

DIVERSITY AS A NEW COMMON

Housing for expats in Rotterdam

MSc3 Advanced Housing Design

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Research report

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Abstract

This research concerns the topic of modern households with a focus on a specific target group: foreign knowledge workers in Rotterdam. By concentrating on a very diverse target group, this paper relates to the general phenomenon of diversity within urban populations.

The main problem that applies to the housing market in the Netherlands is its actual shortage. When it comes to expats, their number in the Netherlands is gradually increasing, but it is still relatively low in comparison to other western European countries. The problems that apply to foreign knowledge workers are mainly related to social exclusion and lack of cultural integration. These issues are brought together in this research in order to find answers, how can the built environment provide attractive environment for a diverse population.

Methods used in this research are based on literature analysis, as well as a questionnaire and interviews with expats in Rotterdam. The key arguments are that foreign knowledge workers are a group that wants to be more culturally integrated and aspires to create stronger community relations. Hence, this research concludes that appropriate housing conditions for foreign knowledge workers are those, which provide a sense of belonging, equality and collectiveness.

INTRODUCTION - RESEARCH PLAN

Architecture is a discipline that concerns people's everyday lives. According to the U.S. Environmental Protection Agency, an average person spends around 93% of their time indoors (Indoor Air Division et al., 1989). This issue makes architects and planners responsible for the quality of living and working spaces. Awareness of this responsibility led to my choice of the graduation studio of Advanced Housing Design, with an aim to design a residential building in Merwe-Vierhavens, i.e. M4H, in Rotterdam.

Problem Statement

One of the problems that the Netherlands is currently facing is housing shortage. Dutch Minister of Foreign Affairs Kaja Ollongren suggested a need of a million new homes by the year 2030. Another research by de Nederlandsche Bank estimates the growth of the number of households by 640.000 until 2030. It also states that the demand for housing in large cities is bigger than in the rest of the country (Hekwolter et al., 2017, p. 26). Good study and work opportunities are inviting factors, especially for young people, to migrate to four major Dutch cities. Located on the former harbor area, M4H has a potential to create attractive housing opportunities. Unlike Amsterdam or Utrecht, where vast parts of the cities are under the protection of the heritage conservator, Rotterdam has a bigger capacity for urban densification. However, according to Statistics Netherlands (CBS) housing satisfaction in Rotterdam is 10% lower than in the Netherlands as a whole. Thus, one of the research problems is lack of attractive housing on Rotterdam's market. Therefore as an urban transformation initiative, M4H strives to provide a future-proof live-work environment that attracts future residents and young companies to settle by the harbor of Rotterdam.

Rotterdam is worldwide known for its diversity in many fields, but mainly its population and architecture. In fact, people of Dutch origin (people born in the Netherlands, whose parents were also born in the Netherlands) were a minority in the city already in 2017, constituting 49.7% of the city's population. Currently, this number is even lower and equals 47.7% (AlleCijfers). It is predicted that native Dutch will constitute only 40% of Rotterdam's population by 2030. It follows that Rotterdam is a truly diverse city, where heterogeneity constitutes a core of the city's identity (Scholten et al., 2019, p. 1, 57). In fact, such huge diversity, described by Scholten et al. as superdiversity, leads to partial disappearance of majorities and/or minorities, as the city is too diverse to find a clear boundary between them. The complexity of Rotterdam's diversity can be a cause of social exclusion and urban segregation, often discussed by sociologists. Hence, these problems will be further discussed in my research.

Given the topic of diversity, a target group for the residential building in M4H will support the research, narrowing it down to specific user needs. Considering the experimental character of the M4H district and its live-work-oriented character, as well as the Dutch government's aim to attract foreign highly-skilled immigrants, I chose expats as a starting point for my further investigation. I believe that their general readiness for change, as well as overall openness for new

experiences and career-oriented lifestyle go hand in hand with the expectations of the municipality of Rotterdam for M4H as a knowledge investment. However, the number of foreign knowledge workers in the Netherlands is still low in comparison with other European countries. This problem leads to a further investigation on conditions which are considered attractive for expats.

Since highly-skilled immigrants are mostly career-oriented, the problem of contemporary housing in relation to working patterns needs to be addressed too. Although the work-home architecture has existed for hundreds of years (Holliss, 2015, p. 38), the model of the contemporary live-work dwelling still remains an architectural challenge. Additionally, technological advancement of the last decades led to the emergence of wholly new career paths, allowing people to work more flexibly. Recent outbreak of Covid-19 pandemic got global attention to the issue of working from home and generated wide interest in dwelling adaptation. However, it is not only the notion of home-based work that should be considered, but also the differences of needs between individual household users. The solutions for single-person dwellings in terms of work-home adaptation are admittedly different than for the family household. Especially in the case of expats, problems such as unemployed spouses and/or children must be taken into account, while considering a suitable dwelling design.

Research questions

This research aims to investigate the problems stated in the previous paragraphs in order to answer the research hypothesis: the possibility of creating an integrated community composed of a diverse group of people. I believe that new urban patterns defined by the global diversity in the cities have a chance to result in strong community relationships. New urban communities, although not culturally homogeneous anymore, share similar live-work patterns and common interests. Based on the problems stated above, following research questions are defined to support the research hypothesis:

- What makes an urban neighborhood inclusive?
- What is a desirable live-work environment for a diverse group of dwellers?
- What constitutes attractive housing conditions in dense urban surroundings?

Given the theme of community as an integral theme of the design research, further research questions need to be defined.

- When does a group become a community?
- How to create a neighbor-friendly housing community without interfering with people's privacy?

My research on foreign highly-skilled immigrants will start with the history of Dutch migration policies, as well as the importance of expats in the country's economy. Further, I will introduce

the community of expats in Rotterdam and the reasons they choose this city as an attractive destination. Moreover, expat-related topics such as cosmopolitanism and mobile lifestyle will be discussed as an argument that not all the generic stereotypes can be easily applied when analyzing the needs of individuals. General features of highly-skilled immigrants will contribute to answering the target group related question:

- Do lifestyle patterns of expats differ from the ones of Dutch people?

The topic of urban segregation and social exclusion will lead to the question:

- How to create an open community that consists of both international and local inhabitants?

Source analysis and methodology

Questions related to the target group of expats will be mainly supported by statistical data and the research of sociologists from Erasmus University Rotterdam, i. a. prof. dr. Godfried Engbersen and dr. Marianne van Bochove. However, there is a clear knowledge gap in any of their sociological analyses, namely the architectural perspective. Existing scientific data lacks a definition of suitable housing for international knowledge workers. Therefore my research will be complemented by a questionnaire that included 33 expatriates and 4 interviews that will give a better view on the needs of expat individuals. The questionnaire was created by one of the platforms supported by TU Delft, which allows the respondents to remain completely anonymous during the process. The main aim of the survey was to define current life situations of individual expats, by knowing general background information of the respondents, e.g country of origin, age, marital status in relation to the friend's circle, willingness to extend their stay in the Netherlands and general satisfaction from their housing situation in the Netherlands. The questionnaire offers a more in depth analysis of individuals in opposition to rough statistical numeric data given by scientists. Next to the questionnaire, I conducted interviews with 5 expatriates of different backgrounds and family situations. The method I used was a semi-structured interview, allowing the interviewee to share as much of their story, as they can tell. The aim of these interviews was to get inspiration and information about the needs of expats regarding spatial and architectural aspects of their dwellings. The choice of interviewees was motivated by providing a maximum variety and contrast in lifestyle patterns. Therefore the respondents belong to various groups, such as: singles, couples, parents. Although my interviewees are only expats, I believe that the features they have and the problems they face can as well describe not only international, but also Dutch young professionals. Aside from conversing with expatriates, I also interviewed an account manager of Rotterdam Expat Center, who gave me insights on their contribution in the well-being and community building activities for highly-skilled immigrants in Rotterdam.

Next to the interviews and sociological articles on expats, I studied literature to gain insights and knowledge about expats, collective living, as well as the phenomenon of superdiversity in

Rotterdam. The book *Coming to Terms with Superdiversity: The Case of Rotterdam* edited by Peter Scholten, Maurice Crul and Paul van de Laar is a source that relates to the themes of immigration in Rotterdam. It is divided into three parts. Each one consists of multiple research conducted by different scientists on various themes, such as the history of immigration, the diversity of Rotterdam and social exclusion. The topic of inclusiveness in the urban neighborhood will be discussed by analyzing the ideas and positions of Richard Sennett. *Building and Dwelling: Ethics for the City* gives inspiration about an open city and collectiveness in the urban realm. Coming from a city scale to the neighborhood, Advanced Housing Design Studio research *Collectiveness in housing* under the supervision of Pierijn van der Putt was a source of many discussions and ideas. It helped my understanding in creating an integrated neighborhood that provides the dwellers a sense of identity and belonging. To further define the differences between the scale of the neighborhood and a size of a community, the analysis of Robin Dunbar's and Richard Sosis' research in *Optimising human community sizes* will be the main point of reference.

Relevance

The main question of the graduation studio of Advanced Housing Design is “how do we provide high-quality, affordable housing for a diverse population?” It relates to the notion of diversity and globalization which imply a further reflection on the conditions and needs of foreigners that settle to live and work in the Netherlands. Although much sociological research has been done to define the problems that affect immigrants in the Netherlands, the topic still lacks architectural perspective. Especially in the case of foreign knowledge workers, their financial situation often implies no need for special attention. However, it can not be forgotten that the cultural shock, the struggles of relocation and lack of social integration can have a great impact on their experience.

According to Statistics Netherlands, the share of goods export of highly-skilled immigrants is 50% higher than in the case of the Dutch knowledge workers (Groot et al., 2013, p. 8). Their presence on the international scene also provides a knowledge environment based on exchange. However, currently the number of expats in the Netherlands is still low in comparison to other European countries (van Zeijl et al., 2020, p. 11). For this reason the Netherlands aims to invite more highly-skilled immigrants in order to further improve its global economic position. Hence, the housing market should create attractive conditions for the newcomers.

Currently finding a suitable apartment is a national problem, not only in case of foreigners. However, internationals face more difficulties due to their lack of language skills and knowledge about the culture. Their dynamic lifestyle also requires additional attention, when it comes to the living and working patterns. According to the Rotterdam Expat Center and Decisio, there is still not enough research that has been done in order to draw appropriate conclusions. Hence, the aim of this paper is to complement the existing data in order to formulate a design hypothesis that will lead to further design research on housing for expats in Rotterdam.

TOPIC RESEARCH

History of migration in Rotterdam

The history of immigration in Rotterdam is strongly related to the growth of its harbor. The city's superdiversity defined by Scholten et al. (2019) is broader described in the second chapter of their book written by van de Laar and der Schoor. There, the authors explain the nature of immigration starting from the seventeenth century, when newly arrived citizens were mostly merchants and traders, but also artists, writers and educators, who contributed to the urban spirit of the city. In the case of Rotterdam, migration was relevant for the demographic development. Already four centuries ago, 20% of people getting married in Rotterdam were registered as foreign. In 1850-1900, more than 40% of the citizens were immigrants. It was the time when migration was still dominated by the labor market structure from the pre-industrial era. However, around 1900 only 2% of people living in Rotterdam were foreigners. The situation changed during the First and Second World War, when Rotterdam provided shelter to tens of thousands of immigrants on a temporary basis. After the city suffered from the events of the war, it needed to be rebuilt with a new emphasis on expanding its industries. Therefore, new immigrants were needed to work as longshoremen, shipbuilders, industrial workers etc. The jobs were well-paid and beneficial for foreigners, initially attracting mainly guest workers from the Mediterranean countries.

The growth of foreign population in Rotterdam led to defining a first Dutch policy for immigrants integration initiated by the municipality of Rotterdam in 1978: *Nota Migranten* in Rotterdam - a memo on integration of the immigrants. It was the first document that put a spotlight on migration that at the time was still considered as a temporary phenomenon (Scholten et al., 2019, p. 112; van Meeteren et al., 2013, p. 115-116). Indeed, the amount of immigrants in Rotterdam grows every year. According to Statistics Netherlands, in 2015 31% of all arrivals in the city was due to immigration, whereas in 2019 the number constituted already 38% (Fig. 1). It goes without saying that Rotterdam is a city that attracts newcomers. But how many of them are currently international workers?

According to the Dutch economic research consultancy Decisio, there were 59.550 international workers in the Rotterdam region in 2017, which comprised 9% of the city's population. Among these foreigners, 16.200 (27% of all international workers and 2,5% of Rotterdam's population) are knowledge workers, i.e. highly-skilled immigrants, commonly called expats. But who are they? As Ooijevaar and Verkooijen (2015) admit, the definition of an expat is ambiguous. Etymologically, it derives from Latin: *ex* (out) + *patria* (native country). However, currently this word is used so widely that practically everyone who relocates from the country of origin is called an expat. Therefore, to be specific about the topic of my research, I chose to focus on expats as international knowledge workers, described by the Dutch government as follows:

International knowledge workers are individuals from private households, who belong to the labor force, who were born in a country other than where they reside, and who have a high level of education. (van Zeijl et al., 2020, p. 6)

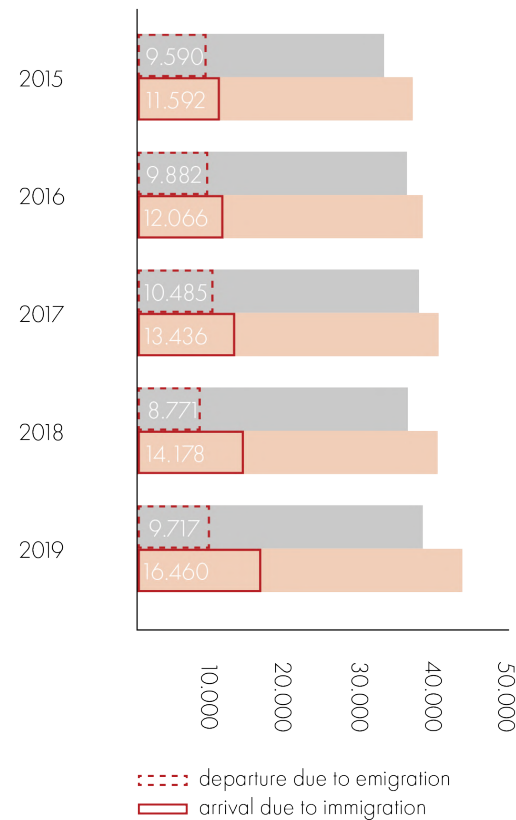


Fig. 1. Rotterdam departures and arrivals, incl. due to migration reasons.

International knowledge workers in Rotterdam

In October 2004 the Dutch rules of admission for highly-skilled migrants got relaxed, allowing for an easier entrance of the highly qualified labor groups to the Netherlands. It is a result of the Dutch government's aim to attract more international knowledge workers, as they contribute to the country's global economy and research. The government considers expats as highly-skilled based on their income. It has to be at least 51.239€ gross for people older than 30. Under 30 years of age, expat's minimal income must be not less than 37.575€. Having fulfilled these conditions, foreign knowledge workers have a better chance to get a permanent residence in the Netherlands. The length of the permit depends on their work contract. In case of a limited contract duration, they get a residence permit for as long as the contract is defined. In case of an unlimited contract, the permit is granted for 5 years, after which they can apply for a permanent residence permit (van Meeteren et al., 2013, p. 120-121). They also get a 30% tax ruling, which makes it more attractive for them to choose the Netherlands as a career destination. However, the amount of international knowledge workers on the Dutch labor market is still relatively low in comparison to other European countries. In 2016/2018, it was only 4,2% of the labor force. Moreover, the amount of expats both in the Netherlands and specifically Rotterdam has declined over the last

years. Nevertheless, the Netherlands stands out when it comes to the amount of self-employed expats, namely 20% of them (van Zeijl et al., 2020, p. 11-12). For this reason, the Netherlands could be considered as a country for growth as entrepreneurs and independent professionals.

Although Amsterdam still remains the main destination for international knowledge workers, Rotterdam attracts expats by its innovative character and the presence of international trade companies. In fact, two of my interviewees - a couple from Poland living in Amsterdam, is currently looking for an apartment to buy in Rotterdam.

We have a feeling that Amsterdam is not a city for us in the end. First of all, we miss the urban atmosphere here. Besides, the city is supposedly so innovative and welcoming for young start-ups and so on, but in reality you actually don't see that. And when it comes to Rotterdam, it really is an innovative city with big career prospects. (Maria and Bartek from Poland)

What are these jobs that Rotterdam has to offer for expats? According to Decisio (2019), the majority of highly-skilled immigrants occupy positions in business services and wholesale and trade brokerage (Fig. 2). They are also more likely to work in international companies, where the share of exports of goods is higher than in case of the Dutch knowledge workers (Groot et al., 2013, 192). When it comes to the origins of expats, most of them come from Germany, Belgium and UK (Fig. 3).

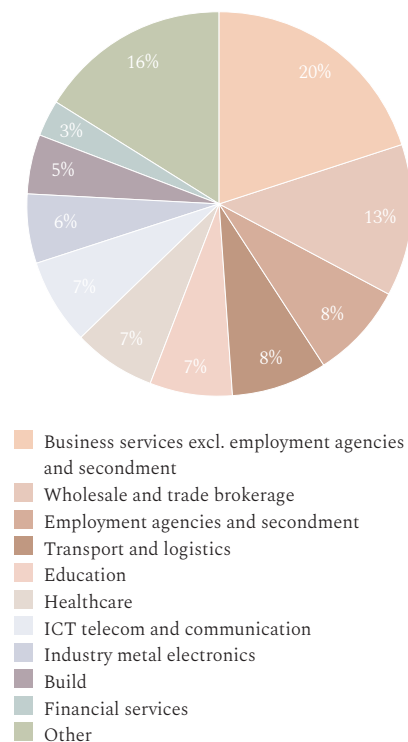


Fig. 2. Professions of highly-skilled knowledge workers in Rotterdam (Decisio, 2019)

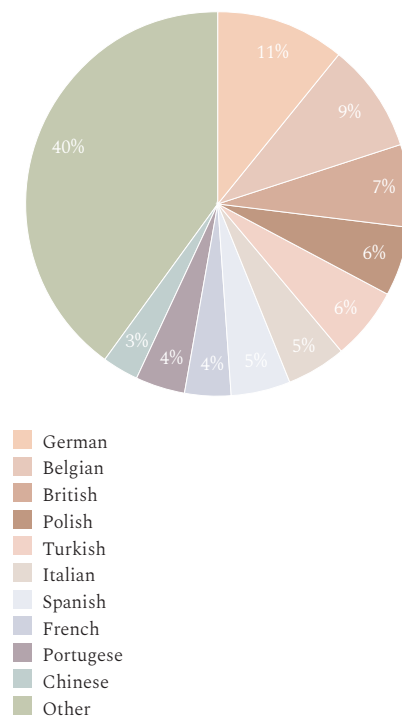


Fig. 3. Origins of highly-skilled knowledge workers in Rotterdam (Decisio, 2019)

According to Decisio (2017), in 2015 most of the highly-skilled immigrants in Rotterdam were at the age between 35 and 45 (Fig. 4). 46% of expats in Rotterdam had a family with at least one child. The dominant family model is two children families (Fig. 5). However, there is no up-to-date number of expat households divided by the precise types. Therefore, my research relies on the data from 2011 collected by CBS for the whole country (Fig. 6a and 6b). It shows that around one third of the international knowledge workers lived in one-person households at that time. Moreover, Expat Rotterdam Center confirmed in my interview that there are still many single expats moving to Rotterdam. Since changing the country of stay and facing a whole new culture can be challenging, next paragraphs will discuss the process and issues expats face while moving to the Netherlands.

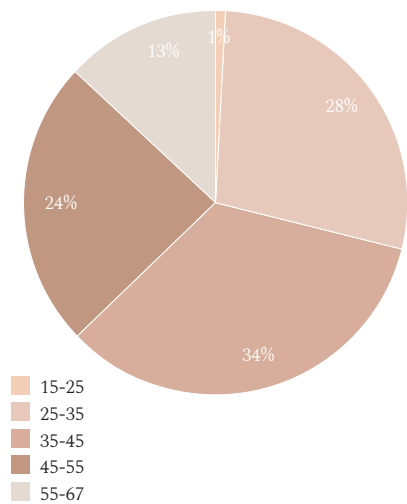


Fig. 4. Age of highly-skilled knowledge workers in Rotterdam (Decisio, 2017)

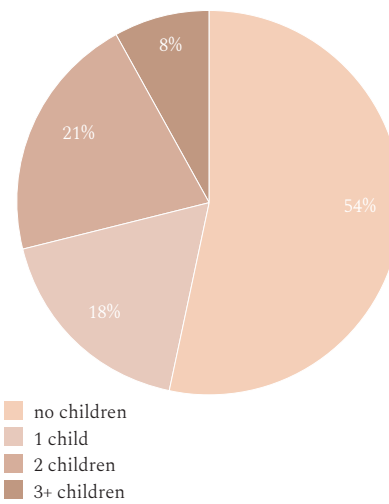


Fig. 5. Families of highly-skilled knowledge workers in Rotterdam (Decisio, 2017)

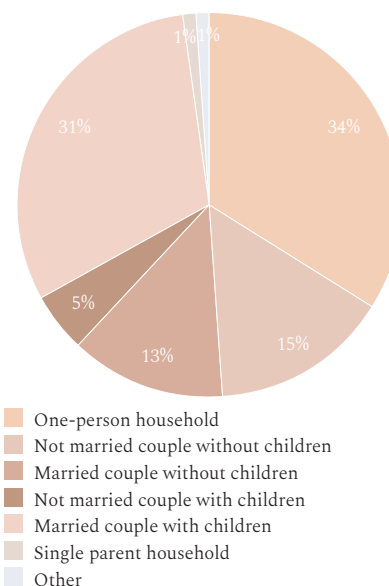
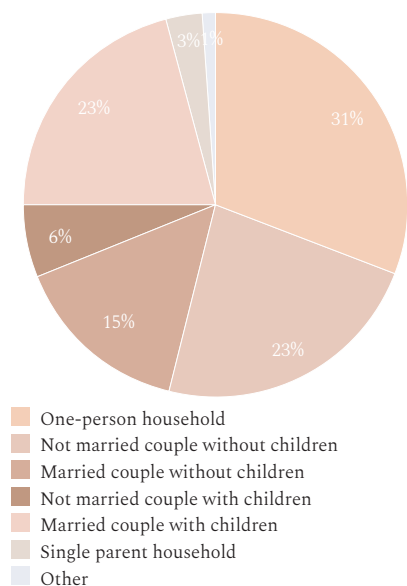


Fig. 6a. Rotterdam expats - women households; 6b. Rotterdam expats - men households (CBS, 2013)

Integration in the Netherlands

International knowledge workers face a very dynamic phase while leaving the country of origin and entering a new one. Adjusting to the unknown is challenging and might be overwhelming, despite the overall excitement about the upcoming adventure. Finding a suitable housing or school in case of families demands effort, especially for international people who do not speak the local language. Cieri et al. (1991) mention two psychological strategies that may occur in case of expatriation: withdrawal and reaction. While the mere process of changing places is time and energy-consuming, the actual adjustments to the new environment occur after relocation. The authors distinguish four phases of expat's experience in the new country. First one is the "honeymoon" phase, meaning exaggerated positivity about the new environment. The time period of each individual phase is not documented. However, the "honeymoon" phase is followed by the stage "the party is over." This phase is the opposite of the previous one, meaning unrealistic negativity of the experience. After that, the "turning point" comes, which forecasts the overall adjustment to the local culture. The last phase is therefore called "healthy recovery", meaning acceptance of the new environment and circumstances.

Integration within the new culture concerns not only the knowledge worker, but in case of bringing a partner and/or children - the family needs special attention too. Having interviewed two expatriate spouses, I realized that for them the process of relocation is even more difficult than for their partners. They often start their new life being unemployed and not having many opportunities to meet people other than partner's friends. When a child comes into play, additional problems with schooling and adjusting to the new environment appear on the scene. However, another of my interviewees mentioned that he and his partner chose Rotterdam thanks to the good international school their son went to. Moreover, such institutions like Expat Rotterdam Center aim to help international knowledge workers and their spouses to get accustomed with the new reality.

If you are an expat and bring a spouse, we take care of them. The reason is that if the spouse isn't happy, the expat isn't happy either. We want expats to feel happy as they come here. (Laura Salm, Expat Rotterdam Center)

What makes expats happy then? Or in other words: how to make them feel like they belong in their new world? Van Bakel et al. (2016) studied the relationship between expats and their local hosts. The study included 33 Dutch "local hosts" and 65 expatriates, whose answers were later analyzed and concluded in the research. The findings of this study prove that high-quality contact between the expatriates and their local host gives expats more benefits than the low-quality contact. Some of the benefits mentioned are adjustment to interaction and open-mindedness. Moreover, the authors mention that leaving existing social networks and watching them fade away, together with stressors from new working environments increase expat's need for social support. Since the locals usually already have their friend's circles established, it is more difficult for expats to form friendship bonds with them. As a result, they seek for other sources of

support, which are their co-nationals or other expats. Several studies, i.e. by Engbersen and van Bochove (2015), as well as my questionnaire among expats, confirm this issue. 52% of my respondents did not mention local people in their friend’s circle. However, 88% of them answered that they would like to improve their contact with the locals. The segregation of expats from their hosts is a problem often summarized by the term of an “expat bubble”.

