A CARING PLACE

A study on how to create an intergenerational community that takes aspects of ageing and caring into account.

Research And Design
The Faculty of Architecture at Delft
University of Technology
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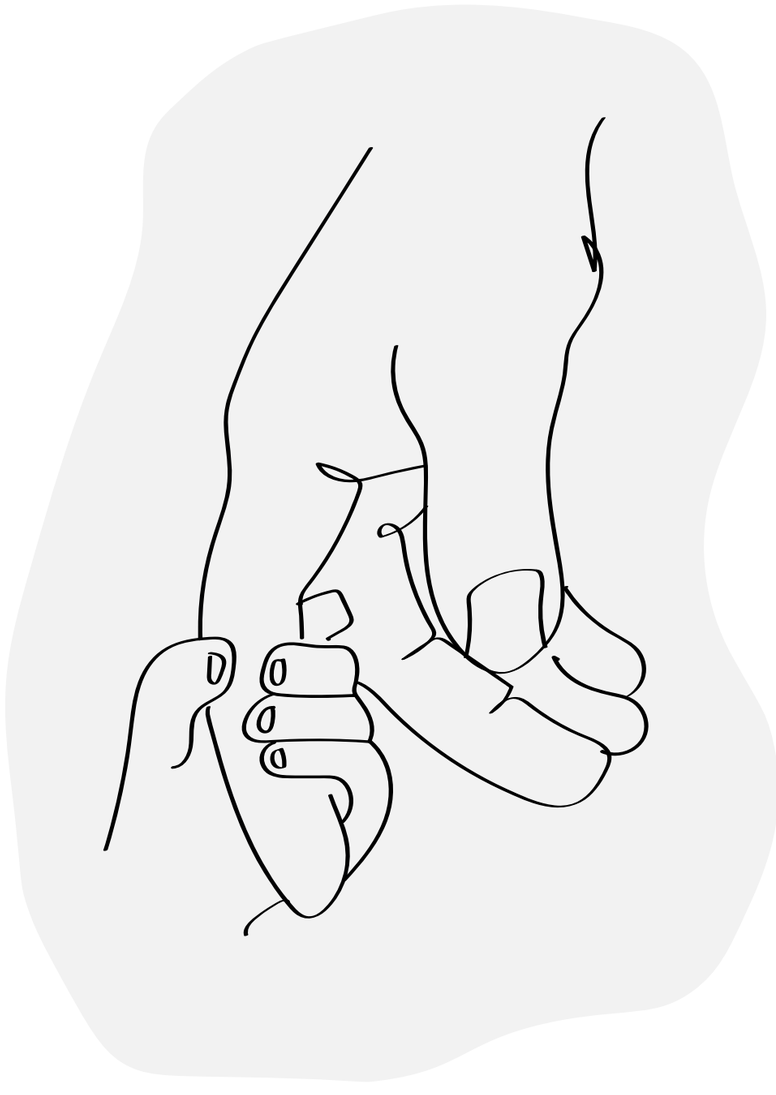

Abstract

Globally, societies are seeing a long-term rise in the older adult population; by 2050, one in every four persons will be 60 years old or older. The numbers of solo dwellers; solo-dwelling elderly; and people living in cities, will also increase (WHO, 2018). However, most city neighbourhoods do not suit contemporary lifespan demands since they were constructed mainly for youthful, typically abled individuals(BHSc, 2021).

With age segregation, social isolation, and loneliness being identified as major social issues, how can architects adapt and improve cities to combat these challenges? And is there a design proposal that would be more sensitive to the changing population's demands?

I aim to explore an innovative and adaptable residential design that might be a solution to Dutch social issues and demographic changes. To create a residential neighbourhood where one may live throughout many life stages while being valued as an individual, I have created research and design questions to take the first steps toward developing a 'caring place'.

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CONTENTS

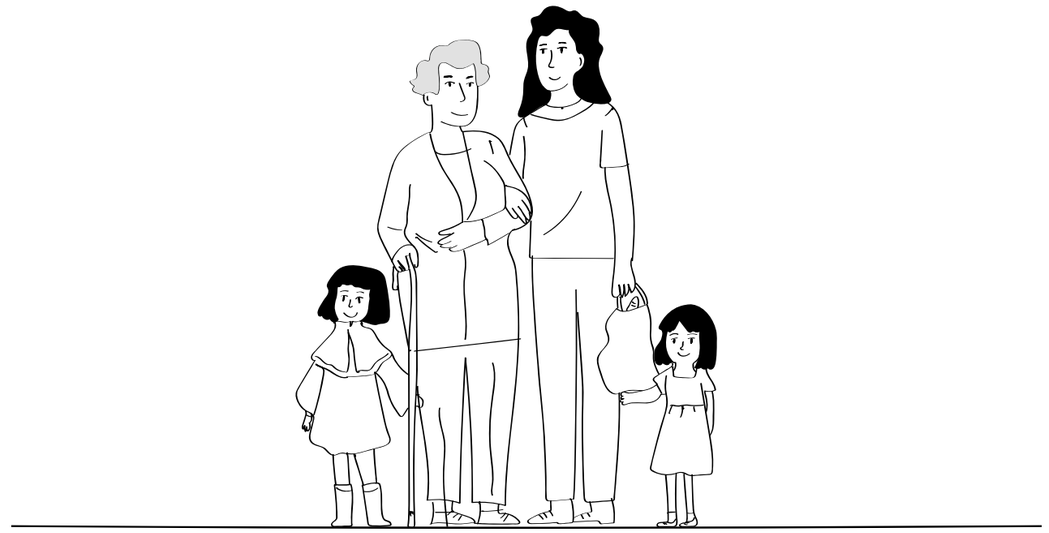
1 Introduction

1.1 Personal motivation

When I left my family's home, I knew I would always be grateful for the care and support that my community provided to one another. I will carry the shared experience with me. My mother, my little sister, and I first moved into the neighbourhood in 2000. It had a diverse socio-economic profile and a multicultural and multi-generational population. My mother worked full-time while raising two young daughters as a single parent. Families lived on either side of us, but a lone elderly lady lived behind our house.

This neighbour, who had no grandchildren, was frequently alone at home and enjoyed spending time in her garden. My sister and I played in the backyard often as kids, and as we grew older, we became closer to the elderly lady. She eventually learned about our family situation and offered her assistance babysitting. She taught us how to hold a pen, write, and read, and she told us stories about the Second World War from her own experience. When my sister and I went to bed in the evening, our mother chatted with the woman over a glass of port. Those moments formed an extraordinary bond. As my sister and I grew older, we helped with the elderly lady's groceries, watched ice skating on TV with her, and invited her to all our social gatherings. We also started calling her 'Oma', which is Dutch for 'grandmother'. This intergenerational relationship allowed us all to grow with each other. We shared knowledge, care, and support the same way a typical family would.

Unfortunately, the woman's home was built for active young families, and there were no alterations that could be made to accommodate her needs with rising age. After two significant falls down the stairs, she was moved into a care facility, far away from the community where she had spent much of her life. She felt isolated from any form of social activity, which constitutes a significant challenge and an opportunity for the future cohesion of Dutch society.



1.2 Problem statement

Globally, societies are seeing a long-term rise in the older adult population; by 2050, one in every four persons will be 60 years old or older. For the first time in human history, there will be more senior people than children in the population (WHO, 2018). The Netherlands had 3.5 million people over the age of 65 as of January 1, 2020. This equates to 19.8% of the total population. In 2021 the grey pressure was 34%, which means there were three persons of working age (20 to 65 years) for every person over 65. As Figure 1 indicates, population predictions, will rise to over 50% in the next thirty years before dropping somewhat to a plateau. The number of solo dwellers, solo-dwelling elderly, and people living in cities, especially cities with populations under five million, will also increase (CBS, 2021). A century of human development has led to these patterns (WHO, 2018).

However, most city neighbourhoods do not suit contemporary lifespan demands since they were constructed mainly for youthful, typically abled individuals. Furthermore, most older people do not wish to live in age-segregated communities (BHSc, 2021). The increasing segregation of generations into same-age institutions such as preschools and retirement homes decreases opportunities for young children and elderly persons to interact with, understand, and learn from one another (Cortellesi & Kernan, 2016). Particularly significant is social isolation. Social isolation is strongly tied to loneliness, which is described as ‘a quantitative manner of weakened social network’ and is characterised as ‘a felt loss of a social network’ BHSc, 2021). Loneliness is linked to a reduction in daily function, which harms subjective health and raises the risk of illnesses like depression and mortality. The effect of social isolation is explored in the 2019 BC Centre for Disease Control study, which mentions that housing is a ‘key component’ in the battle against this problem.

With age-segregation, social isolation, and loneliness being identified as major social issues, architects must consider how to adapt and improve cities to combat these challenges. How can environments be created that are more ‘age-inclusive’? Is there a design proposal that would be more sensitive to the changing population’s demands? As noted earlier, meaningful intergenerational relationships are fundamental social structures that benefit people of all ages. Supporting this is the focus I hope for in my graduation project. I propose a study of opportunities for a socially inclusive and caring neighbourhood in these changing demographics, particularly considering people’s desire to continue living in their own homes as they age. I aim to explore an innovative and adaptable residential architectural design. I believe this may lead to one of the solutions to Dutch social issues and demographic changes.

Figure 1

Dutch population 65+

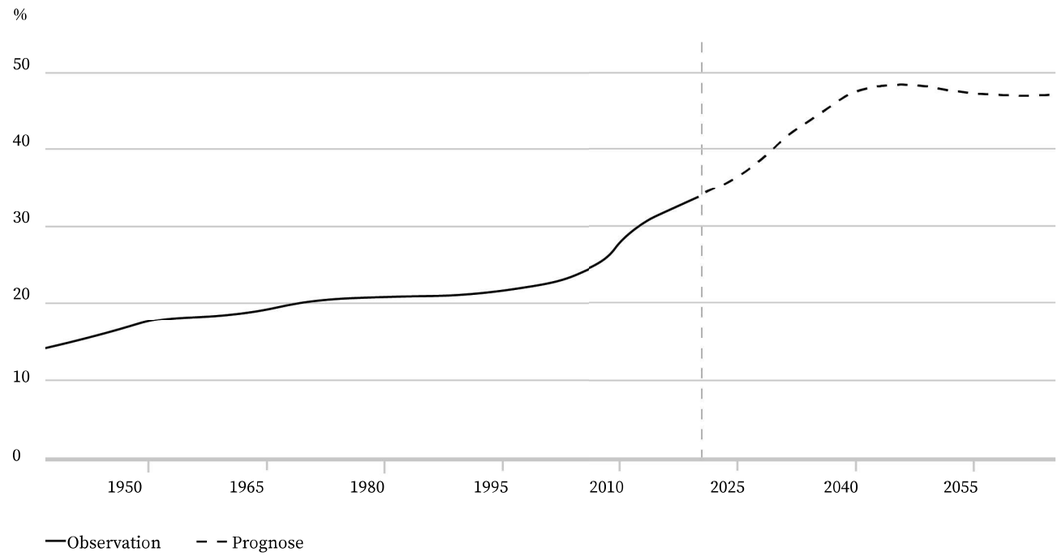
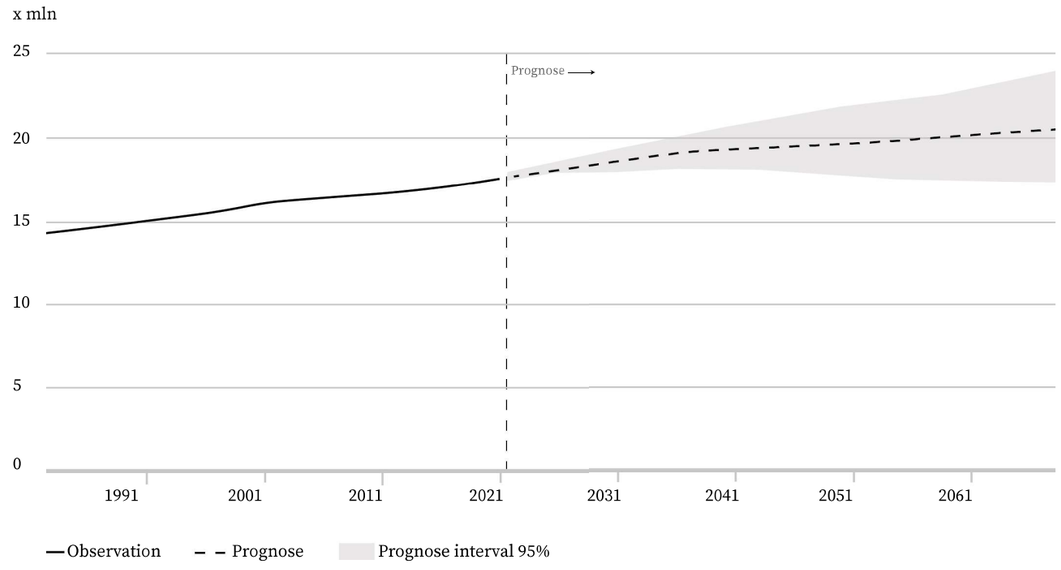


Figure 2

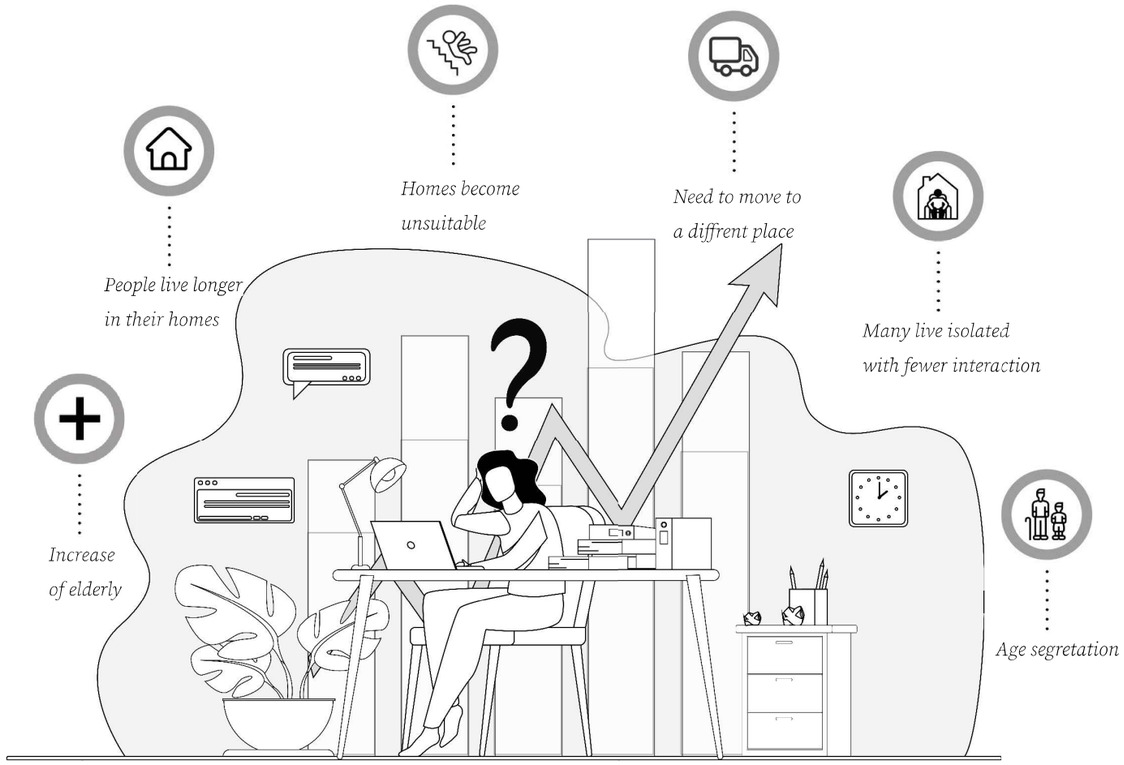
Dutch populationgrowth



Note. Author (CBS, 2021)

1.3 Research question

Research problem infographic



To create a residential neighbourhood where one may live throughout many life stages while being valued as an individual, I have divided the target stages into childhood, adulthood, and elderly adulthood. I have also created research and design questions to take the first steps toward developing a 'Caring Place'.

The main research question is, "How can one create an intergenerational building that takes aspects of ageing and caring into account?"

This research question is divided into three sub-questions to gain a deeper understanding:

What are the intergenerational care and support cycles, and how can they be spatially articulated?

What are each target group's residential, spatial and programmatic needs?

How can one create opportunities for intergenerational encounters through the programming and design of collective spaces?

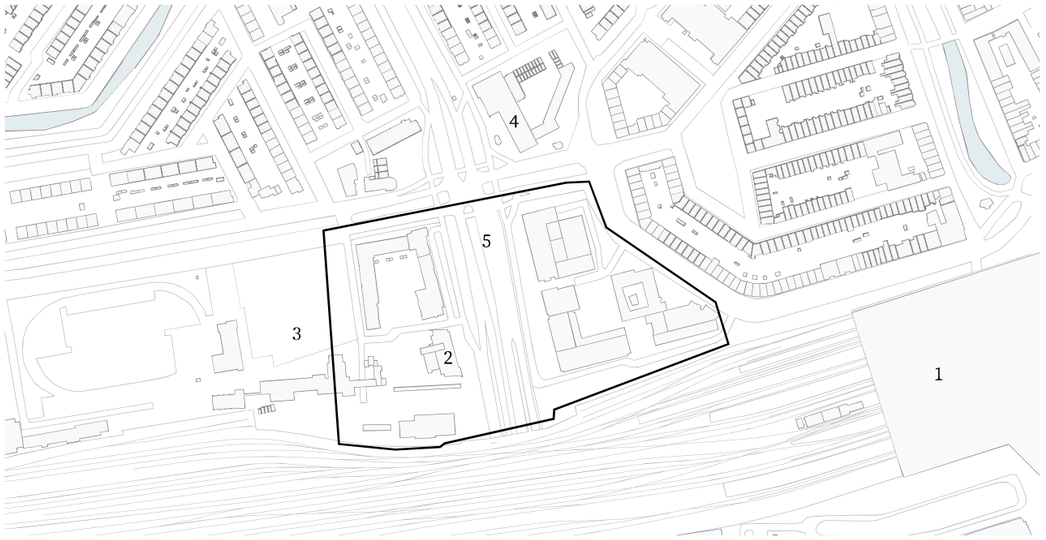
1.4 Relevance of the topic and its relation to the site

The Advanced Home Design Graduation Studio aims to investigate how housing design can decrease inhabitants' ecological impact and ensure social inclusion. The studio's location is Rotterdam's central business area, situated on the northern side of the train track between the city's central station and the Blijdorp Rotterdam zoo. The urban master plan is to establish a socially inclusive, sustainable, and human-scaled living environment based on the long-term non-speculation concept.

My research relates to this because it reacts to the demographic changes and social issues that Rotterdam faces and combines two of the master plan's target groups: elderly people and families. According to the BHSc, Centre for Disease Control study (2021), development of existing and new urban quarters as intergenerational communities for young and old will become increasingly important, as will funding for community housing projects. As a result of demographic change, local governments will force to deal with the negative consequences, such as the ageing of entire neighbourhoods without adequate infrastructure or the rising costs of providing care for the elderly. According to a study conducted in 2006, current and upcoming generations of pensioners are open to new ways of life (Feddersen et al., 2017)

Figure 3

Project location



1. Central station 2. Senior complex 3. School district 4. Supermarket 5. High traffic road

Note. Author

1.5 Theoretical framework

While recent sociological studies have concentrated on intergenerational connections, fewer architectural studies have addressed this issue. Most related architectural studies have centred on elderly care or ageing in place. Because there are gaps in the literature on how design might contribute to intergenerational care possibilities, I have identified recurring primary themes. I have divided the literature review into subsections that address various parts of my research topic.

Care and relationships between generations

While data on childcare needs is readily accessible, less is known about various forms of caring within families or family-like relationships. Social scientist Newman (1989) compiled with different authors a sociological and anthropological study on intergenerational programs. It presents a chronology of events from 1963 to 1988 that have contributed to the growth of intergenerational relationships. According to Newman (1989, p.12), the term 'intergenerational' is becoming more common in descriptions of community care programs that tackle a broad variety of modern social issues. The term 'intergenerational' relates to the way people of various generations interact to nurture and support one another. The elderly individuals in a family system should, in theory, pass on their collective knowledge, perspective, and understanding to the younger generations. The elder generation likewise receives care. The Newman (1989) research is important to my study because it underpins my main theme of care and intergenerational relations.

Spatial and programmatic needs in all-age-inclusive housing

Gromark, S., & Andersson, B. (2020) addresses critical architectural design issues in the fields of residential innovation, ageing communities, and health. This study provides data on architectural developments, care developments, and environmental design patterns. It is thus particularly relevant to my research; however, the study falls short on all-ages spatial requirements. Handler (2019) provides more details on how to create age-inclusive places using data on the techniques and needs of all-age-inclusive spaces.

Spaces for intergenerational encounters

Social policy researchers Biggs and Carr (2015) speak about 'generationally intelligent' spaces, which are characterised as communal places where different generations can meet, communicate, and negotiate common usage (Biggs & Carr, 2015, p. 106) Biggs and Carr propose re-emphasising spaces that enable intergenerational 'play' in an intergenerational urban environment. This 'play' is defined as what takes place in spaces that can accommodate many generations' timetables and interests at the same time. The topic of intergenerational environments is relevant to my study's third sub-question.

I hope to use these studies and others divided into these themes to answer how one can create an intergenerational building that takes aspects of ageing and caring into account? And therefore close the research gap between intergenerational care relationships and all-age-inclusive spatial designs. In this way, I will discover how to create an intergenerational building that takes aspects of ageing and caring into account.

1.6 Research method

This research focuses on incorporating ageing requirements and intergenerational views and techniques into architecture. A healthy lifestyle starts with environments that support everyone at every stage of their lives. To support the use of multiple research methods, I have divided my study into three themes. The three themes correlate with the three sub-questions. Several research approaches are used based on qualitative primary and secondary data.

1. Intergenerational care across various cultures: What are the intergenerational care and support cycles, and how can they be spatially articulated?

To answer the first sub-question, a sociological literature study was helpful as the first method for thematic analysis since it situates the main ideas about this theme.

2. Spatial and programmatic needs in all-age-inclusive housing: What are each target group's residential, spatial and programmatic needs?

A sociological and architectural literature review on intergenerational interactions and community-wide settings, activities, and spaces that attract all age groups have provided a foundation for analysing two case studies on this theme: a residential complex for urban families and a residential complex for a transgenerational encounter.

Projects :
Family housing -
BIGyard by Zanderroth Architekten

Elderly housing -
The Architect by Levs Architecten

A praxeological method of narrative biographic interviews supports the literature review. Interviews with people from different life stages have been conducted, examined, and compared with literature studies on the elderly and family's needs. This section has served as the foundation for the social-spatial analysis that developed into the graphic novel.

3. Spaces for intergenerational encounters: How can one create opportunities for intergenerational encounters through the programming and design of collective spaces?
In this last part of the research, I dived into the all-inclusive spatial requirements and design strategies literature. The case studies in this section are of two projects: an intergenerational complex and a cohousing complex focused on older adults.

Projects:
Co-housing -
Vindmøllebakken by Helen & Hard

Intergenerational housing -
STA | zwei+plus by Trans_cityTC

The data and insights gathered from the research and design found a wintergarden as the essential programmatic choice. The literature reviews, plan analyses, interviews, and graphic novel offer a comprehensive understanding of the topic. I combined these results with the design graduation studio's thematic group research and created a design reference framework.

1.7 Plan analysis

Analytic criteria:

1. Dwelling typologies

2. Private, collective, public as well as semi-public/ semi-private areas

3. Places or elements in the building that contribute to intergenerational encounters

4. Circulation/movement inside the building (flows with daily activities)

5. Architectural design strategy's

Learning goals:
Family housing

- How to create a sense of community
- Family homes floorplans/units

Elderly housing

- Combining care and living
- Design that is accessible for all-age inclusiveness
- Elderly homes floorplans/units

Co-housing

- How to create opportunities for residents to come together
- Creating spaces that encourage social activity
- The mix of housing types that includes all ages

Intergenerational housing

- Collectively programmed spaces focused on different generations

1.8 Case study list

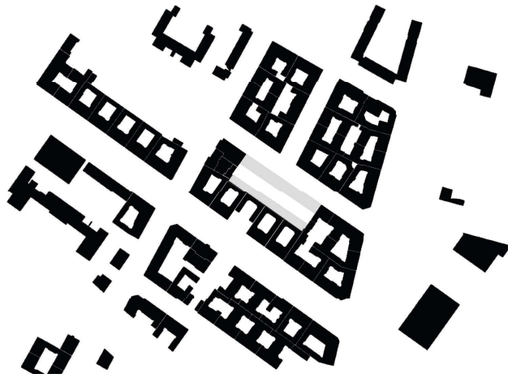
1.

Family housing

BIGyard / Zanderroth Architekten

Location: Berlin Germany

Architects: Zanderroth Architekten



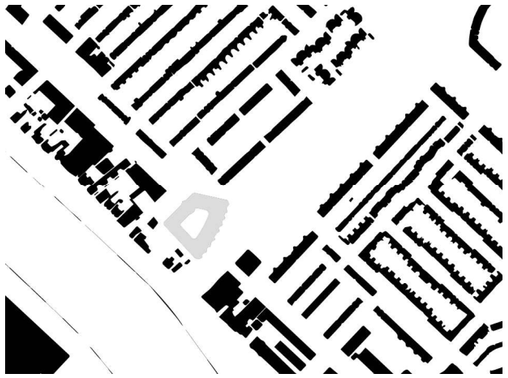
2.

Elderly housing

The Architect

Location: Utrecht, The Netherlands

Architects: LEVS architecten



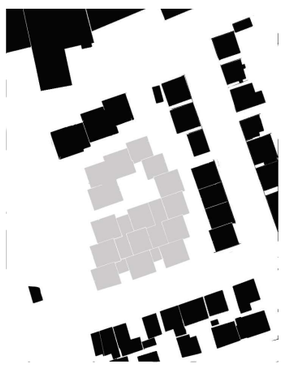
3.

