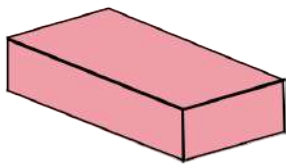
One level dwellings

From 45 m² to 121 m²

Target group: starting families
and families with small children
1 to 2 bedrooms
Options for office space
Open living and dining space
Bathroom and separate toilet
Private outdoor space (not
included in the square meters)
Only 2 small dwellings (average
90 square meters)

Two level dwellings

From 70 m² to 200 m²

Target group: starting families
and families with children
1 to 4 bedrooms
Options for office space
Open living and dining space
Bathroom and separate toilet
Private outdoor space (not
included in the square meters)
Only 2 small dwellings (average
120 square meters)

Overview typologies

Groundfloor

```
0        5        10        15        20
```

The plan

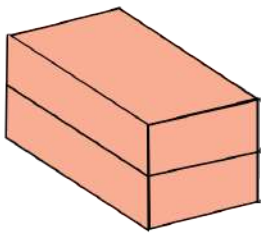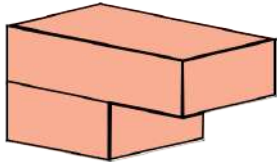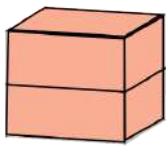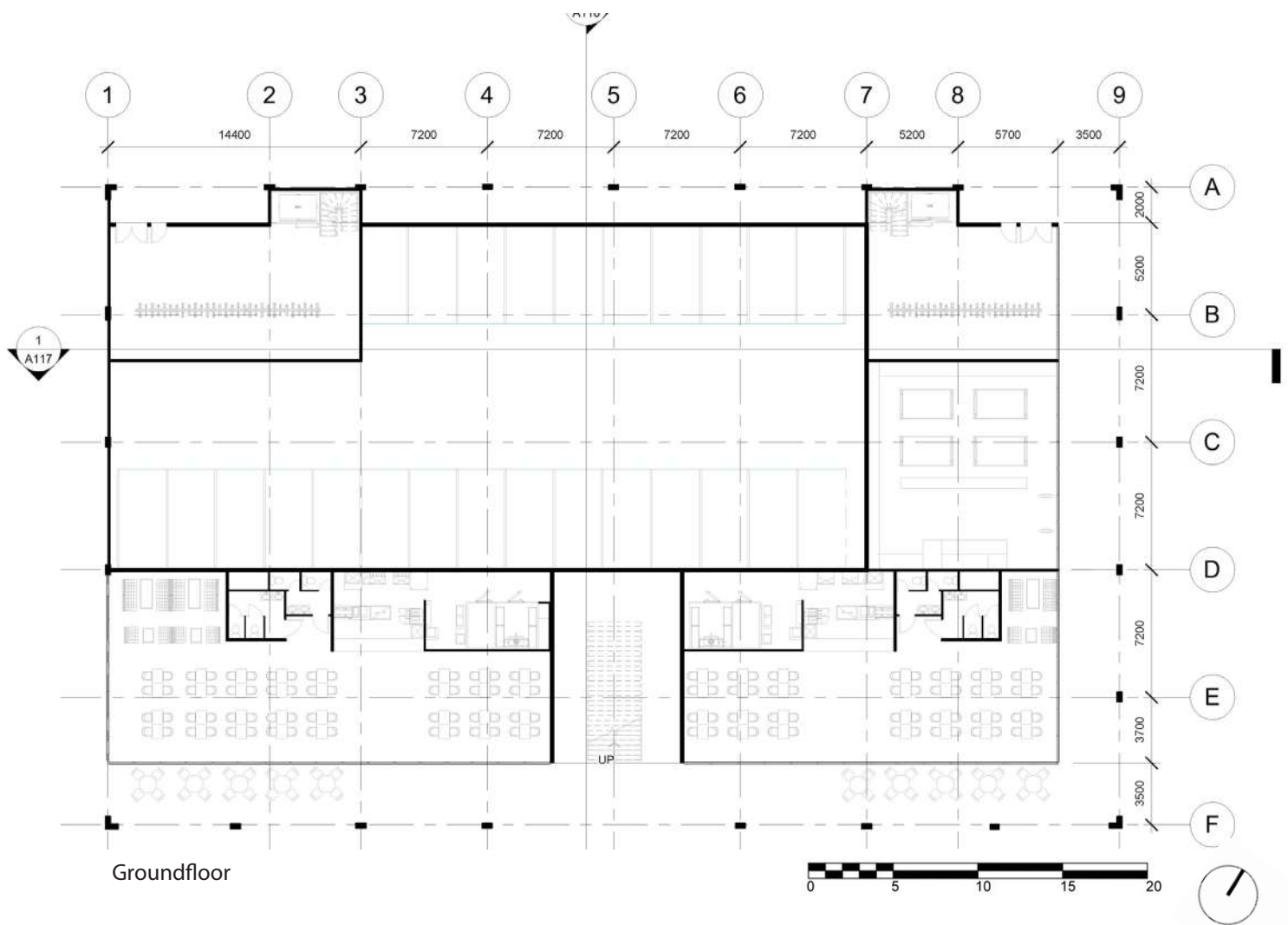The plan of the building has two main components - dwellings (private) and shared spaces. The shared spaces are both inside and outside. The inside shared spaces are positioned on two sides and namely next to the elevators and stairs. This is also where clusters are formed. The shared inner space serves in between 5 - 6 families and provokes interactions as they are right next to the circulation space. There is also inside common areas in the courtyard, which is provided by glass "boxes". This is the space which has a visual connection with all dwellings. The same can be said for the roof terrace on level 3. This is how safety is assured in the common areas. For P2 I am going to define the function of each shared space - playroom, office space, exercise room and kitchen.

Ground floor

As mentioned in the urban plan the ground floor level will have a commercial function and parking space. Since, the target group is expat families, most of them don't own a car. This is the reason the parking spaces will be limited. However, there will be a car sharing facility which can be used by the residents of the building. There are three entrances which lead to the private part of the residence complex - 2 on the north side and one on the south side. The north entrances lead to the elevator and stairs while on the south side there is connection though stairs which lead to the inner court yard.

First and second level

The first level is the level with the courtyard (shared spaces) and "one- level" dwellings. The dwellings have small private outdoor space in the courtyard and a transition zone (the door is not positioned directly towards the courtyard) to reassure smooth public -private transition and privacy of the residents. The second level has the same dwelling typology with a gallery typology access.

The upper levels are different because they also have different typologies and there are less dwellings per floor.

Legend:

- ▇ Inside circulation space
- ▇ Inside common areas / facilities
- ▇ Shared outdoor space
- ▇ Private outdoor space
- ▇ Two - level dwelling
- ▇ One - level dwelling