Expats bubble

There is a common belief that foreign knowledge workers enjoy staying in their own social circles and do not feel the need for integration within the host culture by means of e.g. learning the language. Engbersen and van Bochove (2015) researched these issues in multiple papers, proving with their findings that usually it is not the intention of an expat to stay away from the local culture, but a matter of circumstances.

Overall I am enjoying the Netherlands, I’m learning Dutch but do find it really hard to make friends here. The Netherlands has been ranked as the hardest place to make new friends and the Corona situation has made it even more difficult. (Gareth from UK)

I asked 33 expatriates in Rotterdam to answer an anonymous questionnaire that consisted of direct and open questions. The respondents were people of 20 different nationalities, including 15 outside of Europe. Three of them were male and the rest female. The age varied between 22 and 48 years old (Fig. 7). Six people were single and the rest in a relationship or married (Fig. 8). Three of the respondents have children. Out of the single respondents, one moved to the Netherlands with the partner. Out of the respondents who currently are in a relationship, thirteen found a partner while living abroad (comparison between Fig. 8 and Fig. 9).

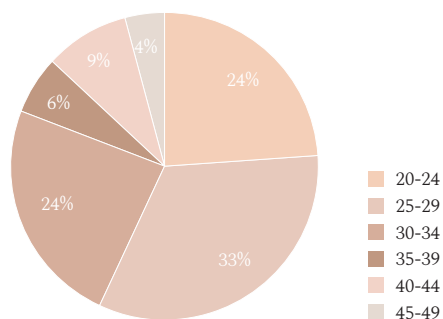


Fig. 7. Respondents answers to the question: what is your age?

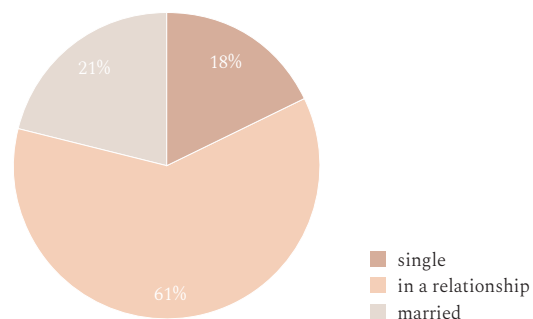


Fig. 8. Respondents answers to the question: what is your marital status?

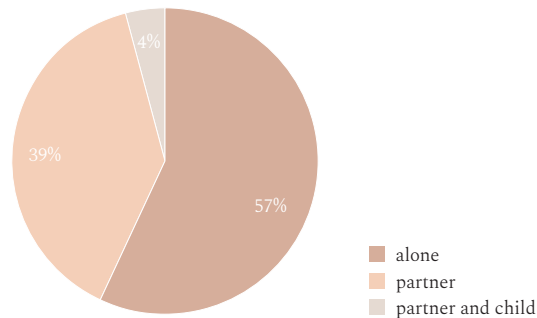


Fig. 9. Respondents answers to the question: who did you migrate with?

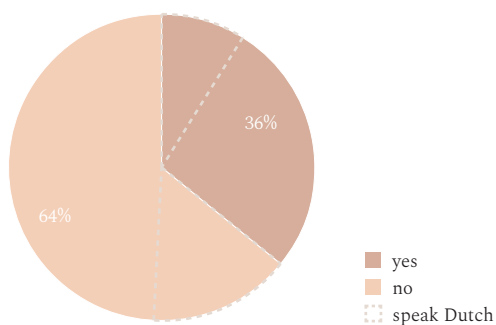


Fig. 10. Respondents answers to the question: do you feel integrated in the Netherlands?

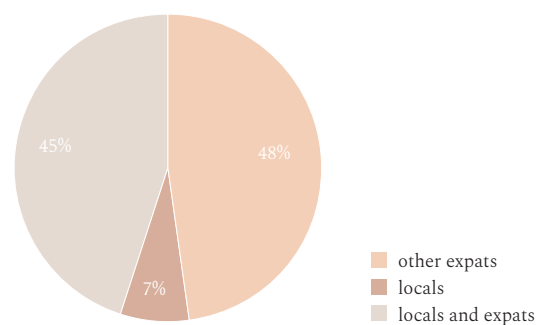


Fig. 11. Respondents answers to the question: what is your friend's circle?

64% of the respondents declared that they do not feel integrated in Rotterdam, among which only a quarter speak the Dutch language on at least communicative level (Fig. 10). 42% of the respondents do not have a permanent group of friends here and 52% does not include locals in their friend's circle (Fig. 11). However, as mentioned in the previous section, 88% of them would like to improve their relationship with the locals. It is remarkable that only one third of the respondents want to return to their homeland some day.

The analysis of this data leads to a conclusion that it is not the intention of an expatriate to separate from the local culture and people. There are many boundaries between the hosts and the foreigners, amongst which the language barrier is definitely the most evident one. Contrary to common beliefs, highly-skilled immigrants in the Netherlands put an effort in learning Dutch. However, it takes years to master the language to the level of maintaining a comfortable conversation on an informal level. Especially considering that Dutch people are known for good English skills. Rotterdam offers places such as Taalcafes, where expats can practice their language with tandem partners. Laura Salm from Rotterdam Expat Center mentioned also other initiatives, such as "Walking and talking", where local volunteers meet with expats to walk around the city and practice the language. Another place is a Venture Cafe, where Dutch and international entrepreneurs meet during a weekly networking event.

However, the presence of initiatives for expats and the number of communities created especially for them does not necessarily contribute to their better feeling of belonging. Based on my interviews and studies conducted by van Bochove and Engbersen (2015), most expatriates are concerned about not being treated as equals in the socio-cultural sphere.

You have expat communities, expat jobs, expat meeting places, expat schools, even expat mortgage! Sometimes we feel like they treat us like some sort of a special care group... (Maria and Bartek from Poland)

Most of the events created for expats are held in English (except for the language-oriented events). The communities for expat support also attract only internationals, which is a natural start of creating friendships between foreigners, without the locals included. Hence, the segregation of highly-skilled immigrants from the local culture is a problem that induces further investigation on the urban level.

Cosmopolitanism and mobility

Due to the choice of living abroad and leaving their culture of origin, highly-skilled immigrants are often associated with the notion of cosmopolitanism. Van Bochove and Engbersen (2015) argue that despite the common representation of expats, their actual image should be reconsidered. Their study involved 75 expatriates from Rotterdam, providing data on expats self-identification. They argue that although foreign knowledge workers change the place of stay by choice, their reasoning is mostly professional - to expand their career horizons. That does not go in line with the concept of cosmopolitanism, which is rather associated with cultural curiosity and the need to travel as part of personal interests. Van Bochove and Engbersen prefer to rather call expats an “organization (wo)man”, since their lifestyle is mainly job-oriented. They tackle the issue of cosmopolitanism in relation to the identity of highly-skilled immigrants. They mention that “although everyone has multiple identities, migrants in particular need to deal with - sometimes contradictory - answers to the question *Who am I?*” (van Bochove & Engbersen, 2015, p. 5). Nearly half of their respondents described themselves as “home-country nationals” and just 21% as cosmopolitans. The authors argue that a strong attachment of expats to their country of origin is rather contradictory to the common belief of expats living “boundless lives.” Furthermore, they mention the issue of extending the stay in the Netherlands and the reasons that speak for and against that. Lack of social integration discussed in a previous section is one of the main reasons for foreign knowledge workers not to stay longer.

However, relying both on the data from van Bochove and Engbersen, as well as my own interviews, it is clear that the image of expats as strictly mobile individuals has changed over the last years. One third of the expatriates studied by van Bochove and Engbersen never lived abroad before moving to the Netherlands and another third lived in just one other country. Half of my questionnaire respondents have lived in the Netherlands for more than two years (Fig. 12).

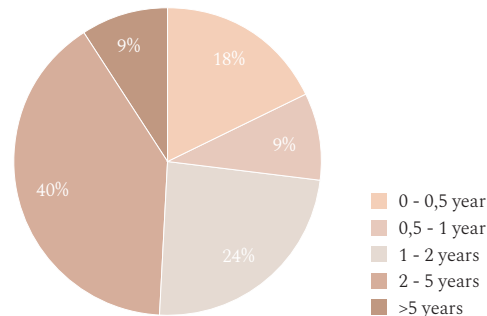


Fig. 12. How long have you lived in the Netherlands?

Laura Salm from Rotterdam Expat Center, who deals with highly-skilled immigrants in Rotterdam directly, describes the current dynamics of expat community as follows:

Expat community is really changing. In the past they were coming just for their projects - months, year or two and then they were coming back, also their spouses wanted to come back. But now you can see more and more eager entrepreneurs that want to start their careers in the Netherlands, bringing their spouses and in some cases children. They come with a long term mindset. They really want to stay five years to get the Dutch permanent residence permit. It's also visible in international schools. Instead of choosing them, some expats go for local schools, which is also tricky, because not all of the schools want them.

Hence, current lifestyle patterns of expats are much different than the word “expatriate” suggests. The choices of their destinations should not be considered as short term anymore. This fact leads to the further analysis of the residential choices of foreign knowledge workers and their needs in terms of housing.

Attractive housing conditions

Finding a home in the Netherlands is a challenge not only for the foreigners, due to the housing shortage. However, in case of internationals, the issue of finding the right accommodation is even more difficult, since the language barrier comes into play. One of my interviewees - Daniela shared her story about the rejections and deceptions she and her boyfriend experienced while searching for a suitable apartment in Rotterdam. Her story is one example among many that are widely publicized on many social media platforms. The issue of not being able to find a right place is common in the case of expats. Although sometimes the company offers support to relocate, that does not always happen. Only two of my questionnaire respondents received help from their employer in the search for housing. Vast majority of 58% relied on the internet and 24% on rental agencies (Fig.13). Two out of five expats that I interviewed experienced scamming from

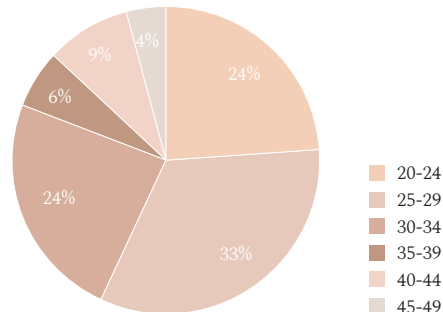


Fig. 13. Respondents answers to the question: how did you find your apartment?

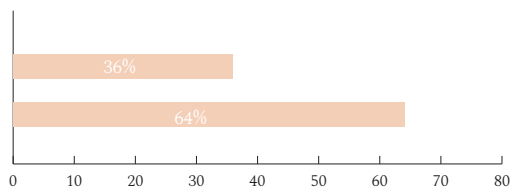


Fig. 14. Respondents answers to the question: are you happy with your living situation?

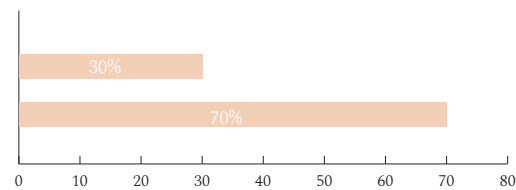


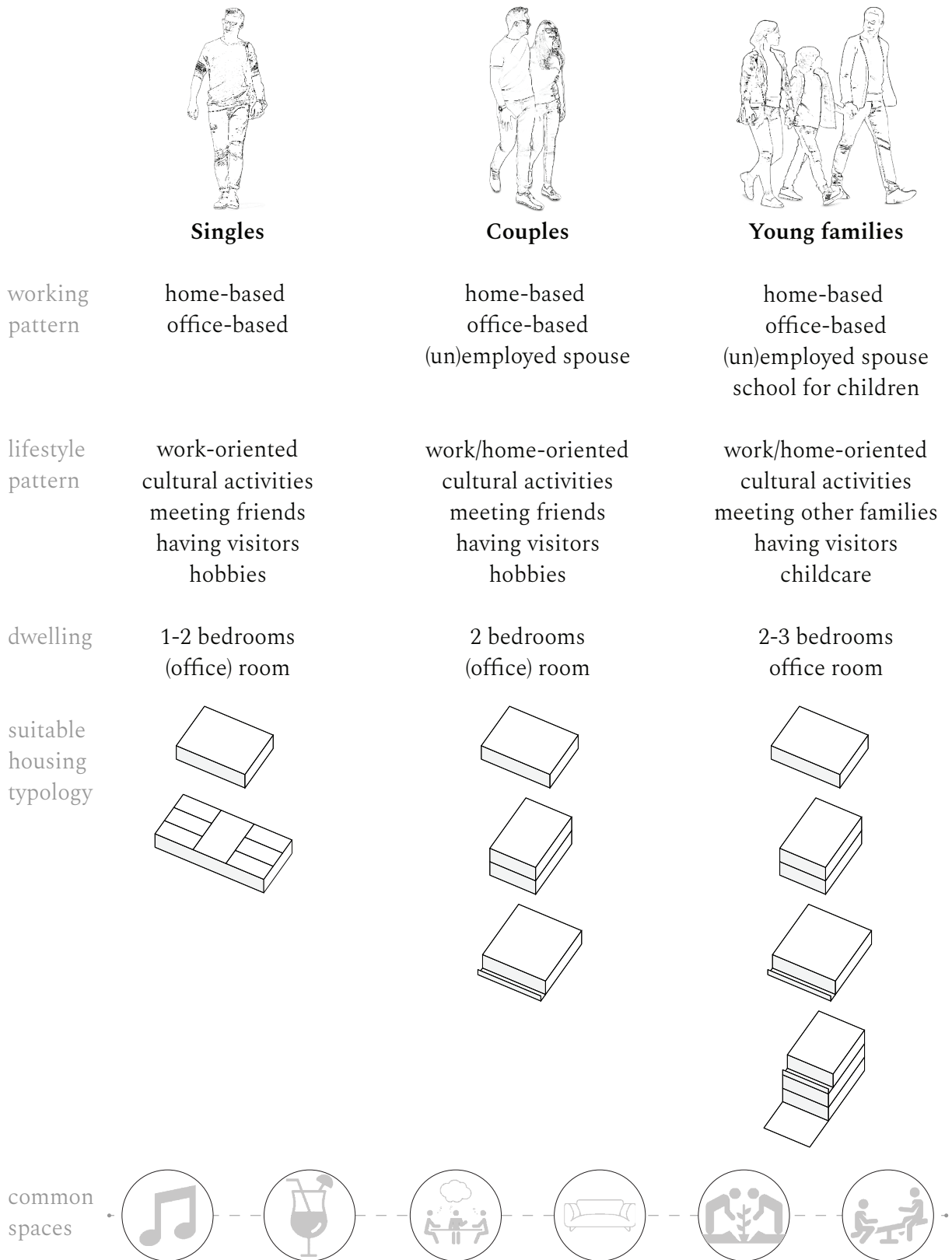
Fig. 15. Respondents answers to the question: are your housing conditions an obstacle in meeting other people?

the rental agencies that they hired. My survey data shows that 36% of respondents are not happy with their current living situation (Fig. 14). Analyzing individual respondents, their happiness does not depend on the size of the household. Moreover, the schemes of the households are also diverse (Fig. 6a, Fig. 6b) and in case of roughly one third of these expatriates their housing conditions are an obstacle in social interaction (Fig. 15).

Based on the research conducted by Beckers and Boschmann (2019), “foreign highly skilled workers are clearly urbanites, choosing residential locations in central locations with good accessibility and in proximity to jobs” (Beckers and Boschmann, 2019, p. 768). They prefer dense areas that offer high numbers of urban amenities, such as restaurants, museums or theatres. In the case of families, the quality and proximity of schools plays a big role too. Although usually highly-skilled foreigners have a higher income, they still choose high quality, but affordable housing.

Currently there is no scientific data on dwelling types suitable for expats. Hence, my findings (Fig. 16) are based on individual interviews and the data collected by my fellow student Mihaela Tomova, who made a survey amongst expat families in Rotterdam. Generally, housing preferences differ between the groups of singles, couples and families. Although some single expatriates

Fig. 16. Features of highly-skilled immigrants.



are open to ideas such as co-living, there are others who value their privacy too much to find themselves comfortable in such living conditions. When it comes to couples, they are generally open for collective housing schemes, sharing some common spaces with the other neighbors. The idea of creating a stronger bond between neighbors might also contribute to solving the problem of expats' social exclusion. Mihaela's questionnaire on specifics towards housing typologies preferred by expatriates shows that mostly singles and couples choose apartments in the urban settings, while families opt for row house typologies, either within or outside the city. In the case of children, there is a strong need for safety of the neighborhood, as well as providing appropriate recreational spaces.

When it comes to the size of dwellings, families need at least three bedrooms, depending on the size of the household. Singles prefer to have two bedrooms, one for the guests and one for themselves. Couples have similar needs. Additionally to the mere dwelling needs, some expatriates connect their work life with the housing scheme. Especially IT professionals, such as two of my interviewees (Gareth from UK and Bartek from Poland), need a separate work room within their housing units. Current global pandemic has also proven that the structure of modern households needs rethinking in consideration of a rising trend of working from home.

Live-work culture

The topic of live-work suits foreign knowledge workers for three reasons. Firstly, roughly two thirds of expats are either young couples at the age of planning children or couples that already have kids. Since work from home is in favor of raising children by giving them more attention, it is the issue that should be considered in planning their future households. Secondly, many expats move to the Netherlands with their spouses, who do not necessarily have a job, like their partners do. Staying at home might be frustrating without having any additional occupation. Hence, providing work spaces for them would improve their overall productivity and personal development. Lastly, although expats move to the Netherlands due to their jobs, some of them are still home-based workers. Especially now, with the outbreak of global pandemic, the concept of the household needs rethinking to suit the inevitable future increase in home-office phenomenon.

Francis Holliss (2015) gives a wide overview on the history and examples of home-based workspaces. Starting from the medieval times, through the industrial era, she draws the long and dynamic history of workhome culture. Her in depth analysis starts to be more suitable for the current idea of the live-work environment in chapter two, where she explains how the term "live-work" appeared on the scene in the twentieth century New York. Although initially the movement concerned a group of artists settling in vacant buildings that they turned into affordable living and working spaces, loft typology remained until today. As did the concept of workhome.

Holliss distinguishes eight types of home-based workers. The ones that suit highly-skilled im-

migrants are: professional and managerial, 24/7 artists and start-up. The first group includes a wide range of professions, therefore it needs to be further narrowed down. To specify it better in terms of expatriates' needs, this home-based work type, as Holliss notices, must be adjusted to the type of profession they do. To simplify it, the author mentions jobs that require constant interactions with clients and the opposite ones - the ones that demand solitaire work in a private setting. The second group of 24/7 artists is especially interesting in the case of expat spouses. Although naturally not all of them belong to the creative industry, the amount of time they spend at home coincides with the lifestyle of artists. Lastly, the start-up group fits foreign knowledge workers, who decide to work in the Netherlands independently. As I mentioned in the second section "International knowledge workers in Rotterdam," the Netherlands is a European leader with the amount of self-employed foreign knowledge workers. Hence, the career-oriented nature of expatriates must go in pair with the spatial organization of their households.

There are three design strategies of live-work spaces that Holliss pays attention to (Fig. 17). The "live-with" concerns a total junction of the dwelling and work space. It is the most common type, where home and work are accessible through the same front door and traditional dwelling spaces are arranged into workplaces. The second one, "live-adjacent," divides home from work, but leaving them situated door to door. Finally, the "live-nearby" strategy concerns a total spatial division of the dwelling and a workspace, keeping the small distance between the two.

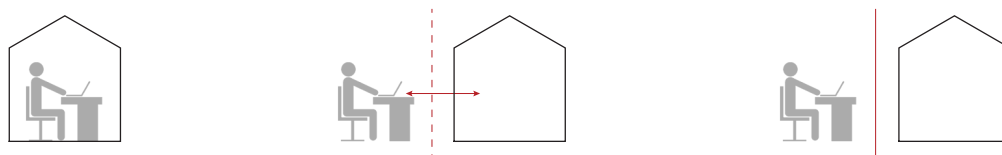


Fig. 17. Design strategies for live-work spaces. From the left: live with, live-adjacent and live-nearby (Holliss, 2015)

Since expatriates are diverse in both the aspect of their lifestyles and working patterns, the ideal live-work environment would be a flexible one. Considering that they often struggle with lack of social interaction, the concept of common working spaces within their residential building is a reasonable solution. A considerable design approach would be a combination of all the three strategies that Francis Holliss suggested in her book. Merging workspaces of different individuals into several collective spaces for the use of neighbors would provide a sense of inclusiveness and create stronger social neighborly bonds. It would contribute to people's interactions with one another and therefore - creating a place, where strangers become a neighborhood.

Inclusive urban neighborhood

Richard Sennett (2018) extensively illustrates the evolution and dynamics of the relationships between the city and its people. To start with, he describes the concept of a city as “two different things - one a physical place, the other a mentality compiled from perceptions, behaviors and beliefs” (Sennett, 2018, p. 1). He uses French words *cit * and *ville* to describe these two dimensions of the city. *Ville* relates to the city in its physical form. *Cit * refers to the ways people experience the place, the life in the neighborhood and the feelings of people towards neighbors and strangers around them. Sennett argues that the relationship between these two realms got lost. One of the issues that he relates to is the common uniformity and anonymity of the inhabitants. “In mid-eighteenth-century Paris or London a stranger felt no hesitation in coming up to you in the street, interrogating you and gripping your arm (man to man) to hold your attention” (Sennett, 2018, p. 27). The industrial era brought consequences of standardization, also when it comes to the way people look and behave towards each other. Sennett compares black and homogenous pictures of the nineteenth century’s streets with the colorful image of the eighteenth century. At the time, people were easy to read. Their professions and societal hierarchy was obvious, but on the other hand, the social interactions were less restrained. With the era of standardization, it became more difficult to read people. As a result, the picture of the *cit * became less clear. Currently, approaching a stranger and starting a conversation is not something casual and could be often misinterpreted. Also, the relationship between space and place, often discussed by architects and planners, is not uniform. Built environment, i.e. *ville* does not necessarily answer the needs of the *cit *. One of the notions that Sennett mentions is the issue of mobility that became dominant in the cities. He brings up the Haussmannian transformation of Paris as an example of the city that “privileged space over place” (Sennett, 2018, p. 35). Expansions of the cities and their infrastructural networks increased the speed in which people are able to receive and comprehend incentives from the outside.

However, it is not only the relationship with friends and acquaintances that builds social networks, but also interactions with the strangers. Maffini and Maraschin (2018, p. 3) in their research on urban segregation state:

When individuals of different social groups can see one another, even if they do not directly interact, they can develop empathy for each other, which is an important step in fighting social inequality.

I believe that the way future-proof urban neighborhoods are designed, should solve current issues of segregation and anonymity within the cities. Especially in the case of foreign knowledge workers and immigrants as a whole, integration, inclusiveness and equality should be inseparable design themes. I discussed these notions with my interviewees to answer my personal question, if the neighborly bonds and increased social interaction is what expats actually want. They confirmed my hypothesis. Especially in the cases of expat spouses it is crucial to provide such spaces for them to inhabit. But surprisingly, even Maria and Bartek from Poland, who clearly described themselves as rather individuals, said:

We are somewhat victims of our times. It shouldn't be like this, that you completely don't know your neighbors.

Sennett gives three examples of worldwide known urban transformations: Haussmannian Paris, Cerdian Barcelona and Olmsted's New York. The intentions of the planners were different, as well as the results, which differed from the intentions. Barcelona intervention became especially inspirational for me. Cerdá's goal was to provide equality by creating affordable housing for different social classes. He based his plan on a grid "as a space of equality and sociability" (Sennet, 2018, p. 42). Although the sliced edges of the buildings were supposed to support motorized traffic on the streets, they resulted in creating spaces of people's gatherings, which function as such until today. Cerdá's plan was admirable in a way that he really tried to solve the problems between the *cit * and *ville*. However, repetitive and additive blocks led to the emergence of monoculture. The problems of one block affected the others. Also the way people appropriated already small courtyards made these spaces cluttered and dark.

Nevertheless, Cerd 's intentions resulted in creating in-between spaces connecting the street and the public street, which in the end contributed to people's interactions. Since collective housing is a theme that applies to the case of foreign knowledge workers, next paragraphs will discuss its relevance given the issue of the urban segregation that affects expats in the Netherlands.

Collective housing as a solution for urban segregation

As I explained in the previous sections, highly-skilled immigrants are a group that often faces integration issues, as well as very dynamic starting phases of accommodating in a new country. The concept of expat communities supported by Dutch expat centers is one solution to the struggles foreign newcomers face while settling in the Netherlands. However, it requires time and organization, as the events are held in various places within the city. But what if the place of living was a source that provides a sense of belonging and integration for expats?