Intergenerational housing

STA | zwei+plus

Location: Wien, Austria

Architects: Trans_city TC



4.

Co-housing

Vindmøllebakken Housing

Location: Stavanger, Norway

Architects: Housing / Helen & Hard

Case study 1 BIGyard

Image. BIGyard - Zelterstraße

Project

Location: Berlin Germany

Clients: Bigyard baugruppe

Architects: Zanderroth Architekten

Completed: 2010

Units: 23 townhouses, 10 garden houses,

12 penthouses

Area: 9100 m^2

Common spaces : 10%

Sauna / Guestroom / Rooftop / Courtyard

Abstract

The concept for this cooperative building project came from the desire to combine the ideals of a single-family house with the benefits of living in a urban setting. With one of the starting poin, the desires and wants of the future residents.As a result, the spatial design of the different building types and the complex as a whole enables multiple neighborly junctures while yet allowing for privacy.

Birkhauser. (2017). Floor Plan Manual Housing (5th rev. and expand. ed.). Birkhauser.

Case study 2 De bouwmeester

Image. LEVS architecten

Project

Location: Utrecht, The Netherlands

Clients: MITROS

Architects: LEVS architecten

Completed: 2013

Units: 38 appartments

Area: 10000 m

Common space: 15-20%

Daycare / Livingroom / Roofterrace / Shared Kitchen / Courtyard

Abstract

De Bouwmeester is a residential care building with the day care centre as an anchor point. Despite teh 10,000 m^2 GFA, the building blends smoothly into its surroundings. The volume of two to seven layers steps up around an inner garden. Each level offers space to set up a communal terrace with a wide view of the green surroundings. The building accommodates a diverse social program.

Case study 3 Vindmøllebakken Housing

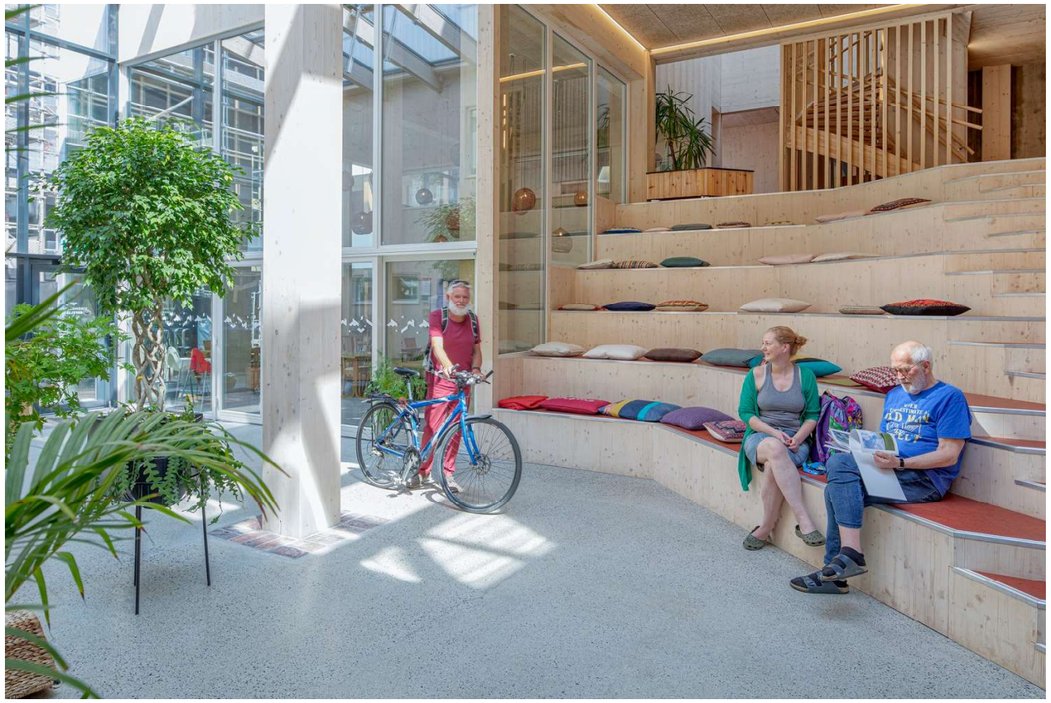


Image. Sindre Ellingsen

Project

Location: Stavanger, Norway

Client: Kruse Smith EiendomAS, Helen & Hard AS

Architects: Housing / Helen & Hard

Completed: 2019

Units: 40 co-living units, 4 townhouses, and 10 apartments

Area: 4950 m2

Common space: 15%

Worshopspace / Greenhouse/ Livingroom Amphitheatre/ Courtyard

Abstract

Vindmøllebakken is in Stavanger. It is influenced by the vernacular city fabric around the site by its orientation and by the size of the footprint of each housing unit. It is a new form of urban high density, small scale typology built in timber. The whole project consists of 54 housing units. The project is based on the model of gaining by sharing a model for sustainable co-living.The building brings social engagement the spatial organization and facilitating sharing.

1. Journal title: ArkitekturNCitation: vol. 102, no. 2, 2020, p. 38-47

Case study 4 STA | zwei+plus

Image. Hertha Hurnaus, Leonahard Hizensauer

Project

Location: Wien, Austria

Clients: ARWAG, ÖVW

Architects: Trans_cityTC

Completed: 2018

Units: 128 apparTments

Area: 15033 m²

Common space: 10-20%

Daycare / Livingrooms / Guestoom / Roofterrace Laundry / Courtyard

Abstract

In Zwei+pus is based on the concept of intergenerational program. Families share a social housing unit in a two unit block arrangement. This gives the oppertunity to help and support one another while also valuing independence and the importance of maintaining social networks.

1.9 Interview plan

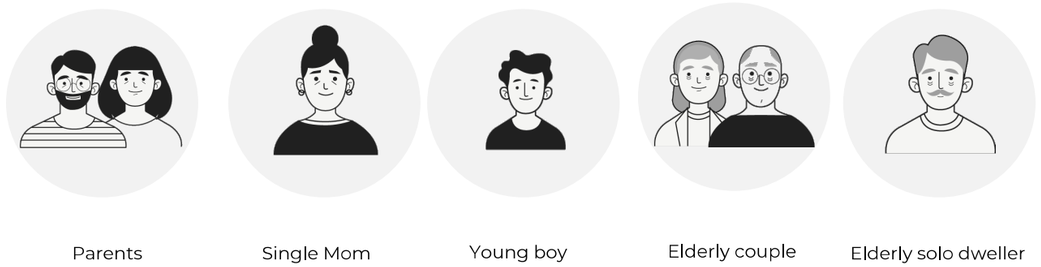
I spoke to several families and older adults to learn more about their needs concerning their living environment. The narratives throughout this research were collected through seven semi-structured interviews that emphasise the areas especially relevant to the intergenerational perspective.

Interviews were held through Zoom and on location. They were more of a dialogue in which I began by introducing my research topic and goals and what I wanted to gain from the interview. This led to lengthy responses. However, I believe it helped me deal with fresh incoming challenges, notions, and viewpoints that I had not considered yet.

Interview partners
Older adults
A couple living in their family house
An older man living in a senior building
Parents
Two couples, one single-parent
Children
Two children from different ages and families

Gaining knowledge about
What is the state of their living conditions, and can it improve? Do they wish to grow old in their current residence, and what measures does it need to take to make that happen? What are their needs? What is their regular day? What do they like undertaking in their neighbourhood, or what is missing? What amenities do they need that is within walking distance? And what role may they play in society?

Example questions
How is your living situation?
What are your everyday routine and tasks?
What will you be willing to share or take responsibility for outside your apartment?
Do you engage with people from different generations? If so, can you describe how?



2

Intergenerational care and programs

2.1 Intergenerational care and support cycles

In this chapter, I explore the global phenomenon of demographic ageing and intergenerational care, how it is addressed in different parts of the world, and, most importantly, what can we learn from it. Creating caring architecture involves blending both physical and non-physical elements. By reviewing existing examples, it is possible to obtain a better idea of how to translate intergenerational relationships into building space.

Furthermore, In this chapter, I stress the importance of the concept of ‘care’ in architecture in reaction to a rapidly changing worldwide demographic. The term ‘care’ is derived from Latin. It is the outcome of a cognitive inversion, and this is not coincidental(Mercken, 2003). With caring architecture, what matters is the users who live in it. Authors Angelika Fitz and Elke Krasny metaphor conveys the urgency of our planet’s situation in the book ‘Critical Care: Architecture and Urbanism for a Broken Planet’ They argue for a new approach to design that they call “caring” architecture and urbanism. Fitz and Krasny lay out a direction for how architecture may assist heal, mending, and revitalising the earth by weaving together ideas of ecology, social justice and feminism. The duo claim that caring is at the very basis of architecture since it is about shelter humans from the elements. Caring architecture is more than sustainability. It is not only about footprint and materials but also about the well-being of all people who will come in contact with a building or space.

Intergenerational Concept

Social scientist Newman (1989) compiled with different authors a sociological and anthropological study on intergenerational programs. In the study he explains that family and community relations have been linked for as long as people live together. The intergenerational concept is based on this relationship, and its roots are in the connections between generations in family groups. A positive event is if the oldest family members, the elders, have learned concepts that can aid the younger members of the family. Intergenerational bonding affects how a family’s children and youth learn, grow, and feel safe. Older relatives also have a sense of purpose, happiness, and satisfaction with their lives because of these ties to the rest of the family. This unique synergy is an essential part of the intergenerational concept spreading across the world. Intergenerational programmes were conceived out of an instinctive understanding of how families function.

Benefits

According to the BHSc, Centre for Disease Control study (2021), existing intergenerational programs improve the target groups’ self-reported health, physical function, and cognition. Furthermore, these programs benefit society by creating a sense of belonging. The BHSc study indicates that intergenerational housing opportunities can be used to address modern housing and social issues. Intergenerational programmes are a unique type of human service that allows people of different ages to interact with each other in a planned and organized manner. Such programmes make it possible for people of different ages to work together to help and care for each other. Intergenerational programmes can benefit the community as a whole.

2.2 Demographic ageing as a global phenomenon

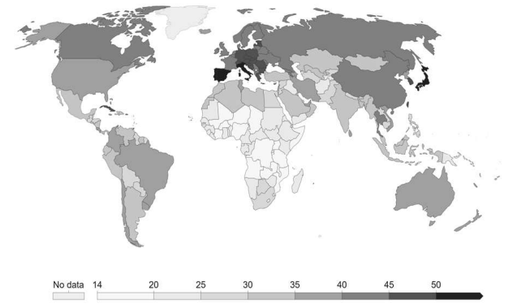
Fertility, death, and foreign migration contribute to determining population structure and shaping society anywhere. According to the Population Division of the United Nations Department of Economic and Social Affairs, the global population is expected to increase. As life expectancy increases and fertility decreases, there is an extraordinary and long-lasting shift in the age structure of the worldwide population. People live longer, and both the percentage and the number of elderly people in the total population are increasing exponentially. According to current estimates, an estimated 1.5 billion people will be over the age of 65 by 2050 (United Nations, 2020).

Global social and economic transformations affect the average age of the worldwide population. Decreased birth rates, changes in the patterns of cohabitation , marriage, divorce, increased educational attainment among the younger generations, and a steady stream of rural-to-urban and international migration impact how and where older people live. Changes in household composition and living arrangements are brought on by rapid economic development.

A significant decrease in the intergenerational phenomenon has been observed in nations with historical data, including Western Europe and the United States. Today, most older people live either in single home or in households with a partner or unmarried children. The quality of life of the elderly is closely linked to their living arrangements. According to research, there are some disparities in mortality that have been linked to a person’s living circumstances. For example, older adults who live alone or in institutions are more likely to die sooner than those who live with a family. How older adults live may have a big influence on the demand for housing, social services, energy, water, and other resources (United Nations, 2020).

Figure 4

Median age 2030



Note (UN, 2020)

According to UN statistics, Germany and Sweden are the countries with the highest percentage of elderly citizens. However, the proportion of people over the age of 60 is more remarkable in Italy and Japan. The number of people aged 65 or older in Japan was at a record high of 36.4 million in 2021. The percentage of elderly adults in the nation’s total population rose to 29.1%, the highest in 201 countries and regions (Japan’s Older Population Hits Record High, 2021), making Japan a unique case study for the ageing population and intergenerational care.

2.3 Care across various cultures

According to the literature, intergenerational care is more common in Asian, South American, and African countries (Feddersen et al., 2017). In some cultures, adult children expect to live with and assist their aged parents as a 'lifetime repayment' or 'caring devotion'. Residing with adult children is a common way to help parents as they age, it might be due to a decrease in their mental or physical health ,it could be due to an increased need for homecare. In other case scenarios, co-residence is a way for parents to help grown children who have never left or decided to return to the parental home with financial or other issues. Another scenario is when an older person moves into an adult child's home to assist with the care of the grandchildren (United Nations, 2020).

Japan, for example, has a long history of parental responsibility based on intergenerational cohabitation. Professional life has gradually but steadily become more demanding due to the country's continued economic growth, resulting in fewer people being able to care for their parents. The traditional image of Japan, in which the elderly are cared for in the family by the eldest child, is fading. There are no other options in many cases except to go to a retirement home, although this is still disapproved of in society. As a result, communal living in immense family structures is fundamentally declining, leading to an increase in the loneliness of many older adults.

Japan has had to deal with this situation, and the increasing number of older people results in a greater demand for care personnel. This demand cannot be adequately met by European standards, partly because Japan has few migrant workers (Feddersen et al., 2017). Japan's response to the difficulties and possibilities posed by the country's rapidly ageing population serves as a model for all countries since family bonds are still strong and the entire nation is reacting to adjust society to this new scenario.

In the year 2000, the Japanese government implemented the "Long-Term Care Insurance" program. This community-based approach combines health care, long-term care, home care, and outreach programs to enable the elderly to remain in familiar surroundings, even if they need advanced care or have dementia. In addition, the government is assessing the social worth of the elderly (Oldyssey,2018). Therefore, intergenerational residential programs are becoming increasingly important to address the care needs and loneliness of elderly people.

Example intergenerational care facility

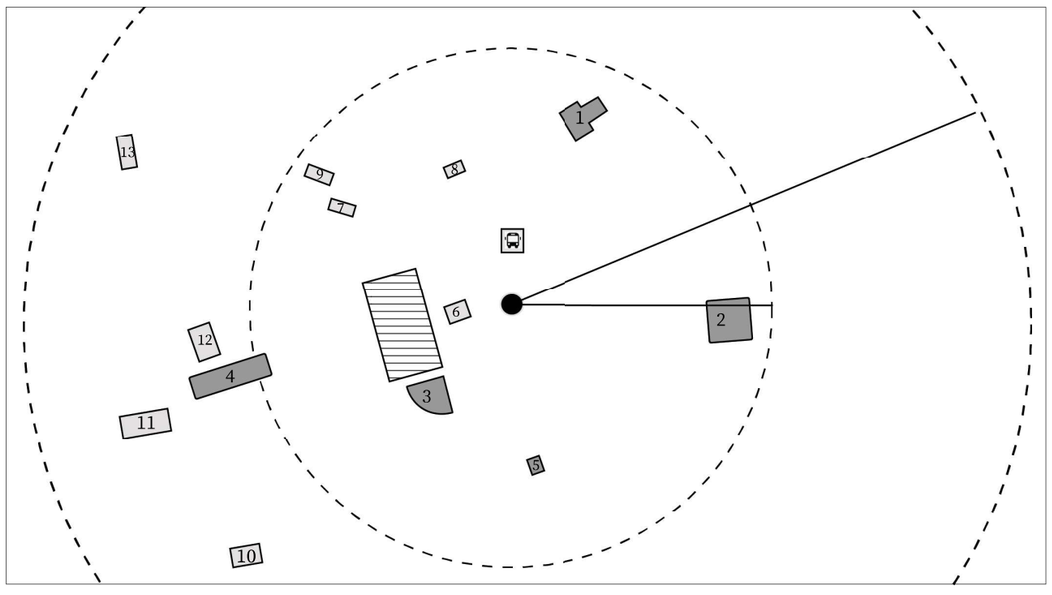
Aoi Care, located in Fujisawa, 50 km south of Tokyo, is a senior care centre that prioritizes intergenerational relationships. Tadasuke Katou, the company's creator, had been working in an elder care facility but was disillusioned with the care provided, which only consisted of the elderly lying in bed, sleeping, and taking their medications. He resigned from this job to start Aoi Care (TOY, 2017).

AOI Care is located at the heart of the community, both literally and symbolically. AOI Care prioritizes assisting the elderly in participating in their surrounding area in everyday life. The facility promotes independence in an intergenerational setting.

The AOI care facility is located in a distant or isolated place (Yeh, 2021). In contrast, most retirement communities in the Netherlands are situated in calmer suburbs and depend on regular shuttle buses to transport residents. Residents of all ages use the public roadway that runs between AOI buildings to go from their homes to the city, school, and jobs. As a result, children walk to and from school across the street and meet up with the elderly residents of Aoi Care. They constructed the centre near public transit (the bus stop, see map Fig.5). A nursery is approximately one minute's walk from the centre (no.3 on the map).

Figure 5

Project location Aoi Care and nearby facilities



[Civic & Community Facilities]: 1. Place of worship, 2. Recreation Center, 3. Child Care (Nursery), 4. Community Center
[Other Basic of Services]: 5. Book Store, 6. Café, 7. Grocery Store, 8. Bike Shop 9. Hair salon
10. Restaurant 11. Thrift Store 12.Convenient Store, 13.Hardware Store

Note. Author

3

Spatial and programmatic needs in an all-age-inclusive housing

3.1 Family residential, spatial, and programmatic needs

In my opinion, an architect is a link between the needs, capabilities, and life patterns of users and their building environment. However, it is essential to translate these needs into a building space. This chapter focuses on the spatial and pragmatic needs related to established theories that have identified the needs of families and the elderly. I collected narratives through six semi-structured interviews that emphasize the areas especially relevant to the intergenerational perspective.

Families with young children, particularly those in the higher income bracket, appear to be leaving the major cities in the Netherlands (NL Times, 2019). This raises the question of the specific requirements for families and children to live in a city. Starting from a child's perspective, we need to know what the design should be of a city where we would want our children to grow up, starting from the concept of a family-friendly city. However, studies on the idea of 'family-friendly' are scarce. Recent research has emphasized the term child-friendly rather than family-friendly. The concept of a child-friendly city has a narrower definition than a 'family-friendly city', and the idea has been recognized more by various organizations.

From the project the 'City at Eye Level for Kids' regarding child-friendly cities and 'De nieuwe generatie stadskinderen' by Naomi Felder and Lia Karsten that recommend creating an ideal environment for children to play, move about, and interact in large cities. Based on these theories, the interaction between children and their surroundings is widely recognized. It has been identified that boosting awareness of child-friendly locations and spaces can lead to more socially inclusive cities (Danenberg, 2018). After studying the different theories and the data from the interviews, I classified the spatial and programmatic needs into several relevant categories for my design project.

Access to public transport
It has been said that families require cars to transport their children from one location to another. Still, many families have demonstrated that this is not necessarily the case. If one lives in a compact, walkable environment, using public transport is considerably more manageable. Several cities now have car sharing programmes that allow families to borrow one as needed (WHO,2007).

Access to Nature
Access to nature is essential for children and their parents. It has positive effects on both mental and physical health. There are various strategies to increase access to nature in cities, such as creating communal parks. (WHO,2007).

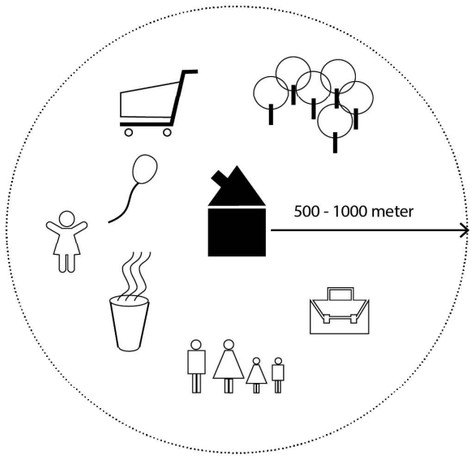
Safety
Many parents are concerned about leaving their children unaccompanied in their neighbourhood, possibly because fewer eyes are on the street and fewer community ties (Brewer, 2019). In general, life and people make the city more appealing and safe. This can be achieved by encouraging people to walk, cycle, and stay. The concept behind these so-called shared streets is to allow vehicles, bicycles, and pedestrians of all ages to share the space peacefully, side by side, and with good eye contact. intriguing for people in neighbouring buildings to watch what is happening (Gehl,2013).

Walkability

Walkability is not only the ability to walk to a destination. Crosswalks, paved sidewalks, and pleasant amenities, such as tree-lined streets are all examples of walkability. Walkable neighbourhoods are designed to offer inhabitants walkable access to essential public services, improving walking behaviour and overall health. A stroll in a city space is a 'forum' for social activities along the route as an inherent element of pedestrian activities, regardless of the aim. Cyclists are welcome in support of the objective of creating dynamic, safe, sustainable, and healthy (WHO,2007).

Figure 6

15min city concept



Note. Author

Community garden and playground

Children's play areas have been a vital aspect of city life for centuries (Gehl,2013). The purpose of a public garden is to provide children with a safe and enjoyable environment in which they may interact with their friends. Local playgrounds are designed to provide spaces for children to play, but they have also been significant spaces for social contact among parents.

A neighbourhood playground may thus be an excellent area for children to interact with other children while also providing a unique opportunity for parents to bond. Parents' social contacts at neighbourhood garden typically contribute to social cohesiveness, social integration, and community building in good ways. Without the ability to access gardens near their homes, millions of children would not have the ability to interact in an outdoor setting. It could be a lifeline to many children, as outdoor play positively impacts children's mental and physical health and development (Heusden, 2021).

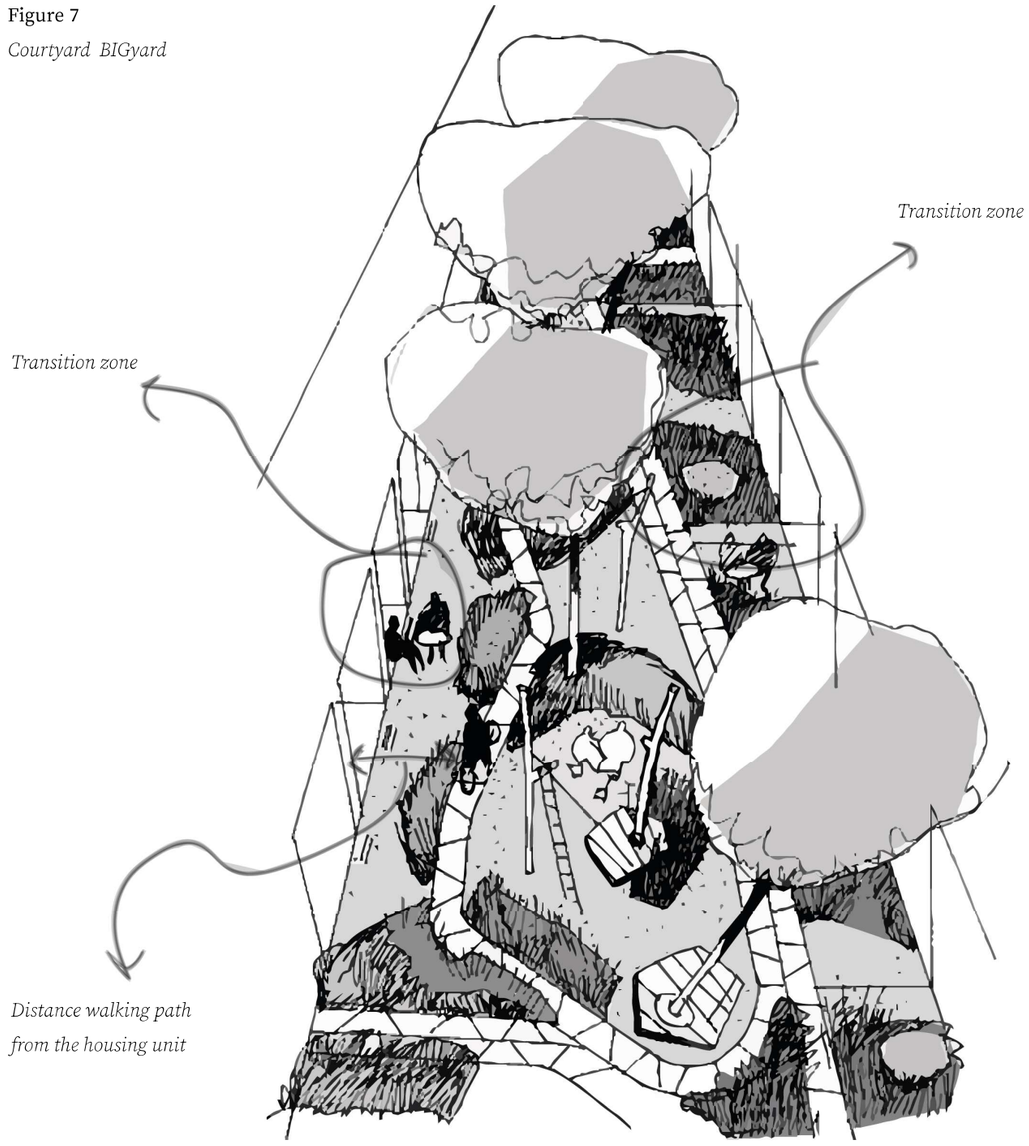
However, Karsten (2005) understudied that children in the Netherlands choose to play indoors rather than outside. The majority of the children come no more than three times a week outdoors, and just a few children play outside daily. Therefore indoor space for play is necessary.