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Level 1 Scheme

A1 110 m²	A2 85 m²	A3 85 m²	A4 85 m²	A5 85 m²	A6 110 m²
45 m² A13					45 m² A7
A12 86 m²	90 m² A11	90 m² A10	90 m² A9		A8 86 m²
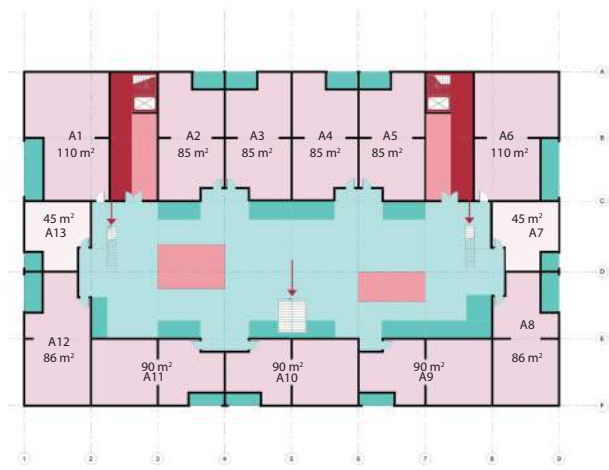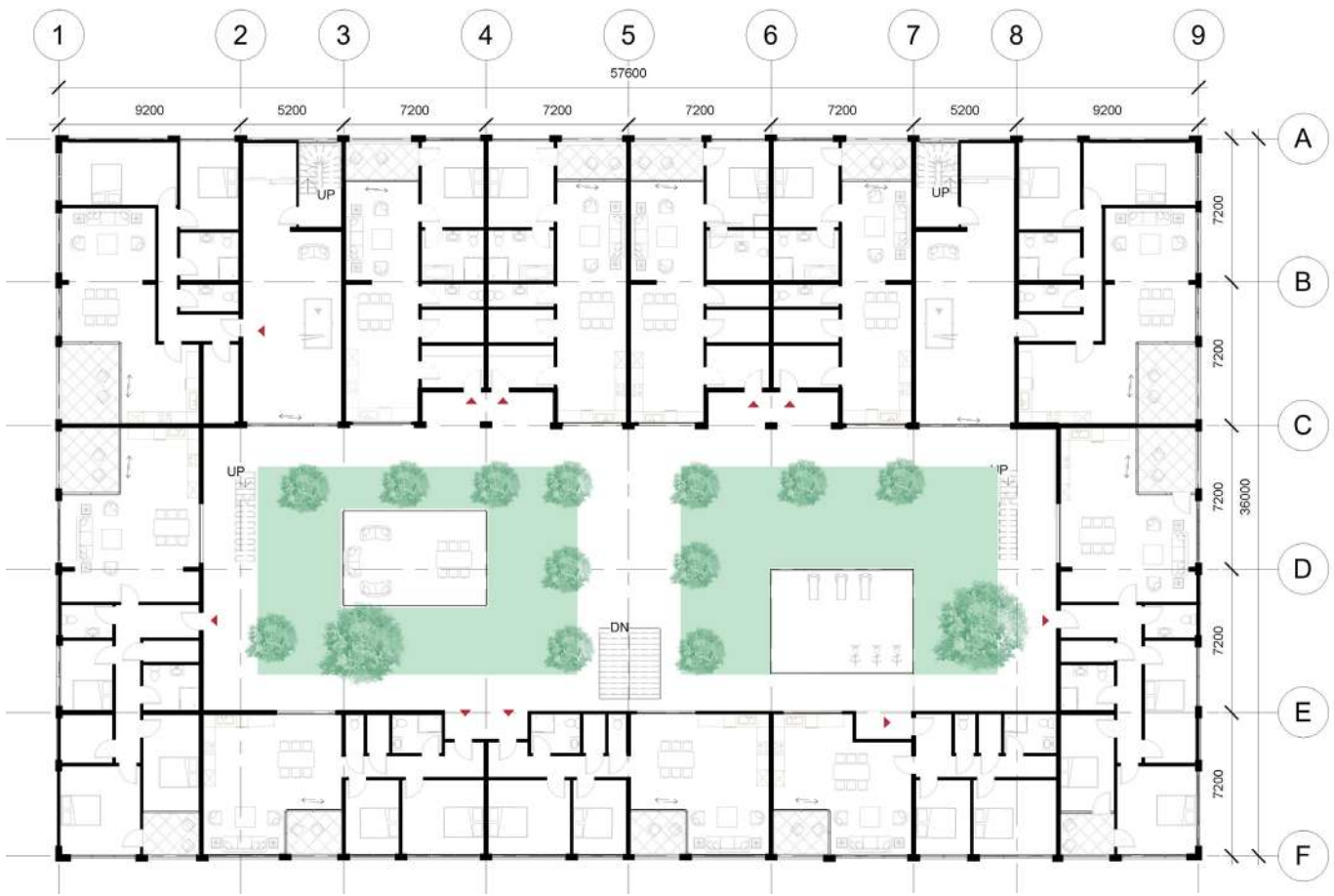