The idea of housing for collectiveness interested me since I started researching it under the graduation studio research program. As a whole studio of sixteen students, we analyzed six buildings located mainly in Rotterdam, where we looked for so called "instances of collectiveness." Our analysis was based on methods of visual ethnography and observation of residents' behaviors through several visits to the sites. During the research it became clear to me that the sense of collectiveness plays a great role in the way people inhabit spaces and what they feel about it. As it turned out during my research, it is also a very important factor in creating the identity of the neighborhood. Some of the buildings analyzed by other students within my studio did not provide much social interaction and openness towards mutual neighborly relations. The building I analysed however, the Peperklip, happened to be a great example of social housing that works well as a social condenser. People that I encountered were clearly happy about living

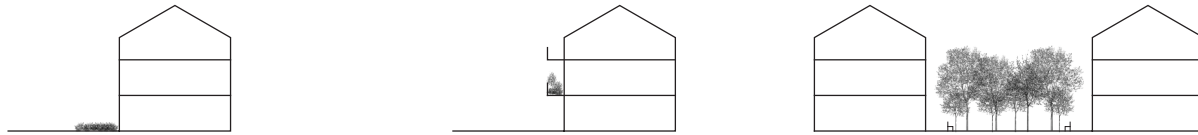


Fig. 18. In-between spaces appropriated by the residents: front garden: loggia/balcony, courtyard.

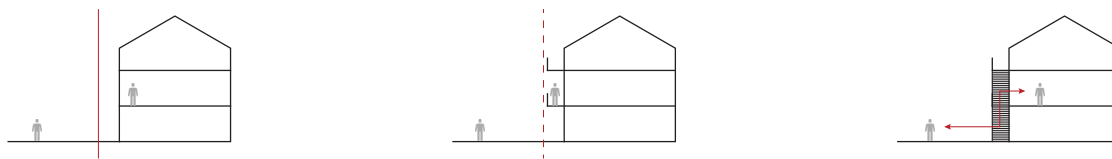


Fig. 19. Connection with the street: private - separated, semi-private - partly separated, public - the street continues into the dwelling.

there and did not avoid contact with any individuals, even strangers like me. I started asking myself: how did it happen that this neighborhood gained such a strong identity and integration among the residents?

The answers came during many discussions and reading inspiring literature, in this case Herman Hertzberger. I started being aware that the way residents feel about the space is not always shaped by the means of architectural forms, but also the elements that the architect left free for people's individual appropriation. Front gardens, loggias, balconies, even public courtyards are places where human touch can be easily noticed. The way people claim their space expresses their identity and thus, the identity of the collective neighborhood. The notion of in-between spaces (Fig. 18) has a strong relation with the levels of privacy. Neighborhoods can provide spaces, where residents feel completely, partly or not at all separated from the public realm around their building (Fig. 19). The transition between public and private spaces goes hand in hand with the accessibility. Connection with the street is a defining factor in creating in-between collective spaces for residents' use. As Hertzberger (1991, p. 14) said:

An open area, room or space may be conceived either as a more or less private place or as a public area, depending on the degree of accessibility, the form of supervision, who uses it, who takes care of it, and their respective responsibilities.

Spaces of encounters of individual residents are especially relevant when designing for the collective. Particularly in the case of expats, the value of privacy must be taken in consideration. Hence, it is important to define the optimal size of the residential neighborhood and its individual communities that provide social interaction between the dwellers, without interfering with their privacy.

From the neighborhood to community

During his discussion on the lost relationship between the *cit * and *ville*, Sennett (2018) brings up the name of Ferdinand T nnies and his distinction between *Gemeinschaft* (community) and *Gesellschaft* (society). While *Gesellschaft* relates to formal arrangements, T nnies associates *Gemeinschaft* with neighborliness and friendly relationships with the people that are not part of one's family. Thus, the community of neighbors maintained by face-to-face encounters. But how large should such a community be to provide optimal levels of intimacy?

Robin Dunbar conducted multiple research on human group sizes and their relationship with cognitive abilities. One of his recent analyses (Dunbar & Sosis, 2017) relies on the investigation of three very different communities, the relationships of their members and the duration of existence. The results show that ~500 is a critical number of acquaintances that would already require a top-down organization in order to maintain a well-functioning structure. However, for all of these three analyzed communities, the size of ~150 turned out to be the threshold in maintaining community's cohesion. It also confirmed multiple previous research of Dunbar, which always gave the same number as an optimal one for maintaining a well-functioning community. Consequently, if 150 people is the estimated amount to create a community, what are the functions of smaller groups? Hill & Dunbar (2003) define the group of 5 as "support cliques" and 15 as "sympathy groups." 35-50 is the optimal friend's circle. Their results are shown in Fig. 20.

Since Dunbar's research is based on a strictly anthropological and mathematical point of view, I compared it with the experience of Kathryn McCamant and Charles Durrett - architects and founders of The Cohousing Company. McCamant & Durrett (2011) define the optimal size of a cohousing community between 15 and 34 households. They also emphasize that the amount of adults should not exceed 50. Although my research does not concern cohousing, the studies of McCamant and Durrett are still a good foundation and a reference point to estimate mutual relations between the residents of the neighborhood. Moreover, the comparison of the findings of Dunbar and McCamant and Durrett shows that they are similar in estimating the optimal size of the community. Hence, they will serve as a toolbox for further design investigations.

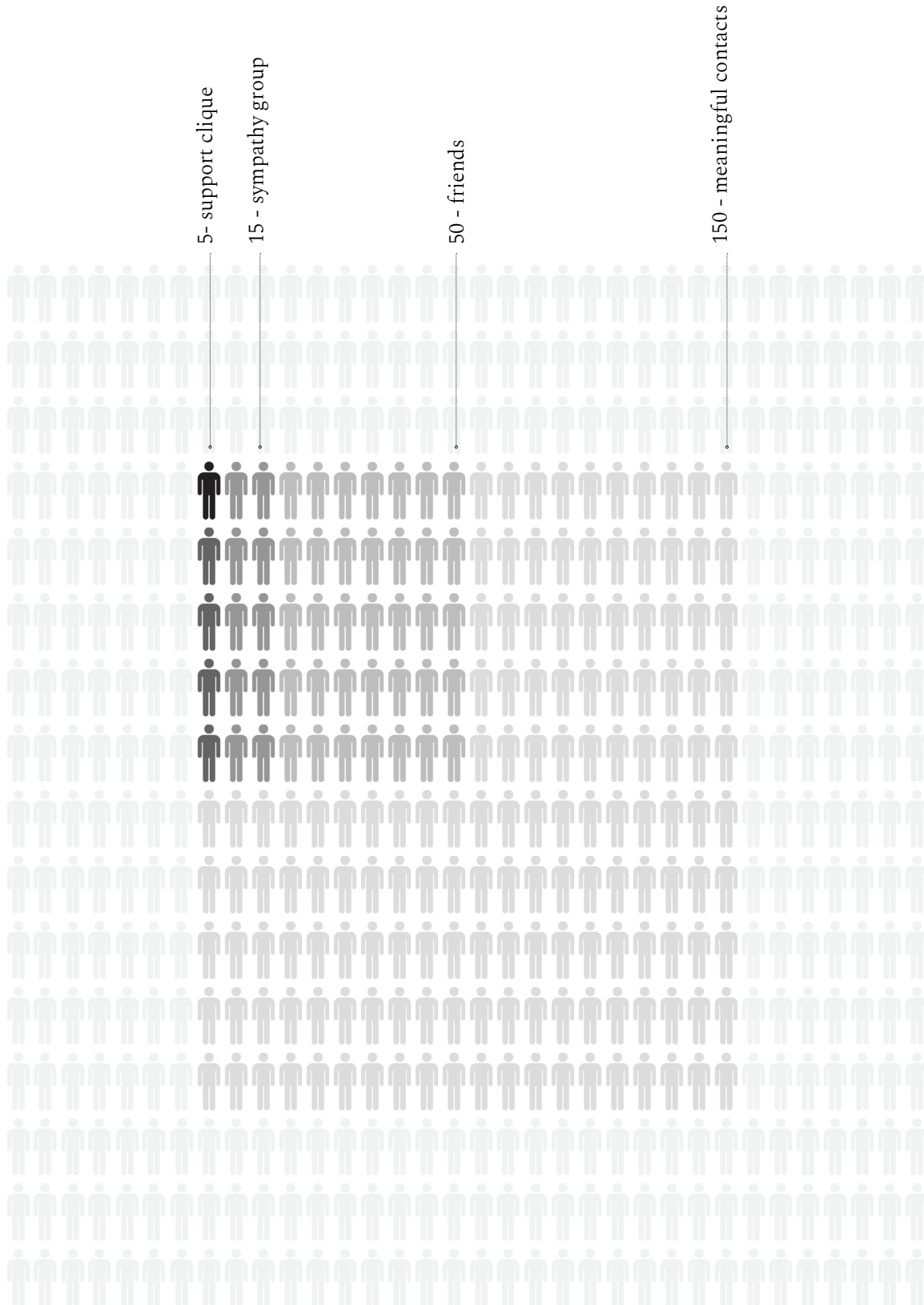


Fig. 20. Interpretation of the Dunbar's number: community amongst the crowd.

CONCLUSIONS AND DESIGN GOALS

Expats are a diverse group of urban dwellers, whose lifestyle patterns and decisions are mainly career-oriented. They face dynamic environment changes and issues with cultural integration. The themes mentioned in my research do not concern only expats, but very frequently their spouses and children. They often struggle with identity problems and leave their social circles behind during relocation processes. For these reasons, they tend to create strong relationships with each other in the country of migration. Their ability of creating communities wherever they go, together with their diverse representation, suits the concept of “Diversity as a new common” - a vision for an urban setting that provides inclusiveness and a sense of collectiveness.

Based on that vision, a desirable environment for a diverse group of dwellers is one that creates a strong sense of belonging, integration and identity. An inclusive neighborhood that provides equality between the residents and increases their feeling of safety and collectiveness. Increased social interaction between the neighbors can decrease the notion of social exclusion and provide stronger neighborly relations. Face-to-face encounters contribute to integration of the community of neighbors and thus, their sense of belonging within the neighborhood. Considering that expatriates usually lead a career-oriented lifestyle, integrating live and work as collective spaces shared by the residents is a solution for both collectiveness, housing affordability and increased social interaction. Common work spaces are not only an extension of the dwellings, but also a solution for parents that need to take better care of their children. The concept of commons spaces within the neighborhood is suitable for expats singles and couples that need more social contact, as well as families whose children need spaces for play.

Considering families and expats as a whole, housing conditions that are most attractive for them are defined by the accessibility of public amenities and places for social meetings. The proximity of schools is one aspect, but also the access to shared facilities for leisure plays a big role. Especially in the case of foreigners that have a fresh start in a new country, it is important to provide places where they can develop their hobbies together with people that share similar interests. Providing common spaces for the interaction of residents creates a sense of neighbor-friendly environment with the principles of equality and inclusiveness. However, public and private spaces should not permeate each other. They should be intertwined within the neighborhood, but with a clear separation of private zones. The members of the neighborhood should have a sense that they can rely on each other as a community, but with a certain respect for one another's privacy.

The notion of creating a community within the urban neighborhood needs to be considered in terms of scale and group sizes. The number of neighbors that have the closest relationship with each other should be kept optimal to avoid anonymity between the residents. Individual groups should be integrated into one neighborhood of dwellers that provides spaces that favor people's encounters. To solve the notion of the expat bubble, a perfect neighborhood is not one that includes only internationals. Based on my research, the features of expatriates are not much different than the ones of local people that share a similar work-oriented lifestyle. For this reason, an inclusive and open community for expatriates should be a mix of foreign and Dutch inhabitants,

where the spaces of their encounters contribute to exchange and integration.

These conclusions lead to defining a design hypothesis that will be integrated with the design goals mentioned above. To provide a sense of equality and belonging, the neighborhood of dwellers must provide collective spaces for residents' encounters. Dwelling typologies must be adjusted to the diversity of needs and household sizes. The scale of the urban neighborhood needs to be adjusted to the human proportion, providing a sense of integration and belonging and offering common shared spaces that cater for residents' social interaction. As Susan Pinker (TED, 2017) concluded her speech:

Building in-person interaction into our cities, into our workplaces, into our agendas bolsters the immune system, sends feel-good hormones surging through the bloodstream and brain and helps us live longer.

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PLAN ANALYSIS

Given the design goals formulated in my research, a case study analysis will contribute to understanding chosen dwelling typologies and their contribution to the collective aspect of urban living. Thus, four projects were chosen in terms of their unique approach towards integrating the residents into a neighborhood community. First analyzed building is Fenix I by mei architects and planners, due to its inner courtyard, galleries and exterior circulation spaces that favor the encounters of the residents. Second project is Haus A by Duplex Architekten, where flexible floor plan and shared common core facilities maintain the solution for co-living by creating multiple satellite dwellings intertwined with more private units. Third, The Family by ANA Architekten, shows an example of urban family living with multiple levels of children's playgrounds. Lastly, Babel by Laurens Boodt Architect, is a unique example of "street in the air" that connects public terraces located vertically along the whole building. All the mentioned projects share the concept of collective housing, hence introducing the idea of sharing spaces and collectiveness within the community of dwellers. Research questions that accompany this analysis are:

- What is the effect of circulation on neighbors' interaction?
- How does collective transform into private?



Fenix I



Haus A



The Family



Babel



FENIX I

Architect: mei architects and planners

Location: Rotterdam

Year: 2019

GFA: 39.500 m²

Height: ca. 43,0 m (warehouse + 9 floors)

Circulation: gallery

Bay widths: 7,7m - 10,2m

Program:

cultural and culinary facilities (ca. 8.500 m²),

225 parking spots (ca. 9.000 m²),

212 loft apartments (ca. 23.000 m²)

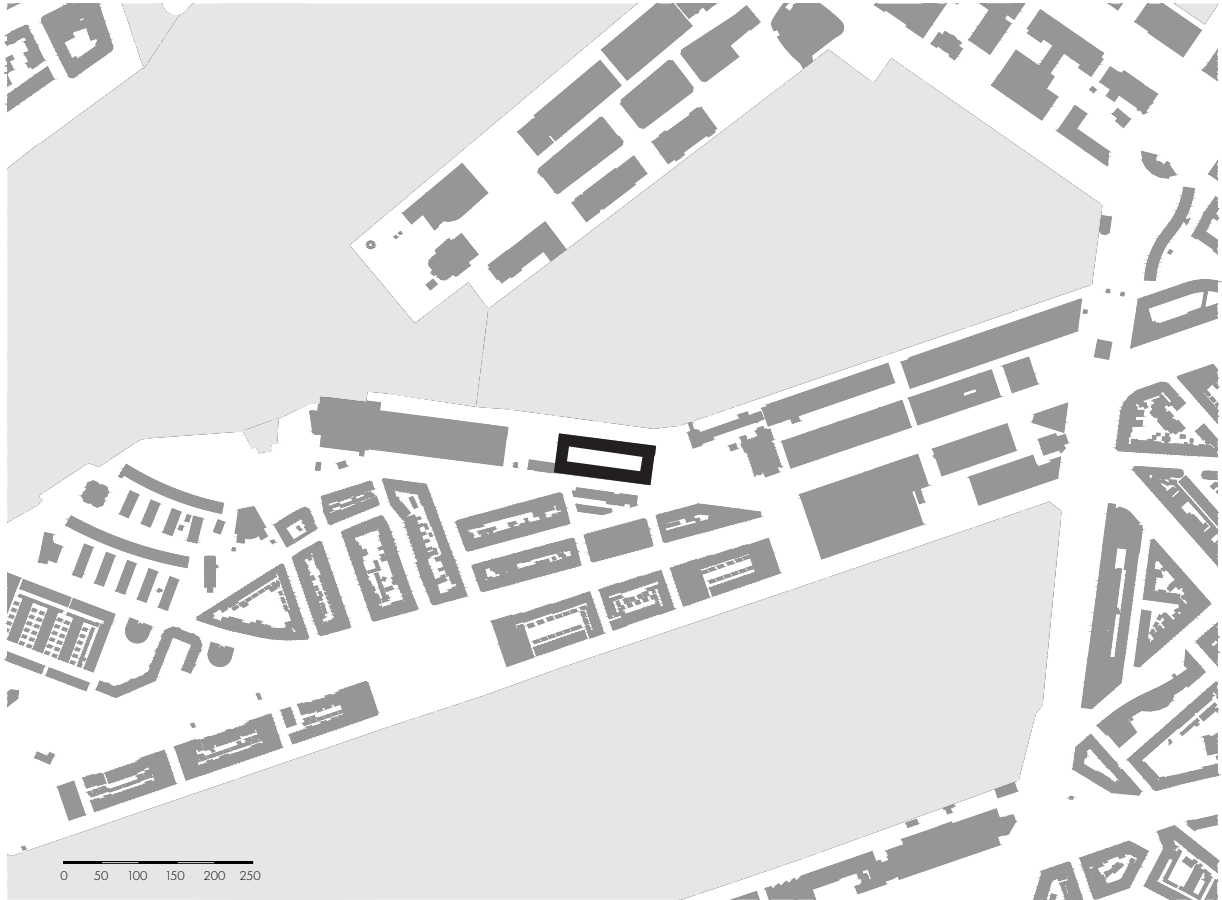
Target group: single, couples, families

Dwelling typologies: lofts, maisonettes

Dwelling sizes: 40 - 300 m²

The building is situated on top of an existing warehouse, which makes it suitable for the character of harbor of Merwe-Viehavens. Locating the new residential building on top of an existing one was possible thanks to a steel cable structure that weighs ca. 1 kiloton. Residential apartments are built with concrete and finished with a transparent glass facade which continues around the whole building.

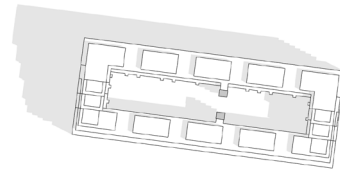
The program contains a variety of mixed use functions. Lower levels include car park, leisure spaces and workspaces, whereas upper levels comprise housing. Inner courtyard separates residents from the surrounding city and offers a quiet communal space. A gallery that runs along the whole building contributes to residents' social interaction. Circulation of exterior staircases that connects all gallery floors emphasizes the connection between the residents even more.



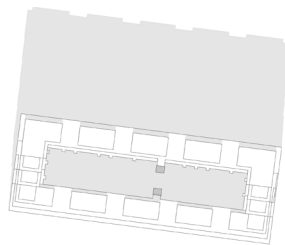
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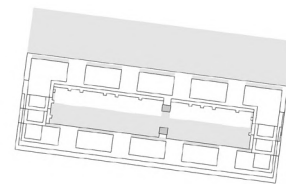
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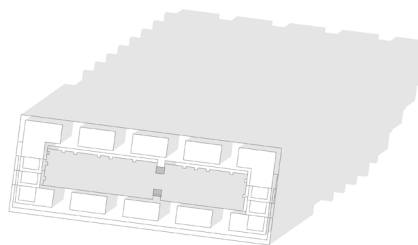
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June 21, 13:00



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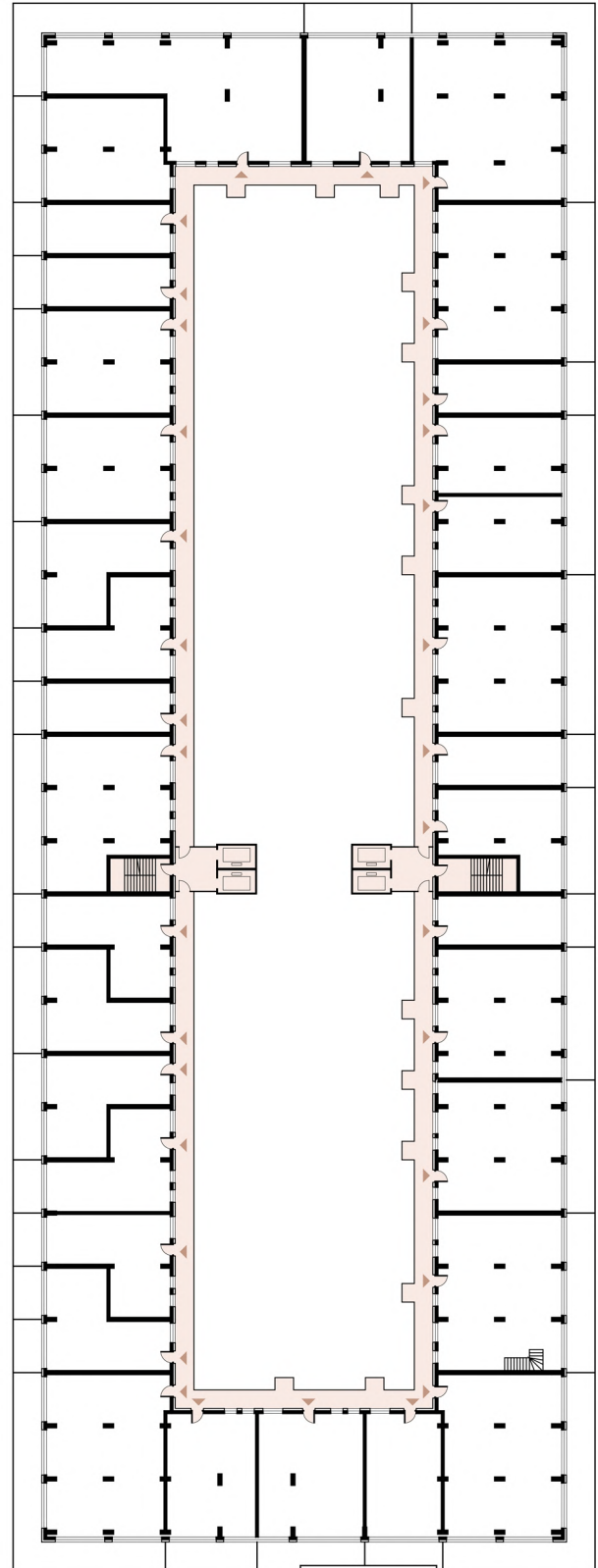
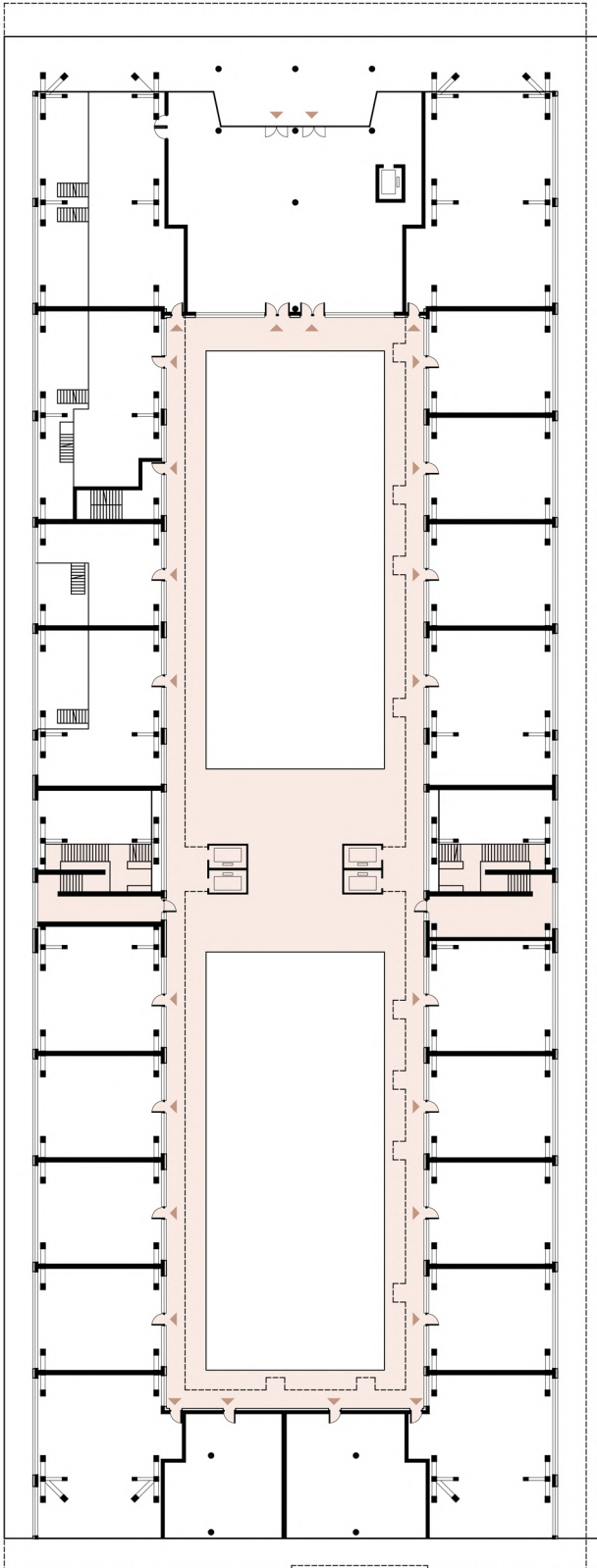