Example community garden

Project: BIGyard, Berlin, Germany

Figure 7

Courtyard BIGyard



Note. Zanderrotharchitekten, edited by author

Figure 8

Isometric BIGyard

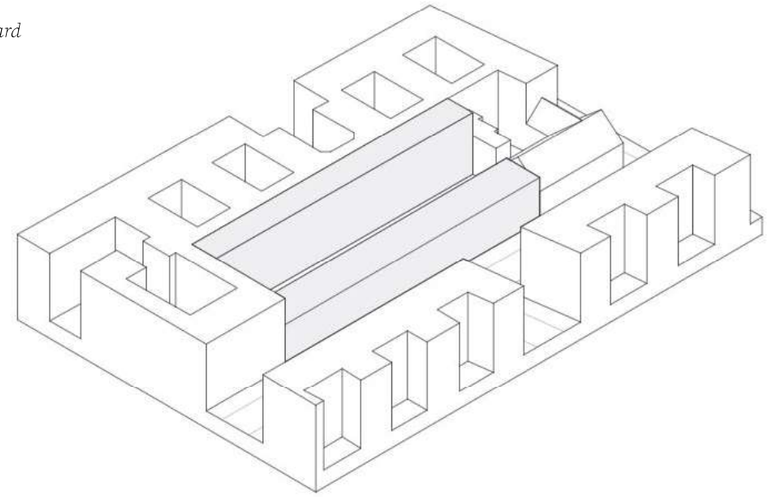


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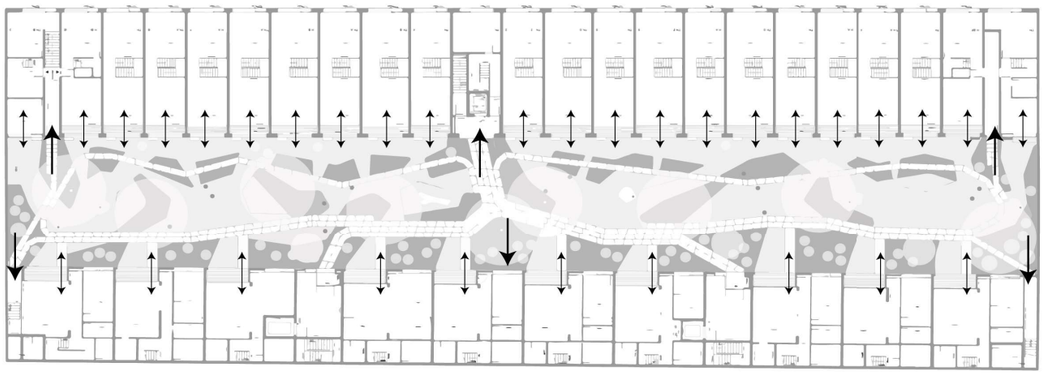
Figure 9

First-floor BIGyard



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Transition zones

Identifying areas and affiliations are critical for engaging with others and protecting private regions, particularly individual homes. As attempts are made to smooth transitions between private and public spaces by constructing semiprivate and semi-public transition zones, the possibility of interaction between zones grows, and people acquire the ability to govern contacts and safeguard their privacy (Gehl,2013).

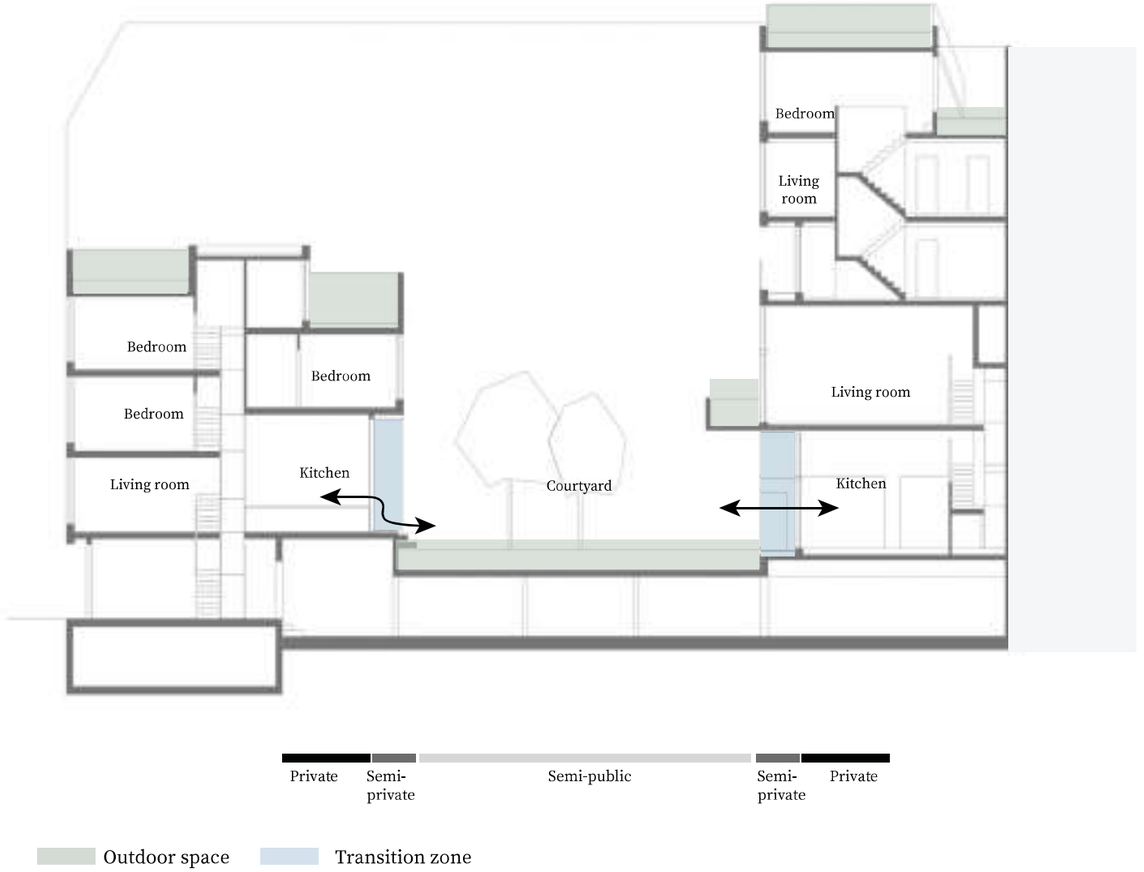
Example transition zones

Project: BIGyard, Berlin, Germany

The threshold space on the ground level connected to the courtyard creates a semiprivate and semi-public transition zone (Figure 10).

Figure 10

Section BIGyard



Note. Zanderrotharchitekten edited by author

Child supervision
Well-designed and safe surroundings prioritize children's play. Parents must supervise their children when they play outside. The amount of monitoring required depends on the age of the child. Starting at a young age or when supervision from home is possible, children are frequently allowed to play outside alone (Karsten & Felder 2016). Visual contact between individuals in the buildings, particularly on the lower levels and in the area in front, is crucial for everyone, both inside and out, to have a sense of safety and contact opportunities (Gehl,2013).

Nine-year-old boy

'I enjoy playing outside with other kids. Unfortunately, I can't because the children's playground is further down the block. My parents and I believe that going there alone is too dangerous. I would have been able to play with the kids more regularly if our house was closer to the playground. Others who live there are there more often.

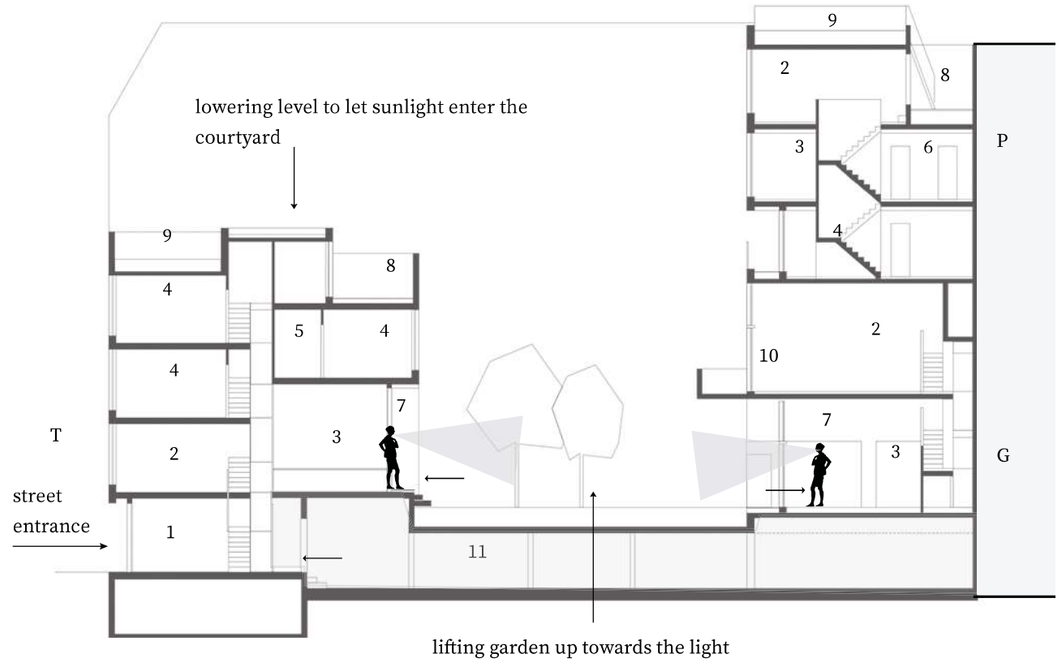
Single mom - 36 years old

'My younger daughter regularly went to the playground to play. The apartment buildings in our block surround all sides of the playground. My kitchen faces the public courtyard with the playground as a focal point. In this way, I can keep an eye on my toddler while cooking. When dinner is ready, or my daughter has to return home, I will hang a red t-shirt on the balcony. Following that, my child will recognize that it is time to return home.'

The first narrative demonstrates how vital it is for children to be able to play outside with other children, but that this is not always achievable when the playground is out of sight of the parental home. There is no safe path for the child to access the garden independently. The other scenario, shows that the child can play outside alone at an early age due to a safe spatial context. This shows that it is crucial for families to supervise their children at play, as well as for children to have safe, accessible playgrounds close to their homes.

Example supervision / playground
Project: BIGyard, Berlin, Germany
The section shown in figure 11 illustrates that the most active room, the kitchen, is situated next to the courtyard. The ability to focus visually and have social attention on the centrally positioned courtyard makes the building safer. It is noticeable because residents leave personal items outside. The enclosed courtyard promotes social inclusion.

Figure 11
Section BIGyard



1- Work 2- Live 3- Cook & Eat 4- Room 5- Bathroom & toilet 6-Corridor 7- Terrace 8- Patio 9-Roofgarden 10-Balcony 11-Garage
T- Townhouse G- Gardenhouse P- Penthouse

Note. Zanderrotharchitekten, edited by author

Dwelling

For households with children, social dimensions linked to everyday life in the neighbourhood and continuity in schools are relevant factors influencing the decision to stay and not move to another area. The factors involved in the issue of household mobility are various and complex. When a household's life course conditions change, one response is to move to a different apartment. However, staying and resolving the changing spatial needs is an important alternative. This is a relationship between the family life course of households, the changing spatial requirements, and they wish to preserve social qualities (Gromark & Andersson, 2020).

Adaptability

The social environment significantly influences decisions to relocate or not. A family might be able to avoid moving because of the adaptability of their current living arrangements.

The following interview statement illustrates the relevance of adaptable housing.

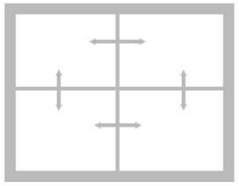
Parents 42 and 47 years old

'In our family home, we had two bedrooms. It wasn't a problem at all because we only had one child. However, when we had a second child, it became an issue. We built a bare wall in our child's bedroom and divided in half. However, this did not work out. Our youngster's son had to pass through his brother's room to go in or out of his room, which his older brother perceived as a break from his privacy. We eventually had to construct an entirely new floor on top of our family's home. My husband spent two years building two additional bedrooms and a bathroom, which resulted in a great deal of stress and chaos. We still consider ourselves lucky because we could stay in our family home and neighbourhood. And the spare room we have now serves as my business office'.

In the studies by Anna Braide on life course spatial adaptability, she uses the three principles of generality, flexibility, and elasticity to describe the design of adaptable dwellings and aspects of flexibility that can be achieved by employing three different tactics:

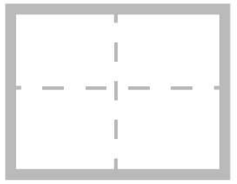
Generality - There is no specific use assigned to the rooms in the apartment, so they may be used for several purposes without physically altering the space. As a result, the rooms may be used simultaneously to a great extent.

Figure 12



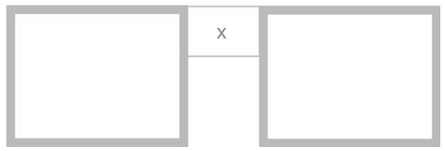
Flexibility - A flexible plan can be changed physically by moving or removing walls or furniture such as cabinets. Flexibility allows changing the number and size of rooms within the existing apartment. A flexible design plan is generally an open area that inhabitants may customize with moveable wall panels or built-in dividers.

Figure 13



Elasticity - An elastic layout allows a dwelling to grow and compress in size. This is often achieved through inter-dwelling space exchanges.

Figure 14



Note. author

Example adaptability by flexible floorplans
Project: BIGyard, Berlin, Germany
The rooms in the dwellings (Figure 15) can be used for several purposes without physically altering the space.

Size of dwellings:
Garden houses 139–162 m²

Figure 15

Floorplans garden house BIGyard

Note. Zanderrotharchitekten edited by author

3.2 Elderly residential, spatial and programmatic needs

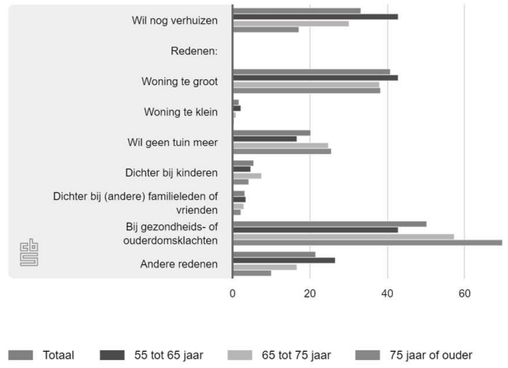
Understanding the housing conditions, housing and movement wishes of this (upcoming generation) of older people is critical for the future housing market situation. The age-friendly theory considers the needs of senior citizens to determine where and how age-friendliness may be improved. If we were starting over and wanted to design the best housing for older frail people in the city, we have to consider what it should be like, what the size of the dwelling should be unit be, and how connected it should be to the surrounding community. Another aspect is whether it should be part of an average age-mixed community or whether it would be better if the people of the same age with a similar outlook on a life lived together. 'Ageing in place' seems to be the overpowering answer for this section. The following sections outline the needs of the elderly in cities.

To answer these questions, I studied the results of the WoON survey (Woon Onderzoek Nederland), which collected statistical information on the housing situation of the Dutch population and their housing wishes and needs (CBS, 2021). The article results describe the current housing situation of people over 55 and their wants and requirements for the future. According to CBS studies, the elderly prefer to remain in their residences for as long as possible. As a result, there is a higher demand for home renovations than new home construction. One of the reasons the elderly are so attached to their homes and living environments is their connection to them. They have made memories, established a social life, and established their daily routines there (CBS, 2021).

The current housing status of persons over 55 and their goals and wants for the future are discussed in the CBS series Statistical Trends. The most frequently reported reasons for not wanting to move are having a pleasant personal home, followed by having a happy living environment. These were noted as reasons for not wanting to move by 91% of over-55s who do not want to move. Facilities, such as a super¬market, café, bus station, or pharmacy nearby (42%), children nearby (34%), and relatives or friends nearby (32%) were some of the other reasons.

Figure 16

Reason to move for older adults in the Netherlands.



Note. (CBS, 2021)

Neighbourhood
Churches, libraries, parks, grocery shops, and pharmacies all have deep roots in the community. As a result, leaving one's home means losing a link to community resources or a neighbour who is always prepared to help. As architects refer to it, many senior citizens regard their home as a feeling of a place or a genius loci. The physical setting may be distinctive, but the emotional connection to the area makes it intimate and authentic (Regnier, 2018).

'The home or apartment reflects a life well lived for many of the elderly' (Regnier, 2018, p19).
Although maintenance can be challenging, relocating is a more significant physical and psychological challenge. Relocation most often means downsizing to a smaller apartment or house. Another reason to migrate is an outdated living unit. The home built to accommodate a family in the past is now much more significant than is required (Regnier, 2018).

The World Health Organisation (WHO) (Global Age-friendly Cities: A Guide, 2007) defines active ageing as a lifelong process shaped by several factors that, individually and in combination, promote health, participation, and security in later life. The WHO's approach to active ageing aims to encourage cities to become more age-friendly. The WHO findings have led to the creation a set of age-friendly city checklists. Some of the factors of an age-friendly community are outlined in the following section.

Walkability
Walking in the area and to nearby locations should be encouraged. It is beneficial to be close to essential shops, services, and activities. Priorities include a grocery store, drug store, bank, restaurant, house of worship, and a park. Residents prefer being near the nearest publicly accessible hospital emergency department and their personal doctor's office since health care monitoring becomes more important as people age (Regnier, 2018).

Some people like walking several kilometres/miles, whereas others, some of the elderly, crippled, and children, find even short walks challenging. The distance usually suggested as an acceptable distance to walk for most people is approximately 500 m. However, the quality of the road plays a role in determining a reasonable distance. There are several uninspired interruptions where minor streets flow into bigger ones and those pointless interruptions that drive walkers, wheelchairs, and strollers up and down curbs at garages and gates. As part of a general philosophy of welcoming rather than inhibiting pedestrian traffic, the sidewalk should be unbroken across entranceways and side streets in all of the outlined instances.

Importance of green spaces
Green spaces are commonly mentioned as age-friendly features (WHO). Nature's potential to heal, protect, and calm is an essential visual and behavioural component of design as we learn more about it. This is especially true for the elderly with chronic diseases, who benefit from views of and access to natural settings. Bringing the outside inside may be accomplished by having windows with low sill heights and greenhouse-style windows (Regnier, 2018).

A place to rest
The provision of places to sit is often seen as an essential element for older people; many elderly individuals find it challenging to move around their neighbourhood without stopping to relax (WHO). People who need to remain in the city for an extended period find standing exhausting and will seek a place to sit. The more comprehensive the stay, the more cautious the individual, will be in selecting a seat. The finest locations usually have many benefits and few drawbacks. The comfort of the seats influences the choice of seating and the length of stay. One of the most significant and popular urban activities is to observe city life. People-gazing is a ubiquitous pastime that we engage in while walking, standing, or sitting. Because a clear and unobstructed view of city attractions is so essential, the lines of vision must be addressed with the same attention as the view (Regnier, 2018).

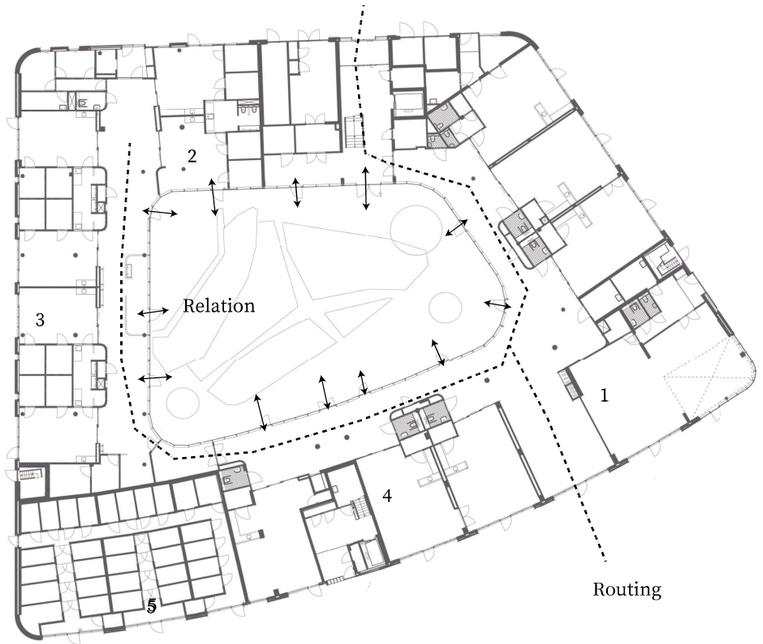
Building
An essential age-friendly characteristic is a variety of housing alternatives in the local area to satisfy changing demands. Several features of house design are thought to affect the capacity of older adults to live comfortably at home. In general, it is believed that it is essential for older people to live in housing that is constructed of appropriate materials and has even surfaces, is structurally sound, has an elevator if it is multi-level accommodation, is large enough to move around in, has sufficient storage space, has adequate bathroom and kitchen facilities, has passages and doorways large enough to accommodate a wheelchair, and is appropriately equipped to meet the ambient environmental conditions (Handler, 2019).

Routing
The layout of the route to the apartments within a residential buildings increases the likelihood of people meeting one other on the way. The more space there is on the path from street to house for even staying and the nicer the ambiance within a building, the longer the trip will be and the greater the chance of meeting someone (Zijdekwartier,2021).

Care
'Long-term care' (LTC) refers to competent nursing home care. LTC is now considered a broader notion that includes various options, such as home support and home health care. New opportunities, such as home- and community-based personal care alternatives, are now available to assist people in remaining independent in their communities. These are all options for long-term care. In northern Europe, the most typical housing and service delivery method is to provide conventional independent dwellings with as-required personal care services. This method is based on the ability of each individual to perform tasks that promote independence. Typically, service aid starts with heavy cleaning and eventually might develop into comprehensive medical care. Home care systems differ by nation, but most are dedicated to assisting frail older people in living as independently as possible outside of institutions for as long as possible (Regnier, 2018).

Example care and shared spaces
Project: De bouwmeester, Utrecht
De Bouwmeester features a sustainable mix of social services, including daycare, a nursery, and a community centre on the ground level. The bottom level “flows” into a landscaped garden through enormous glass doors. Here, gathering places and spatial sight relationships offer a space where young and elderly may come together in a safe and socially acceptable environment.

Figure 17
De bouwmeester, Utrecht



LEGEND
1: Courtyard 2: Daycare 3: Shared living 4: Nusring studio's 5: Storage

Note. LEVS architecten edited by author

Sharing
Living in senior living housing with services allows for more peer contact and stimulates the initiation of new friendships. Many elderly lose close friends over time, so this can be a problem. Safety, accessibility, and freedom are all enhanced by a well-designed purpose-built setting. These are outcome measures to consider when developing strategies for small group clusters and purpose-built housing and service contexts. A key focus is to avoid institutional care by assisting the elderly to remain self-sufficient for as long as possible (Regnier, 2018).

Building configuration
De bouwmeester, Utrecht

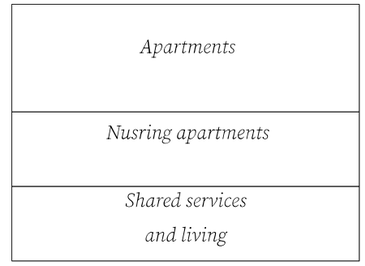


Figure 18
Section De bouwmeester, Utrecht

LEGEND
1: Courtyard 2: Daycare 3: Shared living 4: Nusring studio's 5: Apartments

Note. LEVS architecte edited by author

Design
It would be incorrect to assume that elderly people only need quiet, meditative spaces and dining and communal areas. It has become increasingly important to create spaces for older people to be active, creative, and interact with others or seek inspiration (Brewer, 2019).

The role of light in aiding the impression of space has always been significant. In multistorey urban dwellings, the trend has been to increase the quantity of glass to maximize views and allow as much natural light as possible. Towering ceilings and large windows to maximize natural light in small spaces may make the space look larger. Glassed-in enclosures, such as three-sided bay windows, may enhance the quantity of light and the view in a room (Regnier, 2018).

Example De bouwmeester, Utrecht
Warm-coloured brick plinth, wooden details, large windows to maximize daylight and green view.

Image: Marcel van der Burg

A CARING PLACE

Adaptations
Special amenities or adaptations can allow people to live independently at home for extended periods. People over the age of 75 are primarily affected by these amenities and adjustments. According to the Experiences survey (Akkermans, 2020), nearly four out of every 10 have a low-threshold shower or shower chair, whether or not as a particular modification and 35% have modest adjustments, such as brackets, supports, and adapted thresholds in their homes. Some people employ smart home technology in their homes, such as remote control of the lights and a system to open and close the curtains to be able to remain at home for longer.

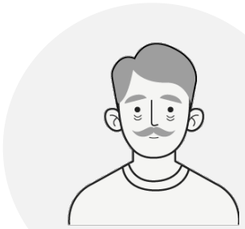
The following narratives support the theories of adaptation and accessibility:

Couple - 64 and 65 years old

‘We do not want to leave our family home, primarily because of the familiar neighbourhood and relationship with the neighbours and the kids. By babysitting for them now and then, we find comfort and joy. We will, however, have to leave at some point because climbing the stairs is growing increasingly difficult with each passing year’.

Accessibility
The accessibility of a home is a critical factor in deciding whether or not it is appropriate for the elderly. A home is accessible if the resident can move from the living area to the kitchen, toilet, bathroom, and at least one bedroom without using stairs. A design feature allows individuals to use the environment as it was intended to be used. It is also possible to construct a room without doors to make it more accessible. (Regnier, 2018).

Solo dweller - 66 years old



‘I dwell in an apartment complex. It’s a multi-story structure, and I live on the second, highest level. Thankfully, it has an elevator. With my back condition, I would not have been able to climb up the staircase all the way to the upper level. The apartment includes one bedroom and is large enough for a single person to live in. It contains an open kitchen as well as a wide bathroom that is attached to the bedroom. The bathroom is rather large. When I take showers, I occasionally need to sit down; the shower is large enough to accommodate a chair.’