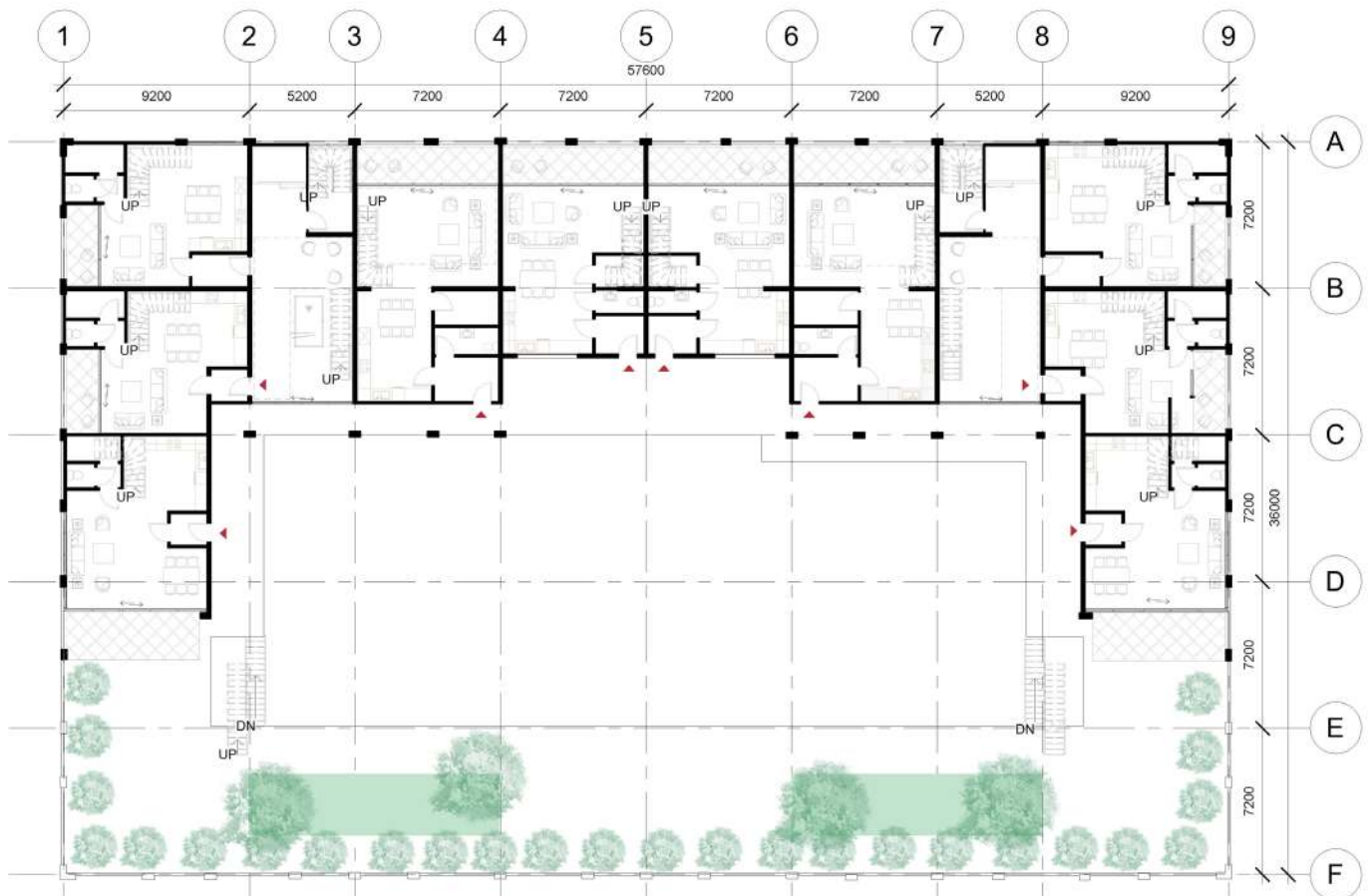
Level 1

Level 3

Level 3 +

Level 3 Scheme

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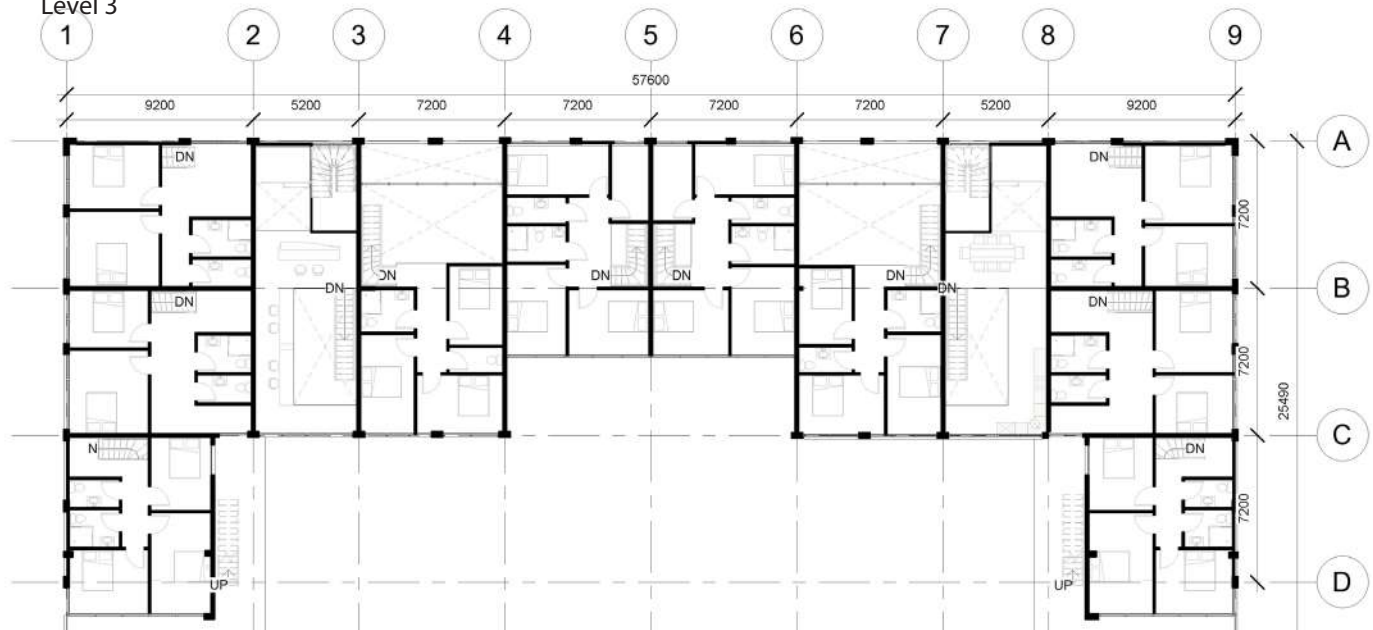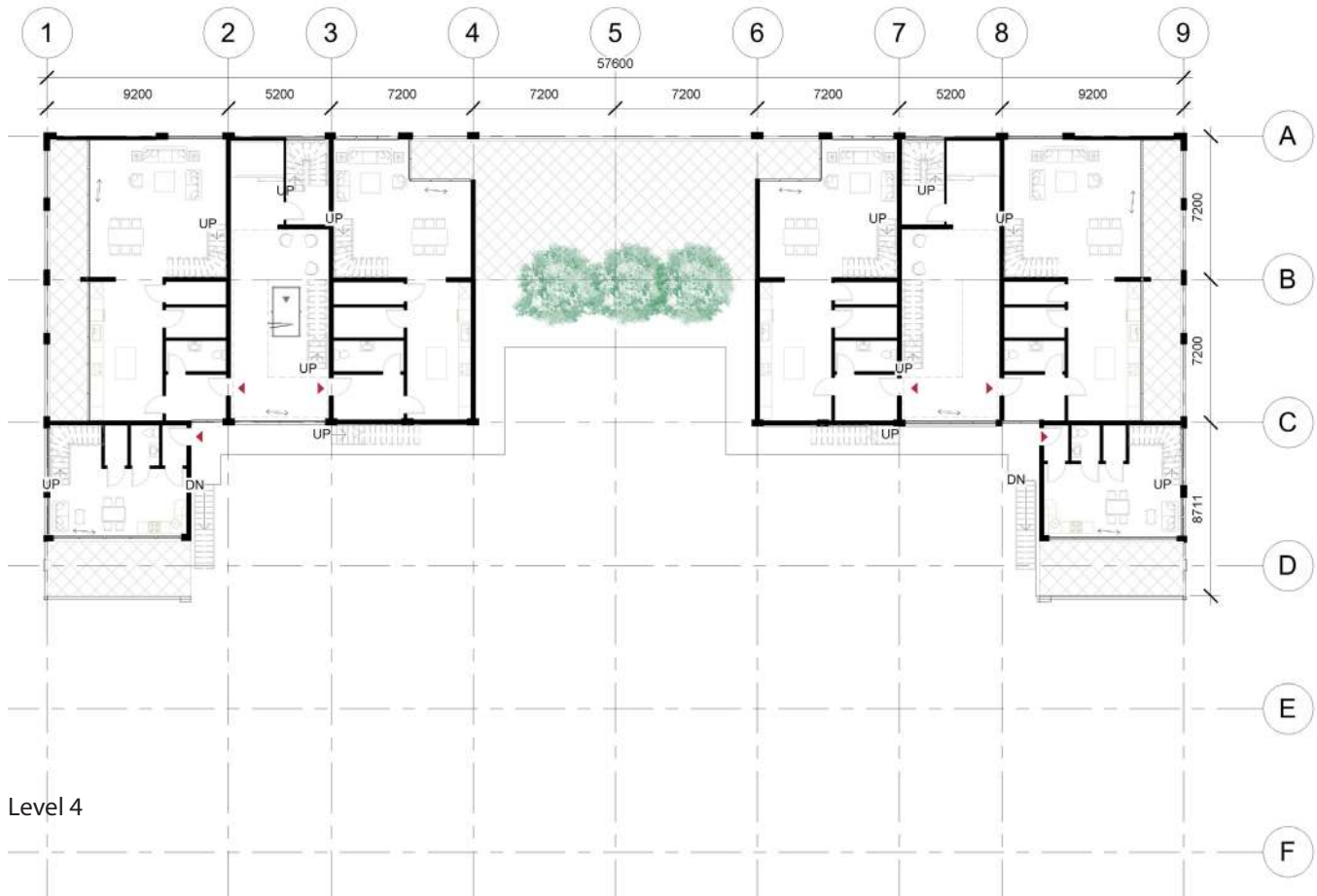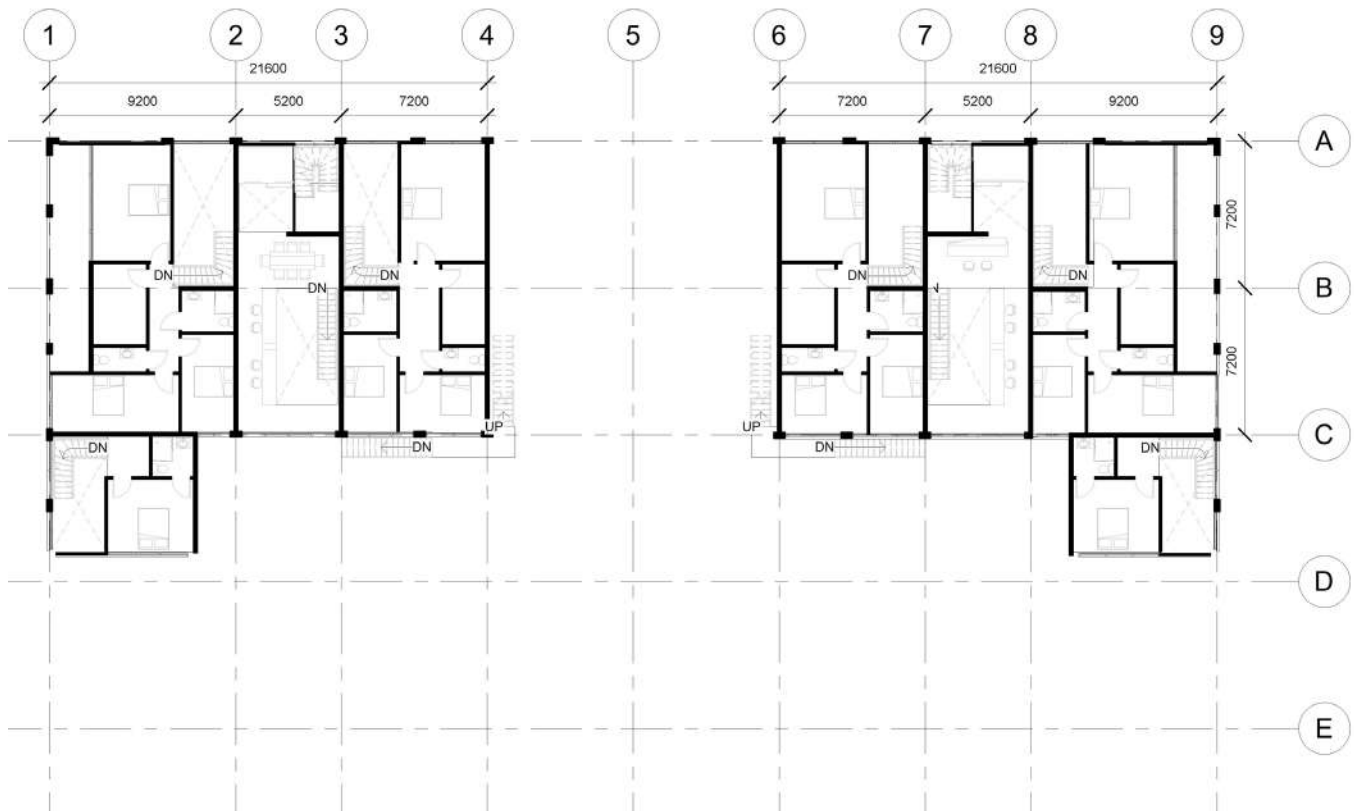
Level 4