June 21, 16:00

Circulation

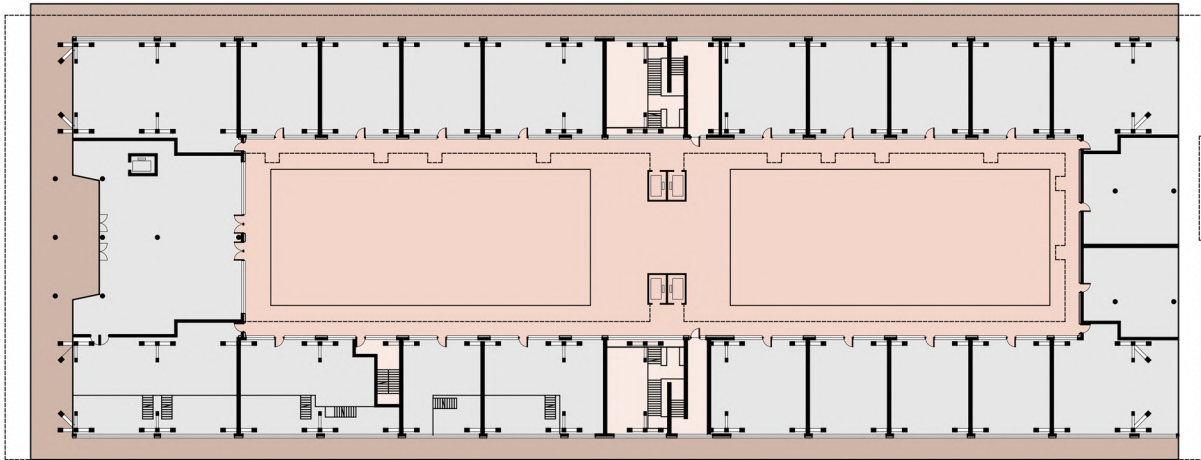
Incision floor
dwelling access from the courtyard

4th floor
dwelling access from the gallery

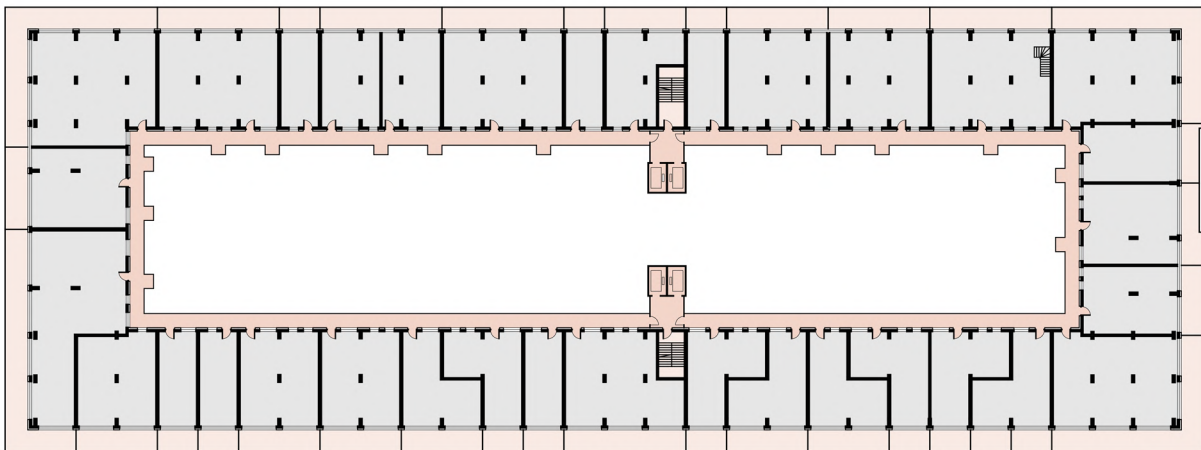


Collectiveness vs privacy

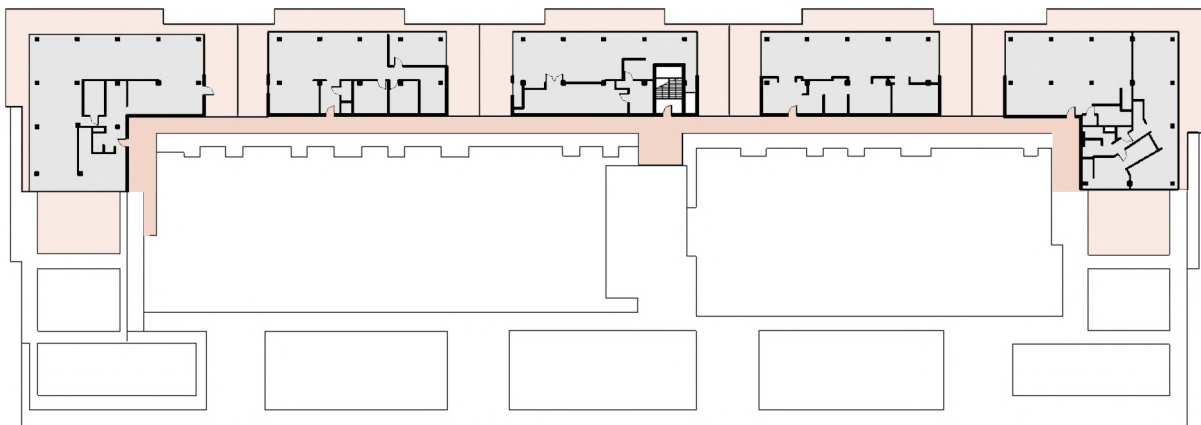
collective  private



Incision floor - 22 loft apartments, incl. 4 maisonettes



4th floor - 33 loft apartments, incl. 1 maisonette



8th floor - 5 penthouses

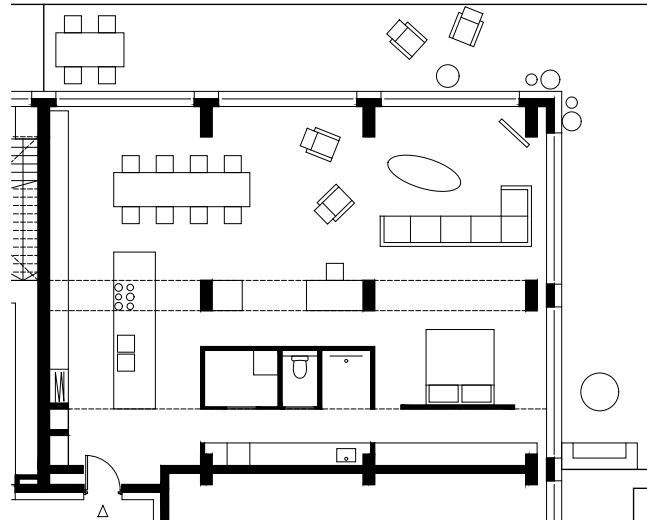


Dwelling analysis



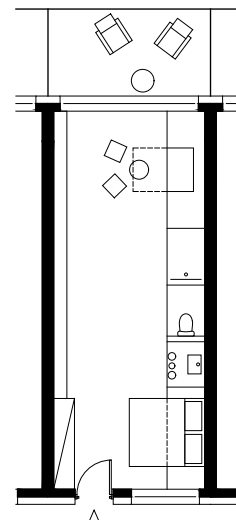
Corner loft

Net dwelling size: 124,6 m²
 Window orientation: north and east
 Bay width: 9,7 m
 Target group: single/couple



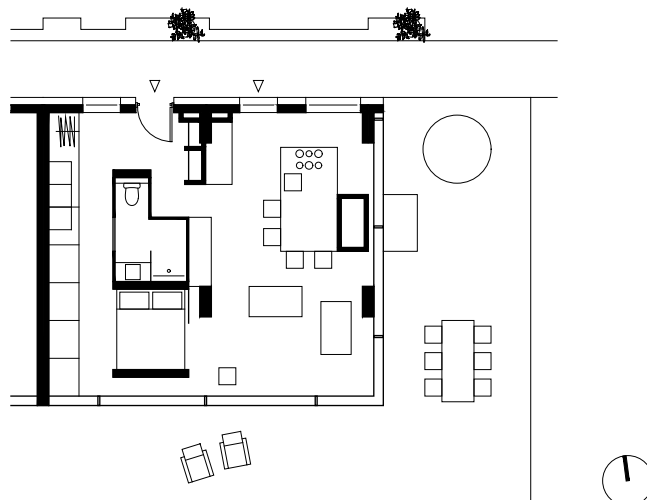
Studio loft

Net dwelling size: 40,0 m²
 Window orientation: north and south
 Bay width: 10,2 m
 Target group: single

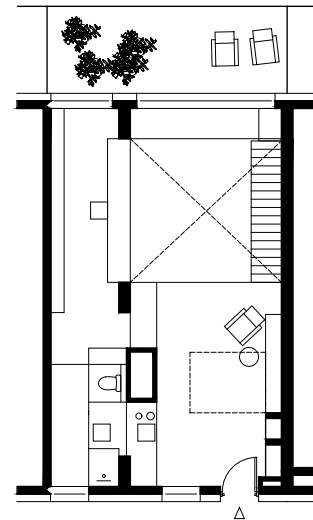
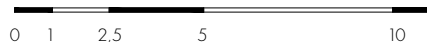


Terrace apartment

Net dwelling size: 63,5 m²
 Window orientation: north, east, south
 Bay width: 7,7 m
 Target group: single



Dwelling analysis



Maisonette loft

Net dwelling size: 184,8 m²

Window orientation: north and south

Bay width: 10,2 m

Target group: couple/young family

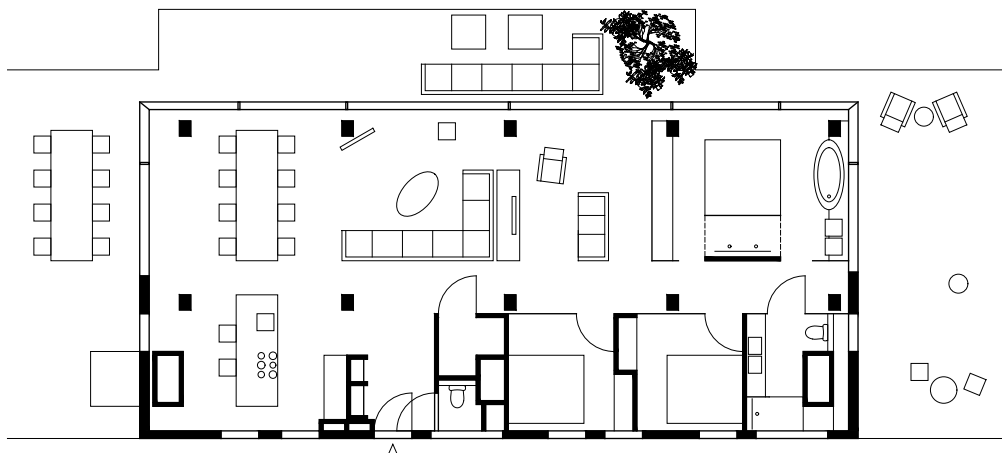
Penthouse

Net dwelling size: 156,1 m²

Window orientation: all directions

Bay width: 8,7 m

Target group: family





HAUS A

Architect: Duplex architekten

Location: Zürich

Year: 2015

GFA: 6.780 m²

Height: ca. 19,9 m (6 floors)

Circulation: central core

Bay widths: ca. 6,0 - 7,5 m

Program:

6 satellite apartments with 10,5 rooms

5 satellite apartments with 12,5 rooms

workspaces, common gallery, bike storage

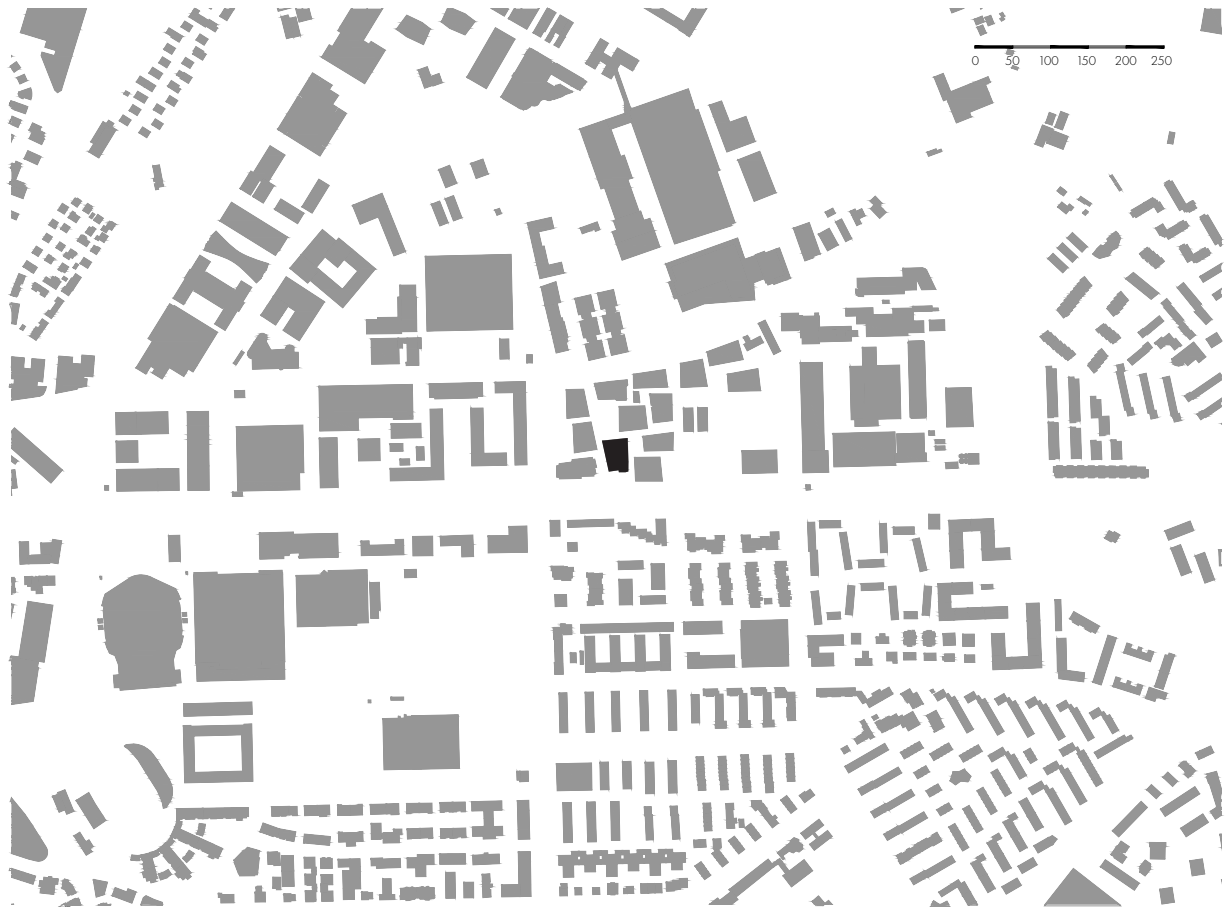
Target group: single, couples, young families

Dwelling typologies: satellite apartments

Co-living units sizes: 320 - 400 m²

The project consists of several satellite apartments with a shared common space located around the central staircase. The satellite apartments in Haus A represent a new form of living together. In the large communal apartments, a system of chambers offers maximum privacy, while between it, the communally used living space is like a sequence of squares and paths. There are 11 cluster satellite apartments of 320 and 400 m². Each residential unit has its own bedroom, a kitchenette and a small private balcony as a counterpart to the large communal loggia.

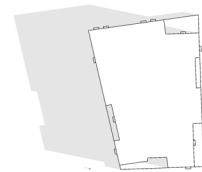
Although the concept of this building is strongly based on co-living and togetherness, private spaces are clearly separated from the shared spaces. This way, the privacy of individual inhabitants is respected without resigning from the idea of collectiveness and support.



Sun analysis UTC +2.00



March 21, 10:00



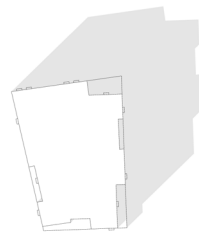
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March 21, 16:00



June 21, 16:00

Circulation



Ground floor
access to workspaces and dwellings from east-west facade



Regular floor
access to dwellings from the central core



Collectiveness vs privacy

collective  private



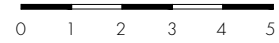
Ground floor
5 satellite apartments, common workspaces



Regular floor
11 satellite apartments

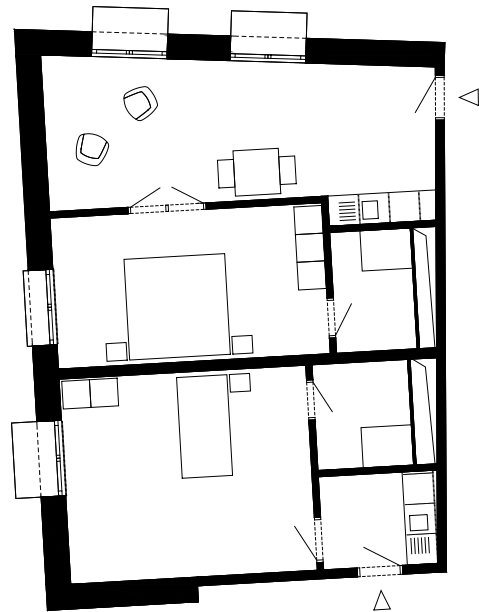


Dwelling analysis



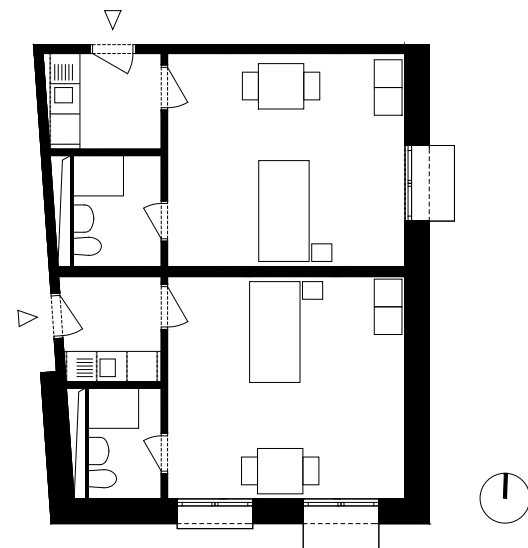
Apartment 1

Net dwelling size: 45,0 m²
 Window orientation: north and west
 Bay width: ca. 7,0 m
 Target group: couple



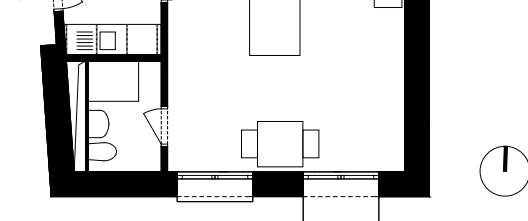
Apartment 2

Net dwelling size: 30,0 m²
 Window orientation: west
 Bay width: ca. 7,5 m
 Target group: single



Apartment 3

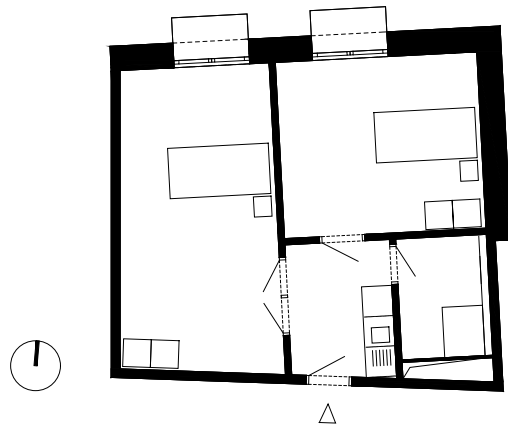
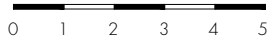
Net dwelling size: 30,0 m²
 Window orientation: east
 Bay width: ca. 7,0 m
 Target group: single



Apartment 4

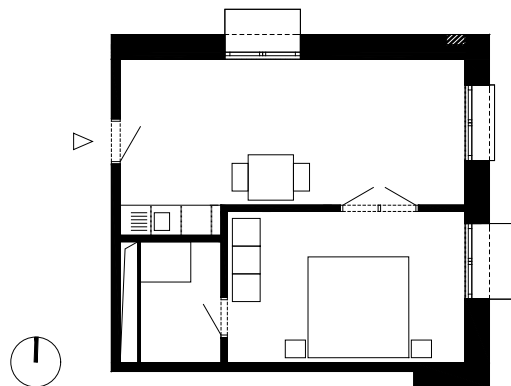
Net dwelling size: 30,0 m²
 Window orientation: south
 Bay width: ca. 7,0 m
 Target group: single

Dwelling analysis



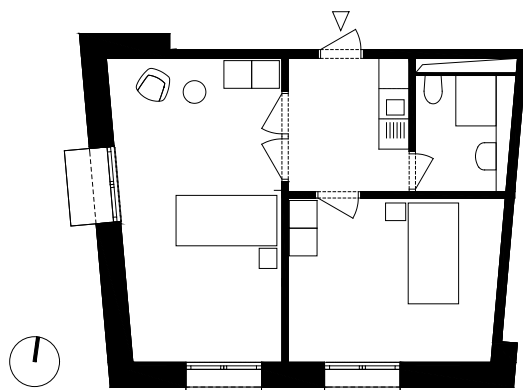
Apartment 5

Net dwelling size: 45,0 m²
Window orientation: north
Bay width: ca. 6,5 m
Target group: couple



Apartment 6

Net dwelling size: 41,0 m²
Window orientation: north and east
Bay width: ca. 7,0 m
Target group: couple



Apartment 7

Net dwelling size: 46,0 m²
Window orientation: west and south
Bay width: ca. 6,0 - 8,0 m
Target group: couple



THE FAMILY

Architect: ANA architecten

Location: Delft

Year: 2018 - ongoing

GFA: 11.776 m²

Height: ca. 29,1 m (9 floors)

Circulation: gallery and central core

Bay widths: ca. 12,2 - 13,8 m

Program:

94 family apartments

56 parking spots, bike storage

Target group: families

Dwelling typologies: gallery, maisonette

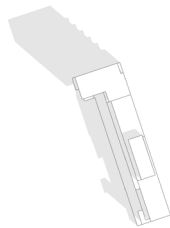
Dwelling sizes: 54,2 - 120,4 m²

The family is a project that caters for diverse family groups. The variety of dwellings offers a choice for diverse household types and family sizes. According to the ANA architecten's statement, dwellings can be easily adapted for every family phase and different family compositions. The building offers also affordable housing, providing compact, yet functional dwellings. Several facilities are shared by the residents, such as DIY space and storages.

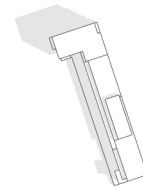
Not only the dwellings, but the whole building was designed to fit in the needs of families with children. Circulation provides several levels of "playground" for children, who can easily access apartments of their neighbor fellows through the wide galleries and outside staircase. Courtyard is another space for play. The building offers spaces for children of different ages and allows them to spend time in a safe urban neighborhood.