4

Intergenerational encounters

4.1 Social sustainability and social encounters

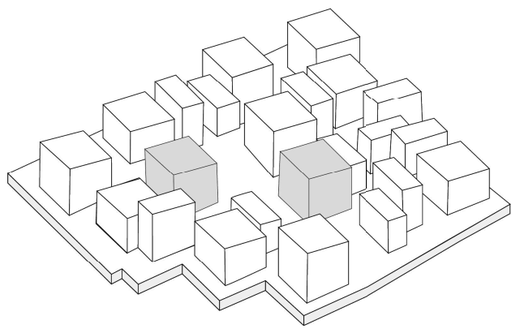
This chapter deals with several spatial arrangements that are imperative in the context of intergenerational space that would allow the ability for intergenerational encounters. Because my research aims to draw different generations together, I start with social cohesiveness. The terms' social cohesiveness' and 'social integration' refer to how other sectors of society interact and how much they meet, know, respect, and understand one another. (Biggs,2013). Second, I examine the knowledge of generational differences and the balance of differences and similarities in interests. This would prevent falling into believing that all age groups have the same objectives and needs. The theoretically outlined features the results of the interviews with the target group, compared and connected in ways that begin to explain the unique symbiosis of intergenerational programming.

Several authors believe that the environment's design can assist residents in forming stronger relationships. The idea of social sustainability is complex and challenging to grasp. Jan Gehl (2022) describes that social sustainability aims to ensure that all members of society have equitable access to public spaces and transportation in the city. Sustainable social practices emphasize equal access to public spaces for 'others' to meet and socialize. The availability of a welcoming public area that may be used for official and casual gatherings is a necessity in this situation. Whenever the quality of public spaces is high, the number of social activities also increase (Gehl,2013).

According to Stoiljković (2022), several aspects of the housing environment, such as the number of units sharing a single entrance, floors, the number of units per floor and housing units in a building are thought to affect the strength of social ties in a neighbourhood.

Micro community
Stoiljković found that overcrowding a common hall or circulation space will make it difficult for neighbours to recognize each other and discourage social connections; therefore, they recommend creating micro-communities with fewer residents and providing more suitable social spaces for social interactions. Furthermore, she states that unexpected and spontaneous social interactions occur in circulation areas, whereas common social rooms are for purposeful gatherings and socializing.

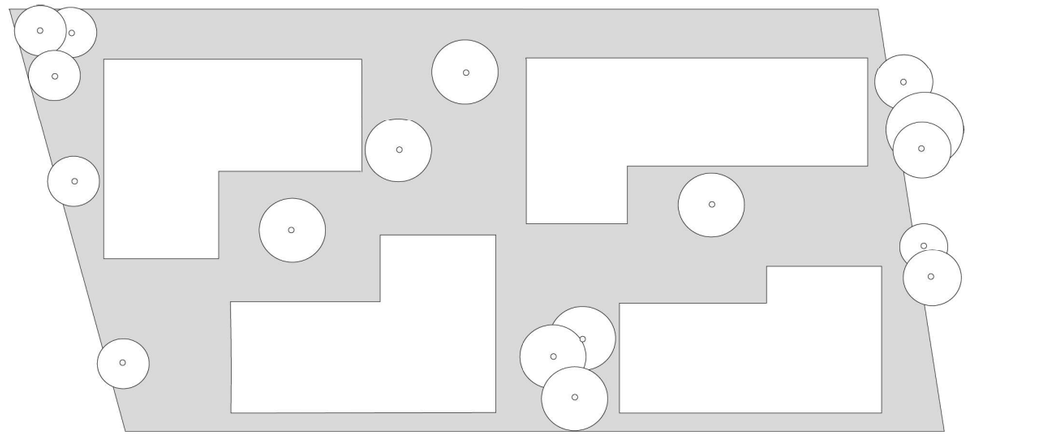
Figure 19
Creating micro-communities



Note. Author

Example clustering
Project: Zwei+plus, Wien, Austria
By developing four L-Shaped buildings around the courtyard, the architects created smaller groups of people who could meet together, instead of one large building block. This is done to promote social interactions within the smaller groups of residence.

Figure 20
Topview masterplan Zwei+plus



Note. Author

A CARING PLACE

Example project clustering
Project: Vindmøllebakken, Stavanger, Norway
The project has 40 apartments organized around 500 m2 of shared facilities. The private units follow a grid of 7.5 x 7.5 m. The volumetric structures surround a small courtyard, form small clusters by sharing an entrance.

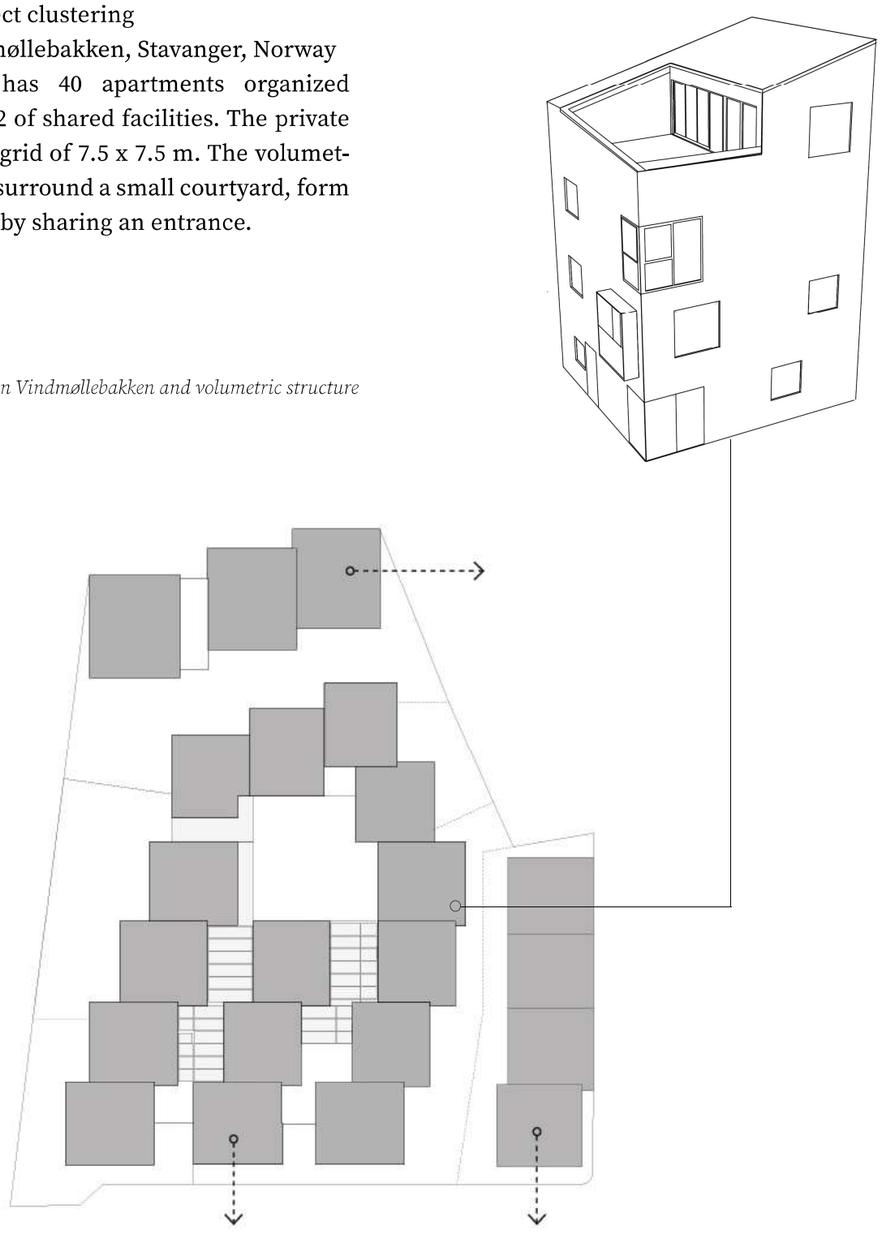


Figure 21
Topview masterplan Vindmøllebakken and volumetric structure

Note. Author

4.2 Connecting residents to the surrounding community

The way the city's boundaries are treated, especially the lower levels of buildings, has a significant impact on city life. When one is in town, this is the zone one walks through and the frontages one sees and experiences up close and personal. This is where people enter and exit buildings, and indoor and outdoor life collides. This is where the city meets the structure.

According to a study of activity patterns in new residential neighbourhoods in Copenhagen in 2005 (Gehl,2013), Balconies, front yards, and other outdoor places are utilized in a modern urban setting. It is important to note that front yards are being used significantly more than balconies, where closeness to the dwelling, space, plants, and a favourable local climate may be associated with interactions with the surroundings.

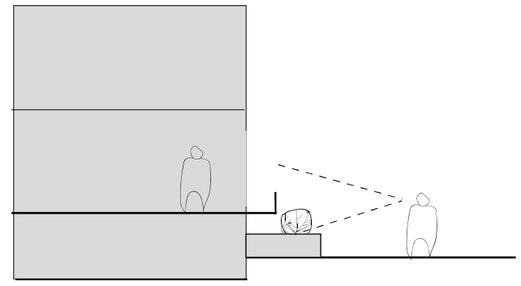
Ground-level

The rhythms of the façade, materials, colours, and the people in or near the buildings are all experienced up close. This primarily determines whether our stroll is engaging and eventful. These are compelling reasons for city planners to focus on providing dynamic and entertaining ground floors along vital pedestrian routes. All other factors are much less significant in visual and other experiences, such as enjoyable features and beautiful rhythms. The attractiveness of the ground floors may be used to highlight issue areas in the city and analyze the status of the city's most significant streets, especially along the most crucial pedestrian routes (Gehl,2013).

The ground-floor edge

The ground-floor edge serves as a zone for doorways and interchange points between indoors and outdoors. The edges allow people who live in buildings or right in front of the buildings to engage with others who live in the city. This is the area where activity inside buildings may spill over onto the city's shared spaces. Edge locations are also carefully selected for extended visits on benches. The soft boundaries influence outdoor activity in front of residences (Gehl,2013).

Figure 22
Ground-floor edge



Note. Author

The distance between private and public provides a pleasant living quality for the first-floor residence areas.

4.3 Circulation

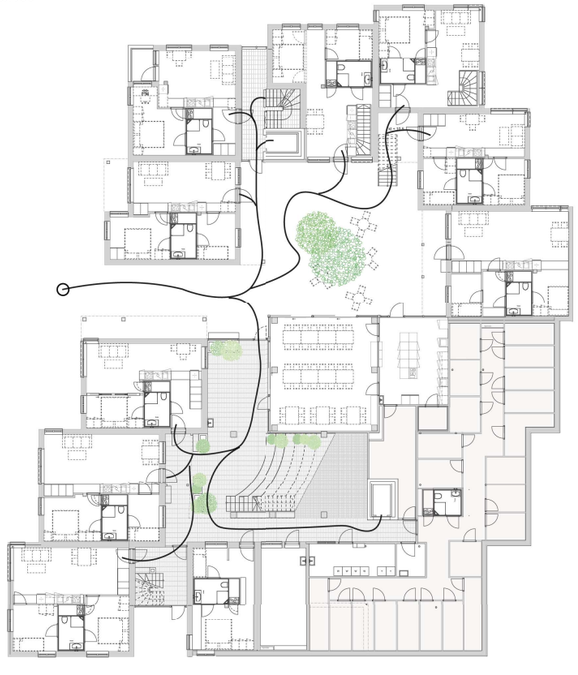
Although circulation is primarily for the transit from the building entrance to the apartment door, it may also be used for social interactions among residents (Stoiljković, 2022).

According to Stoiljković (2022), circulation areas, such as entrance halls, lifts, lobbies, hallways, and so on, are the most popular spaces for social interactions and their main purpose. Residents use these areas for a variety of social goals. Children play or ride bikes, mothers monitor children who play, and men socialize. As Stoiljković points out in her study, other factors, such as the width of the gallery, its orientation, its position concerning the environment. Hallways in buildings should have natural solid lighting and ventilation and an outside view; extending horizontal circulation areas would maintain acceptable physical separation during the pandemic and encourage users to connect and collaborate. Making the entrance to the apartment building more personal and unique could help to make it more welcoming and pleasant (Regnier, 2018).

The Vindmøllebakken project in Norway is an excellent example of such a design concept. The apartments are reached via wide-open galleries that are positioned next to the shared and common spaces. Every daily flow passes by the shared facilities (Figure 23).

Figure 23

Daily flow to the home entrance



Note. Helen & Hard edited by author

Iamge : Sindre Ellingsen- Project Vindmøllebakken, Stavanger, Norway

4.4 100% corner

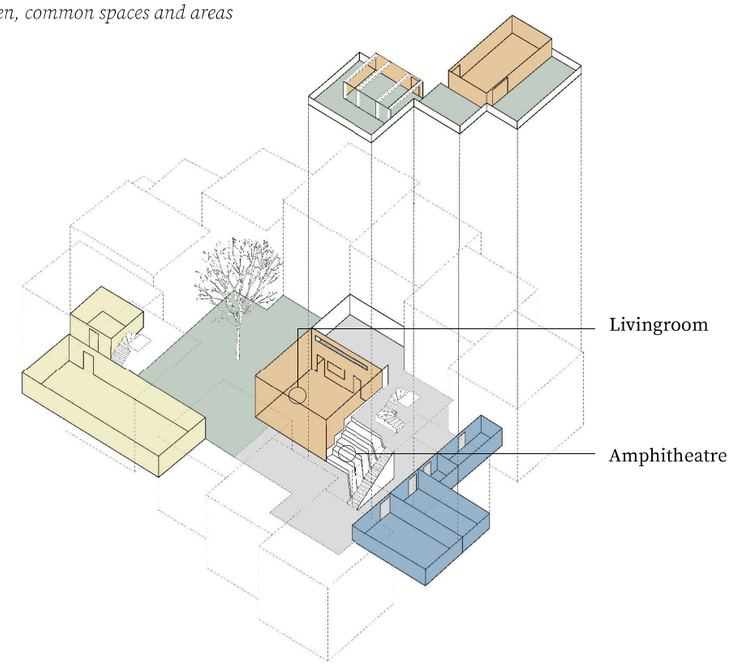
Regnier (2018) describes the 100 corner as follows: The busiest intersection in a downtown metropolitan region is frequently referred to as a '100% corner'. This can relate to either pedestrian flow or vehicle counts in the location with the most use and activity. In this context of intergenerational space, the expression refers to the most socially engaged area of the building. Enhancing the use of a shared area through activities and social interaction contributes to the welcoming atmosphere of a building. A confluence of elements is generally required for a 100% corner to be successfully appealing and engaging.

These spaces can exist naturally in a structure, but they can also be manufactured by combining the correct elements in the right places. The notion of a 'third place', where locals can congregate, is comparable to the 100% corner. This might be for, for example, card games or simply to monitor the ebb and flow of circulation and activity from afar. The value of a 100% corner is, according to Regnier, to be increased by nearby usage and careful placement:

- Direct entrance to the outdoors with views/ connection to neighbouring activity areas
- A kitchenette with food or beverages nearby
- A public restroom nearby
- Lighting that is both artificial and natural
- Residents' activities and well-travelled pedestrian walkways are visible.
- Storage available.

Figure 24

Axometric Vindmøllebakken, common spaces and areas



Note. Helen & Hard edited by author

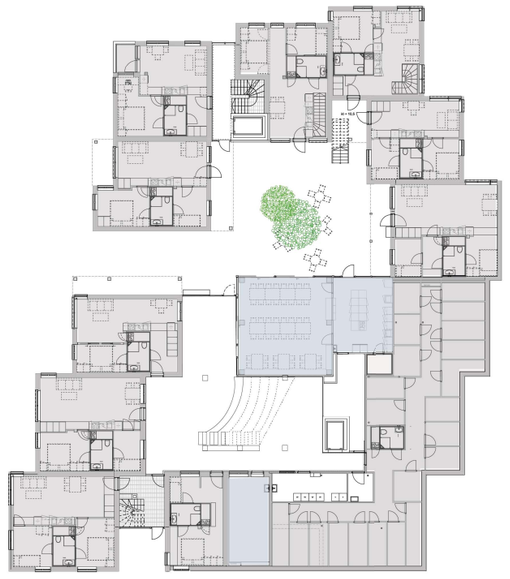
4.5 Common areas

First, the use of common areas in a building results in more or fewer contacts between the inhabitants of a building, leading to positive relations between neighbours. Second Stoiljković survey (2022) demonstrated that residents appreciate the value of common areas to foster social ties among users.

Example: Common space
Project: Vindmøllebakken, Stavanger, Norway
The rooms are orientated and designed to create visual connections between spaces and people. The residents can easily see what is happening in the shared areas. It allows freedom to engage in communal life as they wish.

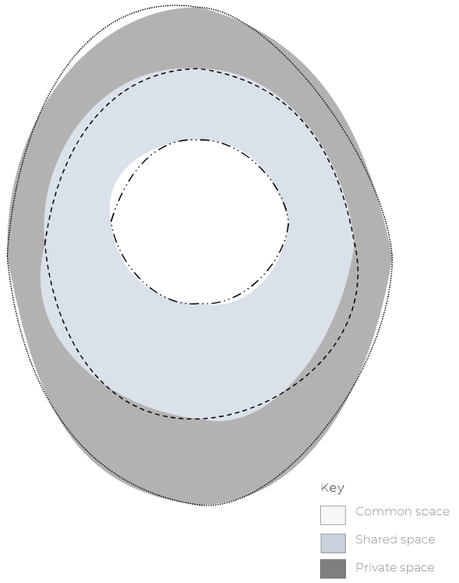
Figure 25

Shared and common spaces are the heart of the project



Note. Helen & Hard edited by author

The co-living units' spatial organization focuses on what is shared. Outside the private unit is a shared zone owned together with other people. This project shows how coordinated, and well-organized spaces with spatial buffer zones between the private and public domain provide safe ground for behavioural patterns.



Note. Author

4.6 Collective programmed spaces

Project: Zwei+plus, Wien, Austria
The collectively programmed areas are arranged around the ground floor: a community café open to the surrounding (blue), laundry (yellow), a kindergarten (orange), and an assisted living center for older residents (purple).

1 guest apartment
2 rubbish
3 bicycles
4 meditation garden
5 ventilation garage
6 entry hall & stairs
7 foyer
8 community room
9 kitchen
10 office room
11 caretaker appartment
12 carriages & prams
13 passage
14 childrens playroom
15 laundry room
16 vestibule
17 foyer
18 garderobe
19 hall
20 classroom
21 toilettes
22 storage
23 activity space
24 director
25 personell
26 kitchen
27 carriages & prams
28 playground

Figure 26
Ground-floor Zwei+Plus

Note. Zwei+plus edited by author

Iamge : Hertha Hurnaus, Leonhard Hilzensauer. Project Zwei+plus

Roof terrace

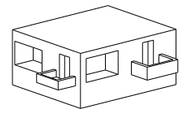
A communal roof terrace is, according to Stoiljković's study, one of the basic themes of modernism, with good social benefits. Even though recent instances illustrate that roof terraces have lost their significance, it is undeniable that they are suited for a wide range of activities, from gardening to relaxation. Roof terraces have significant potential for enhancing social interaction (Stoiljković,2022).

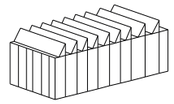
Courtyard

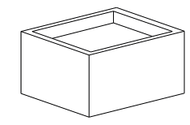
Courtyard designs are economical layouts that optimize land coverage and density. They provide safe, well-lit outdoor areas that can be observed from or accessible from the residential units. Courtyards are particularly valuable in senior homes because they can promote social interaction and exchange. Interior common rooms that overlook a courtyard can improve the view and encourage people to spend time outdoors. Courtyards can also be utilized to move from one side of a structure to the other. They add to the vibrancy of a building by encouraging pedestrian mobility and providing another mode of transportation. With small groups, courtyards are reasonably straightforward to use. The ability to focus visual and social attention on a centrally positioned courtyard may make a building more inviting. The best courtyards should be at least twice as wide as the height of the surrounding building to accommodate adequate sunlight. If a courtyard is too large, it can be subdivided into several discrete areas. Courtyards are commonly used for exercise, stage activities, or sitting areas (Regnier, 2018).

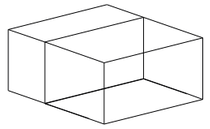
Atrium

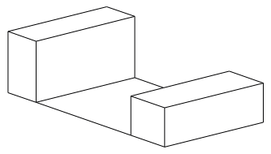
Atriums are glass-roofed courtyards. They are helpful as all-year social settings since they provide refuge from severe weather. They are often used in senior housing in the United States and Northern Europe and are popular for various reasons. First, they are seen as welcoming enclosures that promote social interaction. Older adults spend more time at home than younger ones and connect with their neighbours more often. Areas and equipment for everyday activities and more significant gatherings are frequently found in an atrium. Second, northern Europe's summers are moderate, with long days. In the winter, the atrium provides a warm communal place that warms up during the day. In the typically bleak northern European winters, shrubs and trees in the atrium give a respite from a garden. Furthermore, activities in an atrium may be watched from upper floors without direct engagement (Regnier, 2018).











Terrace/ Balcony

Private outdoor space

Calm and secure area

Greenhouse

Producing energy

Producing vegetables

Roofterrace

Elevated garden

Wintergarden

A social space for the whole building

Residential Garden

Circulation space

Social areas with activities

Note. Author

4.7 Intergenerational space

According to Biggs and Lowenstein (2011), intelligent spaces, such as those that allow various generations to meet, engage, and negotiate the everyday use of their environment, would be a fundamental component of sustainable living. Both age-specific terminology and friendliness for 'all ages' Instead, we should create intergenerational spaces that consider at least three intergenerational relationships features (Biggs & Carr (2015). They mention that generational intelligence, or the capacity to put oneself in the shoes, is based on the identification of a separate self, generational difference, and the negotiation of empathetic generational relationships. They propose the following in terms of creating generational spaces.

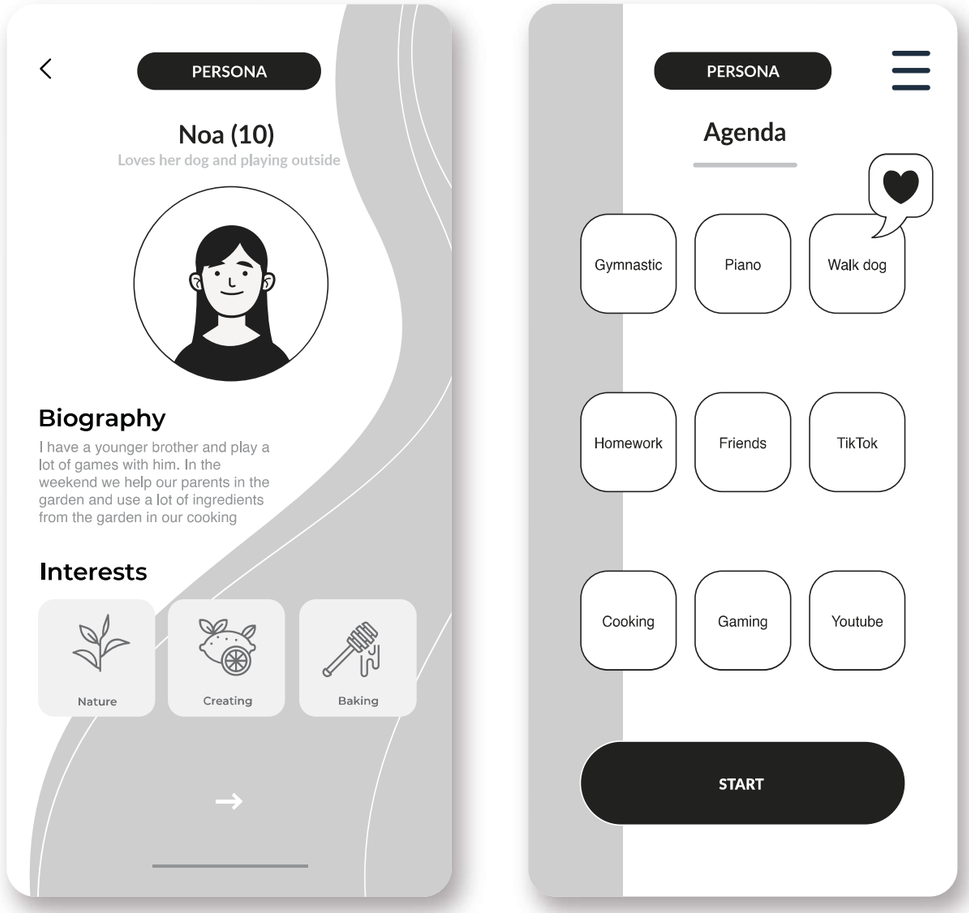
- The first step is to find the persona's from diffrent generational groups. This would help to clarify the specific tasks associated with a certain stage of life.
- The second step would be to increase explicit awareness of generational difference and similarity of interest. An approach such as this would help to avoid falling into the trap of assuming that everyone has the same goals and needs. Establishing the evolution of a relationship that acknowledges the other as more than an extension of one's priorities over time.
- The third step involves making a value judgment regarding one's viewpoint on the quality of this differentiated connection, in terms of conflict and cooperation, while keeping potentially conflicting factors in mind without falling into oppositional thinking.
- Finally, a course of action based on negotiations between generations. While acknowledging each other's uniqueness is essential, it is also essential to find common ground. Most importantly, there are disparities across generations regarding daily responsibilities and existential attitudes that are culturally obfuscated yet crucial to a rich and age-inclusive society.

Persona's

I constructed three separate personalities using the information and the procedures suggested by Biggs and Lowenstein. These personas highlight the differences and similarities in their areas of interest. Their agendas indicate the specific tasks depending on their time of life.