Level 4 +

Level 5

Level 7

Level 7 +

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Level 8

Level 8+

0 5 10 15 20
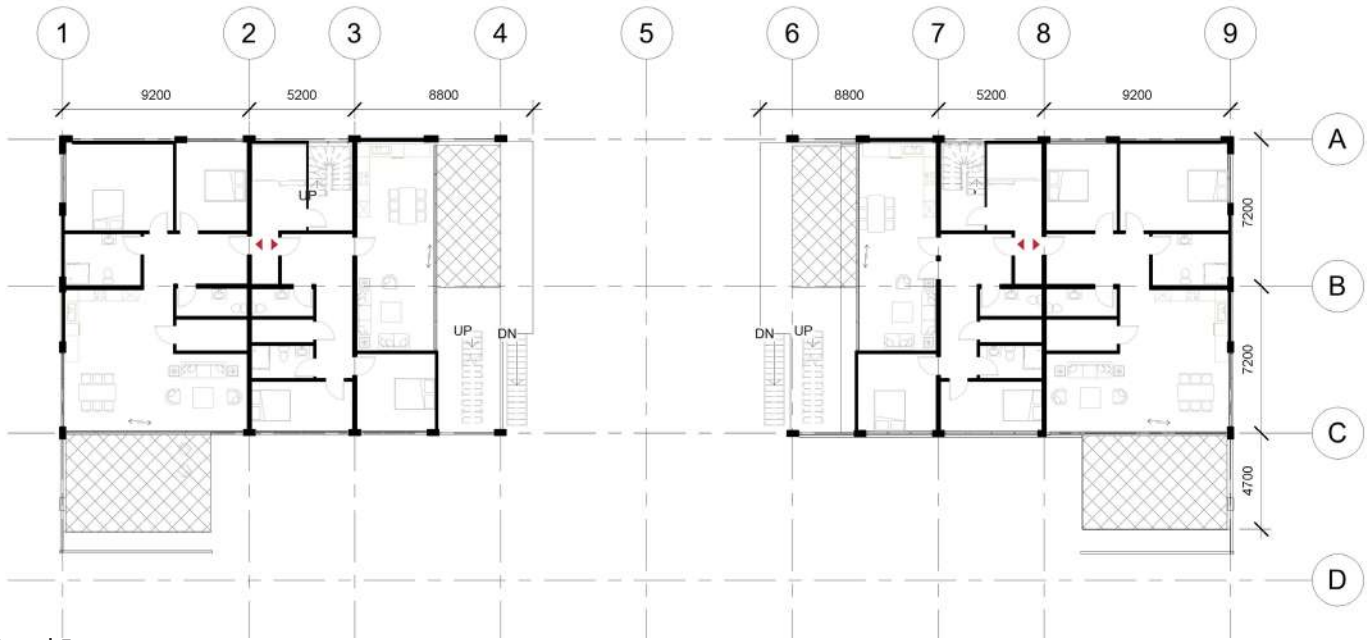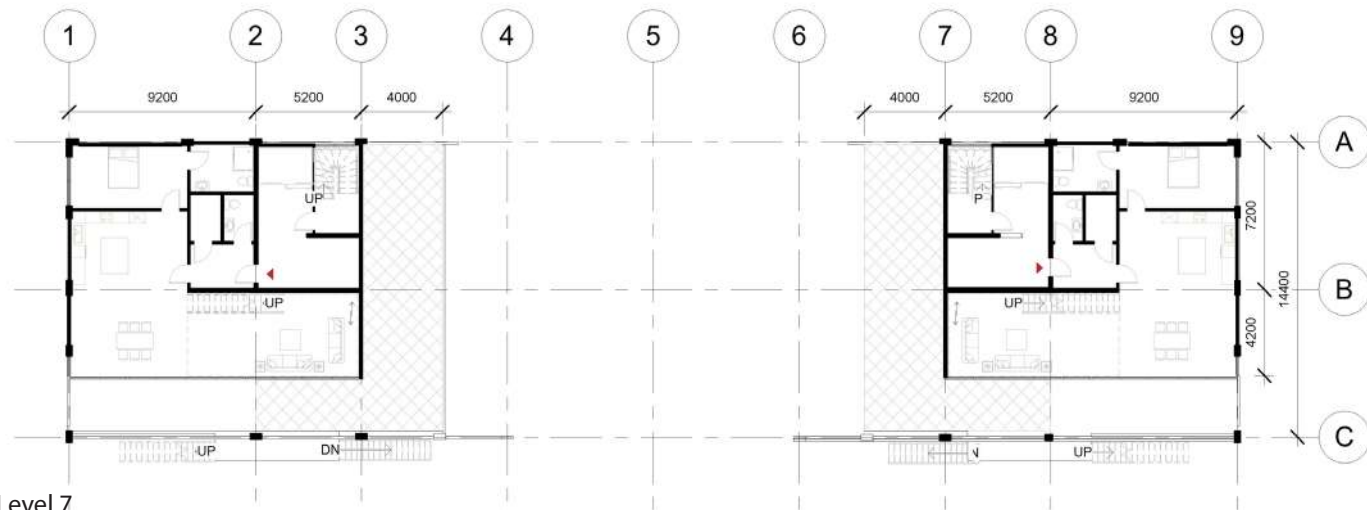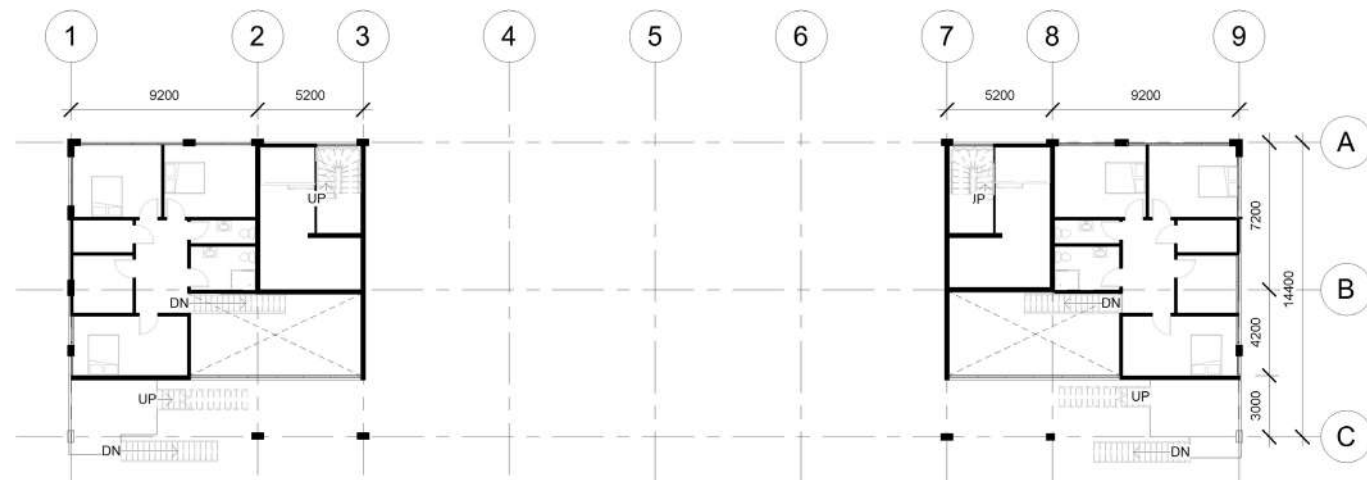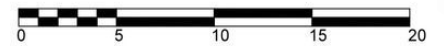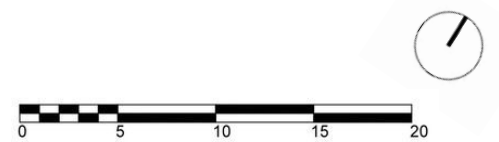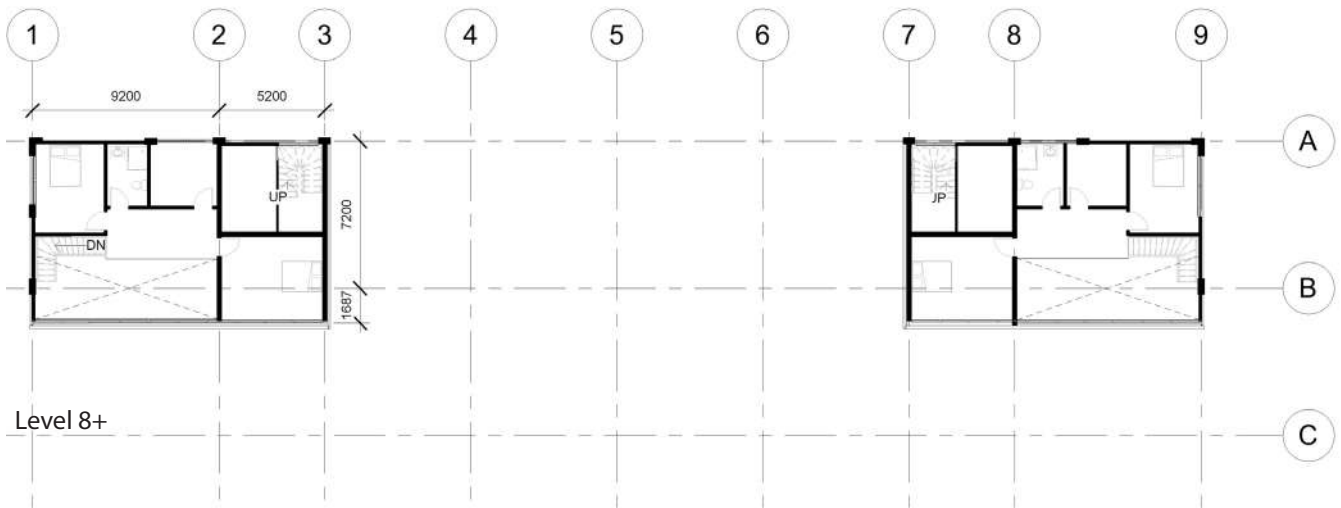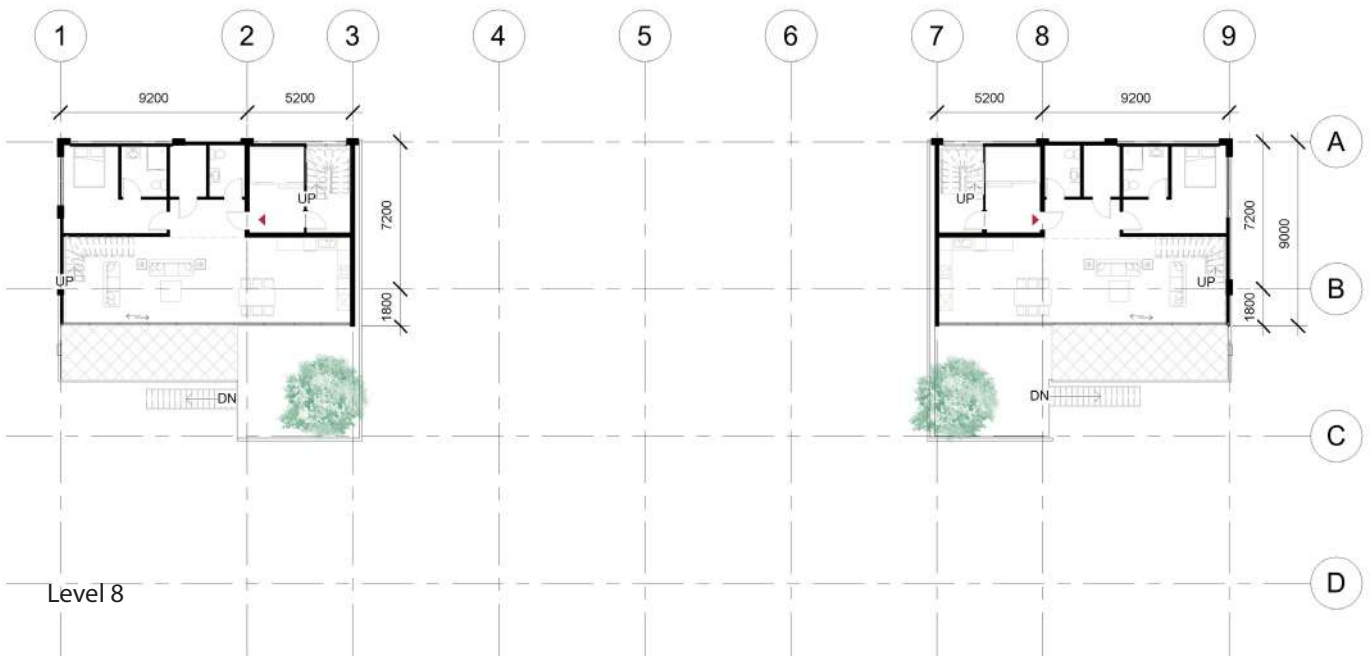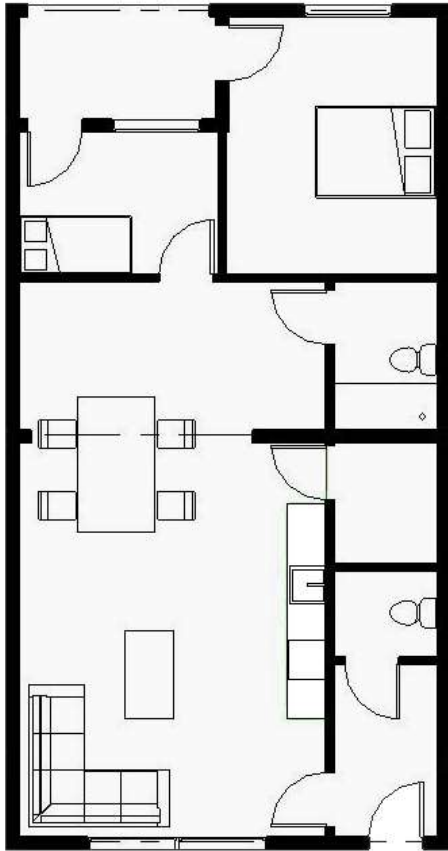
Two - bedroom dwelling

(One level - 7,2x 14,4 m)

7200

Three - bedroom dwelling

(Two levels - 7,2 x 7,6 m)

One level dwelling

This typology of dwellings is positioned on level 1 and 2 and bigger ones (121 m² on level 7 and 8). The example dwelling has two bedrooms with a small private balcony. The living and dining is an open space. The dwelling would serve a starting family with a small child or a couple.

Variance

Even though, the dwellings can be categorized in two ways (one - level and two - levels) dwellings, the typology is much more diverse due to the fact that they are is a big range of sizes. For P2, I am planning to develop more dwelling typologies and show the diversity that the building can offer.

Two - level dwelling

The two level dwellings are bigger in size. The example above shows a three bedroom dwelling with a open space on the first level (dining, kitchen, living room) and three bedrooms on the second level. The bathroom is also positioned on the second level, while there is separate toilet and storage space on the ground level.