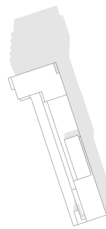
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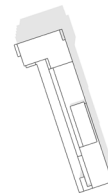
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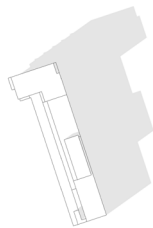
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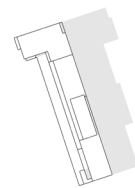
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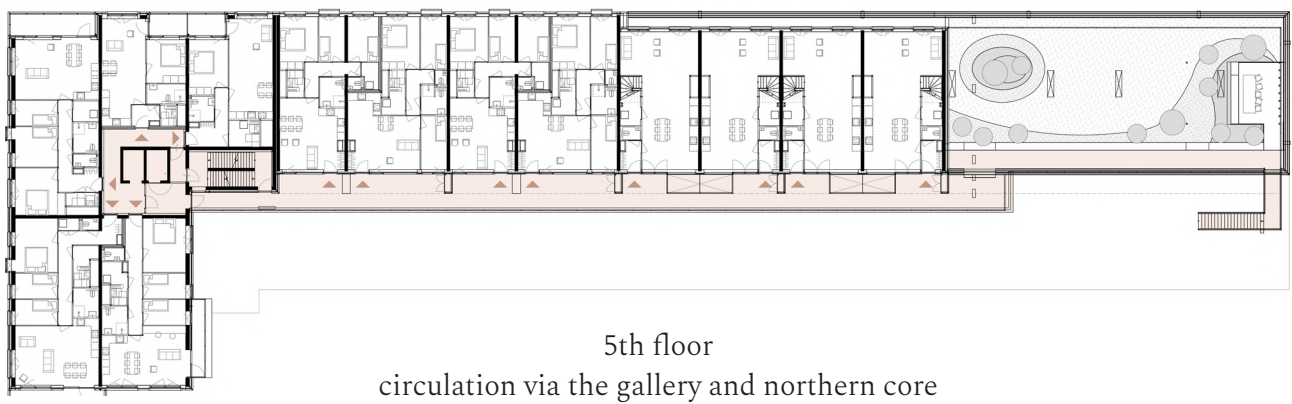
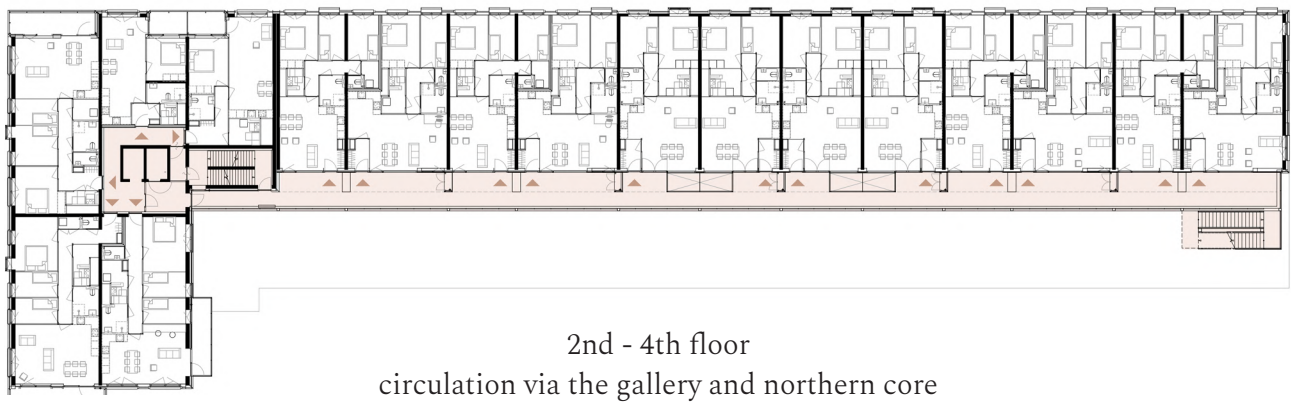
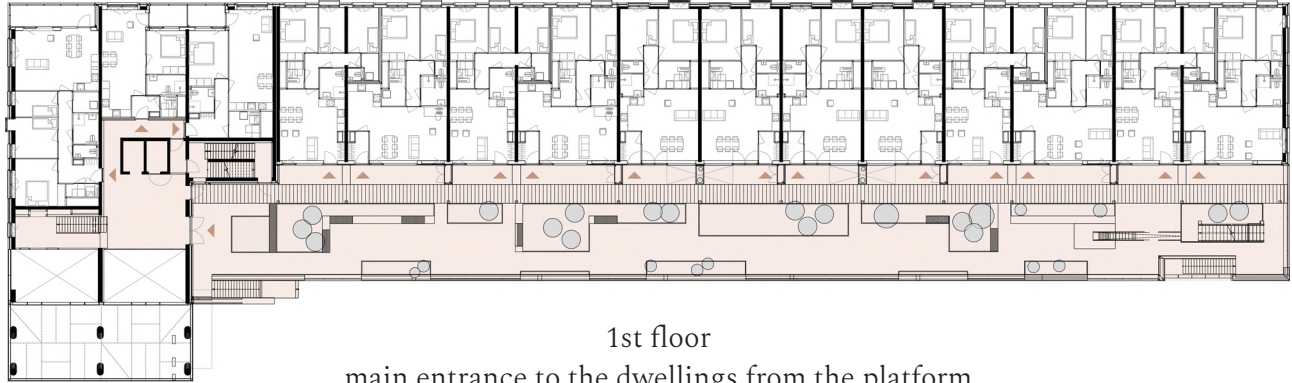


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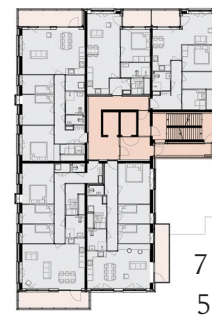
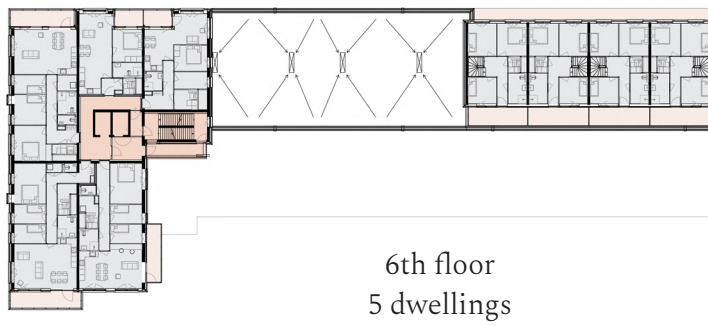
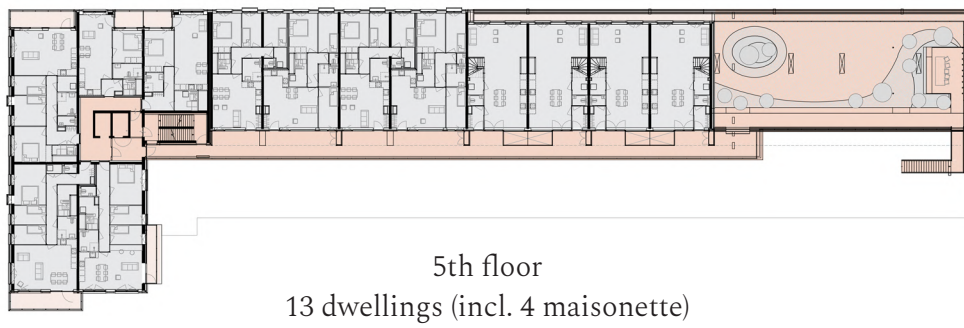
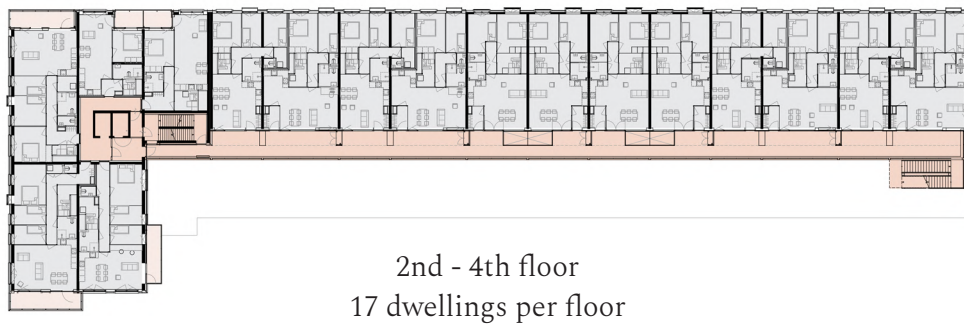
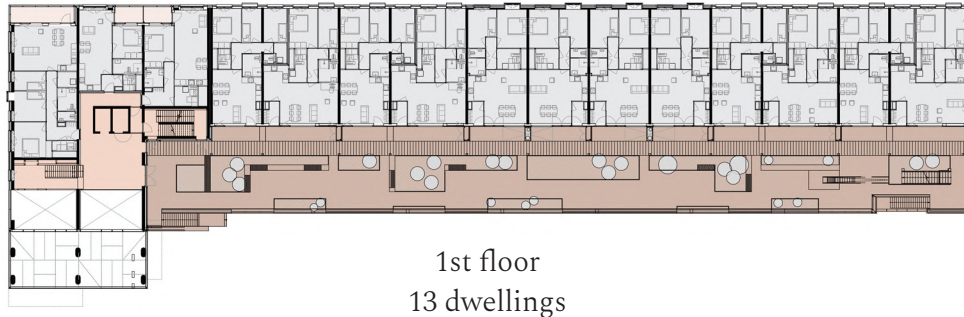
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Circulation

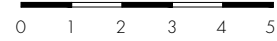


Collectiveness vs privacy

collective  private

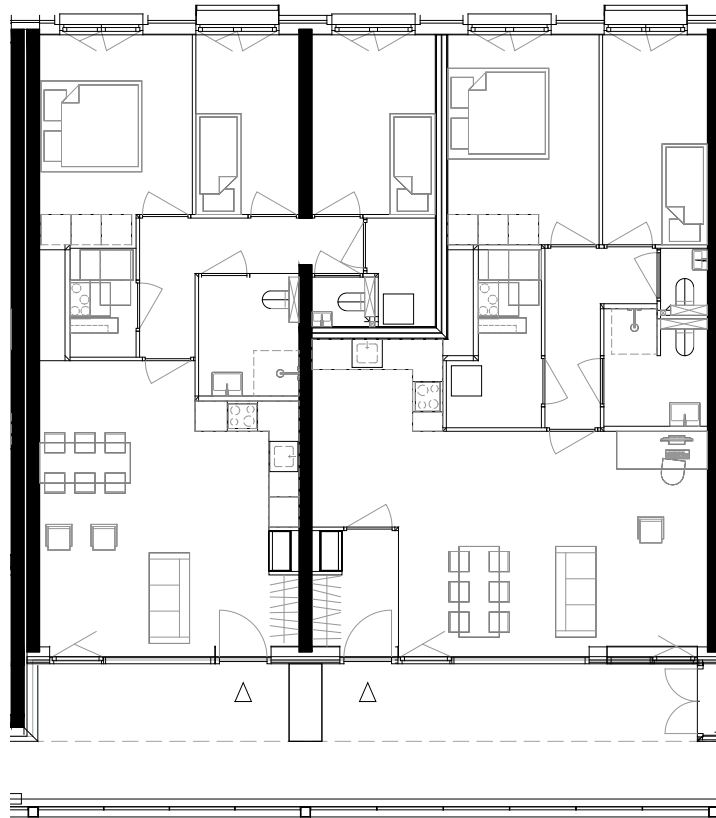


Dwelling analysis



Apartment 1 (left)

Net dwelling size: 79,9 m²
 Window orientation: east and west
 Bay width: 12,35 m
 Bedrooms: 3
 Target group: family of two children



Apartment 2 (right)

Net dwelling size: 79,0 m²
 Window orientation: east and west
 Bay width: 12,35 m
 Bedrooms: 2
 Target group: family of one child

Apartment 3 (left)

Net dwelling size: 54,2 m²
 Window orientation: east
 Bay width: 8,9 m
 Bedrooms: 1
 Target group: couple

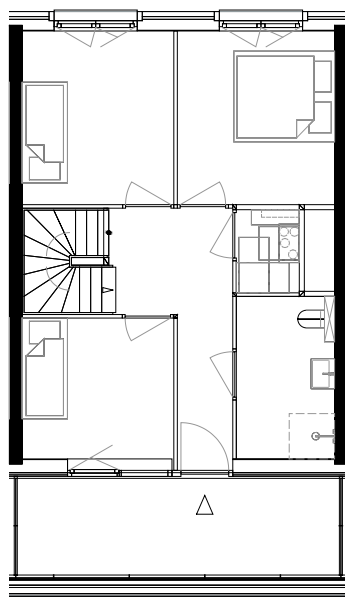
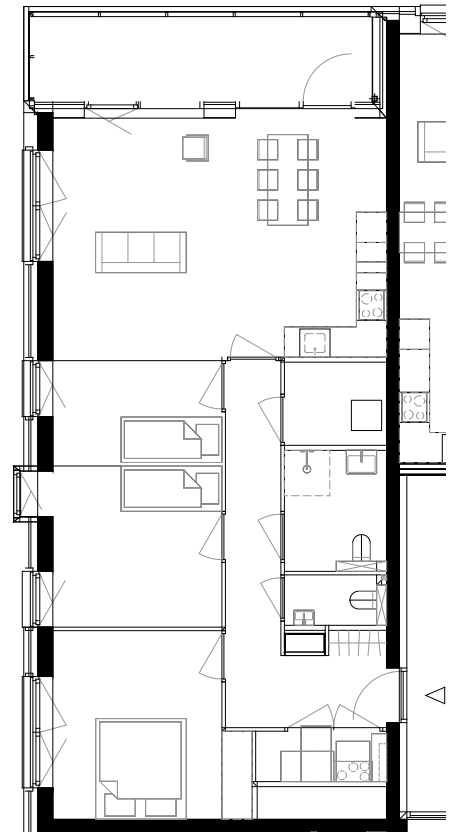
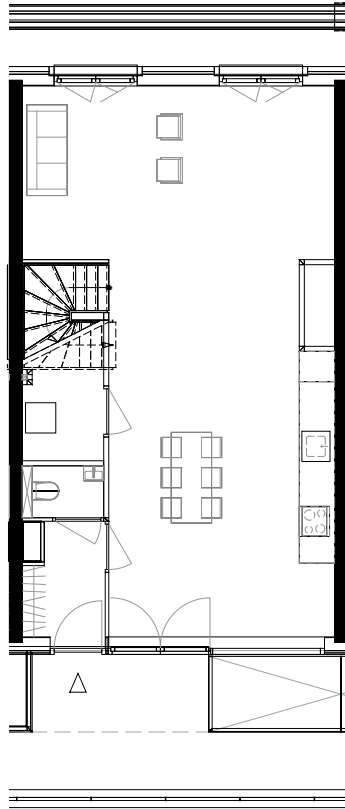
Apartment 4 (right)

Net dwelling size: 62,2 m²
 Window orientation: east
 Bay width: 10,5 m
 Bedrooms: 1
 Target group: couple



Dwelling analysis

0 1 2 3 4 5



Apartment 5 maisonette (left side)

Net dwelling size: 120,4 m²

Window orientation: east and west

Bay width: 8,7 / 12,35 m

Bedrooms: 3

Target group: family of two children

Apartment 6 corner dwelling (above right)

Net dwelling size: 92,2 m²

Window orientation: west and south

Bay width: 6,9 m

Bedrooms: 3

Target group: family of two children



BABEL

Architect: Laurens Boodt Architect

Location: Rotterdam

Year: 2016 - ongoing

GFA: 3.000 m²

Height: ca. 32,0 m (10 floors)

Circulation: exterior stairs and inner core

Bay widths: ca. 7,0 - 7,5 m

Program:

25 maisonette apartments

30 parking spots, bike storage

Target group: families

Dwelling typologies: maisonette

Dwelling sizes: ca. 70 - 135 m²

The project's main idea is the "street in the air" - a continuous vertical circulation that leads around the whole building circularly and vertically. The reason for that is providing multiple levels of connections between individual apartments, allowing children to play safely with each other without walking out to the street.

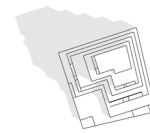
All dwellings are maisonettes. The ground floor of each unit has a connection with the "street in the air" - a plateau for neighbor's interaction and meetings. Kitchen and living room are located also on the ground floor, allowing direct connection to outdoor spaces. More private rooms: bedrooms, bathrooms and storage are located on the upper floor of each dwelling.



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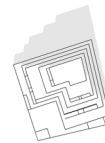
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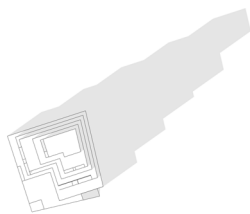
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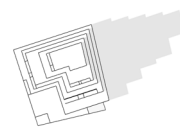
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Circulation



Collectiveness vs privacy

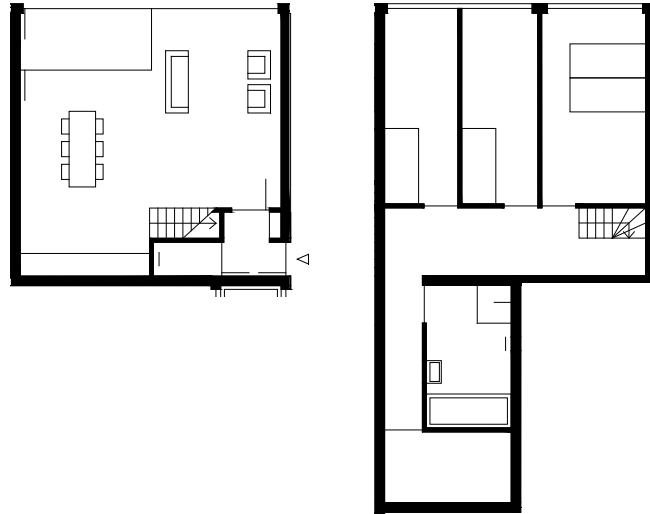


Dwelling analysis



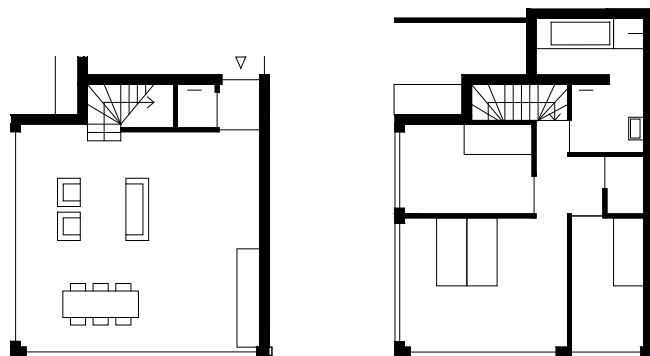
Apartment 1

Net dwelling size: 116,1 m²
 Window orientation: north
 Bay width: 7,1 / 13,2 m
 Bedrooms: 3
 Target group: family of two children



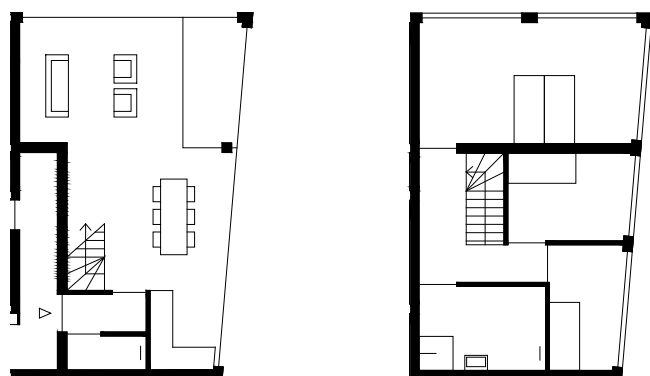
Apartment 2

Net dwelling size: 73,5 m²
 Window orientation: west and south
 Bay width: 7,2 / 8,9 m
 Bedrooms: 3
 Target group: family of two children

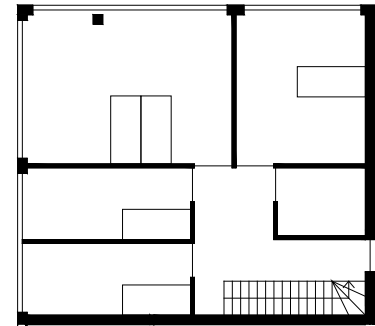
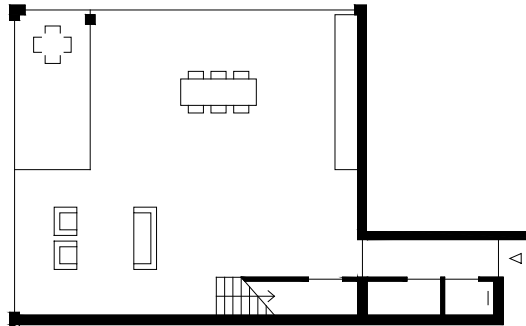
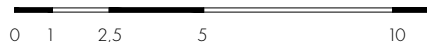


Apartment 3

Net dwelling size: 94,0 m²
 Window orientation: north and east
 Bay width: 4,1 - 6,1 m
 Bedrooms: 3
 Target group: family of two children



Dwelling analysis



Apartment 4

Net dwelling size: 119,5 m²

Window orientation: north and west

Bay width: 8,1 / 9,1 m

Bedrooms: 4

Target group: family of three children

Apartment 5

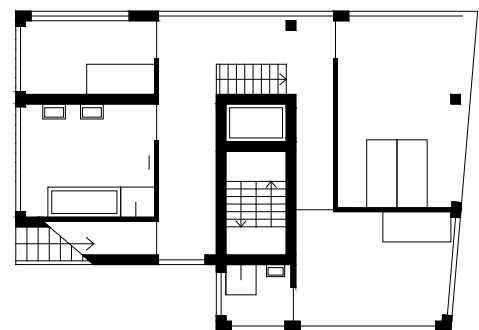
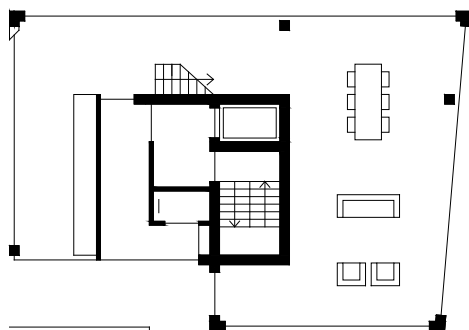
Net dwelling size: 135,0 m²

Window orientation: all directions

Bay width: 4,7 - 6,5 m

Bedrooms: 3

Target group: family of two children

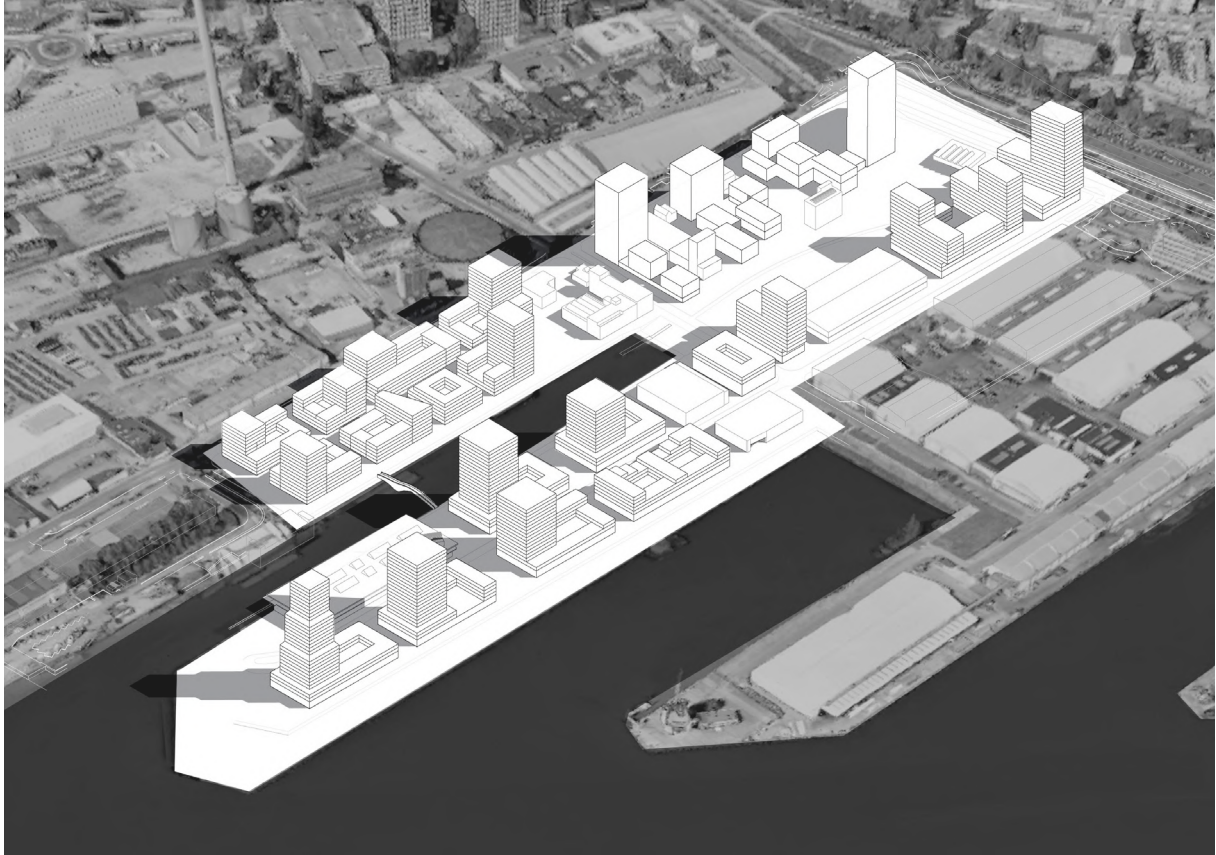


CONCLUSIONS

In each of the analyzed buildings social interaction takes place mostly around the circulation spaces and outdoor areas designed for the use of the neighborhood. Hence, the routing around a building and appropriate location of the entrances to individual apartments play a big role in the number of encounters of the residents. As shown in Fenix I or the Family, gallery is an element that does not only function as circulation, but also a place for meetings or entertainment. The idea of the street in the air proves to be suitable especially for the families, allowing children to have a safe play zones without going to far away from the dwelling. The same principle applies to communal terraces that are easily reachable by the neighborhood community. They are spaces of increased social interaction and community atmosphere. Apart from that, Haus A also proved that inner circulation can contribute to collective aspects of living too. Common areas within the co-living block are located with a short proximity to the main core. This way, not only common spaces comprise the core of the building, but the privacy of individual dwellings is respected.

In all of these projects, the location of the most private rooms, such as bedrooms or bathrooms, is distanced from the collective spaces. This way, the privacy of individual household is maintained. Moreover, collective spaces can be treated as extensions of the dwelling. Common areas can provide additional program, both indoors and outdoors, which the household does not facilitate. Moreover, based on the analysis of these four buildings, privacy levels increase from bottom up, showing largest collectivity levels on the ground floor. Upper levels give more privacy thanks to further distance from the public street, separating not only from the visual contact, but also noises.