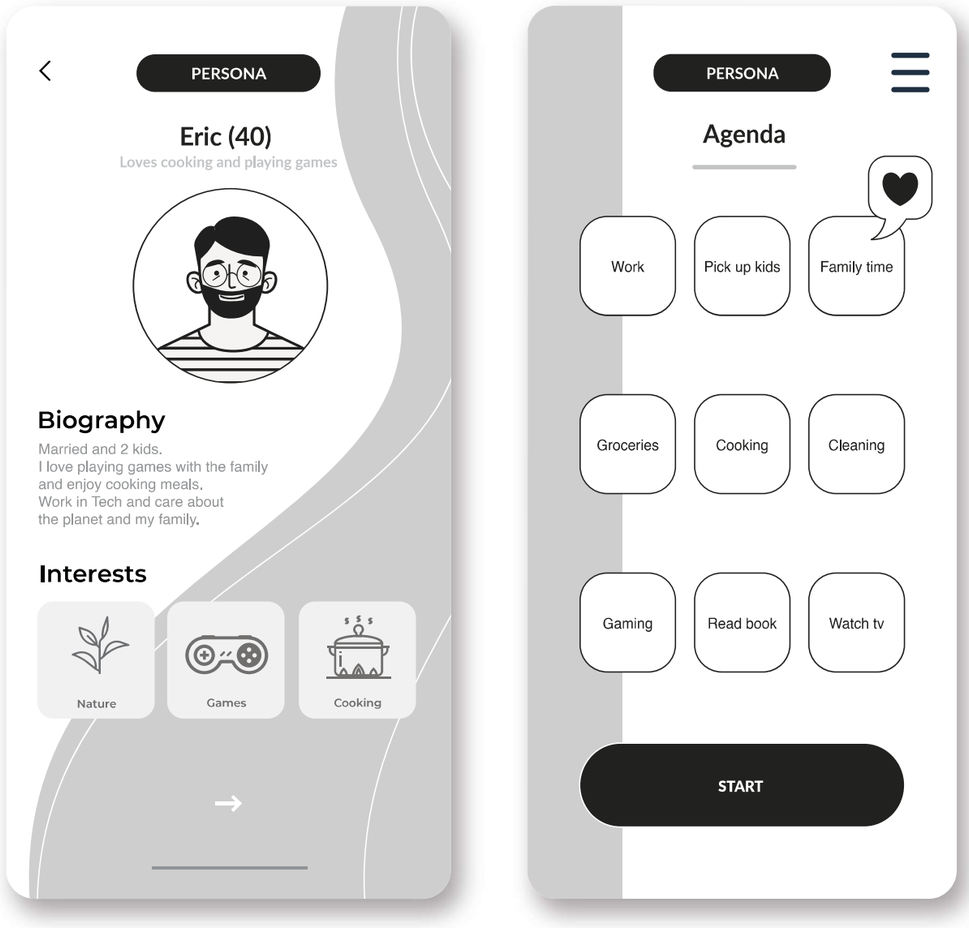
This persona's aided in the final discovery of the most overlapping interest; gardening, which also suits all time timbales to engage in the activity. As a result, I have concluded that gardening is the essential programmatic choice for an intergenerational space in my design.

Persona 1



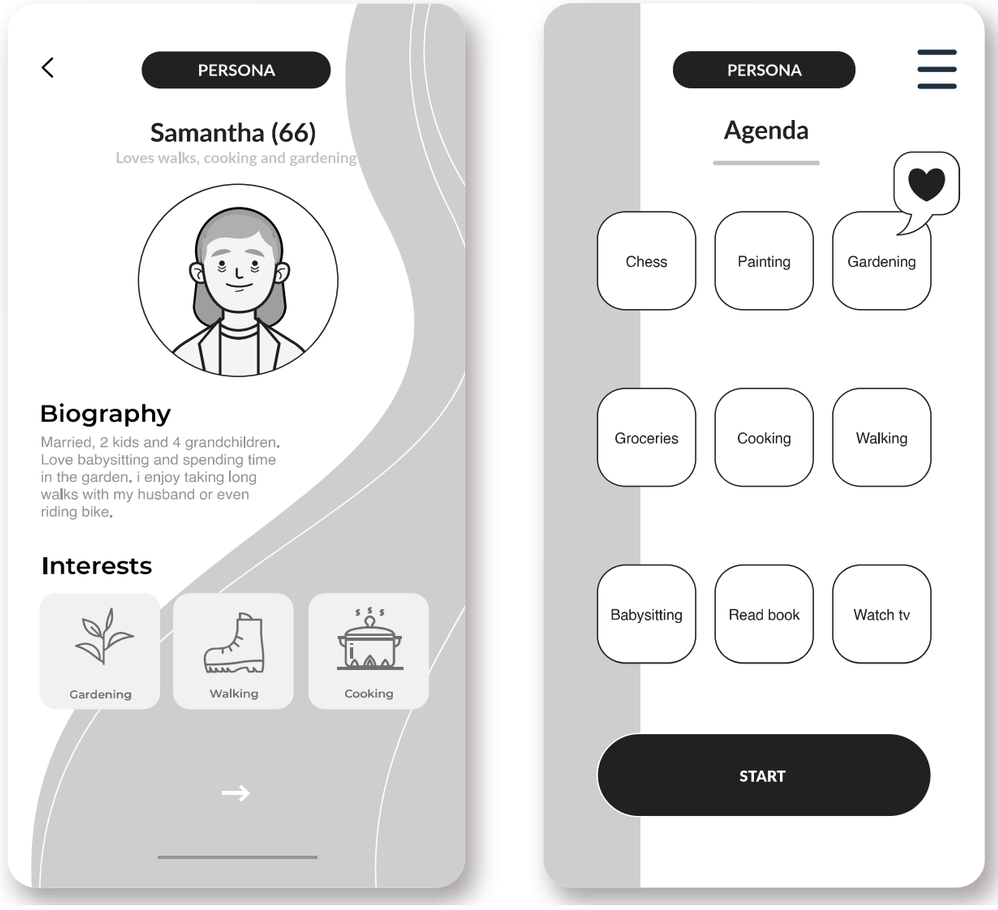
Note. Author

Persona 2



Note. Author

Persona 3



Note. Author

Conclusion

5.1 Conclusion

The goal of this study was to explore methods for creating an intergenerational building. Based on literature , pan analysis, and a praxeological approach of narrative biographic interviews, it is possible to conclude that intergenerational care and support are key factors to consider as demographic, prognoses, and social challenges develop. Existing intergenerational programmes have demonstrated the need and value of intergenerational programmes to address societal challenges such as social isolation and age segregation.

The results that show the needs of those different generations illustrate that it is vital to use different architectural strategies to succeed in designing a place that is all-age inclusive and also a place where the residents can grow old. As a result, it is critical to comprehend the needs and preferences of the target group by analysing different case studies on family/elderly homes, co-housing units, and intergenerational buildings. This analysis revealed that spatial arrangements, architectural design approach, and programming all have an essential role in promoting social inclusion. The interview takeaways provided an understanding of generational distinctiveness as well as the balance of differences and similarities.

This knowledge is required to build a diverse and age-inclusive society. The recognition of a separate self, generational differences, and the negotiation of sympathetic generational relationships are the foundations of social inclusion and therefore intergenerational care and support.

Although architecture can not and should not dictate how people should live, it can support and provide the opportunity for residents to participate in, care and engage with each other. Based on the findings, I developed architectural design strategies that contribute to the creation of an intergenerational building. The following four design domains are seen as critical to achieving this goal:

Location

Building

Dwelling

Shared spaces

The Social benefits, design and delivery scheme is based on intergenerational care and program theories and case study from chapter 2.

The design principles are extracted through the literature findings, interviews and plan analysis.

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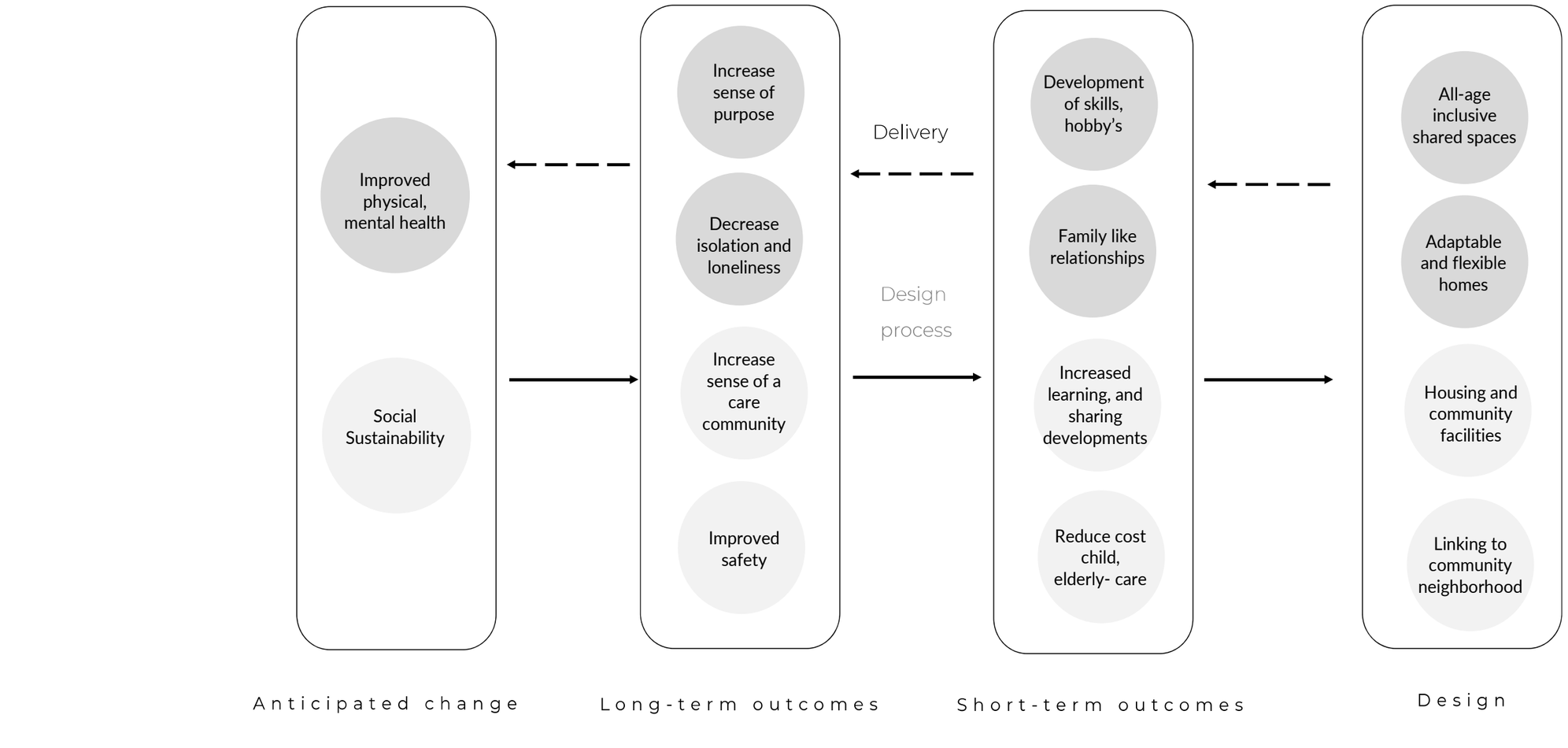
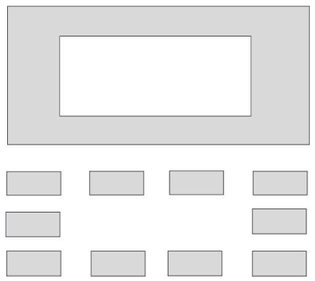
5.2 Conclusion scheme

Social benefits, design and delivery



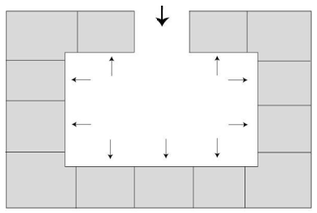
Note. Author

5.3 Design principles



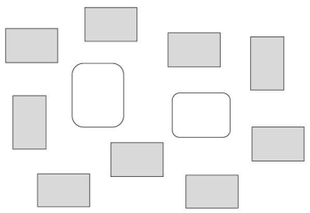
Micro-communities

Creating micro-communities with fewer residents and providing more suitable social spaces for social interactions.



Modern ‘hofje’

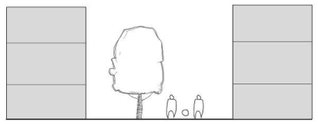
Using circulation as a way for spontaneous encounters and interactions among residents.



Shared and Common spaces

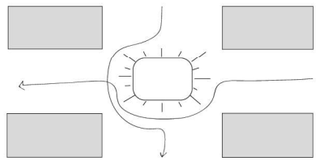
Shared and common spaces as the heart of the project.

Building Configuration



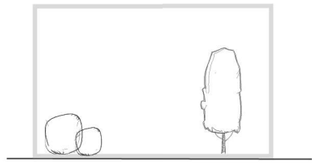
Courtyard

Garden that can be observed from or accessible from the residential units.



100 % corner

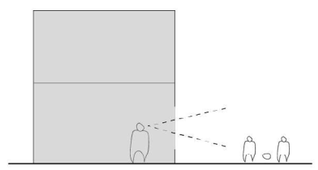
The most socially engaged area of the building. Enhancing the use of a shared area through activities and social interaction.



Wintergarden

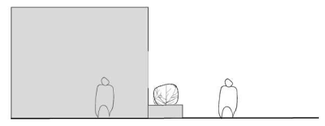
A Wintergarden as the key programmatic choice for an intergenerational space

Design principles



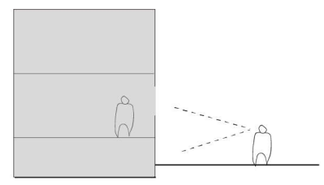
Vision

The most active area of the dwelling is situated next to the courtyard.



Transition area

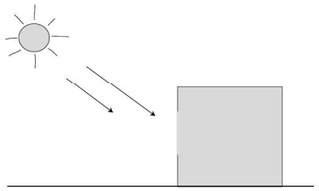
Smooth transitions between private and public spaces



Privacy

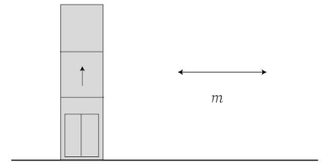
Protecting private regions

Building Edge



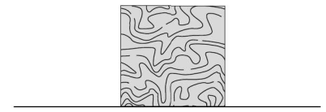
Light

Maximize views and allow as much natural light as possible.



Independent living

Accessibility, safety, and social interaction are crucial by assisting the elderly to remain self-sufficient for as long as possible.

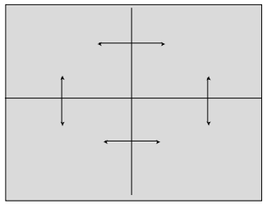


Materialisation

Use of light and natural materials for an inviting and cosy atmosphere.

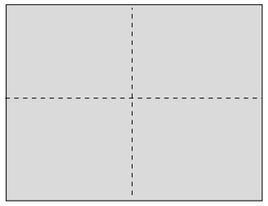
Building Design

Design principles



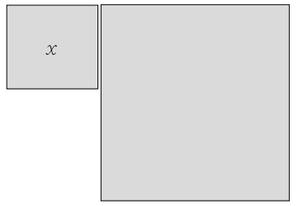
Generality

There is no specific use assigned to the rooms, so they may be used for several purposes.



Flexibility

A flexible plan can be changed by moving or removing walls or furniture. It allows changing the number and size of rooms within the existing apartment.



Elasticity

An elastic layout allows a dwelling to grow and compress in size. This is often achieved through in-ter-dwelling space exchanges.

Dwelling

Urban Masterplan

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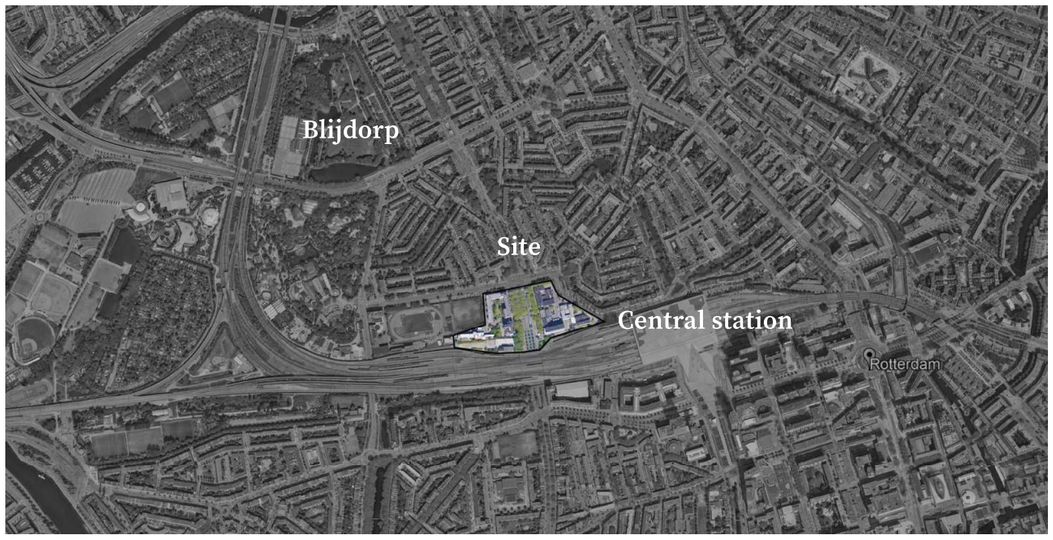
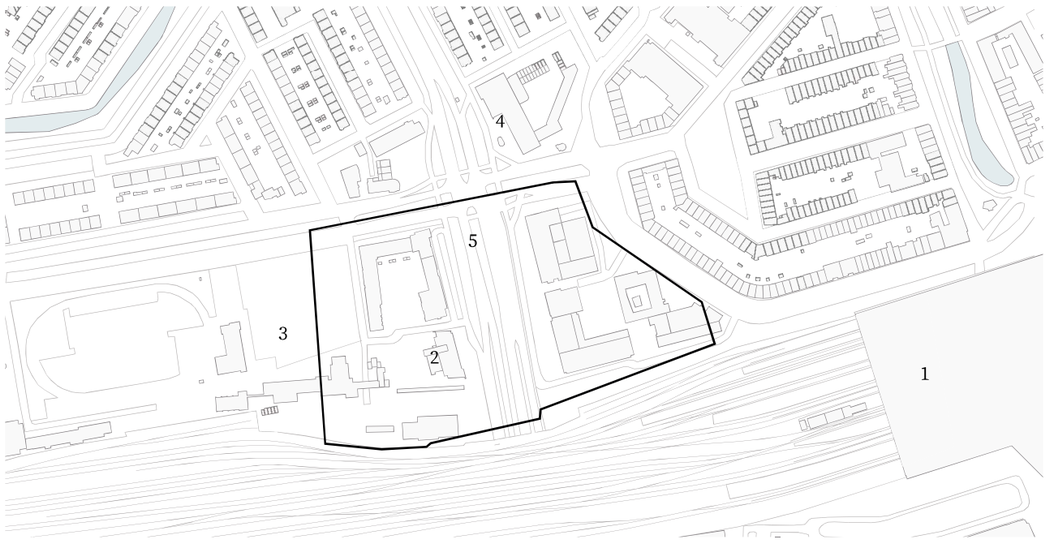
6.1 Location

The studio's location is Rotterdam's central business area, situated on the northern side of the train track between the city's central station and the Blijdorp Rotterdam zoo. The urban master plan is to establish a socially inclusive, sustainable, and human-scaled living environment based on the long-term non-speculation concept.

Project Location



Site



1. Central station 2. Senior complex 3. School district 4. Supermarket 5. High traffic road

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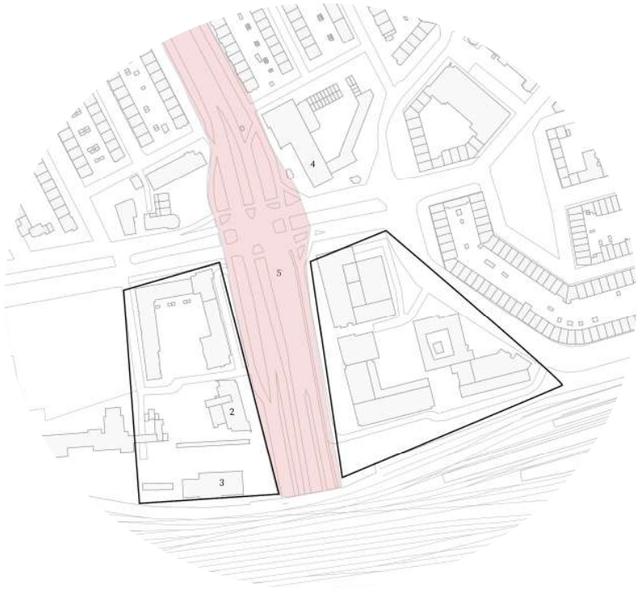
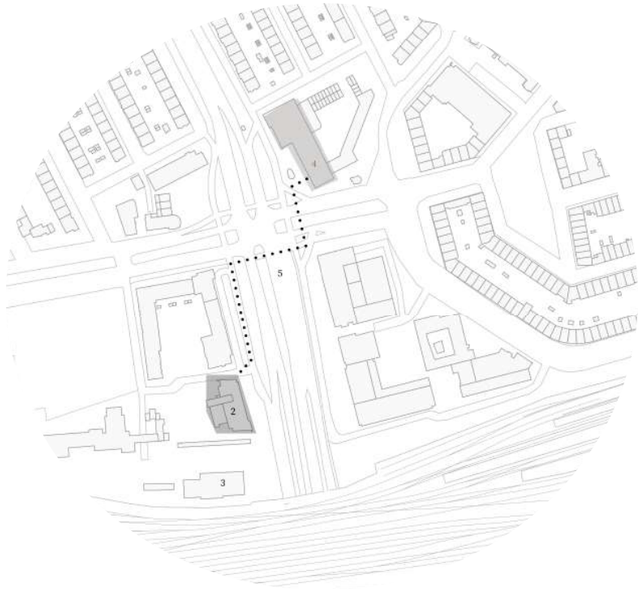
Current situation - challenges



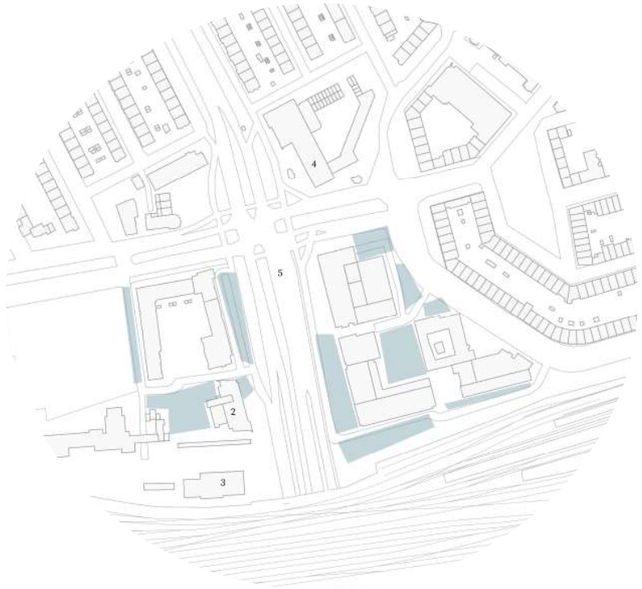
High traffic road

The high traffic road is splitting the plot into two.



Barrier

The high-traffic road functions as a barrier for the seniors, trying to reach the supermarket on the opposite side of the road.