	Roof level	41000
	Level 8+	38000
	Level 8	35000
	Level 7+	32000
	Level 7	28940
	Level 6	26000
	Level 5	23000
	Level 4+	20000
	Level 4	17000
	Level 3+	14000
	Level 3	11000
	Level 2	8000
	Level 1	5000
	Groundfloor	0

0   5   10   15   20
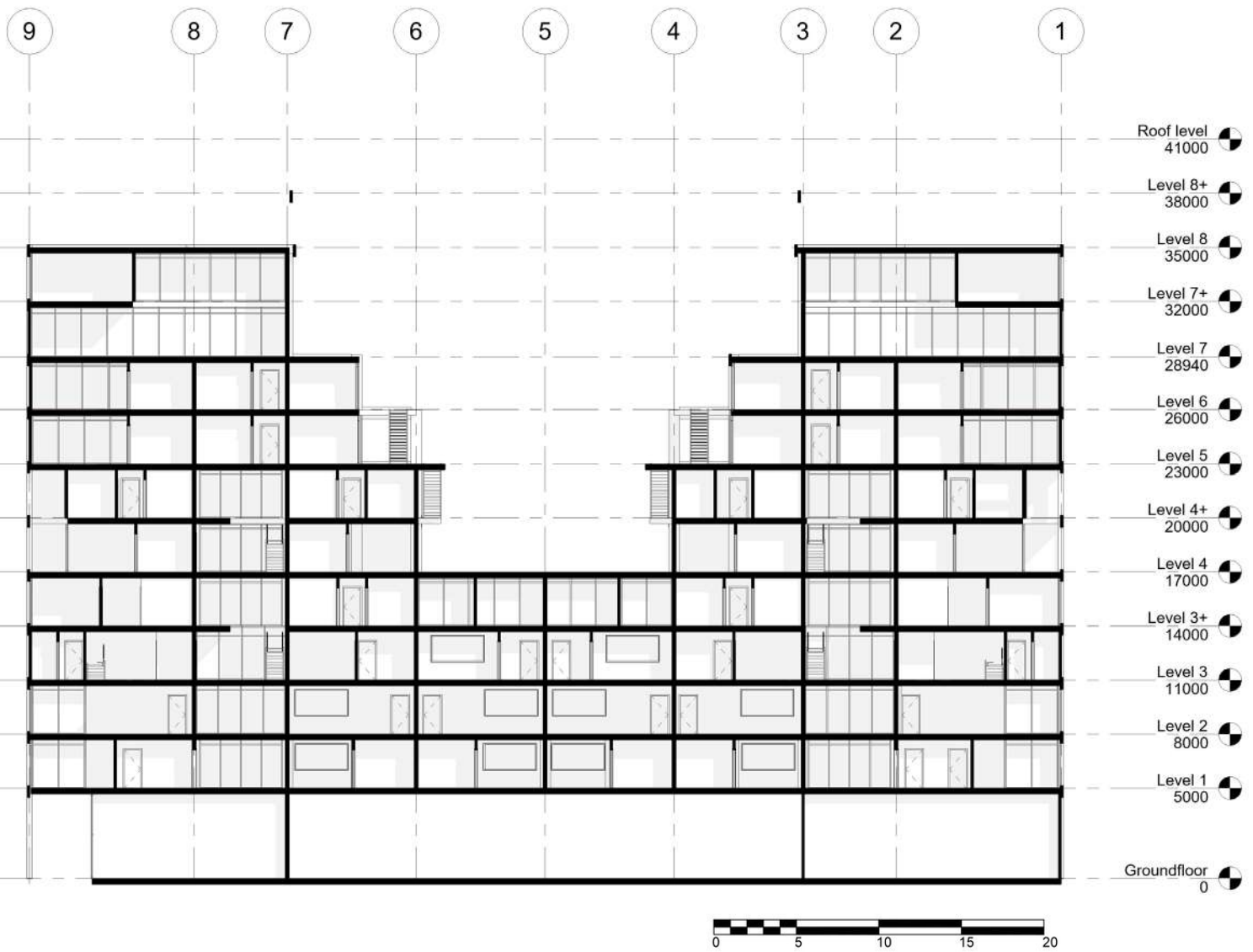
Longitudinal section

Section

The section of the building show the height of the building and the different levels. The height of the ground floor level is 5 meters while the upper levels are 3 meters. In total the building is 41 meters which matches the proposal of the masterplan.

Reflection

At the point of writing this report, the concept design is a proposal of the volume and dwelling layout. Further development of the concept design will contain a more precise and defined position of the shared spaces and dwelling typologies. Overall, the building proposal will contain all aspects that were concluded in the literature research. The concept of a child - friendly neighbourhood can be achieved by the street in the air, the courtyard and the roof terraces which are created it in the concept design. Moreover, the interaction can be achieved since the layout allows for a good surveillance of the common spaces, and at the same time the common areas are provided as such that the residents will always pass by them.

Following, the target group needs and the co-housing principles, the project "The city - place for all" will provide not only suitable but also a favourite place for the families in the city of Rotterdam.

Short section

MSc 3 Advanced Housing Design Graduation Studio

North elevation

9	8	7	6	5

Roof level
41000

Level 8+
38000

Level 8
35000

Level 7+
32000

Level 7
28940

Level 6
26000

Level 5
23000

Level 4+
20000

Level 4
17000

Level 3+
14000

Level 3
11000

Level 2
8000

Level 1
5000

Groundfloor
0

0   5   10   15   20
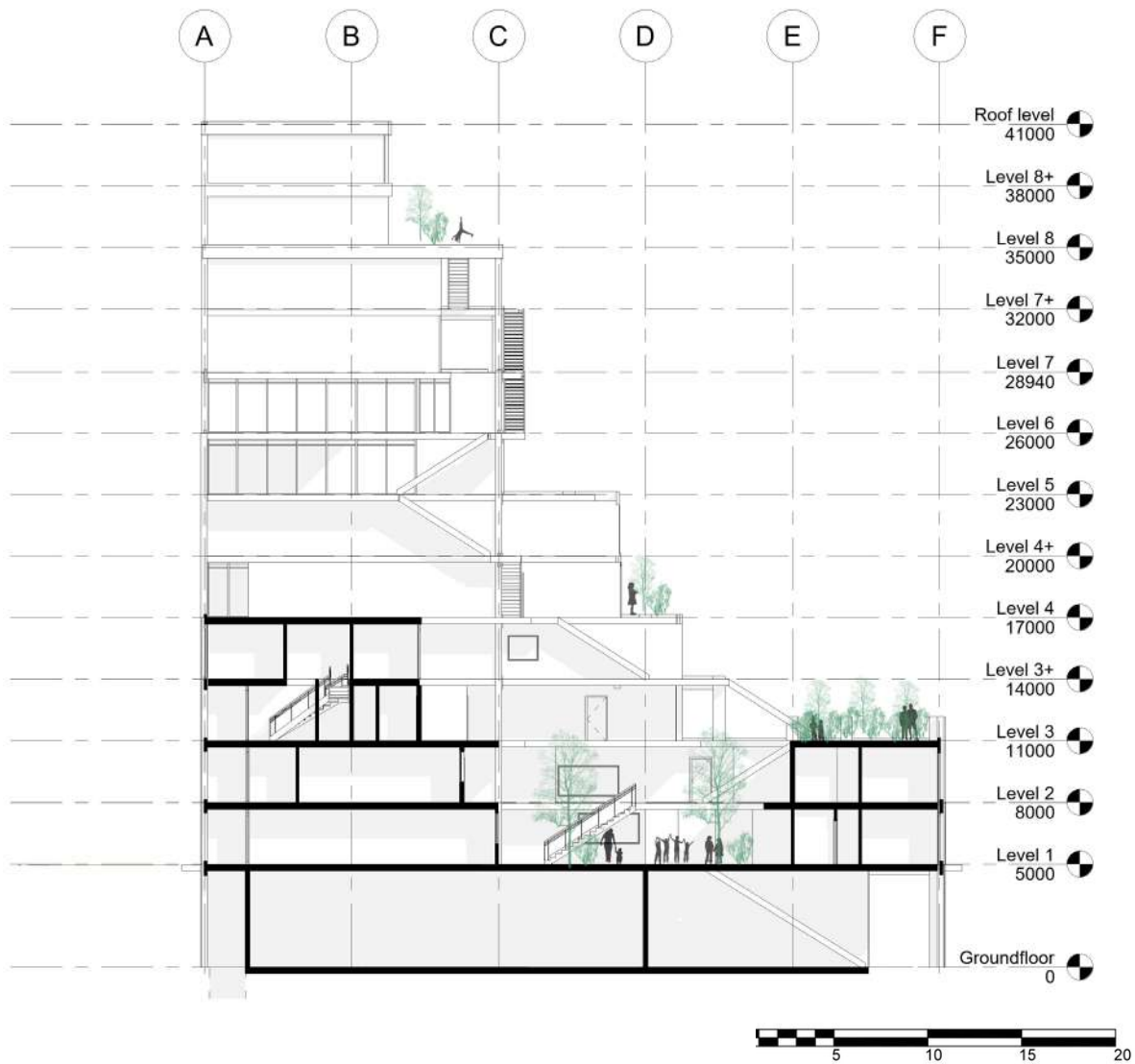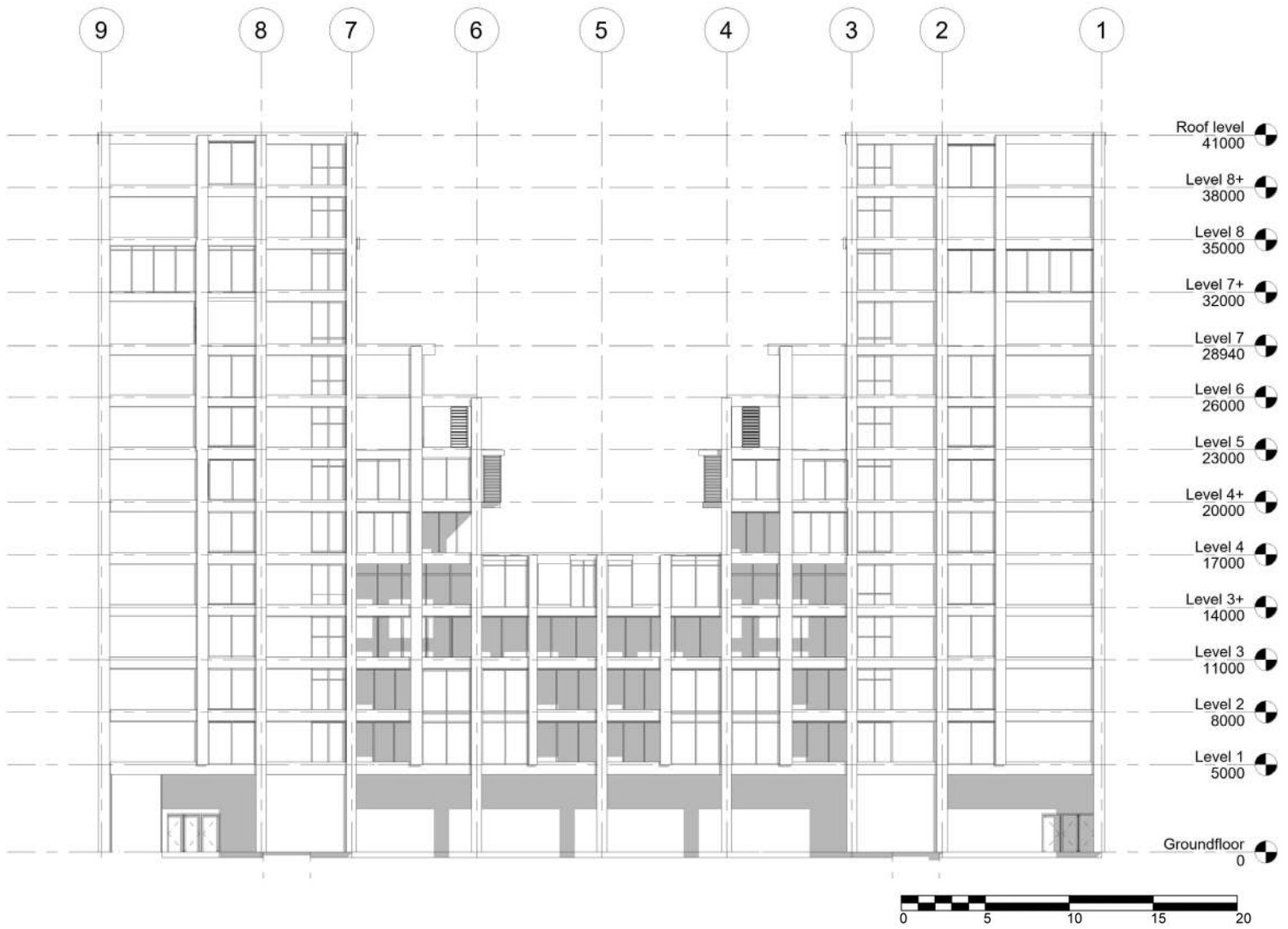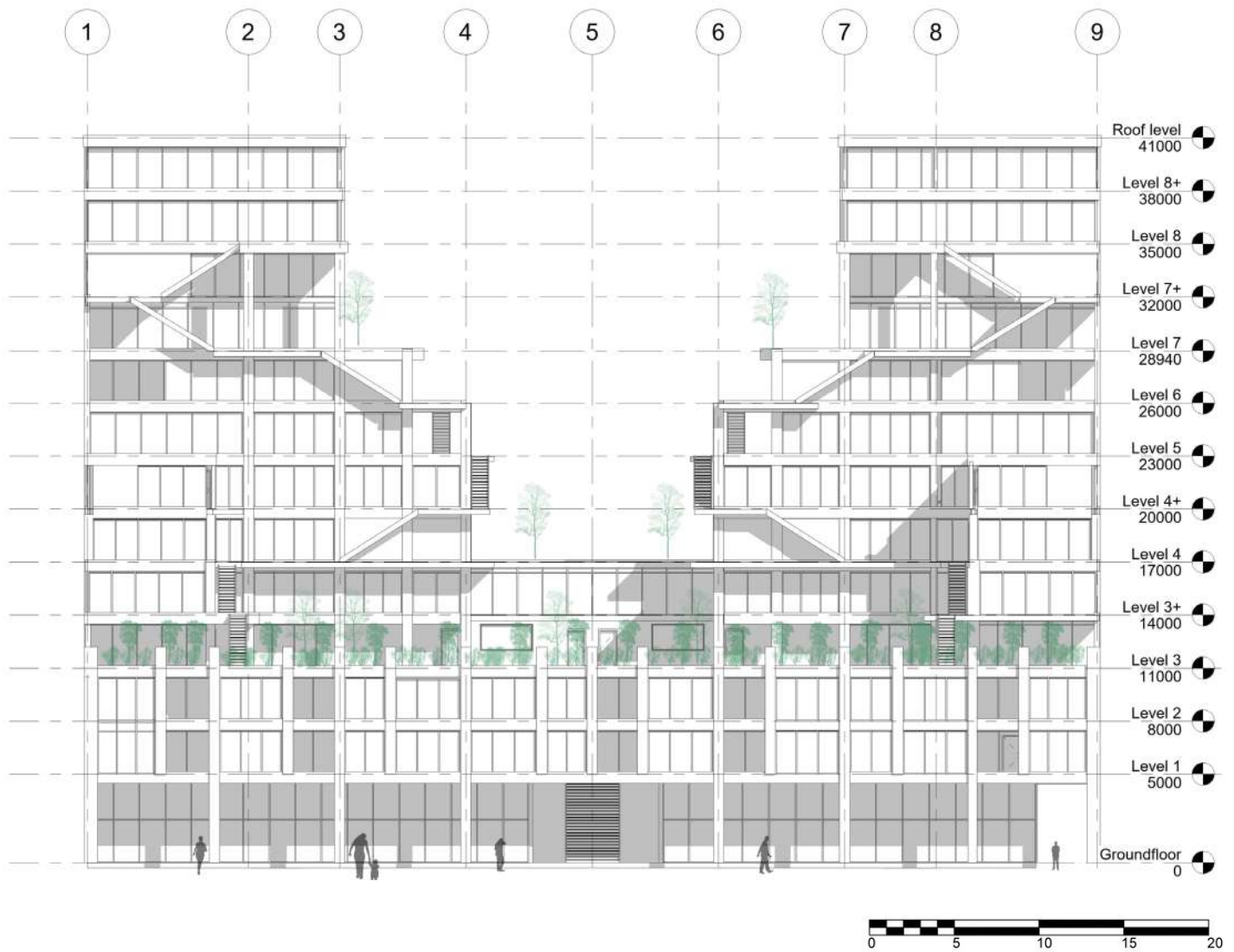
South elevation