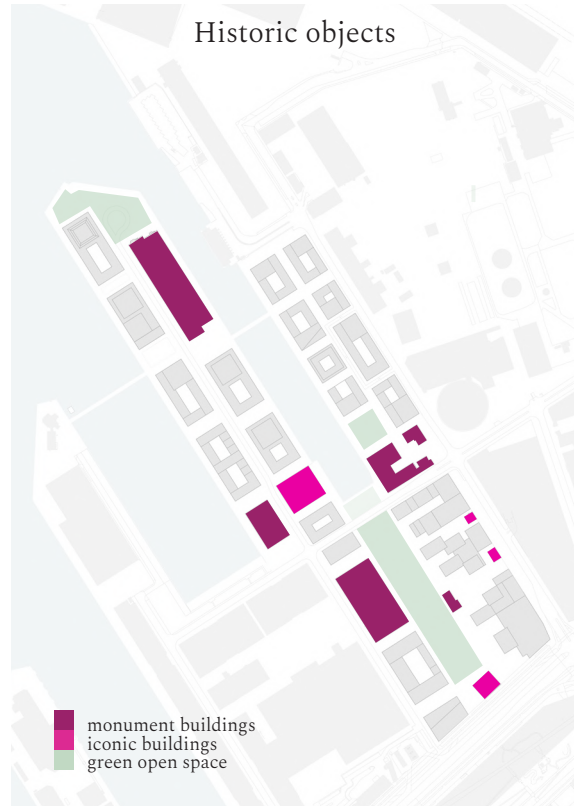
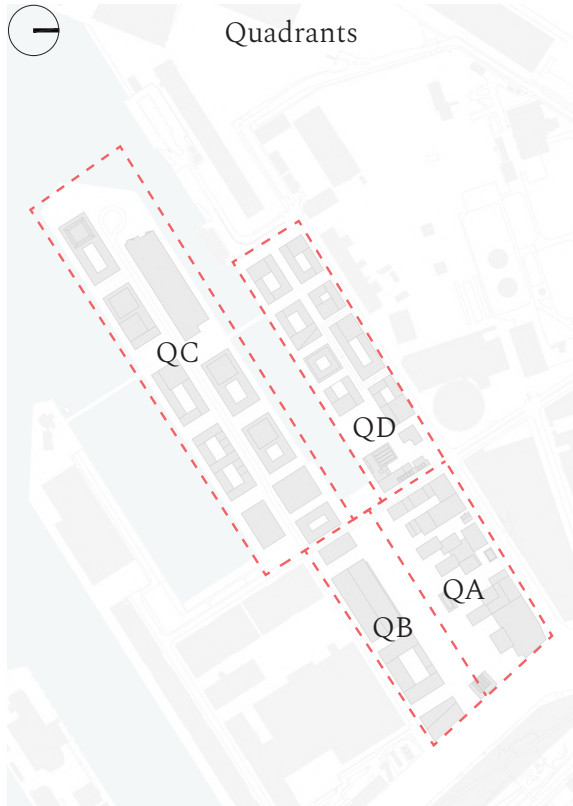
LOCATION ANALYSIS



KEILEKWARTIER IN M4H, ROTTERDAM

Merwe-Viehavens currently houses flourishing port companies. It has a complex surface, outdated real estate and infrastructure that is not suitable for pedestrians or cyclists. It means that the district has to be transformed and repurposed, mixing living and working. According to the municipality of Rotterdam, the plan for M4H is to transform it into the neighborhood from which surrounding districts will benefit more. The ambition of this project is to turn it into a lively live-work environment with an emphasis on participation processes and organic growth.

As a studio of Advanced Housing Design, our task was to firstly prepare a masterplan for part of M4H - the new Keilekwartier. The vision had to be based on the future-proof, experimental and live-work oriented character. As a group of 16 students we were divided into 4 subgroups, each one focusing on a different quarter of M4H. Each of the quadrants had a task to design their area based on existing masterplan designs: Quadrant A - Strijp S in Eindhoven, Quadrant B - Binckhorst in the Hague, Quadrant C - Kop van Zuid in Rotterdam and Quadrant D - Katendrecht in Rotterdam. All these urban transformations created an overall vision for the future of Keilekwartier. We created a set of principles concerning the historic buildings and open spaces, existing roads and infrastructure, connection with the water and the city and types of living and working spaces.



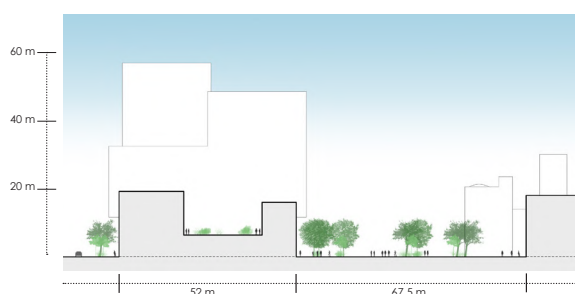


Final urban plan model

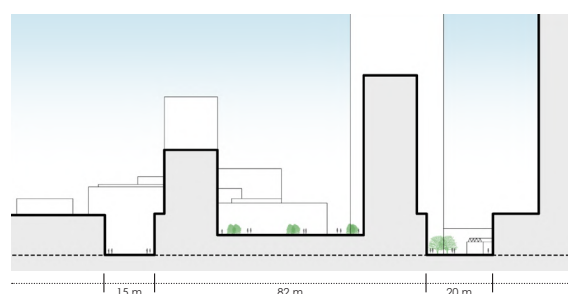
After setting the masterplan site-specific principles, typologies of 4 existing neighborhoods mentioned before were transferred to the new Keilekwartier, with respect for existing warehouses that were decided to be kept intact. Typology transfer was a starting point in elaborating plot sizes, densities, as well as shapes, character and heights of the new buildings. It also provided a reference for building and dwelling typologies (see map below). The model shown above is an interpretation of the urban plan that was created. However, it should not be treated as a strict design reference. Specific intentions of the new masterplan are described in a set of regulations for the Keilekwartier (see next page). Considering that the vision for M4H is focused on organic and experimental approach, the new urban plan should be a starting point and basic toolbox for further architectural interpretations.







Section A-A



Section B-B

The building I chose for my graduation project is located in Quadrant B, next to the existing warehouse that accommodates a variety of small businesses, including architecture studios and interior designers. The proximity to the main street Vierhavensstraat is an added value. One of the other advantages of the plot is its size and a possibility of creating a courtyard typology, which will contribute to the sense of neighborhood and create a space shared by the residents, for their own appropriation. Big plot size also allows for a diversity of dwellers, fitting the theme of expat singles, couple and family target groups. It will provide spaces for both social interaction, as well as private appropriation for individuals. Everyone will have their own place adjusted to their lifestyles and household types. The building will also face the park, which is another advantage not only for families with children, but for anyone to spend leisure time with friends and neighbors.

The chosen plot has also a potential to build high up to 55 meters, which allows creating a diversity of vertical collective spaces in the spirit of a vertical neighborhood.

CONCEPTUAL DESIGN

The research has shown that expats are a target group that can be created by both very individual people, as well as ones who need strong social interaction. Therefore, the design of the residential building for expats is divided into two main typologies: courtyard and tower. Courtyard is mostly dedicated to couples and families, having in mind providing play zones for the children and common spaces in general. Dwellings in the tower are more private and less collective, ideal for people who value their individualism. There are two main circulation sources: a gallery and a corridor. They all connect vertically and horizontally through the whole building. Corridor type includes also a middle core of common spaces shared by the apartments of one floor or two floors in the case of the tower. Main entrances to the dwellings are located from the courtyard side. The courtyard itself is lifted 6 m up, allowing the ground floor to offer a space for car sharing. Dwelling types are adjusted to the household sizes. Single users and couples can choose between single floor apartments, gallery types and co-living scheme. They belong mostly in the tower part. Bigger apartments are dedicated mostly to families.

Plot size: 4.264 m²

Gross floor area: 26.200 m² (incl. 16.400 m² net dwelling area)

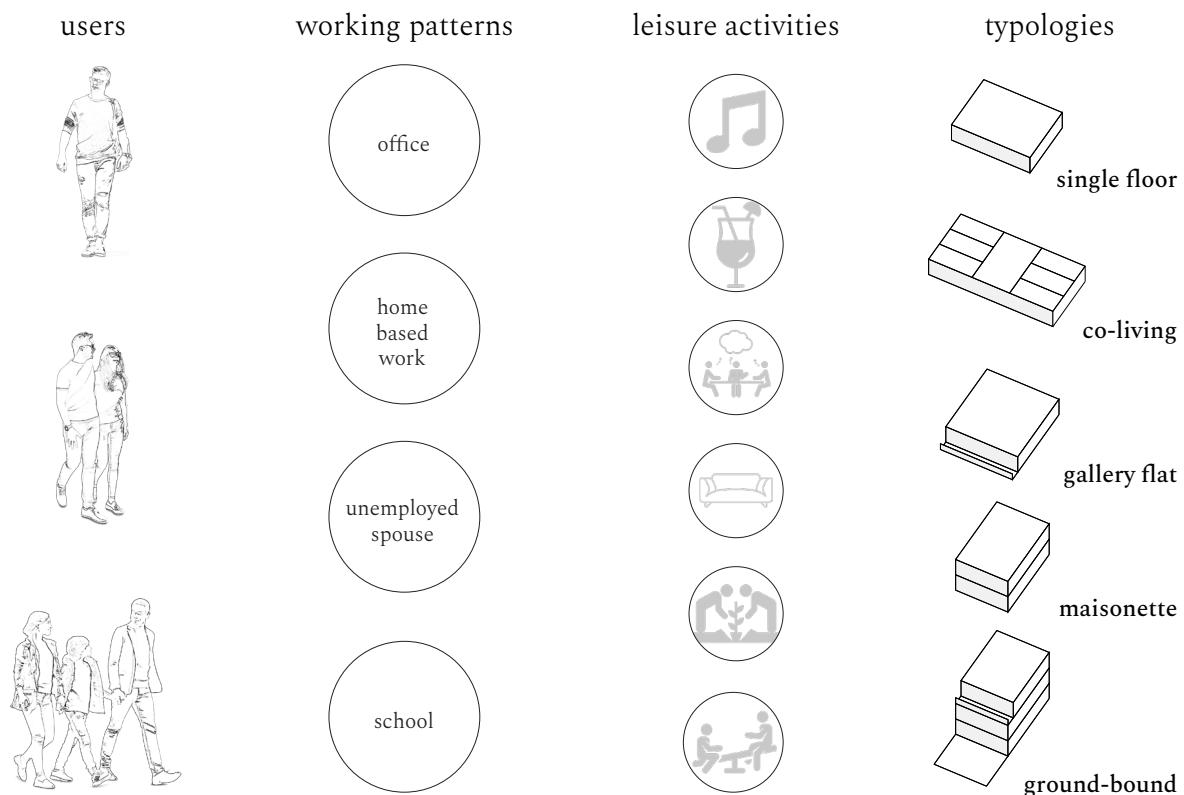
Dwelling amount: 238 + 60 co-living units

Dwelling sizes: 38,5 - 122,8 m²

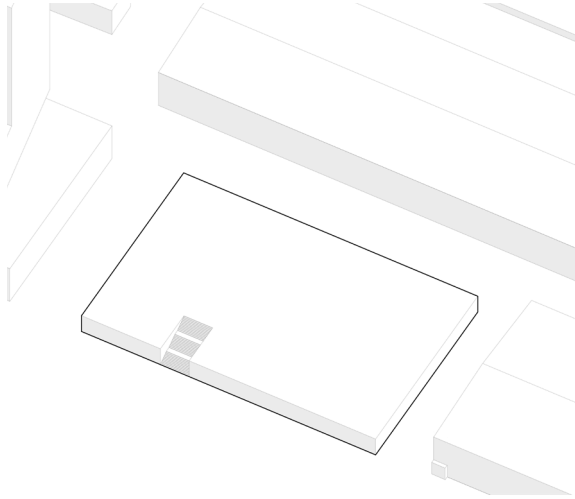
Dwelling types: maisonette, ground-bound, gallery flat, single floor flat

Common spaces:

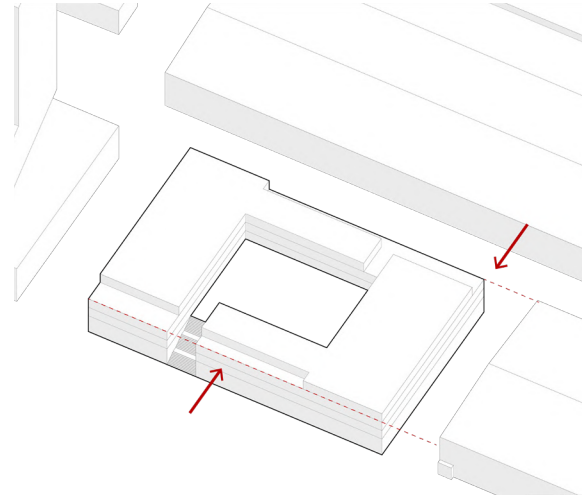
bike storage (176 spots) and car share (50 spots incl. 2 for disabled), 200 storage units, laundry rooms on each floor, work rooms, play rooms, language studio, workshop rooms/studios, guest rooms



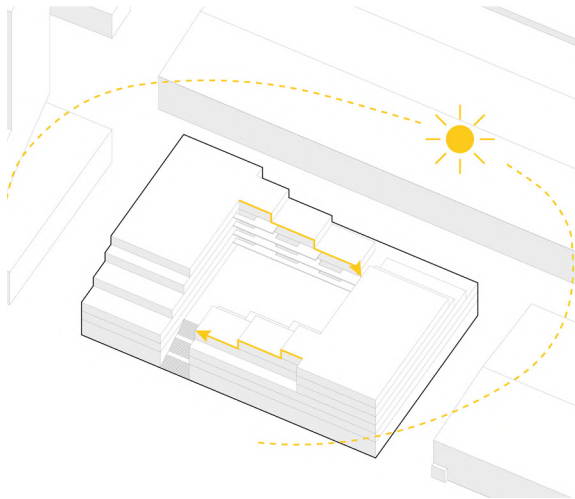
1. lift the ground floor for parking



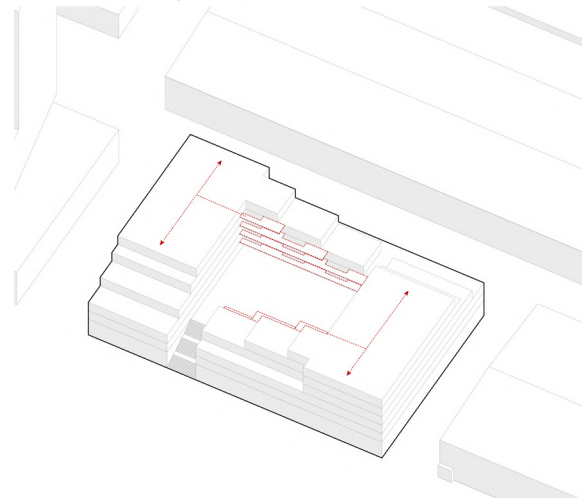
2. align the height to the warehouse



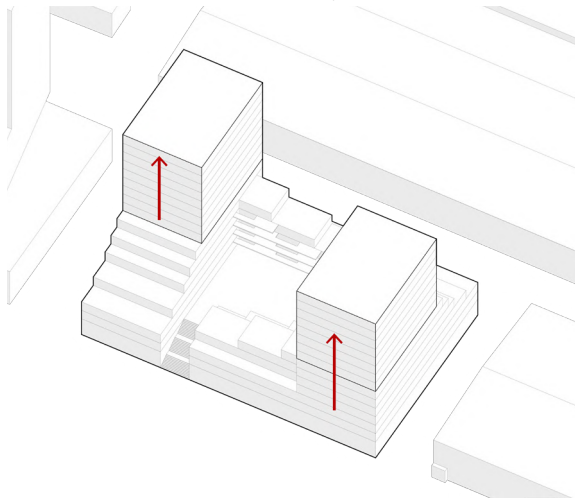
3. adjust the volume to sun orientation



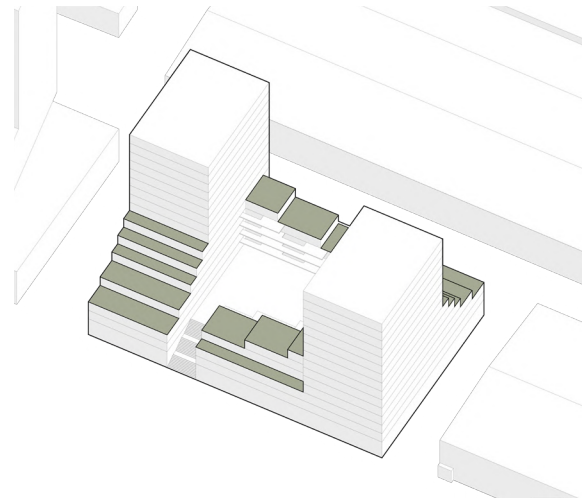
4. create gallery - corridor connection



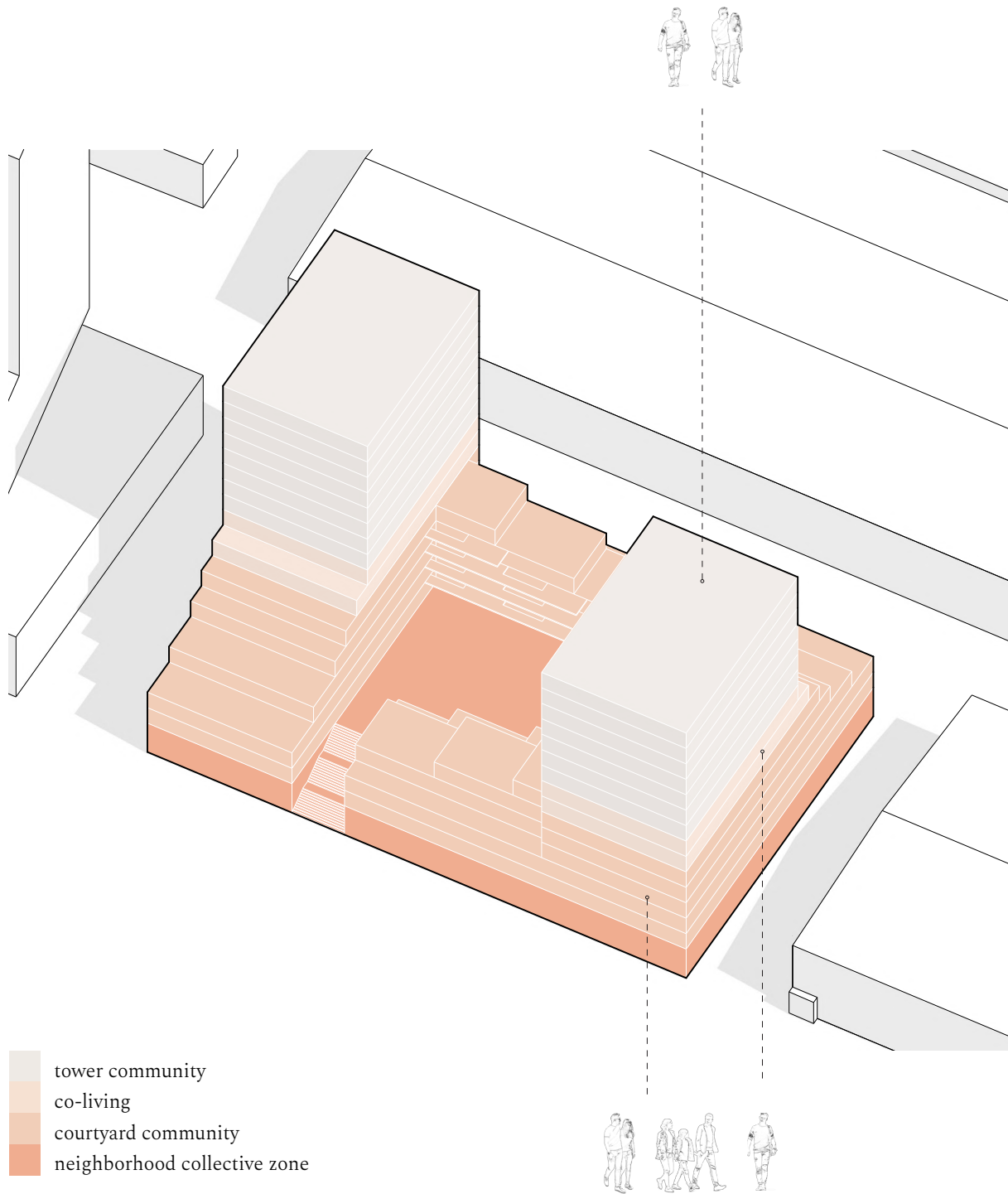
5. increase the privacy in the towers



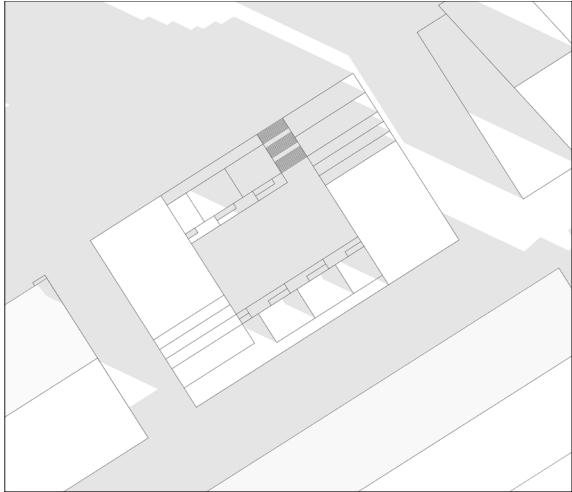
6. create collective open spaces



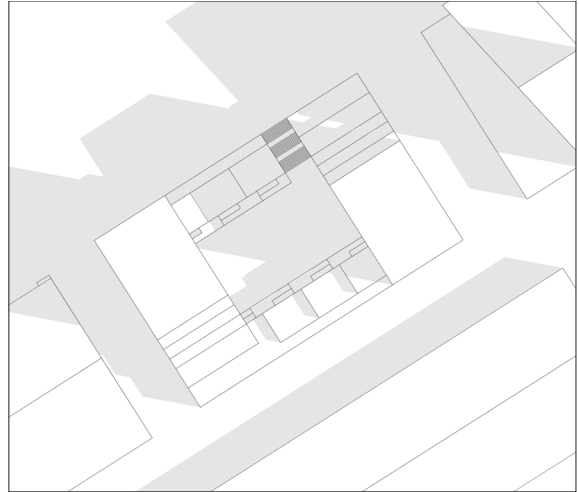
Functional program



March 21, 9:00



June 21, 9:00



March 21, 12:00



June 21, 12:00



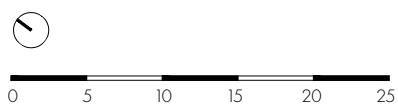
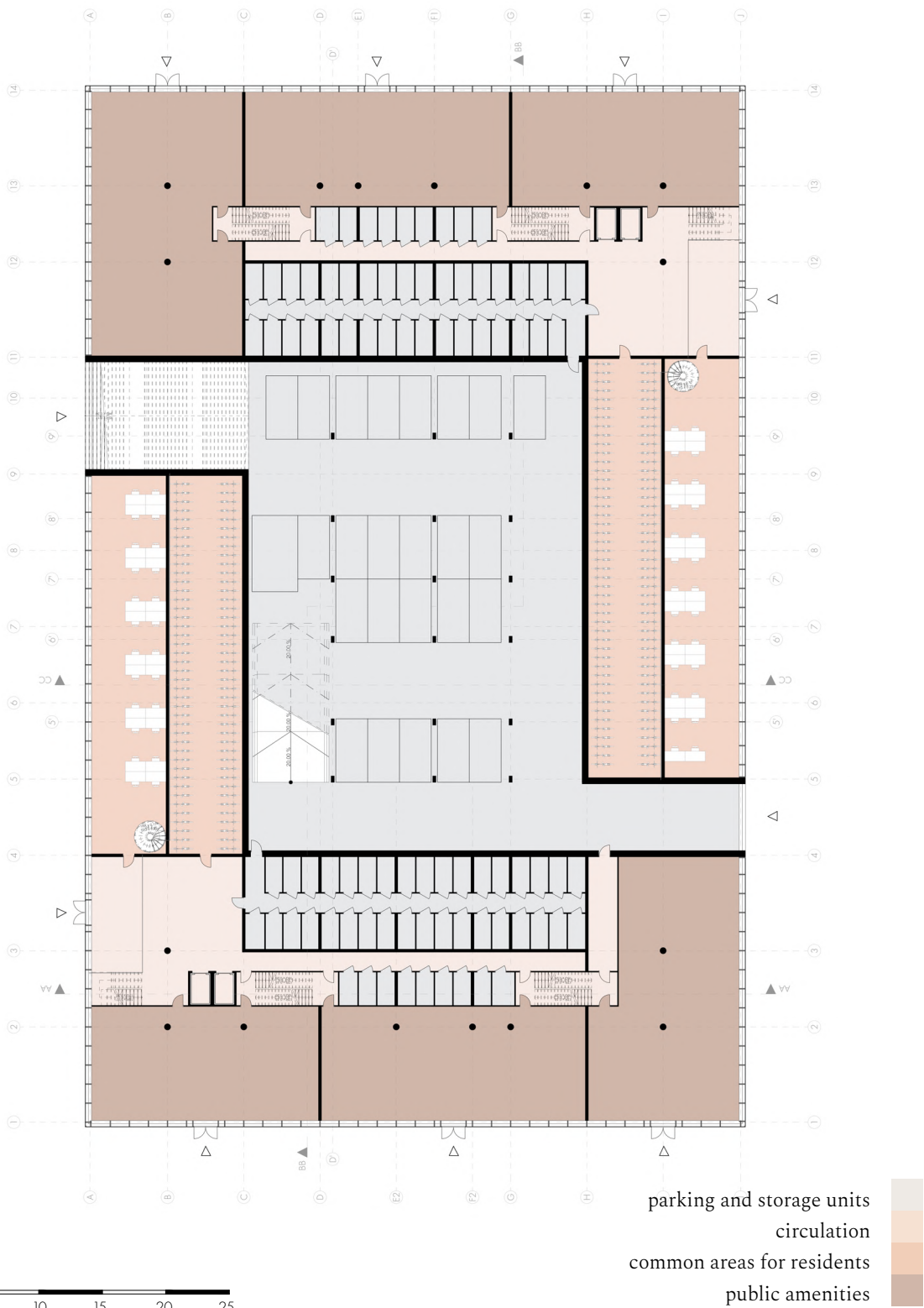
March 21, 15:00