Cars

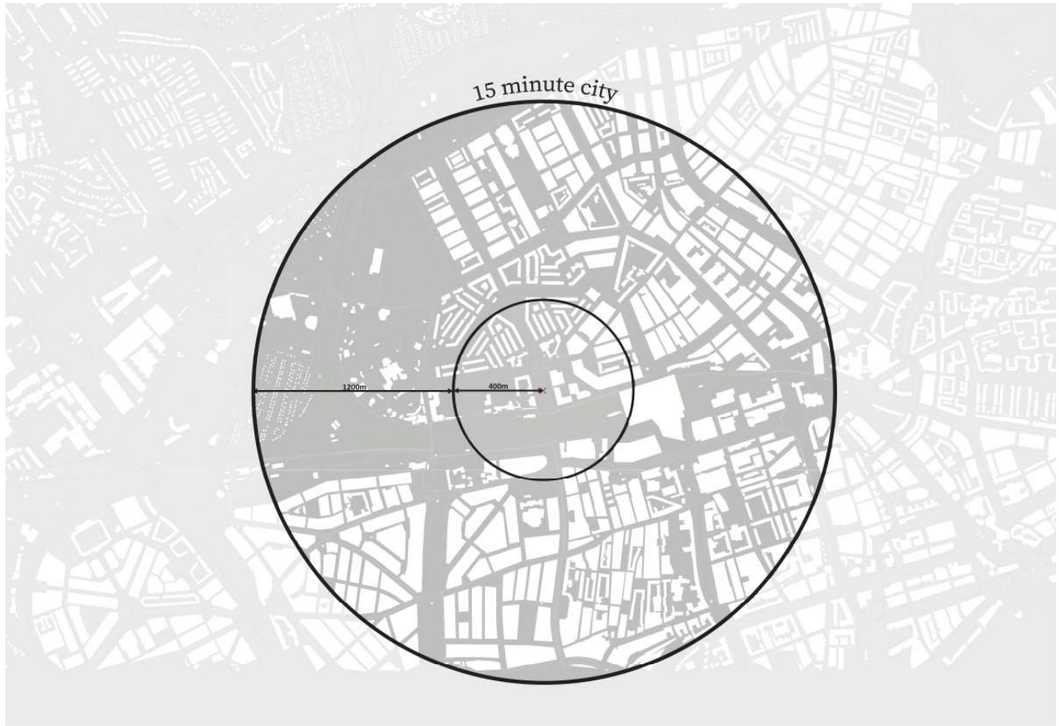
A large number of parking spaces and car roadways

Legend:

1. Central station
2. Senior complex
3. School district
4. Supermarket
5. High traffic road

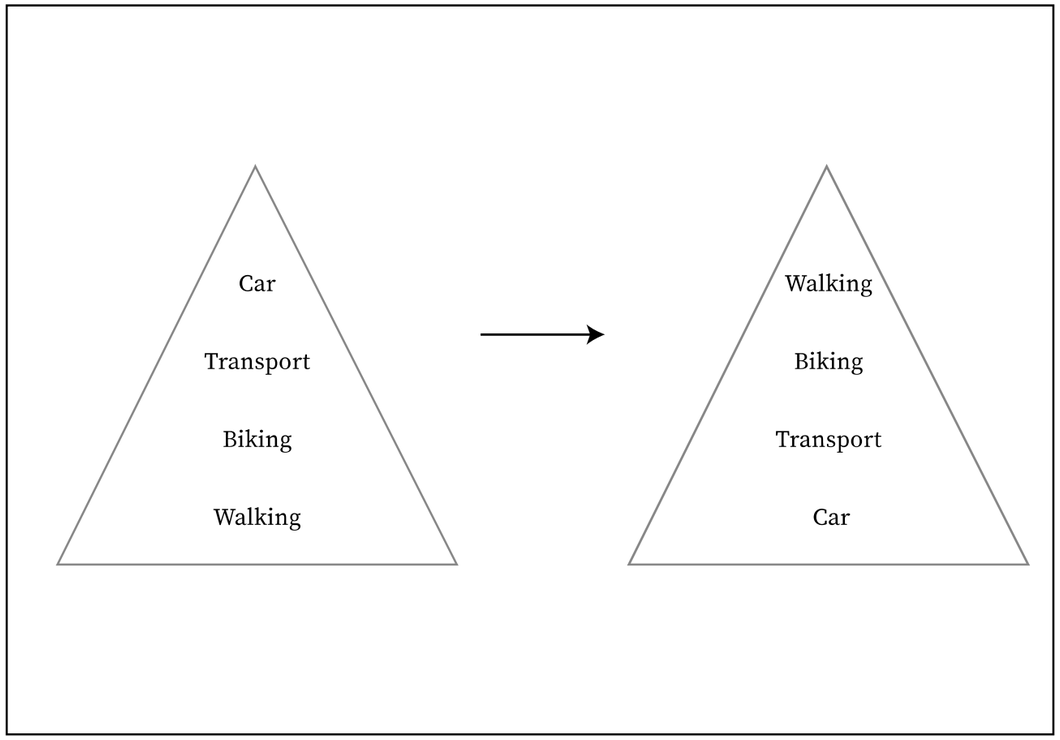
A CARING PLACE

6.3 Proposal New Urban Masterplan



15 minute city concept

Proposing a walkable neighbourhood and car free zone. This is done to offer the inhabitants walkable access to essential public services, improving walking behaviour and overall health.



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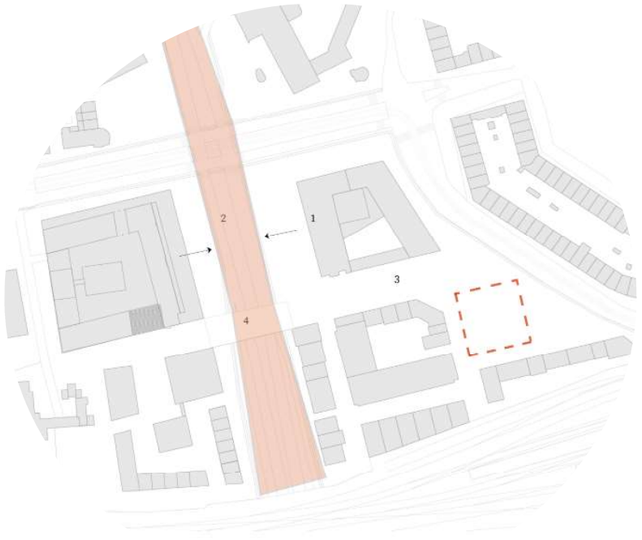
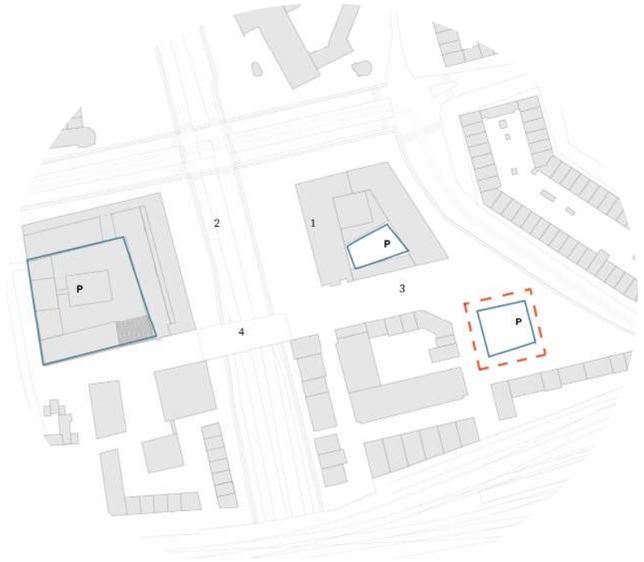
New Urban Masterplan



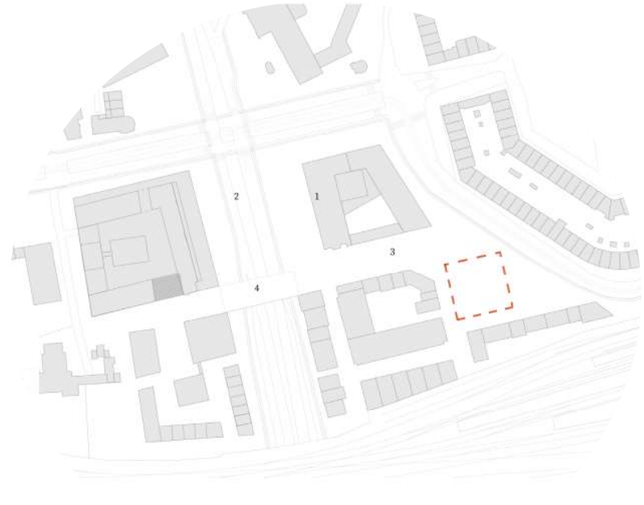
High traffic road

Downsizing the road



Parking

Adding underground car garages. Creating car free zones



Humanscale

Dividing the masterplan into smaller plots.

Legend:

1. Central station
2. Senior complex
3. School district
4. Supermarket
5. High traffic road

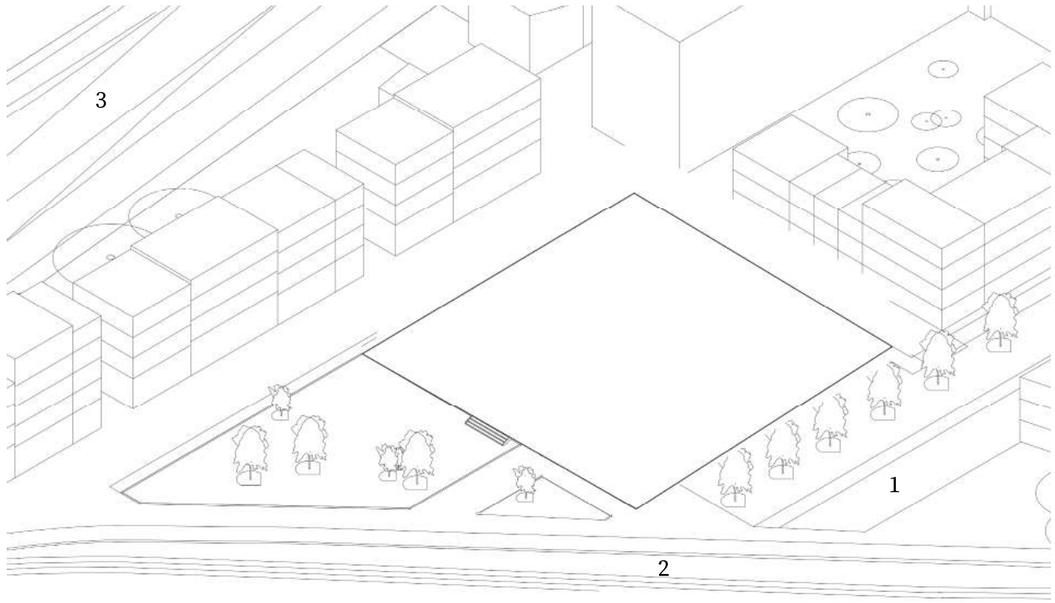
A CARING PLACE

7

Design

The Faculty of Architecture at Delft University of Technology Roos Salih

7.1 Design Concept



Buidling Plot

Plot size 40x40m
1. Green corridor
2. Statenweg
3. Train tracks

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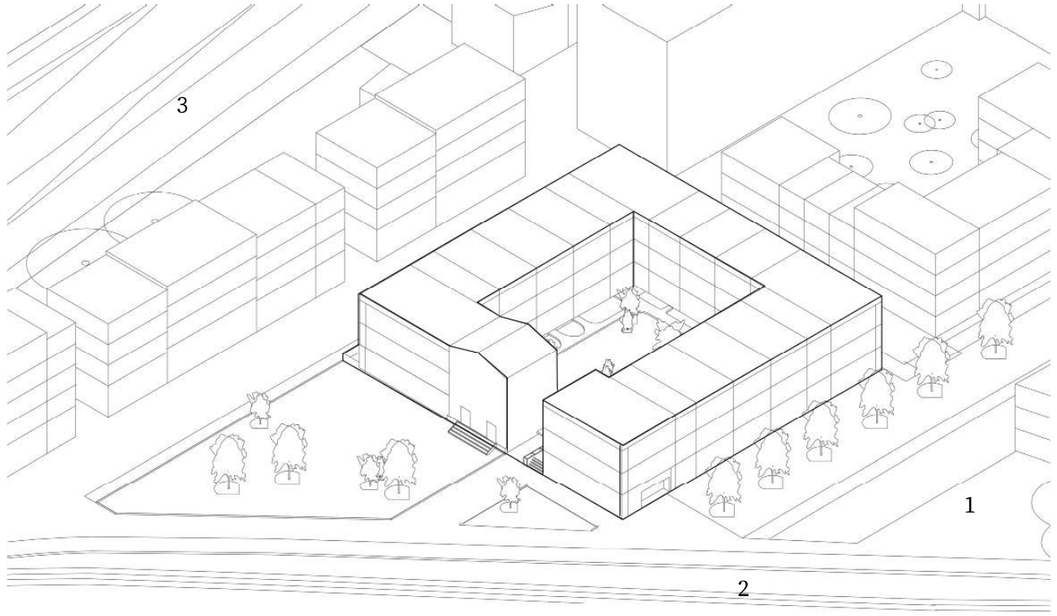
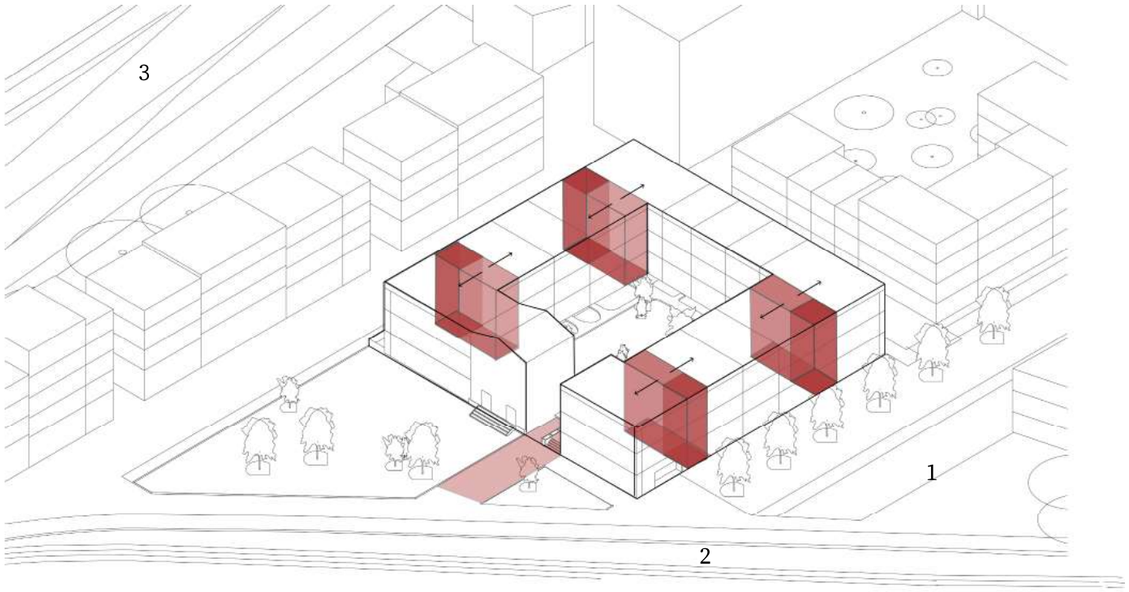
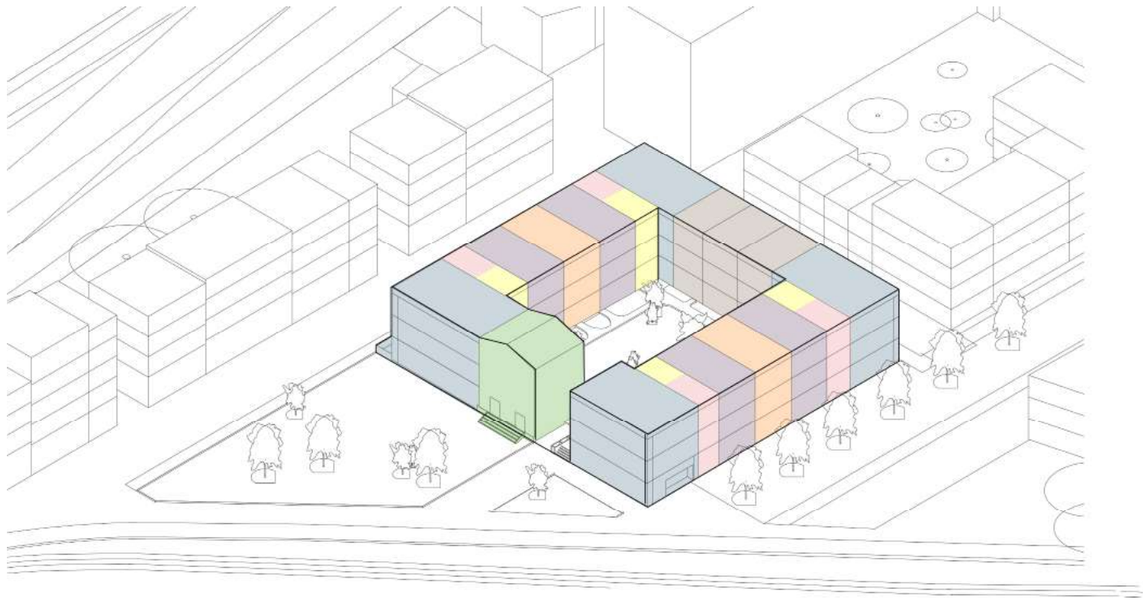


Building Typology

1. Greencorridor
2. Statenweg
3. Train tracks

Design Concept





Circulation

1. Greencorridor
2. Statenweg
3. Train tracks

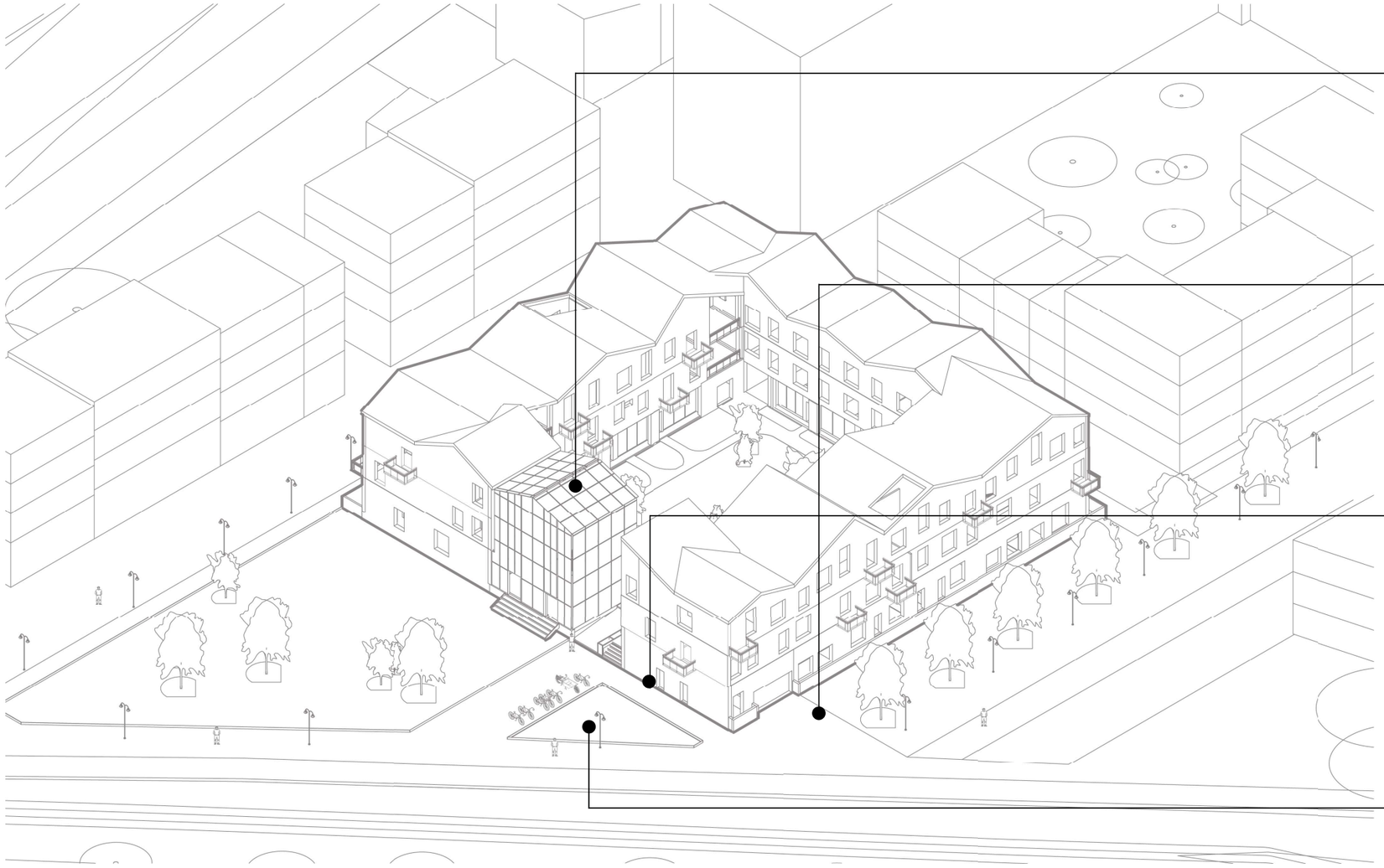
Red. Circulation

Building Program

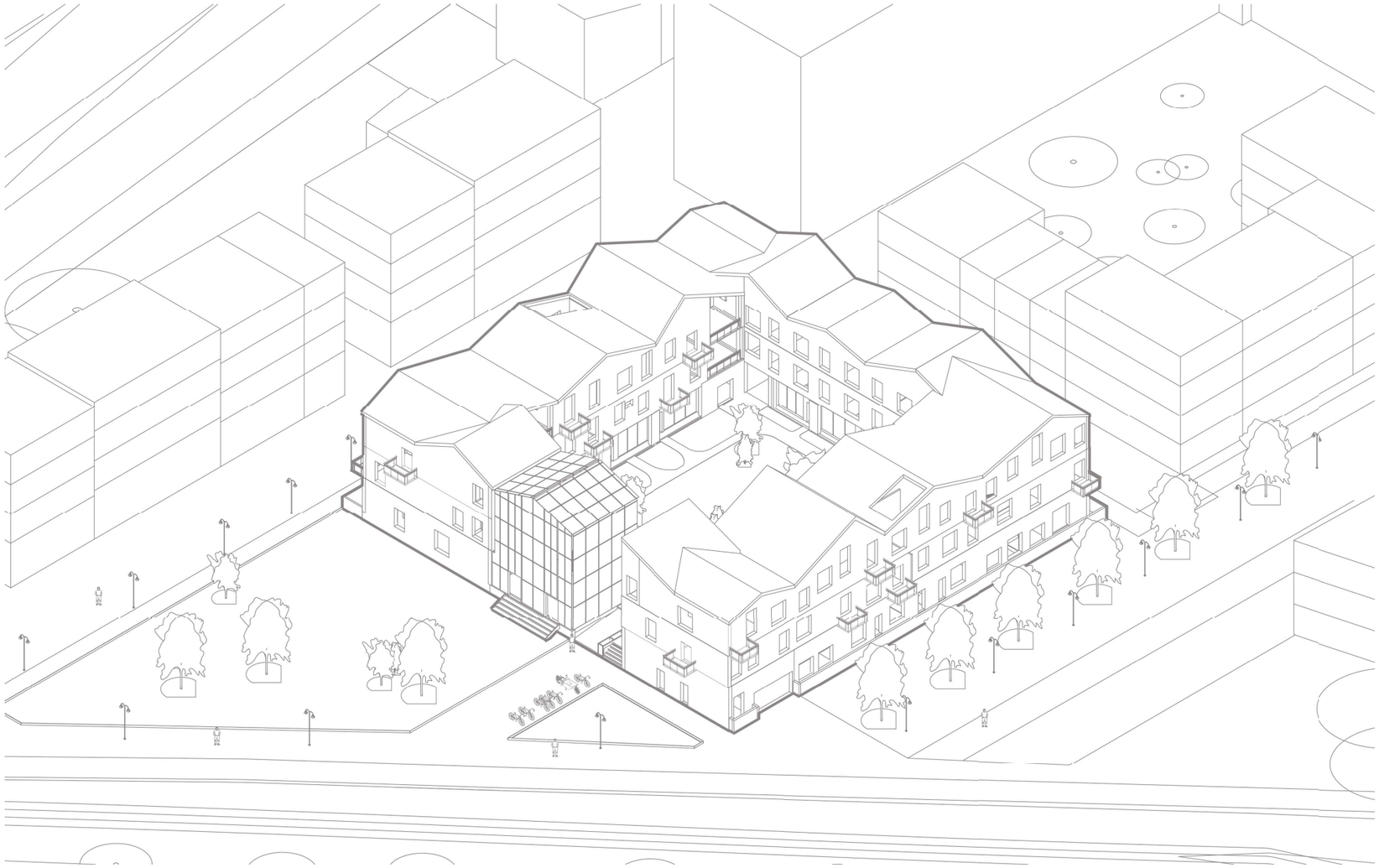
Green	Orangery
Red	Circulation
Yellow	Terrace
Blue	2/3 bdr Appartment- 86-98 m2 (12)
Purple	Studio - 54m2 (12)
Orange	Urban villa - 130m2 (2)
Brown	Urban Villa -110 m2 (3)

A CARING PLACE

Design Concept



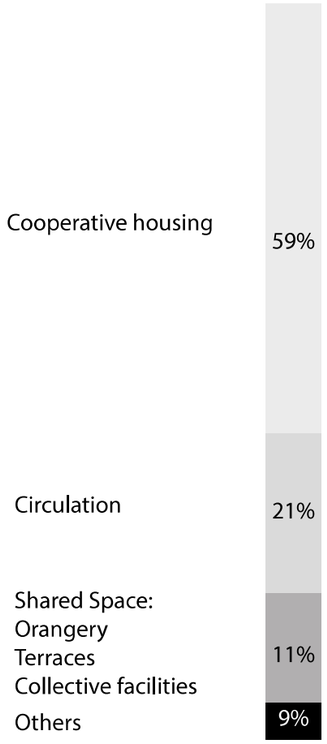
Facilities
Orangery
Bike storage
Recycle space
Compose room
Parking with shared mobility
Post and package space
Courtyard



Program

Orangery
Bike storage
Recycle space
Compose room
Parking with shared mobility
Post and package space
Courtyard