APPENDICES

The chapter contains the Bibliography with all sources that were used for writing this report. Then, a table with an overview of the interviews is provided followed by the results of the questionnaire.

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Name:	Marnie de Meylor De Mooij	Charli Searchwell-Guest	Virginia
Category:	"travelling spouse"	"travelling spouse"	"travelling spouse"
Children:	1	0	1
Original country:	USA	UK	Argentina
Work:	work from home	work from home - pharma industry	work from home - IT companies/psychologist
Comments as a parent	"it is important to try to connect to other families in the same situation so you can built your life" "It is difficult to find a place which is child friendly because you need a toilet, changing facilities and a safe place in the park."	not applicable	Work from home: "The advantage is the family life with a baby has been easier."
Rotterdam:	"Rotterdam is too busy and unsafe for raising your child" "language barrier exists to a minimal extent in the center of Rotterdam, while it is increasing more in the smaller cities like Schiedam. "	not applicable	
Location	"close proximity to big city is the best"	"Our preference in the UK was always countryside living.. But here we need to make friends and be able to travel and connect easily, so we wanted to be either in a city centre (as close as possible but still with house and garden) or rural with close train access.."	
Communication:	"it is really easy to find people to hang out with, since there are a lot of groups on Facebook and a really big expat community, but it is difficult to make friends" "in Rotterdam, it is really normal and acceptable to have a conversation in English because almost everyone speaks in English"		"Even though I made some Dutch friends, it is easier to interact with other expats." "Mainly at work or when joining other activities like yoga, the pool" "sense of community in the neighborhood"
Housing:	outdoor space, open floor plan and an office space	"own private garden space and a large open plan kitchen"	"3 bedrooms or more, Integrated kitchen and living room spaces, Separate Laundry room,Outside space "

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Elaine Miller	Rachalle Ayers	Joelys Viamonte
"travelling spouse"	"travelling spouse"	came as a single parent
0	3	1 and pregnant
Scotland	Australia	Venzuela
work from home	work from home	work from home
not applicable	We now live in Amstelveen where the main shops and large green parks are further away so we need to catch a bus or bike ride (not ideal with 3 little kids all the time) but we have a townhouse with a yard and don't need to climb up stairs with a pram	"My daughter is 12 years old and she likes it here a lot, she says that in Rotterdam she always had many problems with the children at her school. She says the children here are friendlier and don't treat her badly. She has integrated very well, speaks fluent Dutch, English and Spanish. and she has no desire to return to Venezuela at any time. "
not applicable		"too many people and too noisy" "From Rotterdam I miss the friends I made, now it is more difficult for me to see them, because of the distance. The disadvantage of having moved would be having to make friends here again and in times of coronavirus it has been very difficult."
"Activities are much more in the city. We have joined the running club, trainings, book club" "wouldn't live in a village"	"Recently moved from Den Bosch where we lived in an 2 bedroom + attic apartment (no lift) in the city center. Benefits were access to the shops, markets and nice large green parks/forests that are all walking distance." "We now live in Amstelveen where the main shops and large green parks are further away so we need to catch a bus or bike ride (not ideal with 3 little kids all the time) "	"it was more important to be able to live in a quiet area where we could raise our children."
"Meet people when walking the dogs and online groups such as Meetup - handy tool – book club,running club"	" Met a lot more Mums in the city center with local activities " (about den Bosch)	"Here (Breda) I have had to speak Dutch since not many people speak English like in Rotterdam"
"100 square meters - 115 in Amsterdam with Garden – grass"	"From my perspective I don't think Dutch houses are made for young families. We just needed a large lounge room for play and 3 bedrooms. I prefer open plan living with no stairs because it's easier to watch the kids, kids can walk out of their bedroom and find you without going up and down steep stairs (which most Dutch houses have)"	"With the coronavirus we understood how important your home can be, and that you really need to work to improve the conditions in your home and be able to have space to enjoy inside the house."

Fill in questions: Country of origin, current city of residence, time in the Netherlands

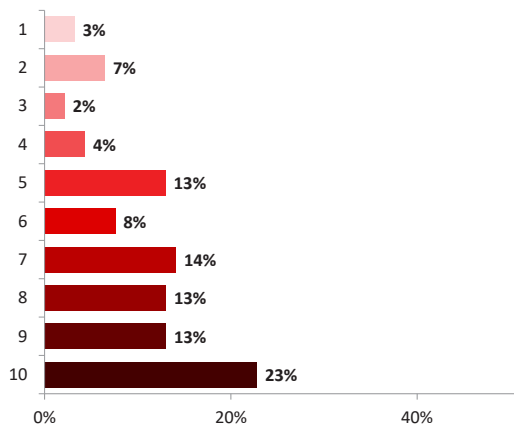| No	Age	Country of origin	Current city of residence	Time in the Netherlands
1	22	Bulgaria	The Hague	9 months
2	40	Uk	Rotterdam	3 years
3	37	Rissia	Rijswijk	4 years
4	26	Ireland	Den Haag	1.5 years
5	33	Iraq	Breda	3 years
6	34	Venezuema	Hilversum	5 years
7	46	Canada and Holland	NLD	8 months
8	40	USA	Rotterdam	4 years
9	28	Romania	Amstelveen	1.5 years
10	33	Australia	Amsterdam	2 years
11	39	United Kingdom and Belgium	Rotterdam	4 months
12	50	Ireland	Rotterdam	5 years
13	29	Poland	Arnhem	9 years
14	27	Romania	Amsterdam-NL	2 months
15	42	Turkey	Tilburg	22 months
16		Italy	Netherlands	6 years
17	28	India	Rotterdam	15 months
18	29	Mexico	Netherlands	4 years
19	26	Mexico	Leiden	3 months
20		Poland	Netherlands	2.5 years
21	31	Philippines	The Hague	4 years
22	30	USA	Zwanenburg	5 years
23	29	Czech republic	Den Haag	3 years
24	40	Canada	Wageningen	4 years
25	26	New Zealand and Tanzania	Zeewolde	2 years
26		Canada	Tilburg	2 years
27	23	Italy	Delft	1 year
28	25	Colombia	Utrecht	1 year
29	33	Poland	Den Haag	2 months
30	22	UK	Delft	14 months
31		Ecuador	Rotterdam	8 yeats
32	35	México	Den Haag	1 month
33	29	Egypt	The Netherlands	1 year
34	26	Vietnam	The Hague	4 years
35		Netherland Antilles	Den Haag	September after being away for 26 yrs
36	37	Estonia	Groningen	1.5 years
37	29	United Kingdom	Rotterdam	7 years
38	26	Slovakia	Rotterdam	Less than a month
39	30	Nepal	Ravenstein	2 years 8 months
40	38	United Kingdom	Cuijk	5 years
41	35	Colombia	Amsterdam	8 months
42	26	Canada	Rotterdam	15 months