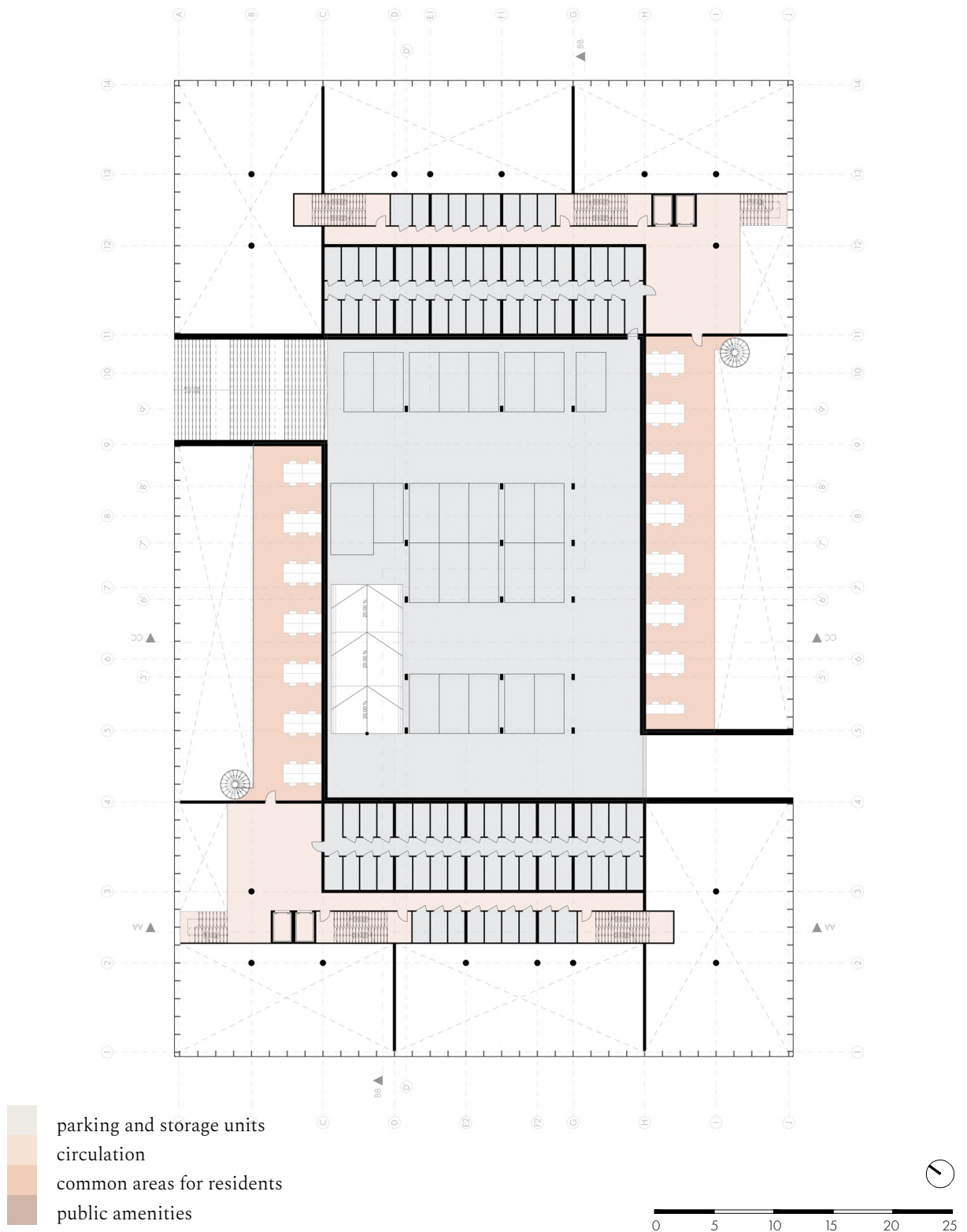
June 21, 15:00



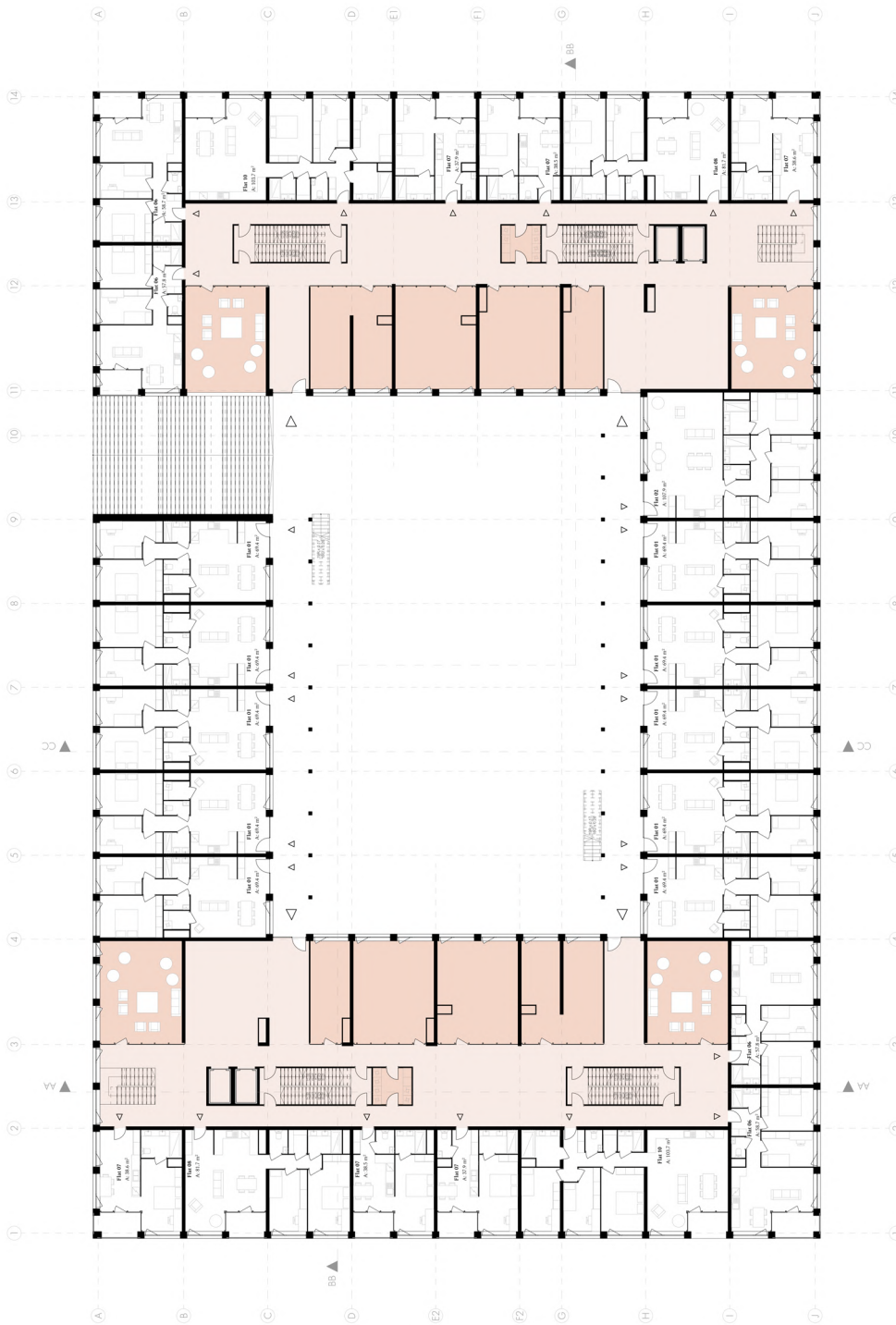
Ground floor 1:500



Ground floor mezzanine 1:500



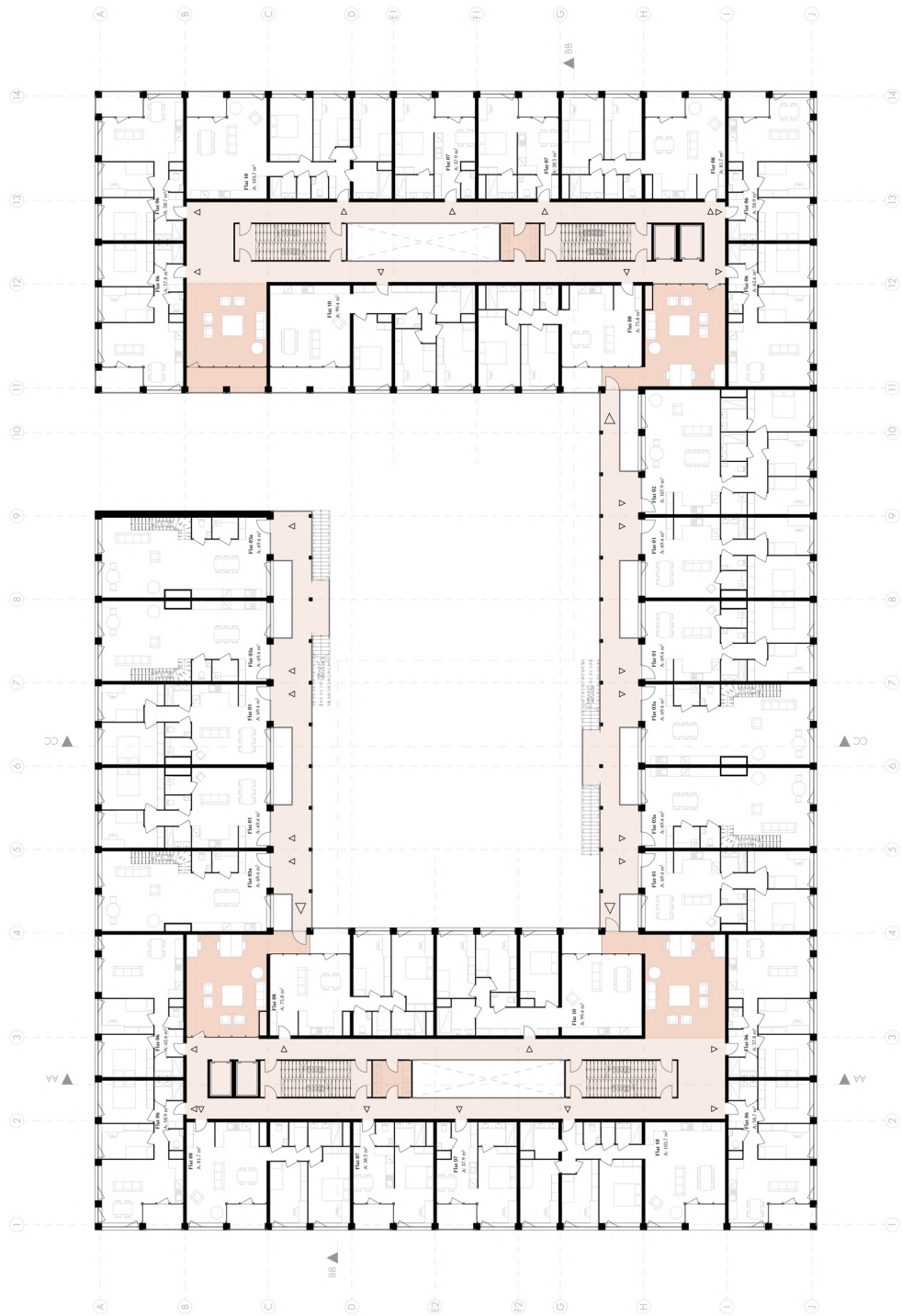
1st floor 1:500





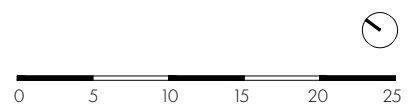
circulation
common areas for residents



2nd floor 1:500



 circulation
 common areas for resident

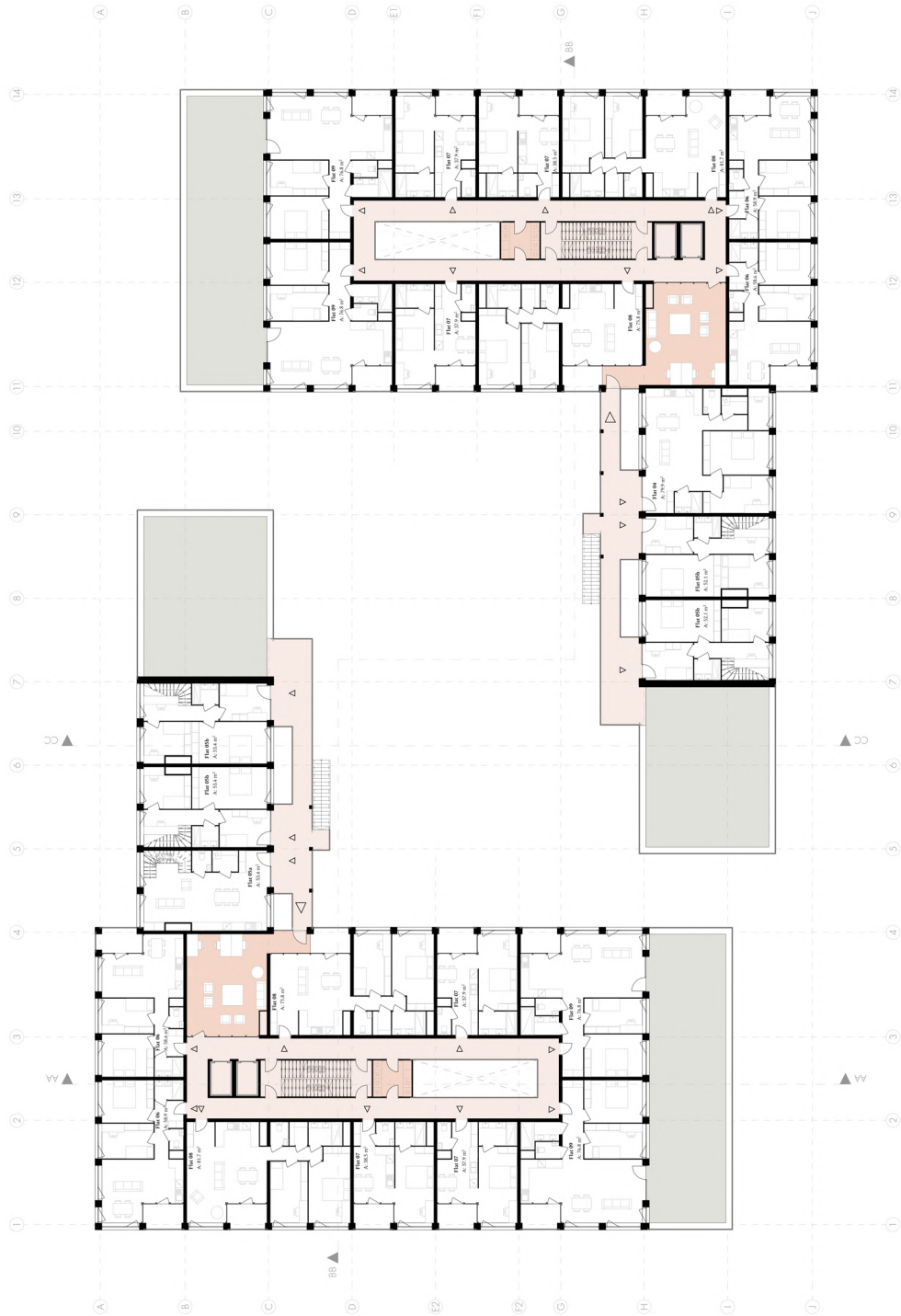



3rd floor 1:500

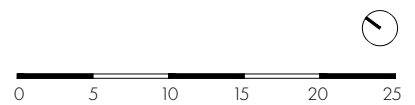


circulation
common areas for residents

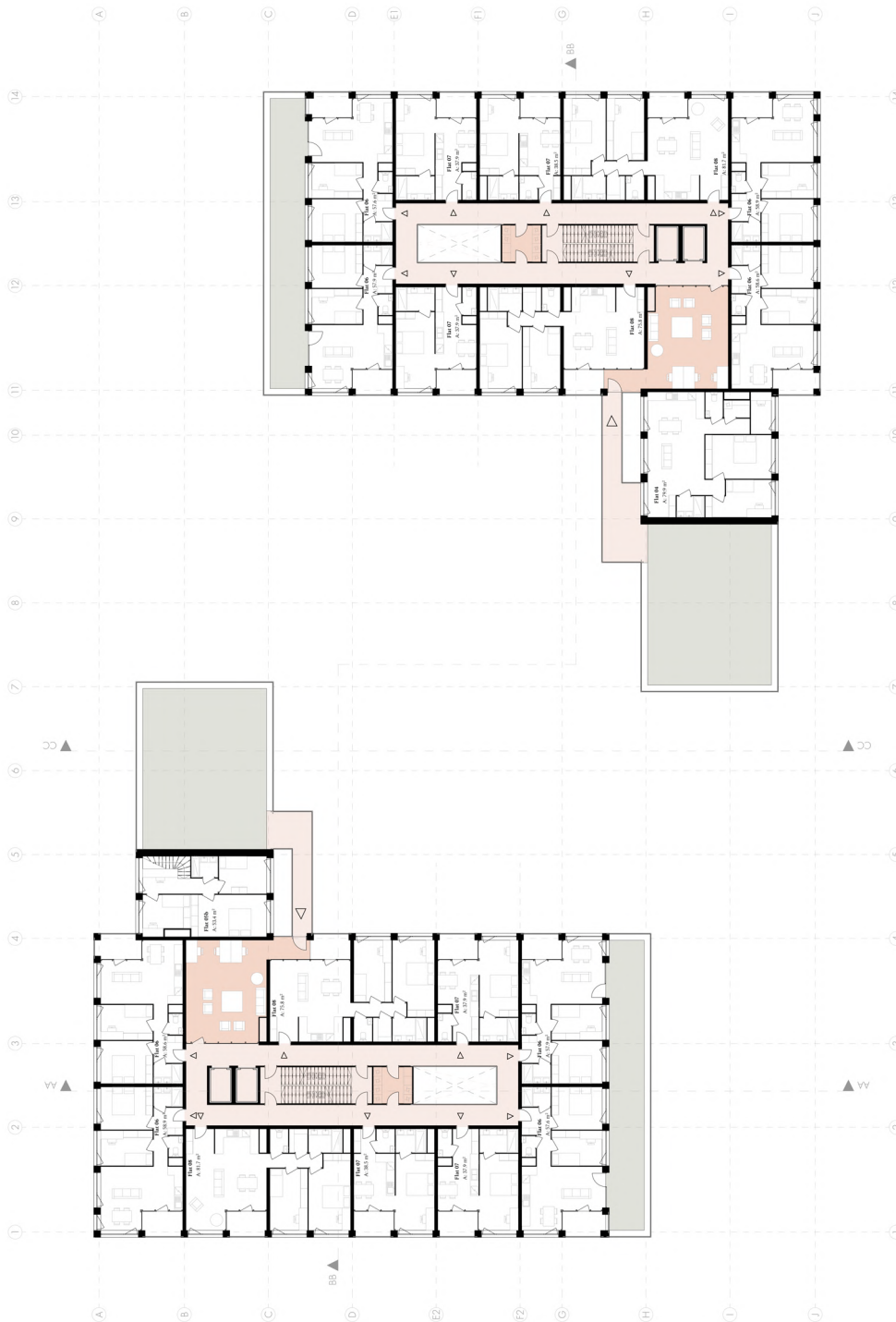
4th floor 1:500



 circulation
common areas for resident

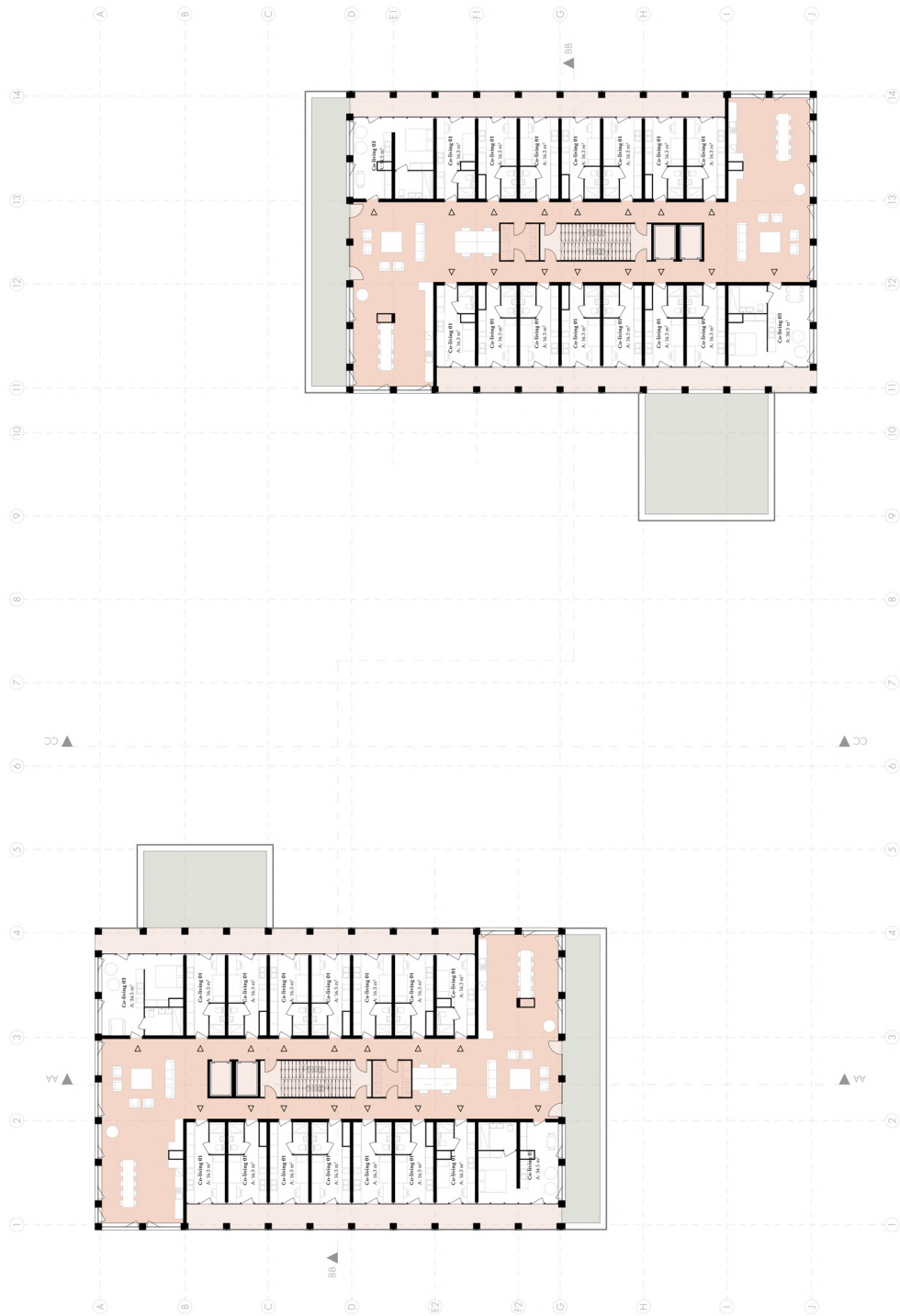


5th floor 1:500

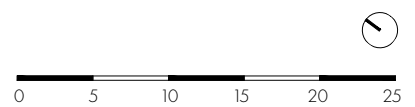


circulation
common areas for residents

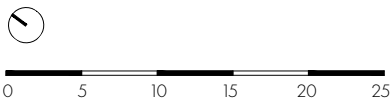
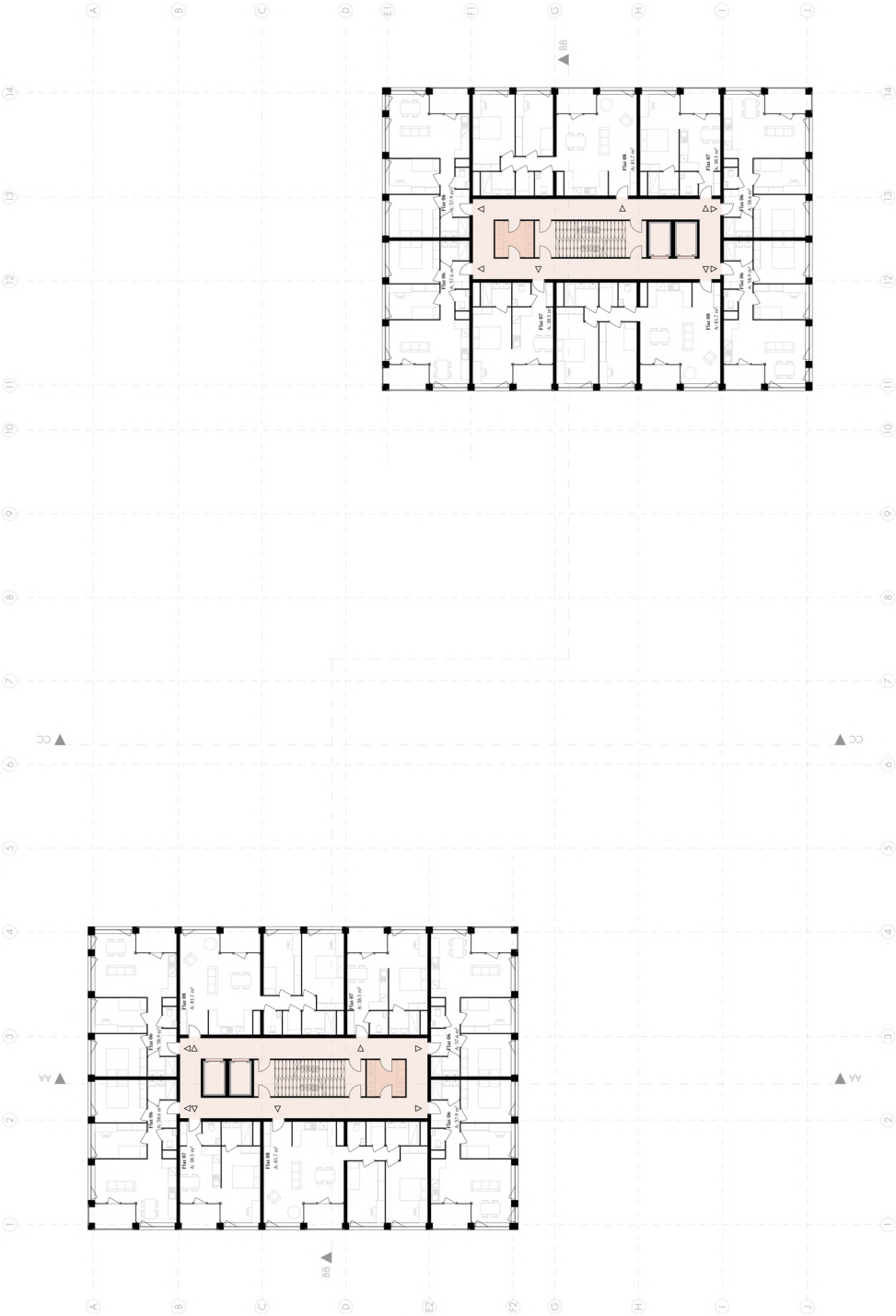
6th floor 1:500