Programbar



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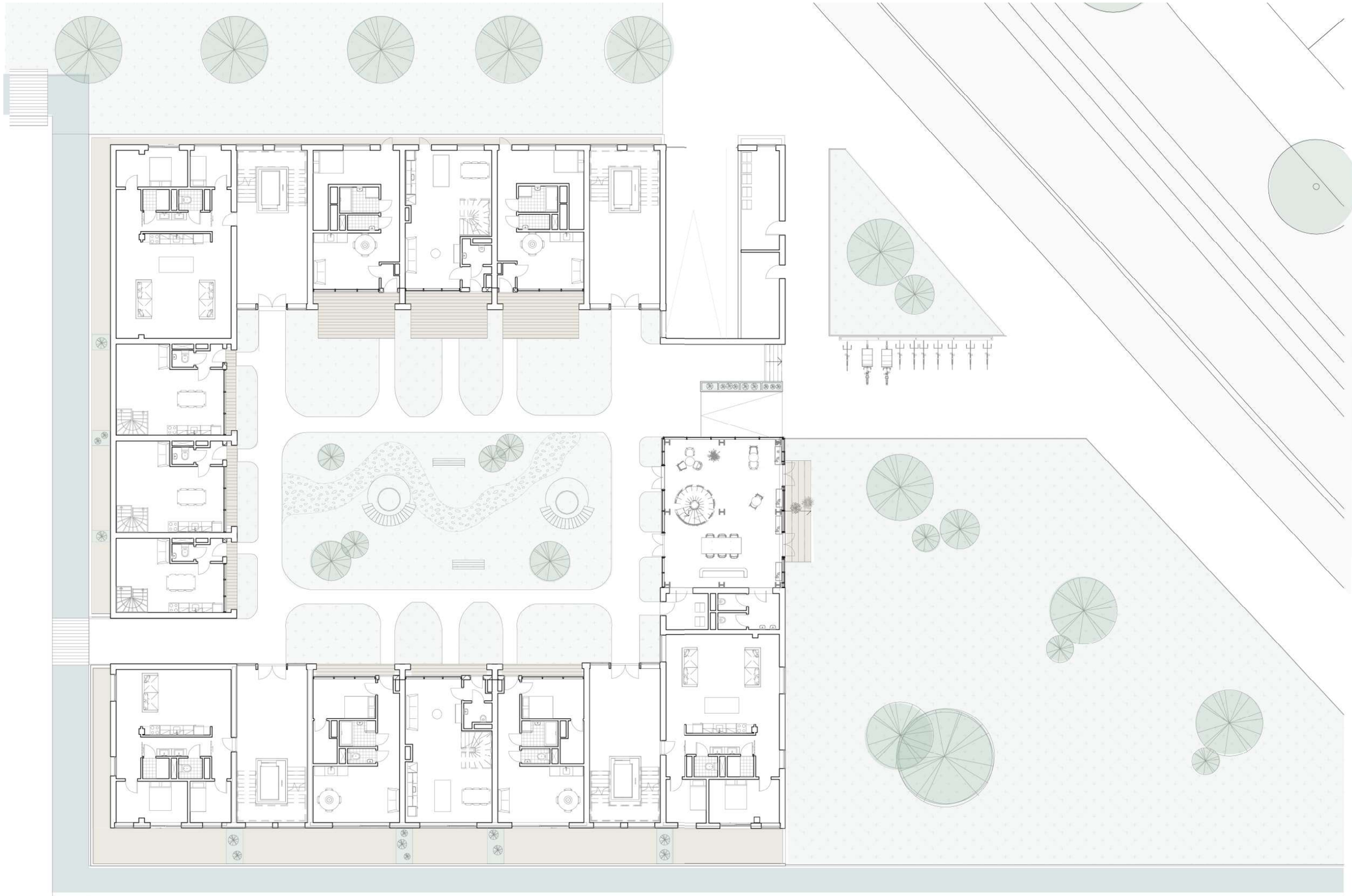
7.2 Plans



Site

0 1 2 5m

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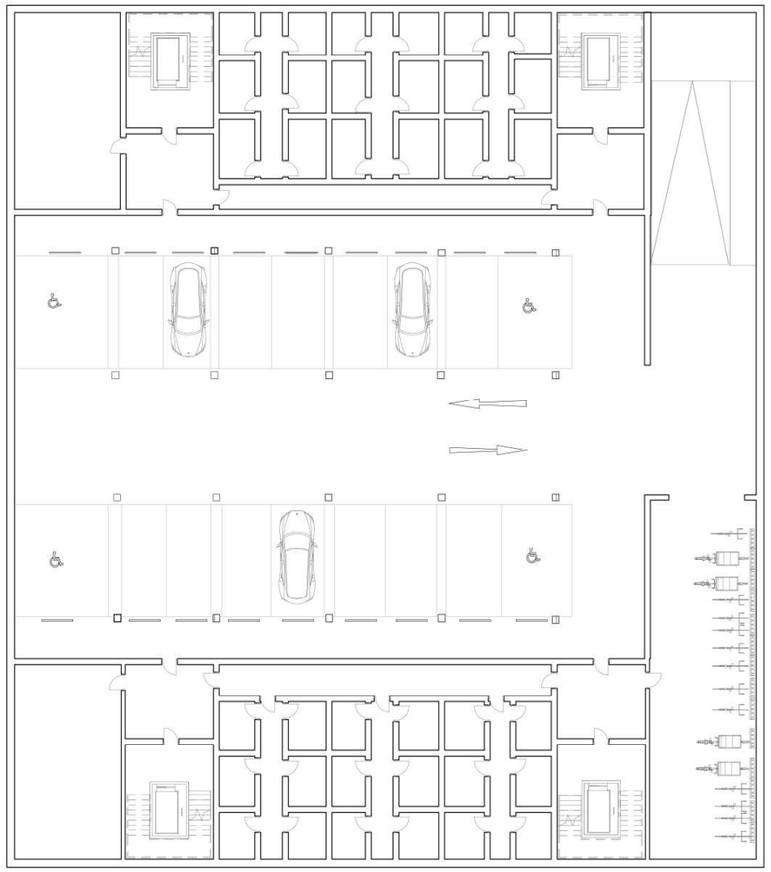
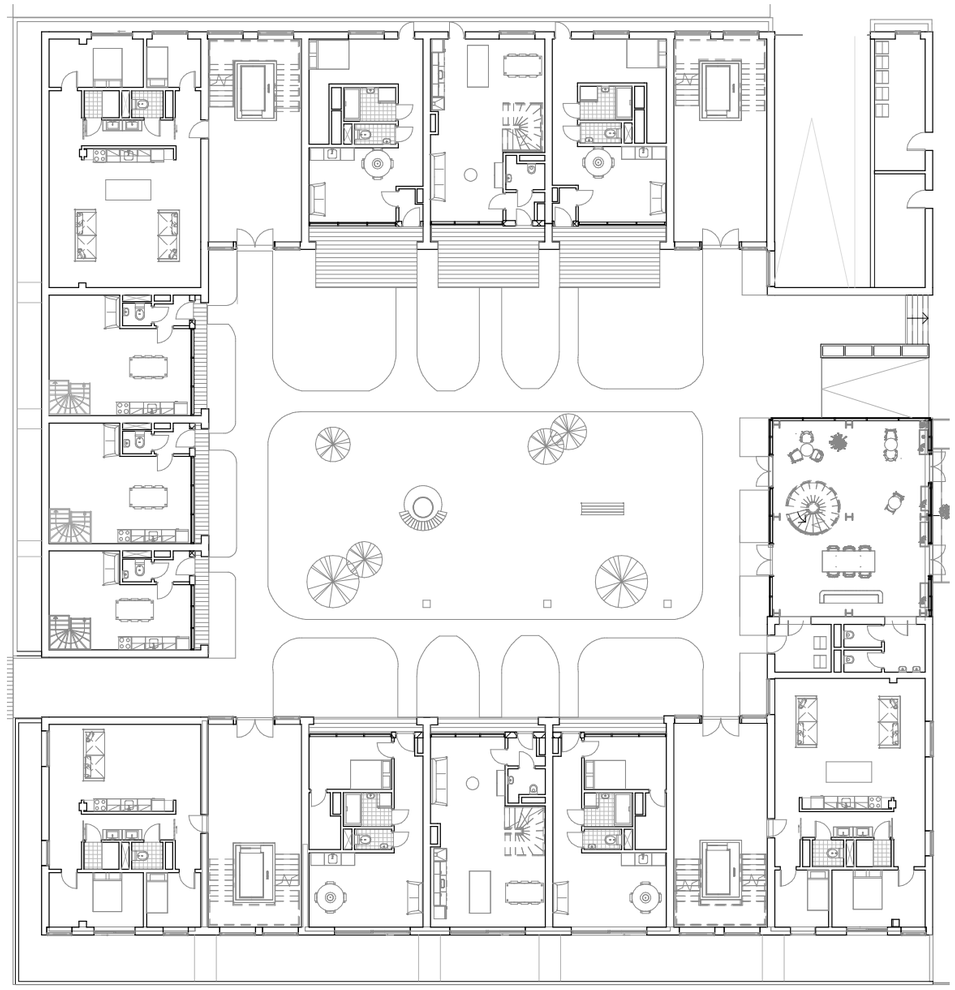
Floorplans



Basement

1 Shared mobility
2 Bike storage
3 Storage
4 Technical space



Groundfloor

1 Main entrance
2 Orangery
3 Semi Public toilets
4 Mail and package room
5 Recycle space
7 Compose room

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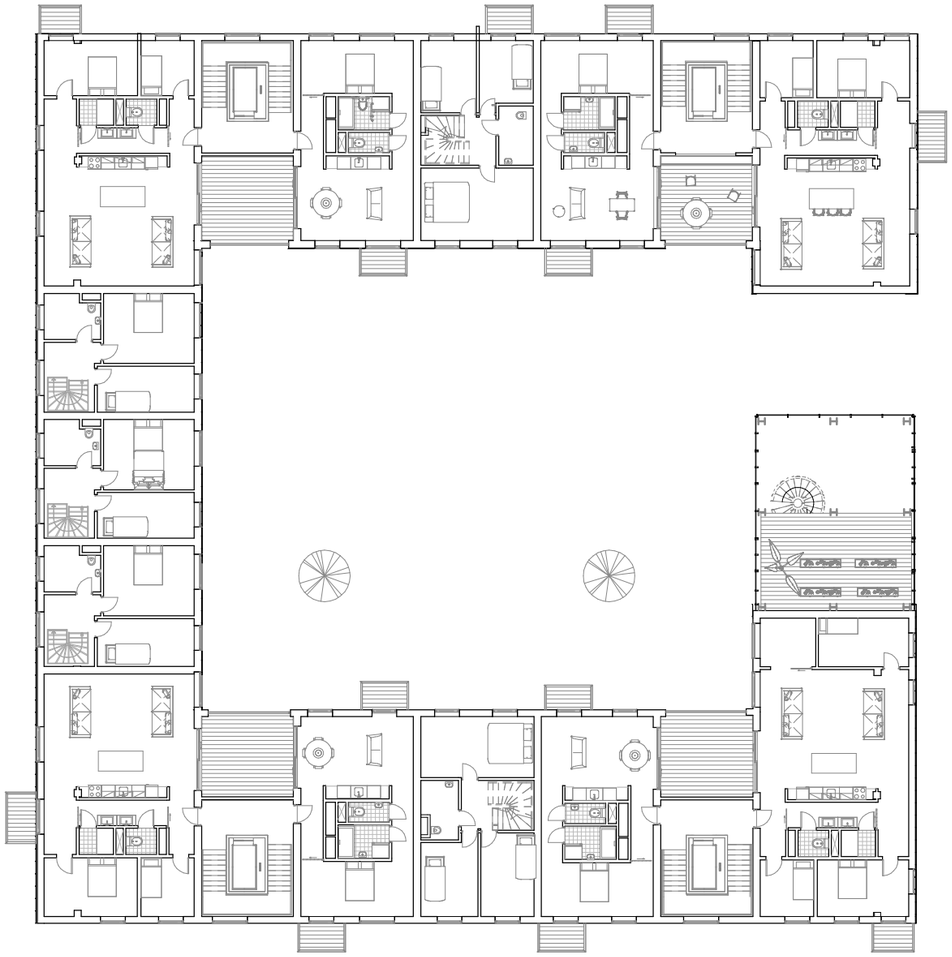
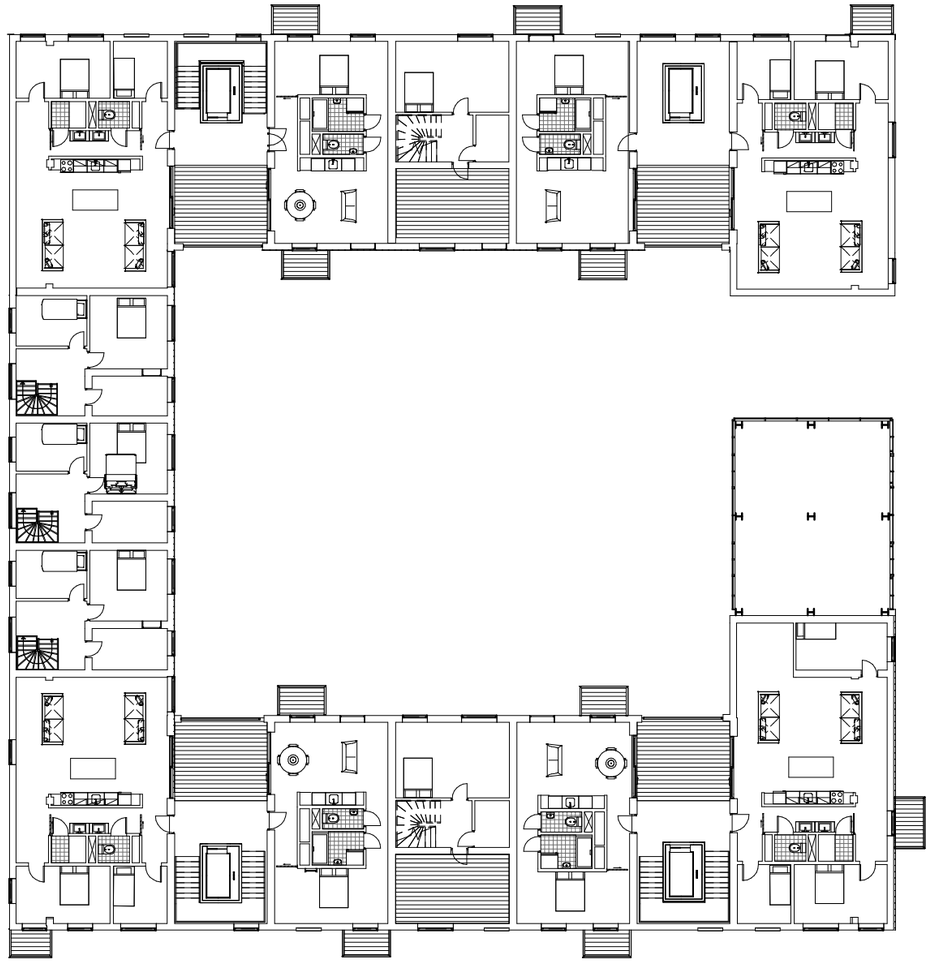
Floorplans



Second floor



Third floor

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Roos Salih

A CARING PLACE

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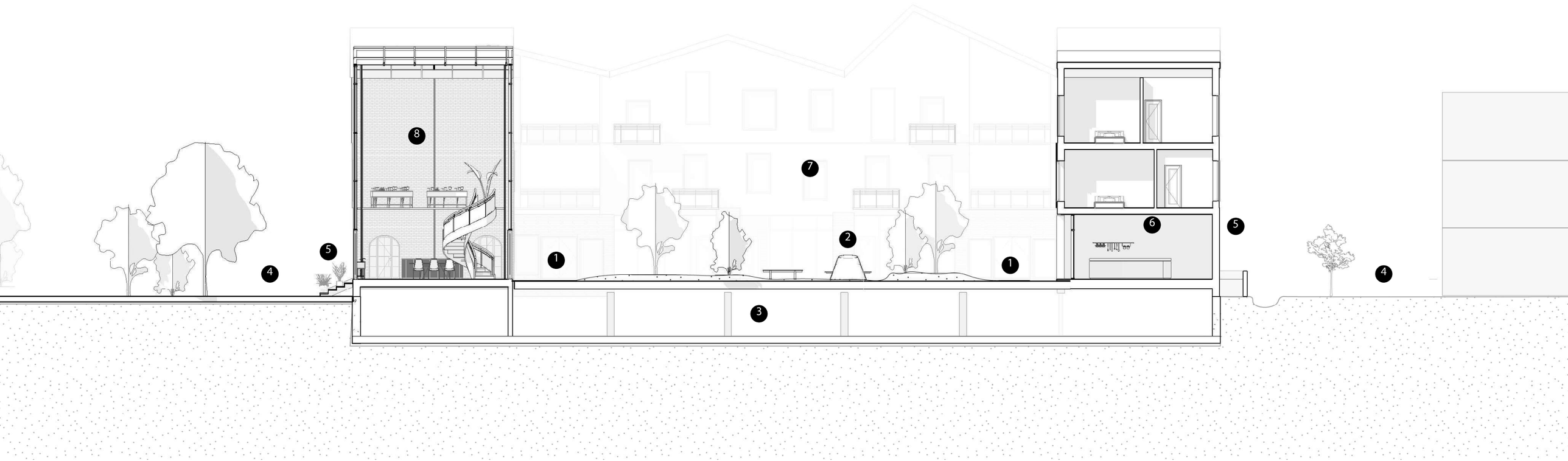
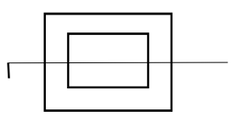
Roos Salih