43	46	Spain	NL	18 years
44	22	USA	Den Haag	2 years
45		United States	Oldenzaal	13 years
46	27	Indonesia	Almere	Almost 2 years (December 17)
47		Bulgaria	Amersfoort	Couple of months
48	23	Mexico	Gronsveld	4 years
49	64	UK	The Hague	24 years
50	28	USA	Amsterdam	15 months
51	30	Malaysia	Rotterdam	2 years 3 months
52	30	Italy	Rotterdam	3 years
53	45	France	Delft	2 years
54	42	Australia	Gouda	10 years
55	30	Hungary	The Hague	1 year
56	46	Ukraine	Rotterdam	15 years
57	47	Switzerland	The Hague	1 year
58	19	Romania	Enchede	4 months
59	46	Mexico	Kinderdijk (village!)	6 years
60	53	Finland	The Hague	24 yrs
61	32	Iran	Rotterdam	3 months
62	34	Pakistan	Netherlands	1.5years
63	37	Lithuania	Rotterdam	4 years and 7 months
64	37	Russia	Rotterdam	6 years
65	36	Argentina	Krimpen aan den IJssel	8 years
66	33	Ukraine	Nootdorp	10 years
67	45	Serbia	Rotterdam	12
68	31	Brasil	Rotterdam	2 years
69	32	Canada	Rotterdam	4.5 years
70	48	Italy/US/UK	Rotterdam	7 years
71	33	Colombia	Rotterdam	1 year
72	35	USA	Rotterdam	1 year
73	36	Russia	Rotterdam	12 years
74	38	Taiwan	Rotterdam	10 years
75	31	Slovenia	Rotterdam	4years while studying than 3years out and now 4years here again
76	37	Portugal	Netherlands	10 years
77	30	Uk	Rotterdam	3 years
78	39	Peru	Rotterdam	6 years
79	31	Poland	Etten-Leur	7years
80	35	United States	Capelle aan den ijssel	3 years
81	35	Brasil	Netherlands	3 years
82	42	France	Netherlands	5 years
83	45	Nigerian	Rotterdam	7years
84	42	South Korea	Rotterdam	2 years

85	35	Syria	Rotterdam	2 years
86	50	USA	Rotterdam	16 years
87		Italy	Rotterdam	18 years
88	33	Colombia	Rotterdam	2 years
89	44	UK	Rotterdam	12 years
90	33	Indonesia	Schiedam	4 years
91	44	Italy	rotterdam	11 years
92	40	thailand	Rotterdam	10 years
93	42	Brazil	Rotterdam	10 y
94	39	Italy	Rotterdam	2 years
95	34	Spain	The Netherlands	8 years
96	29	Spain	Rotterdam	Since 2013
97	33	Peru	The Netherlands	6 years
98	37	Poland	Rotterdam	13
99	37	Italy	Rotterdam	6 years

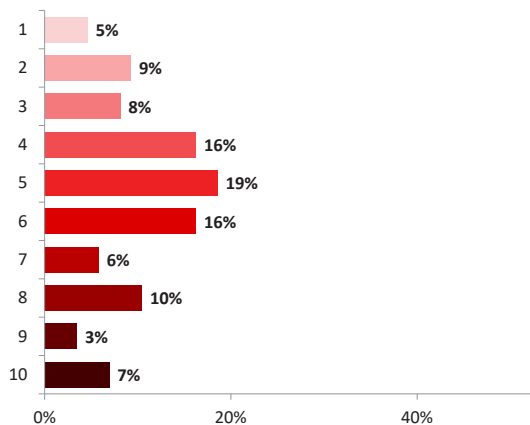Rate the following stress factors (1 - not causing stress, 10 - causing a lot of stress)
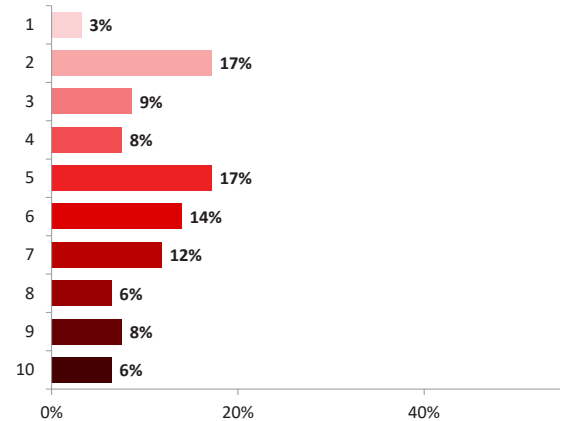
Finding proper housing

1	3%
2	7%
3	2%
4	4%
5	13%
6	8%
7	14%
8	13%
9	13%
10	23%

Cultural differences

1	2%
2	17%
3	17%
4	10%
5	14%
6	8%
7	12%
8	12%
9	5%
10	2%

Adaptation at work

1	5%
2	9%
3	8%
4	16%
5	19%
6	16%
7	6%
8	10%
9	3%
10	7%
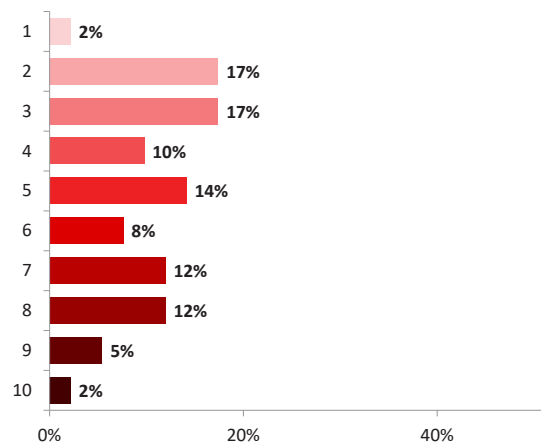
Administration issues (residence permit, visa,

1	3%
2	17%
3	9%
4	8%
5	17%
6	14%
7	12%
8	6%
9	8%
10	6%

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Finding friends and communication issues

Rating	Percentage
1	1%
2	7%
3	11%
4	6%
5	11%
6	8%
7	24%
8	16%
9	7%
10	10%
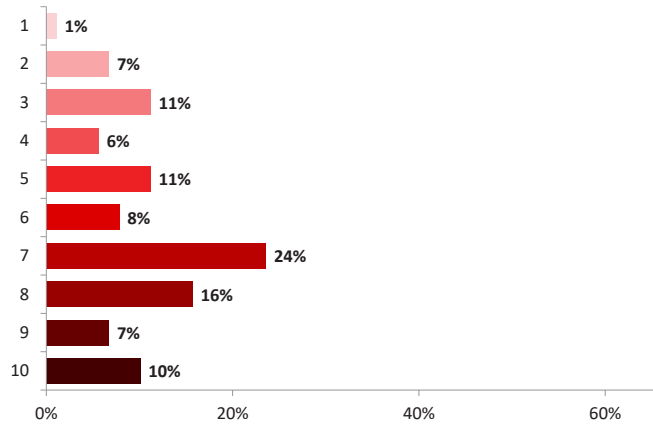
Missing friends and family back home

Rating	Percentage
1	1%
2	3%
3	8%
4	12%
5	11%
6	15%
7	7%
8	13%
9	3%
10	26%
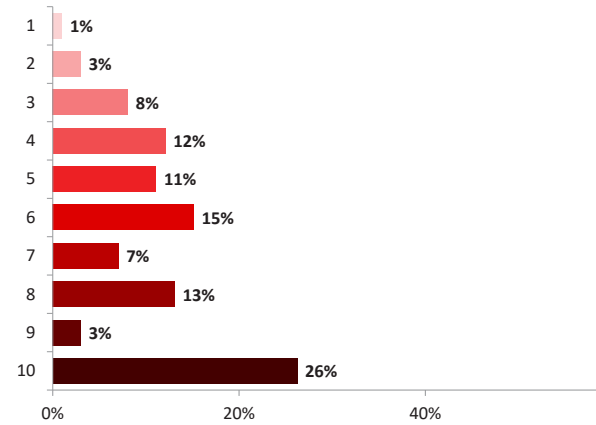
Difficulties with child care (difficulties to find daycare, language difficulties etc.)

Rating	Percentage
1	12%
2	10%
3	15%
4	8%
5	12%
6	17%
7	12%
8	5%
9	7%
10	3%

Language barrier

Rating	Percentage
1	3%
2	10%
3	10%
4	15%
5	12%
6	11%
7	15%
8	12%
9	5%
10	7%
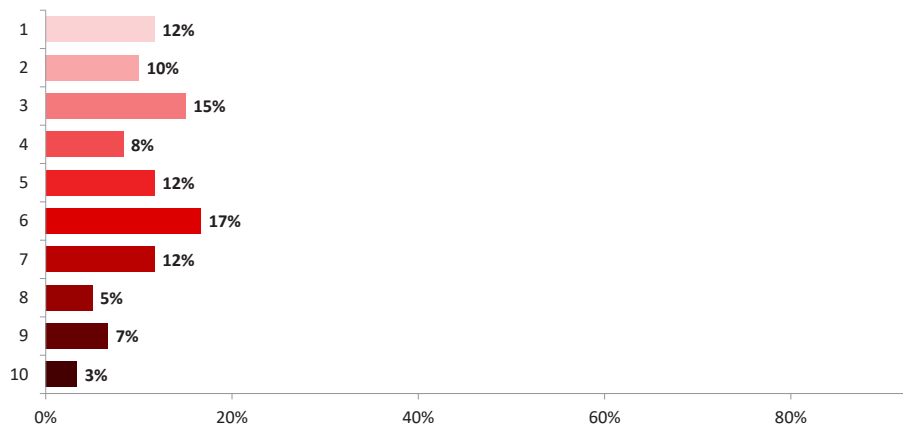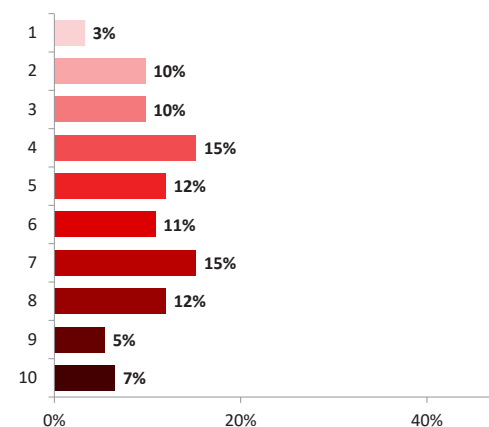
What is your preference in terms of housing?