circulation
 common areas for resident



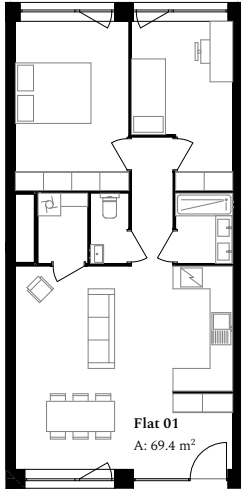
8th floor 1:500



circulation
 common areas for residents

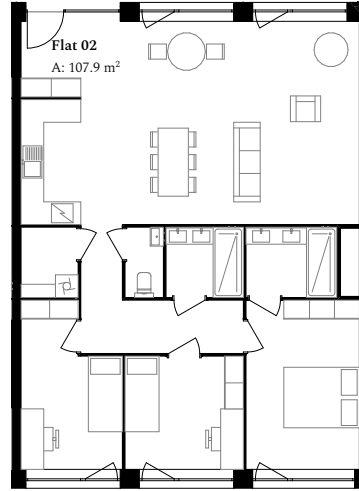
Co-living scheme 6th floor 1:200





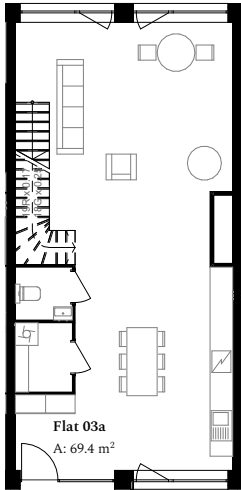
Apartment 1

Type: ground bound
 Size: 69,4 m²
 Window orientation:
 north-west, south-east
 Bay width: 12,0 m
 Bedrooms: 2



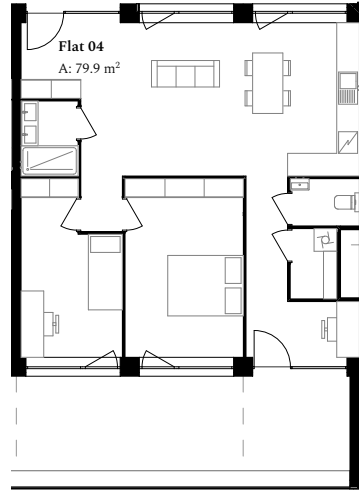
Apartment 2

Type: ground bound
 Size: 107,9 m²
 Window orientation:
 north-west, south-east
 Bay width: 12,0 m
 Bedrooms: 3



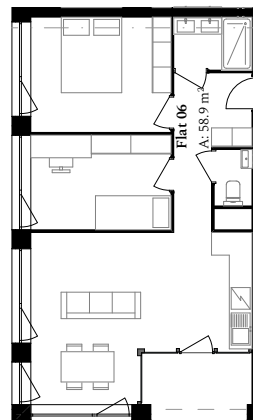
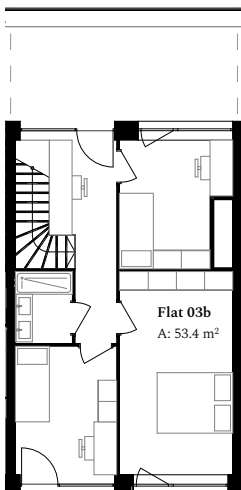
Apartment 3

Type: maisonette with
 gallery access
 Size: 122,8 m²
 Window orientation:
 north-west, south-east
 Bay width: 9,0 - 12,0 m
 Bedrooms: 3



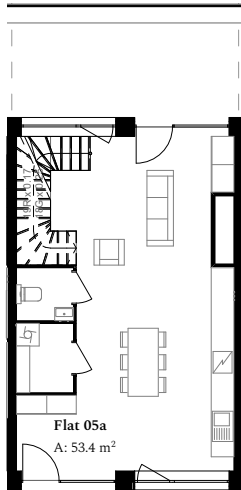
Apartment 4

Type: apartment with
 gallery access
 Size: 79,9 m²
 Window orientation:
 north-west, south-east
 Bay width: 9,0 m
 Bedrooms: 2



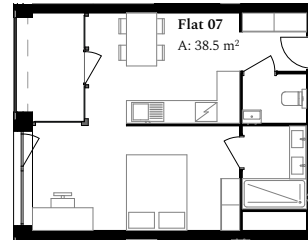
Apartment 6

Type: apartment with
 corridor access
 Size: 58,9 m²
 Window orientation:
 north-west, south-west
 Bay width: 6,0 m
 Bedrooms: 2



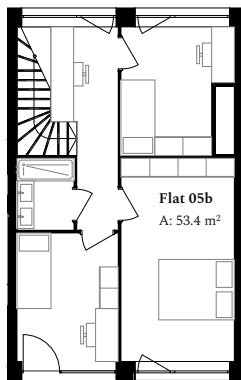
Apartment 5

Type: maisonette with gallery access
 Size: 106,8 m²
 Window orientation: north-west, south-east
 Bay width: 9,0 m
 Bedrooms: 3

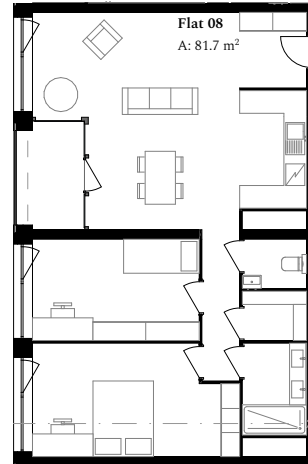


Apartment 7

Type: studio with corridor access
 Size: 38,5 m²
 Window orientation: south-east
 Bay width: 7,5 m
 Bedrooms: 1



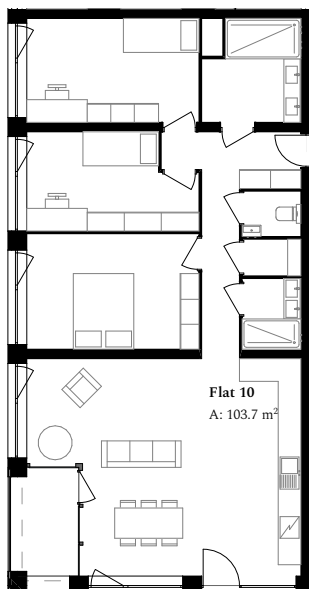
Flat 05b
 A: 53.4 m²



Flat 08
 A: 81.7 m²

Apartment 8

Type: apartment with corridor access
 Size: 81,7 m²
 Window orientation: south-east
 Bay width: 7,5 m
 Bedrooms: 2



Flat 10
 A: 103.7 m²

Apartment 10

Type: apartment with corridor access and private terrace
 Size: 103,7 m²
 Window orientation: south-west, south-east
 Bay width: 7,5 m
 Bedrooms: 3

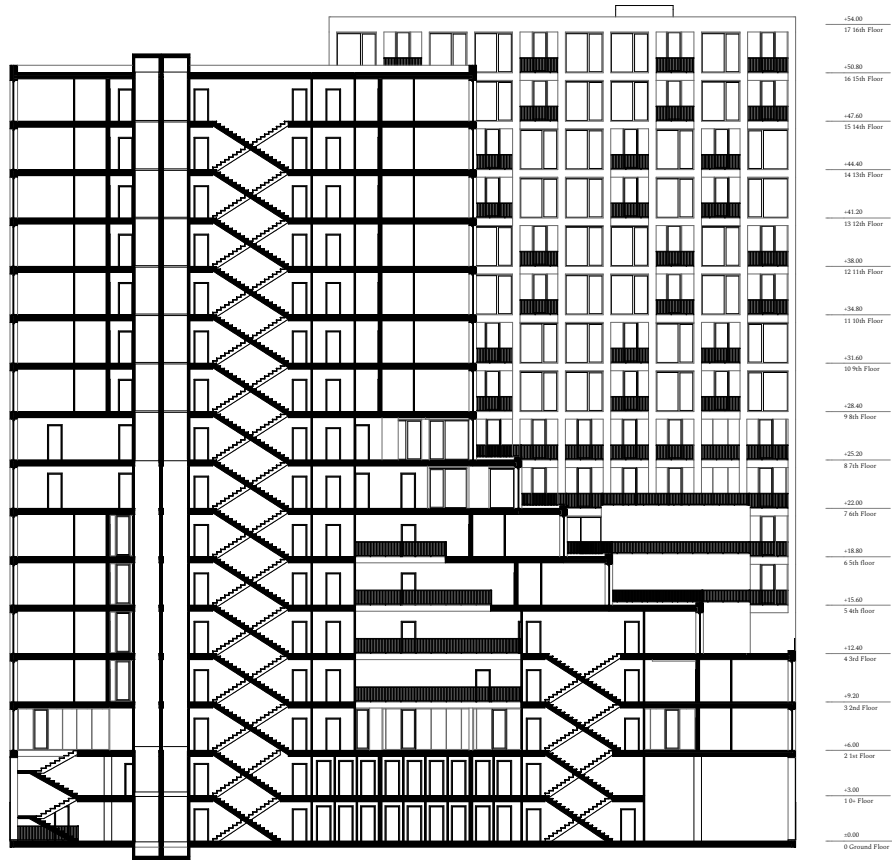


Flat 09
 A: 76.8 m²

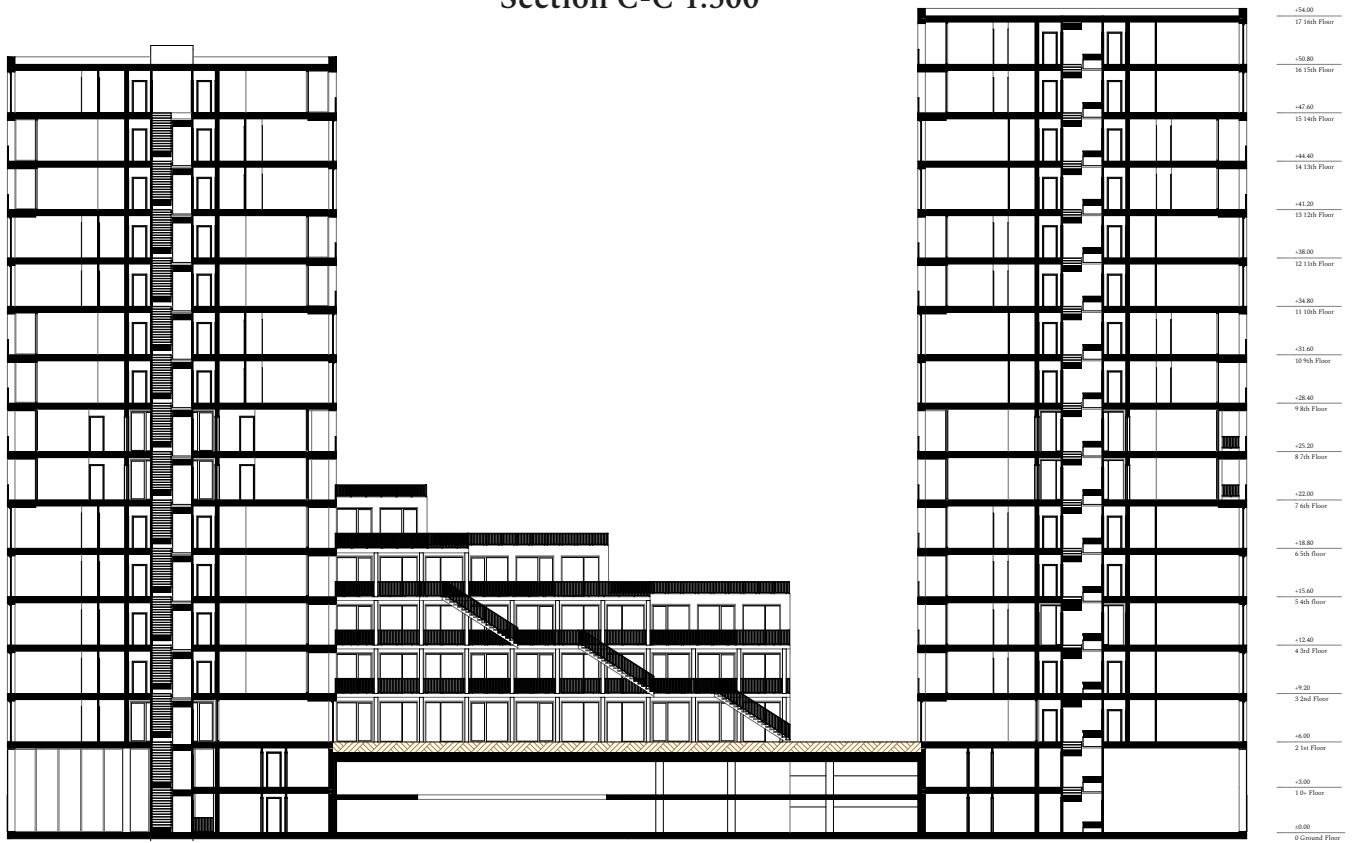
Apartment 9

Type: apartment with corridor access and private terrace
 Size: 76,8 m²
 Window orientation: south-west, south-east
 Bay width: 7,5 m
 Bedrooms: 3

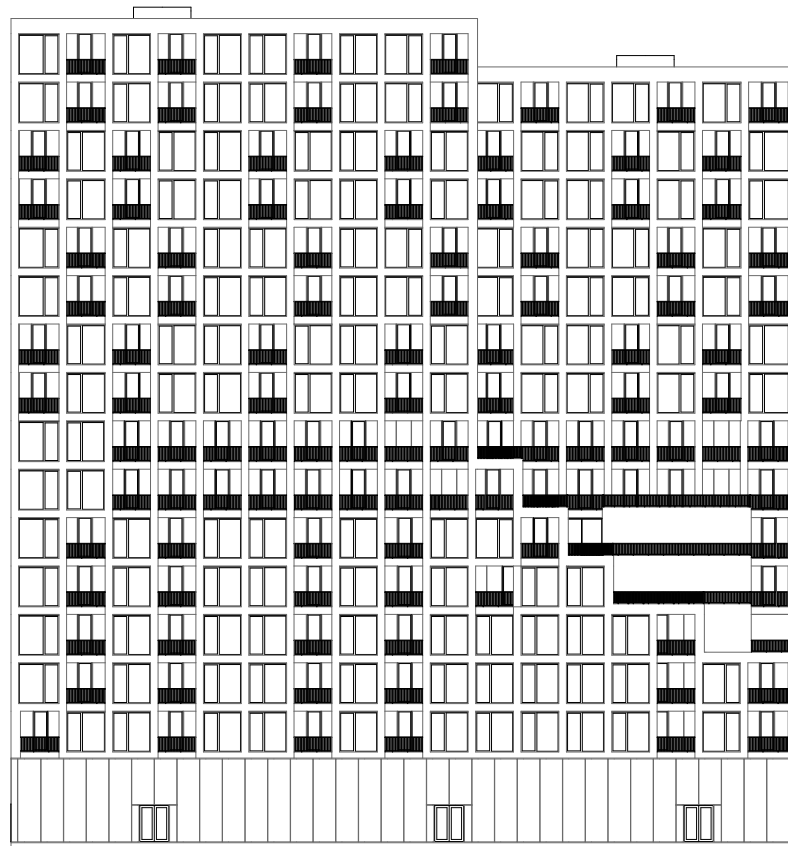
Section A-A 1:500



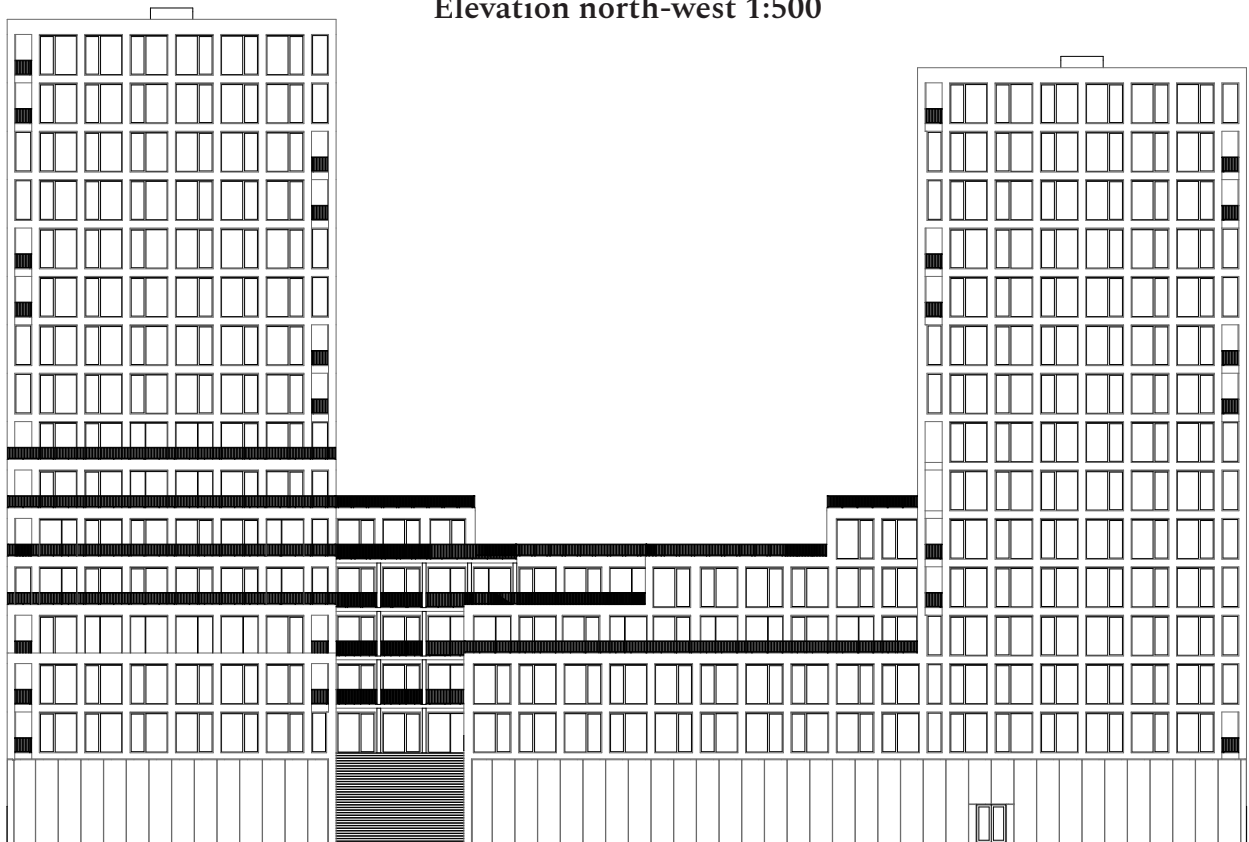
Section C-C 1:500

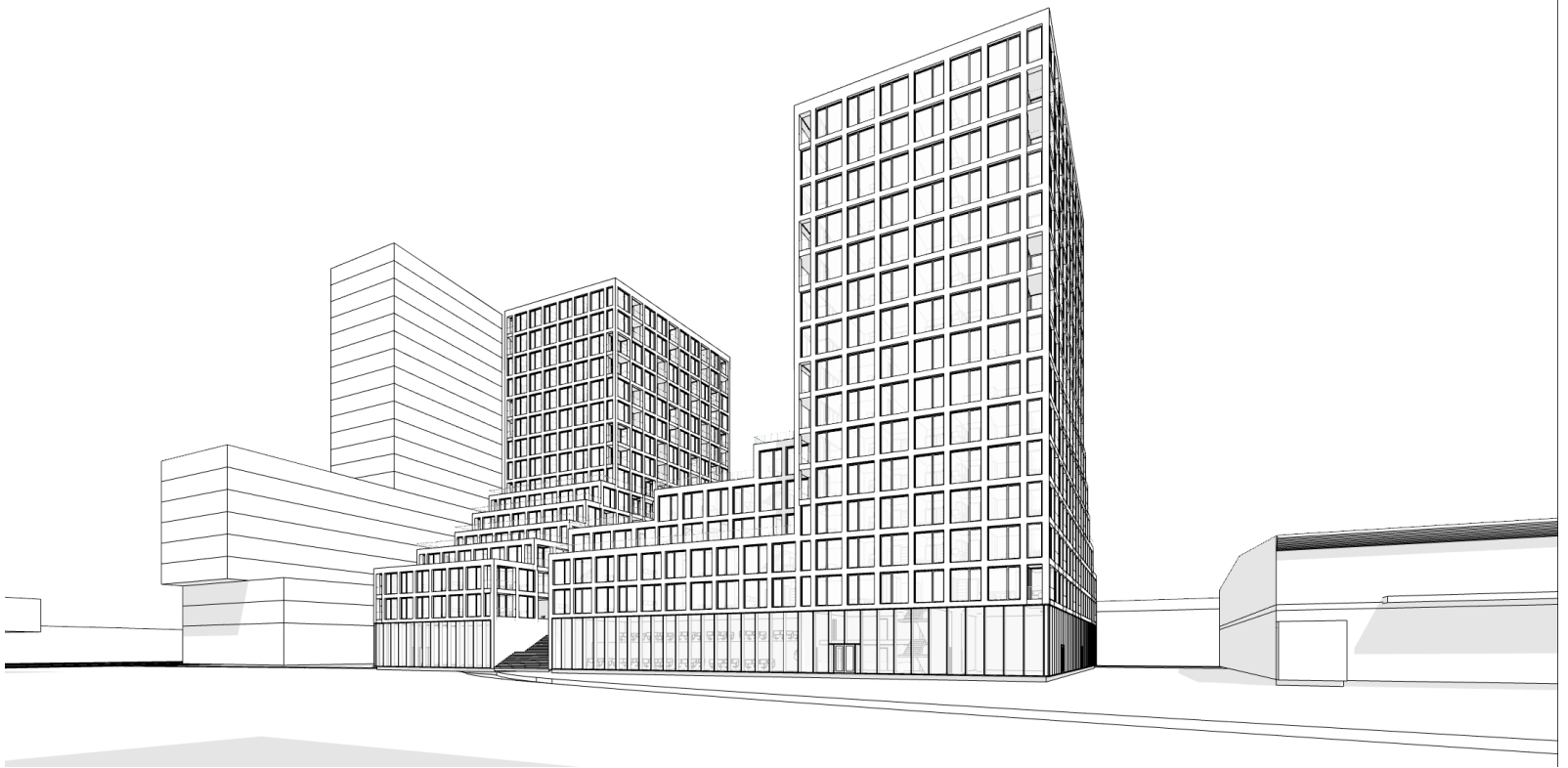


Elevation south-east 1:500



Elevation north-west 1:500





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