(N = 99)

Option	Percentage
Sub-urban detached house	37%
House (row house) in close proximity to city center	45%
City house (row house) in central area of a city	35%
Apartment in city	20%
Residential complex with outside area and common areas for children (ex. superlofts)	13%
Other (Please specify)	4%

How many bedrooms do you need?

- 1: 10%
- 2: 23%
- 3: 45%
- 33%

How many square meters do you need?

- 0 – 50: 5%
- 50-75: 10%
- 75-100: 32%
- 100-125: 30%
- 125-150: 22%
- 150+: 22%

Location preferences

(N = 99)

- City center: 27%
- Close proximity to city center 10 min bike: 64%
- City edge neighborhood (20 – 30 mins bike to city center): 43%
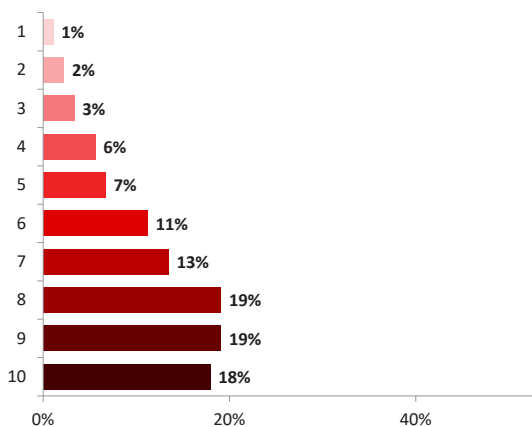- Sub – urban area (close proximity to big city): 27%
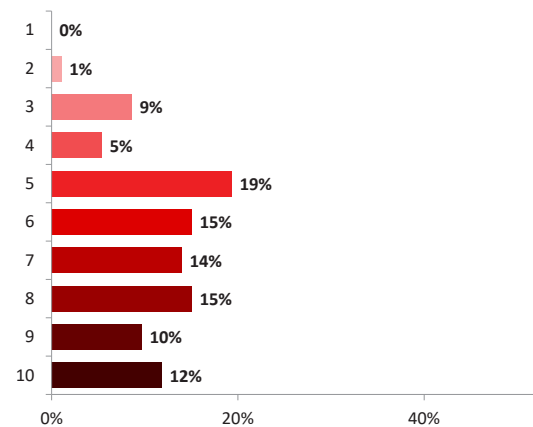- Rural area: 7%
- Other (Please specify): 0%

How important is to live close to...? (1 - not important, 10 - really important)

Parks/playgrounds

- 1: 1%
- 2: 2%
- 3: 3%
- 4: 6%
- 5: 7%
- 6: 11%
- 7: 13%
- 8: 19%
- 9: 19%
- 10: 18%

City center

- 1: 0%
- 2: 1%
- 3: 9%
- 4: 5%
- 5: 19%
- 6: 15%
- 7: 14%
- 8: 15%
- 9: 10%
- 10: 12%

MSc 3 Advanced Housing Design Graduation Studio

Train station (bus stop/ tram stop)

Rating	Percentage
1	0%
2	1%
3	2%
4	2%
5	6%
6	4%
7	10%
8	21%
9	19%
10	34%

Work

Rating	Percentage
1	0%
2	0%
3	5%
4	2%
5	8%
6	22%
7	9%
8	26%
9	13%
10	14%

Children daycare/school

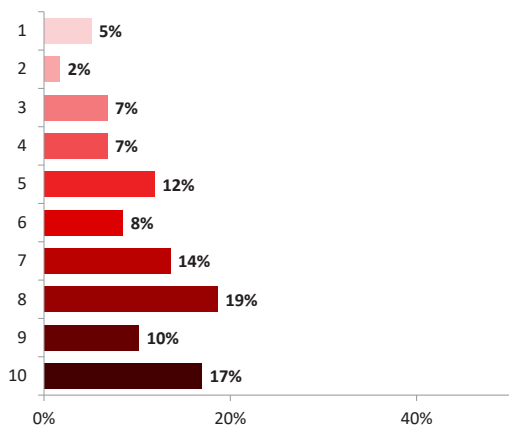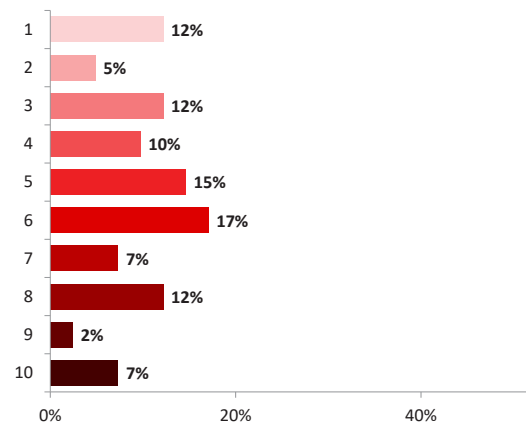| Rating	Percentage
1	7%
2	0%
3	0%
4	1%
5	6%
6	11%
7	11%
8	24%
9	13%
10	26%
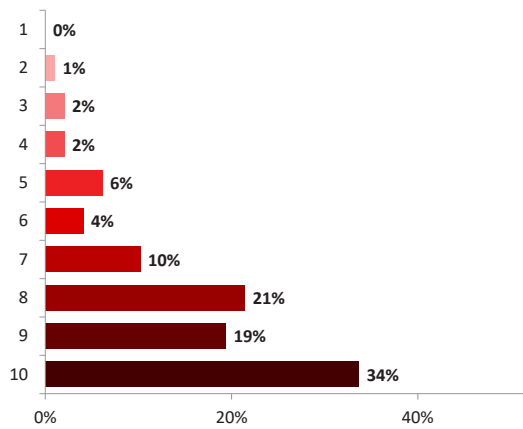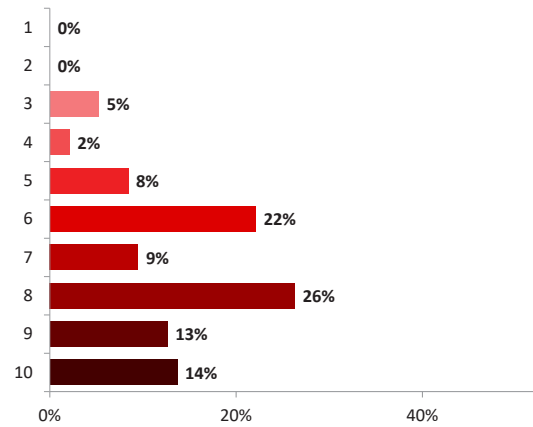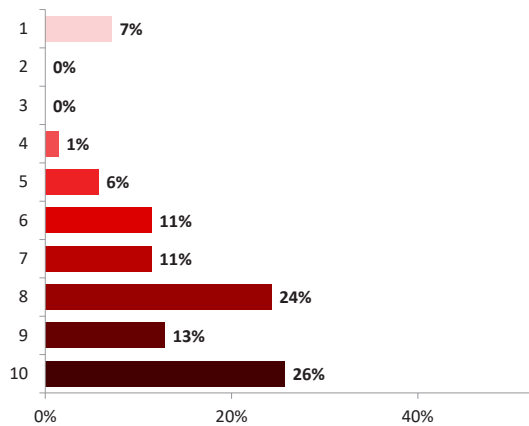
If you live in a big residential complex, please rate the importance of each common area? (1 - not important, 10 - really important)

Outdoor shared space

Rating	Percentage
1	5%
2	2%
3	7%
4	7%
5	12%
6	8%
7	14%
8	19%
9	10%
10	17%

Shared car facility

Rating	Percentage
1	12%
2	5%
3	12%
4	10%
5	15%
6	17%
7	7%
8	12%
9	2%
10	7%

Common working space

Rank	%
1	24%
2	8%
3	12%
4	6%
5	20%
6	12%
7	6%
8	6%
9	0%
10	4%
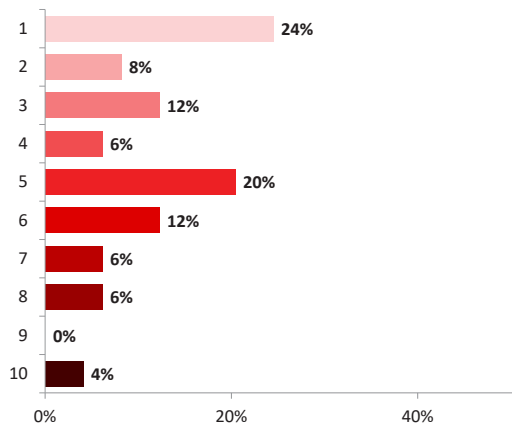
Inside common areas for kids

Rank	%
1	12%
2	2%
3	5%
4	2%
5	9%
6	9%
7	14%
8	9%
9	12%
10	26%

Car parking

Rank	%
1	6%
2	2%
3	2%
4	4%
5	7%
6	4%
7	7%
8	26%
9	15%
10	28%

Children day care

Rank	%
1	15%
2	7%
3	2%
4	0%
5	15%
6	10%
7	10%
8	7%
9	10%
10	24%

Playgrounds

Rank	%
1	13%
2	0%
3	2%
4	6%
5	6%
6	6%
7	15%
8	6%
9	15%
10	30%

Private outdoor space (green balcony/garden)

Rank	%
1	0%
2	0%
3	3%
4	2%
5	3%
6	3%
7	11%
8	13%
9	18%
10	47%