A CARING PLACE

7.3 Sections



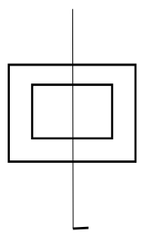
Section East/West



1 Circulation
2 Urban Farming
3 Parking
4 Street
5 Terrace
6 Kitchen
7 Courtyard
8 Orangery

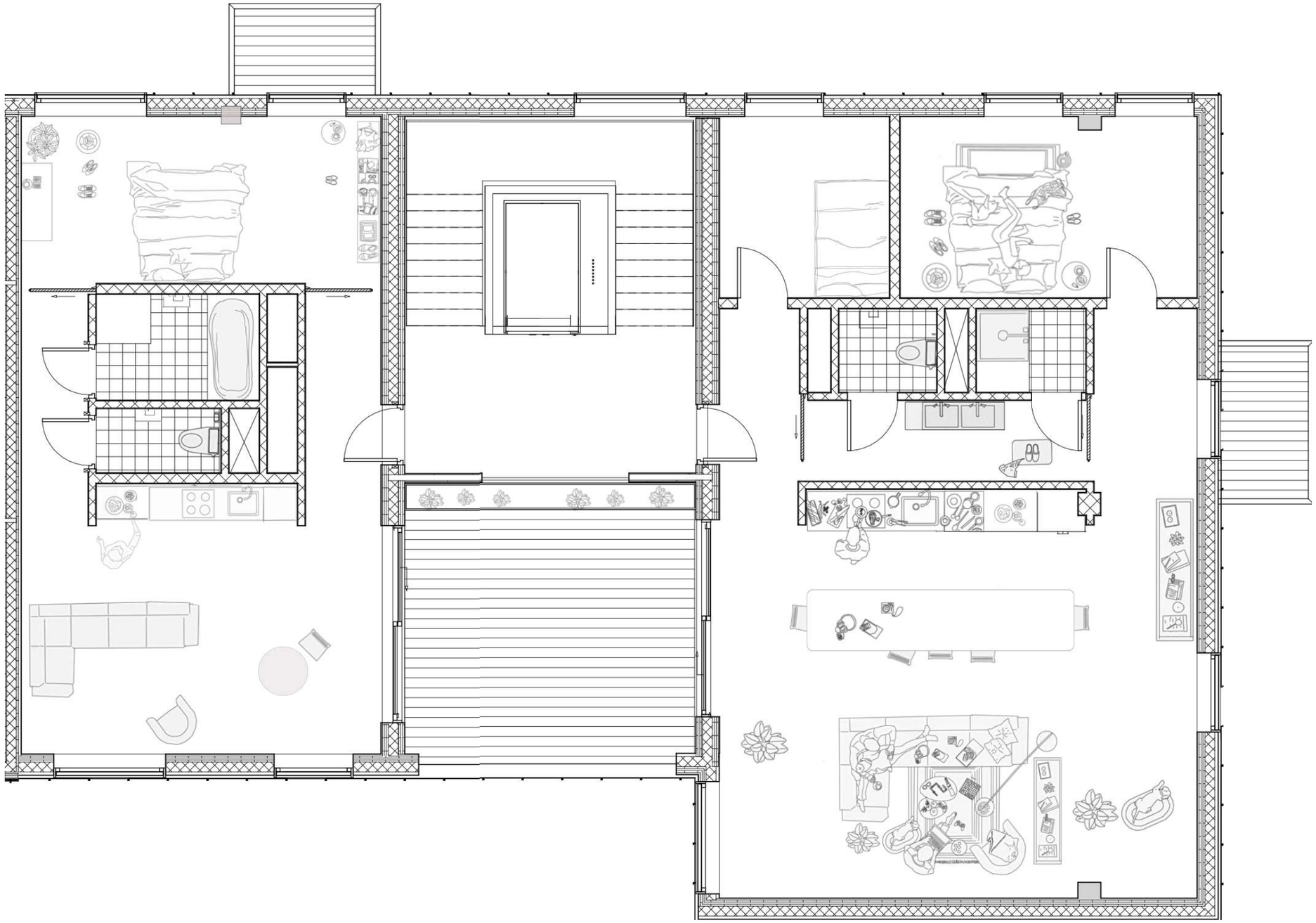
A CARING PLACE

Section South/North



A CARING PLACE

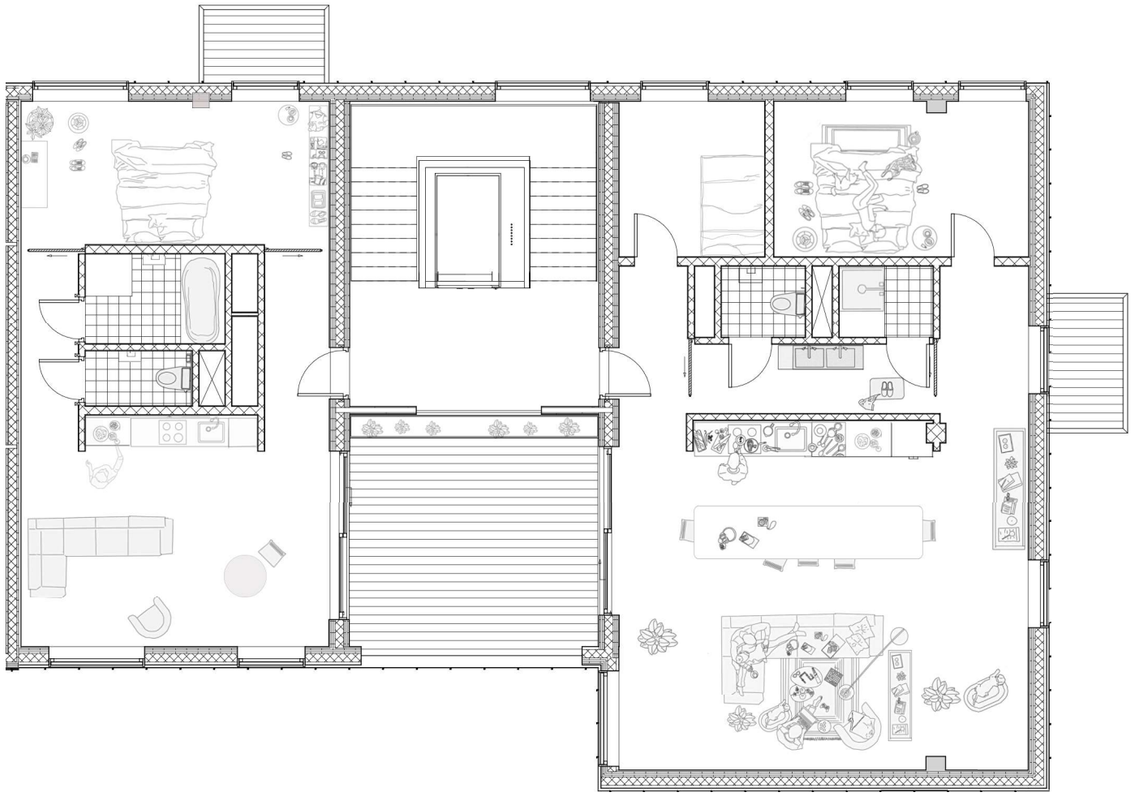
7.4 Dwellings



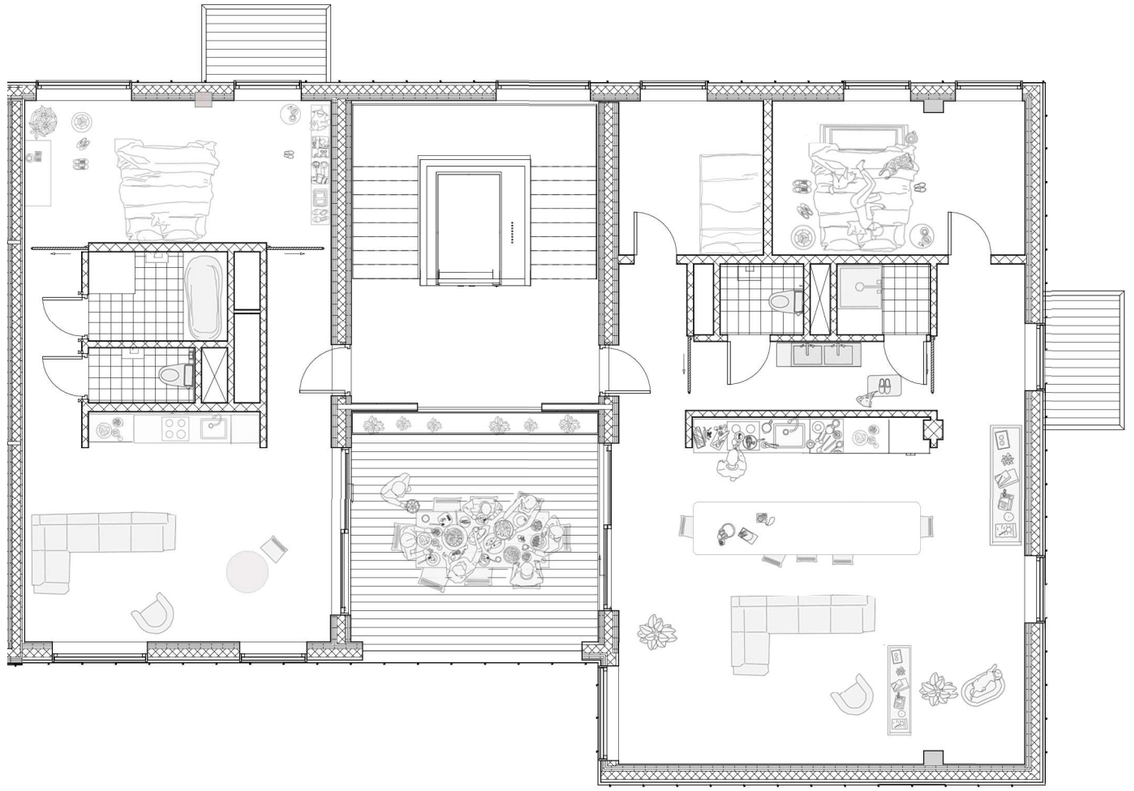
Cluster

1 2 bdr appartment
2 1 bdr appartment
3 Circualtion space
4 Shared space

0 1 2 4m

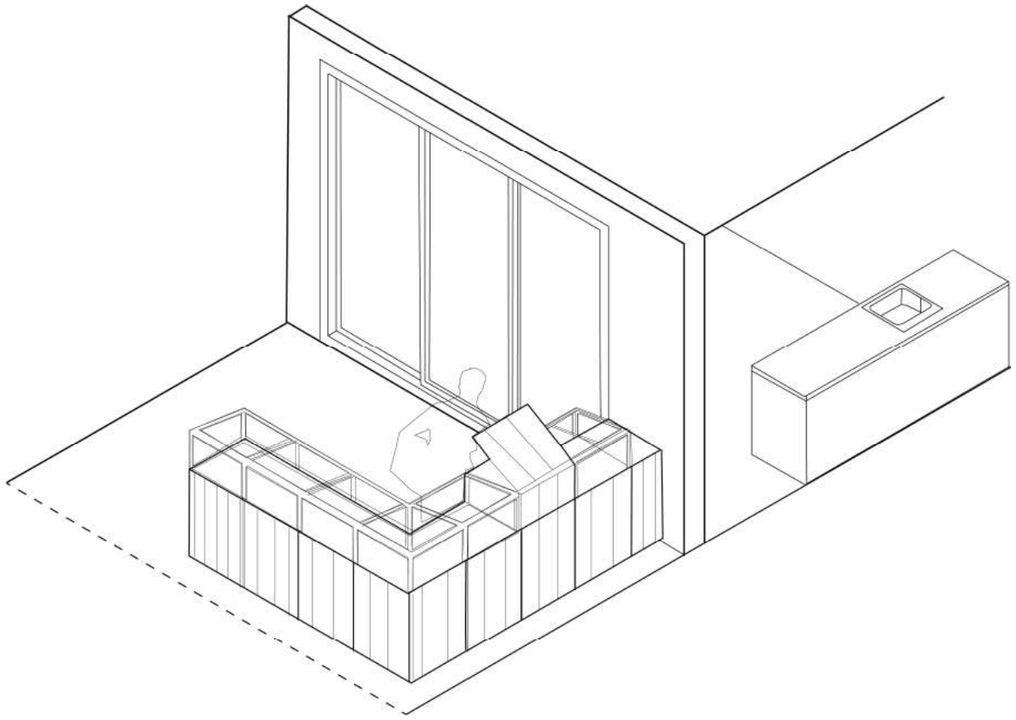


Situation 1



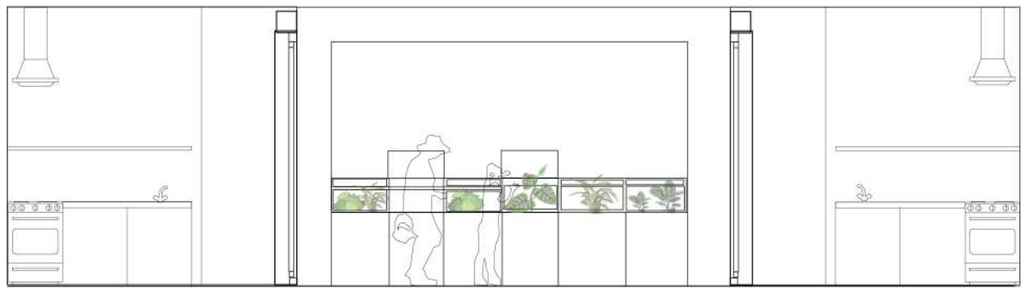
Situation 2

Isometric shared terrace



Option 1
Plant pots as a barrier
and groundfloor

Section shared terrace

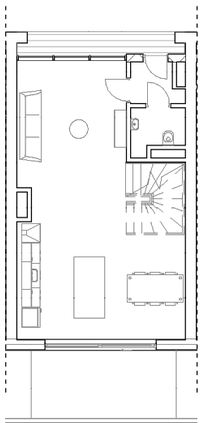


Option 2
Plant pots as a linear connection
and groundfloor

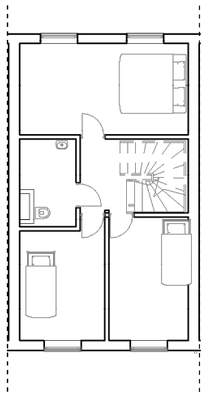
A CARING PLACE

A CARING PLACE

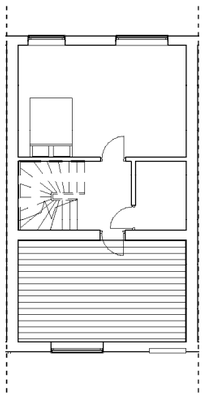
Dwellings



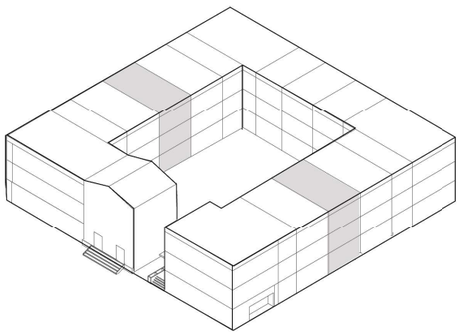
Groundfloor



First Floor

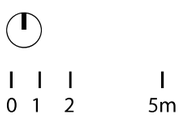


Second Floor

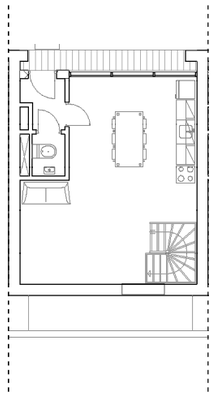


Urban Villa

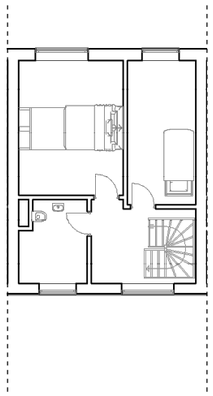
130m2 (2)



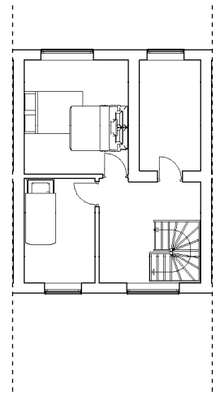
A CARING PLACE



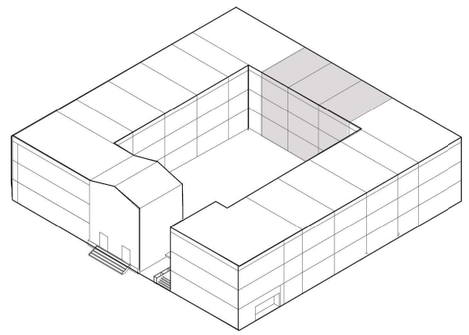
Groundfloor



First Floor

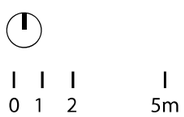


Second Floor

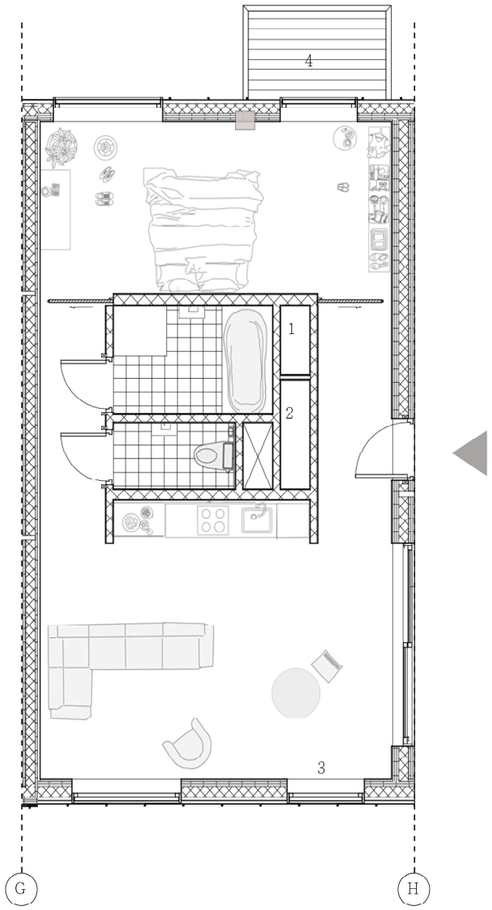


Townhouse

130m2 (2)

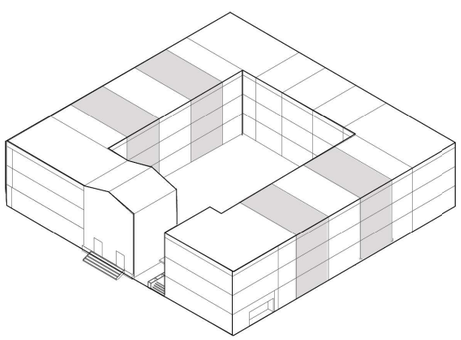


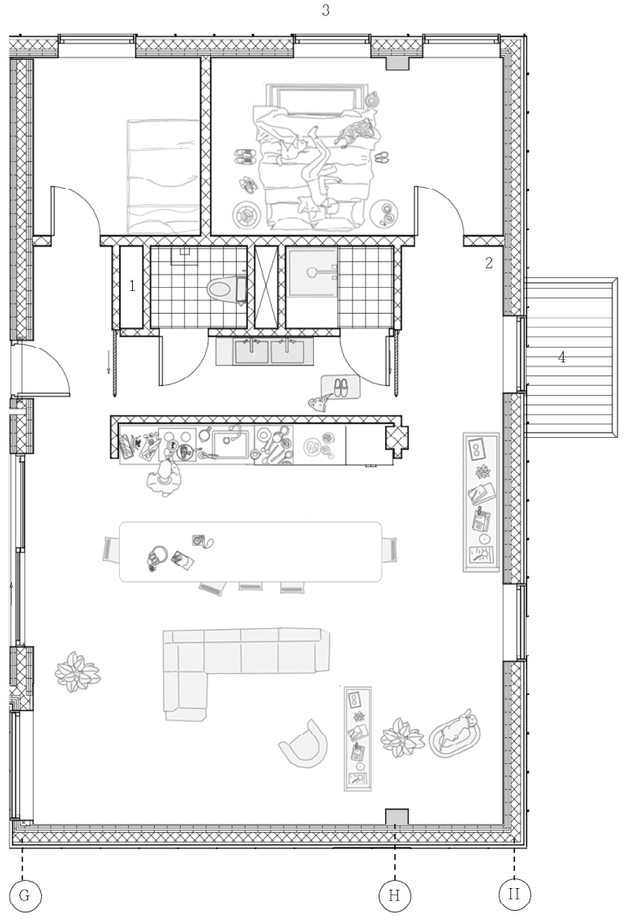
Dwellings



1 BDR appartment 54m2

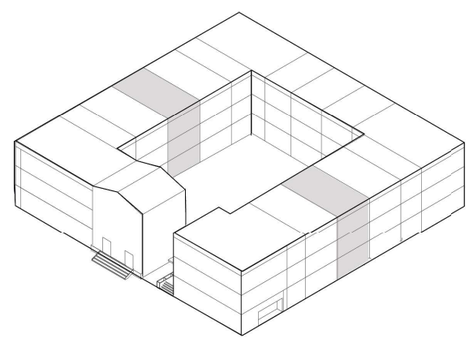
1 MK
2 Closet
3 French balcony
4 Balcony





2BDR Appartment

1 MK
2 Closet space
3 French balcony
4 Balcony



A CARING PLACE

7.5 Materialisation

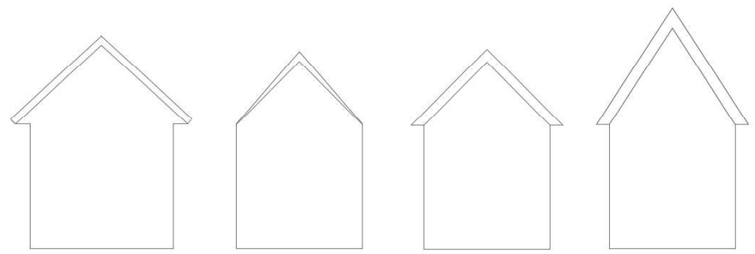
1

2

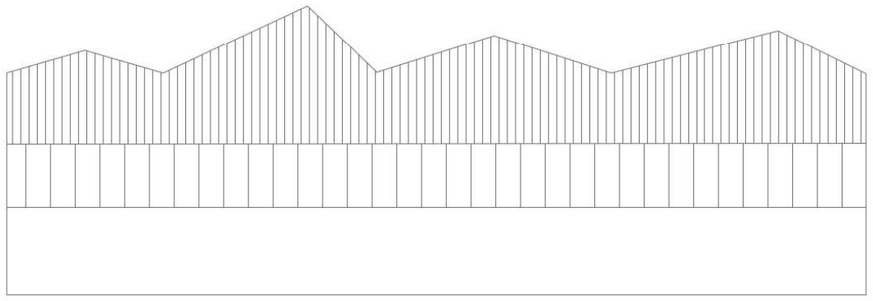
Facade

1 Zinc Pigmento Brown

2 Brick Rainbow Silver



The sloping roofs emphasise the typology of the residential building and seek a connection with the typical archetype of ‘the single-family dwelling’.



1

2

The brick architecture ensures harmony with the materialisation of the town houses in the immediate surrounding.

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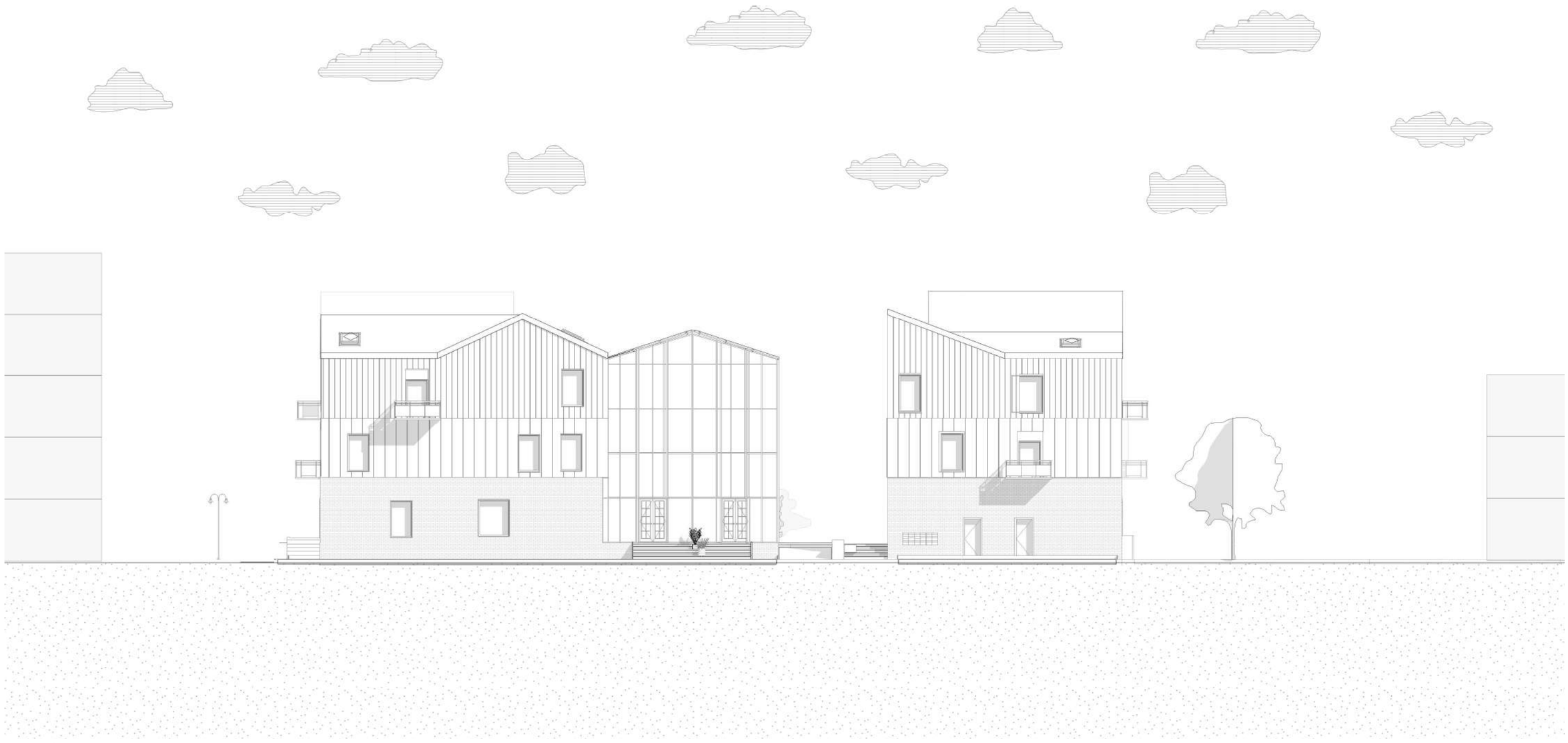

East Elevation

0 1 2 5m

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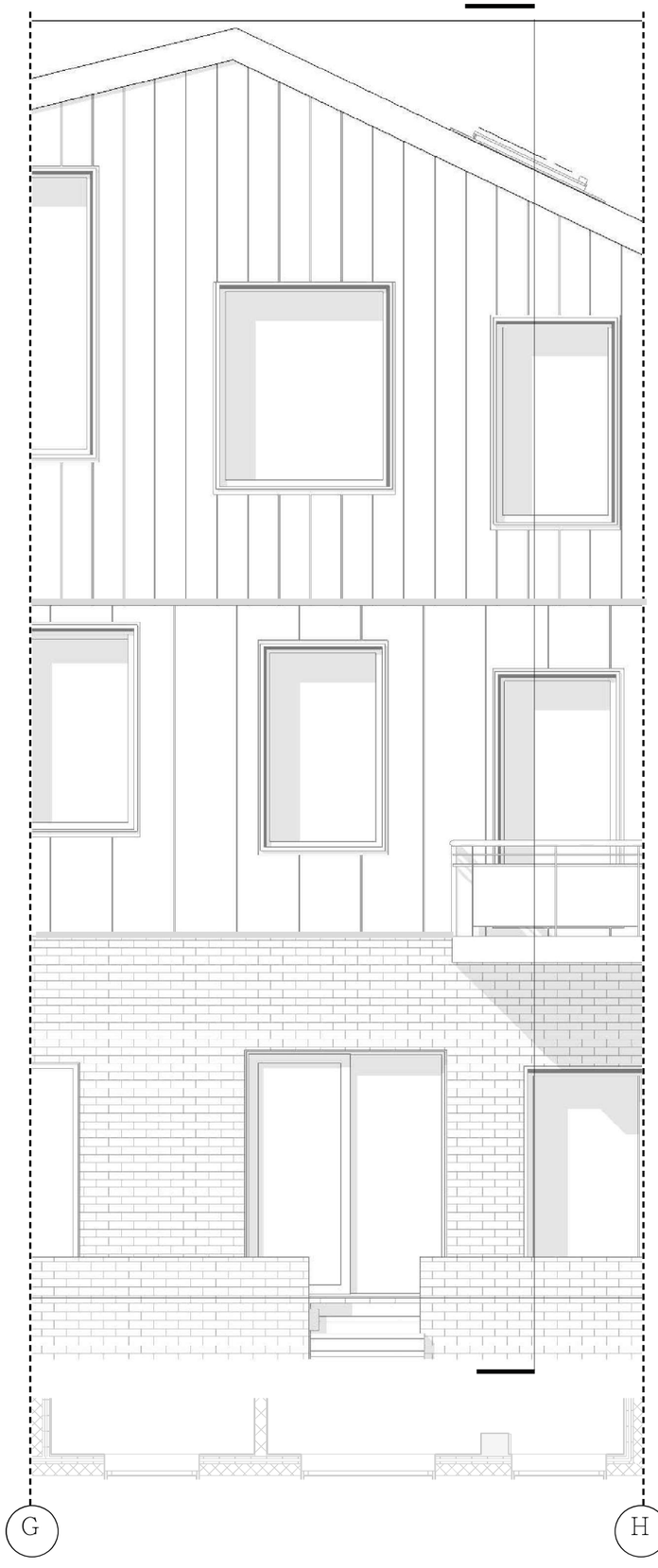
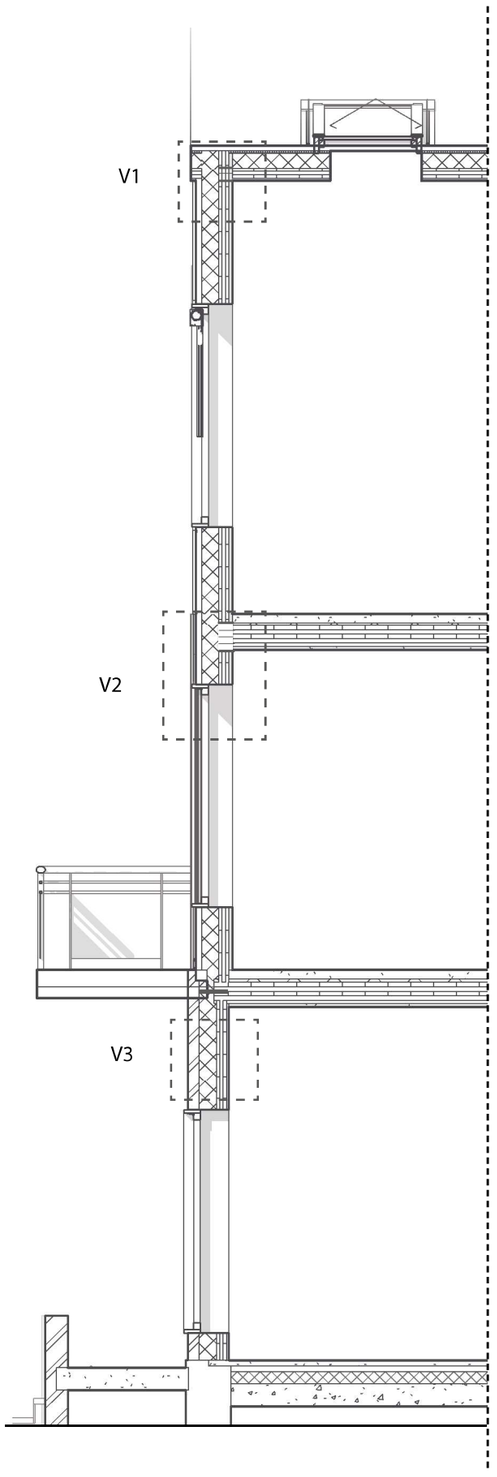
South Elevation

0 1 2 5m

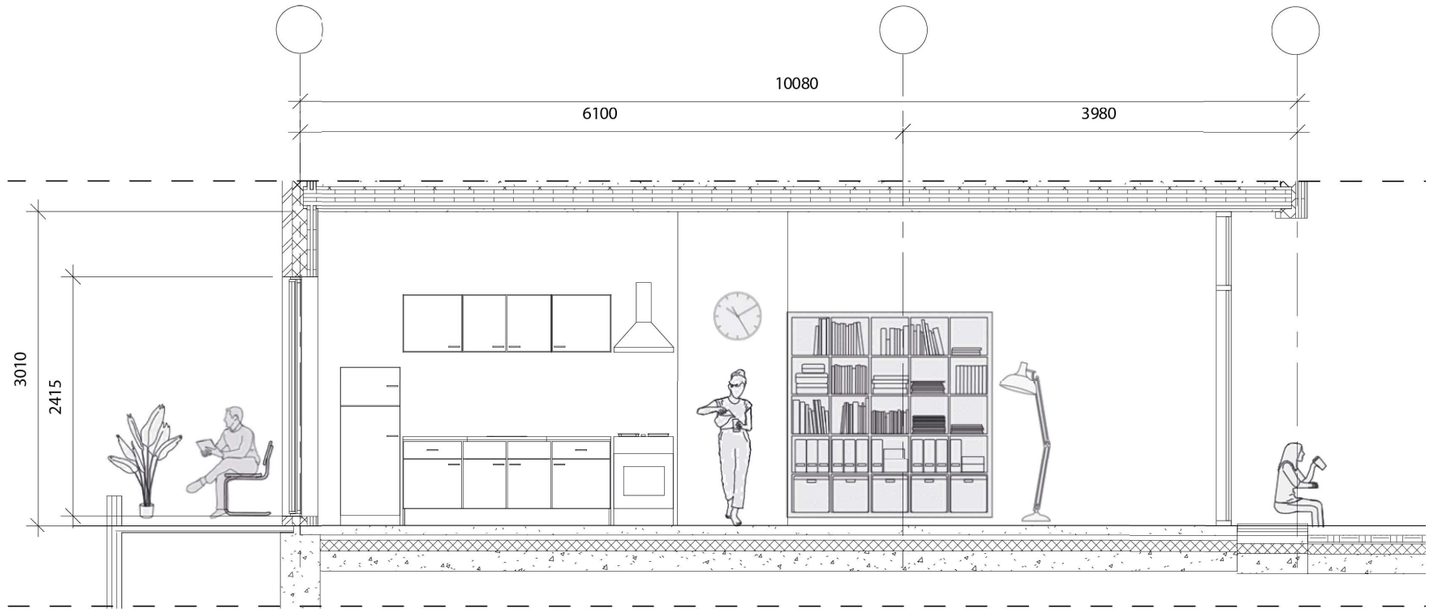
Fragment

0 0.5 1 2m

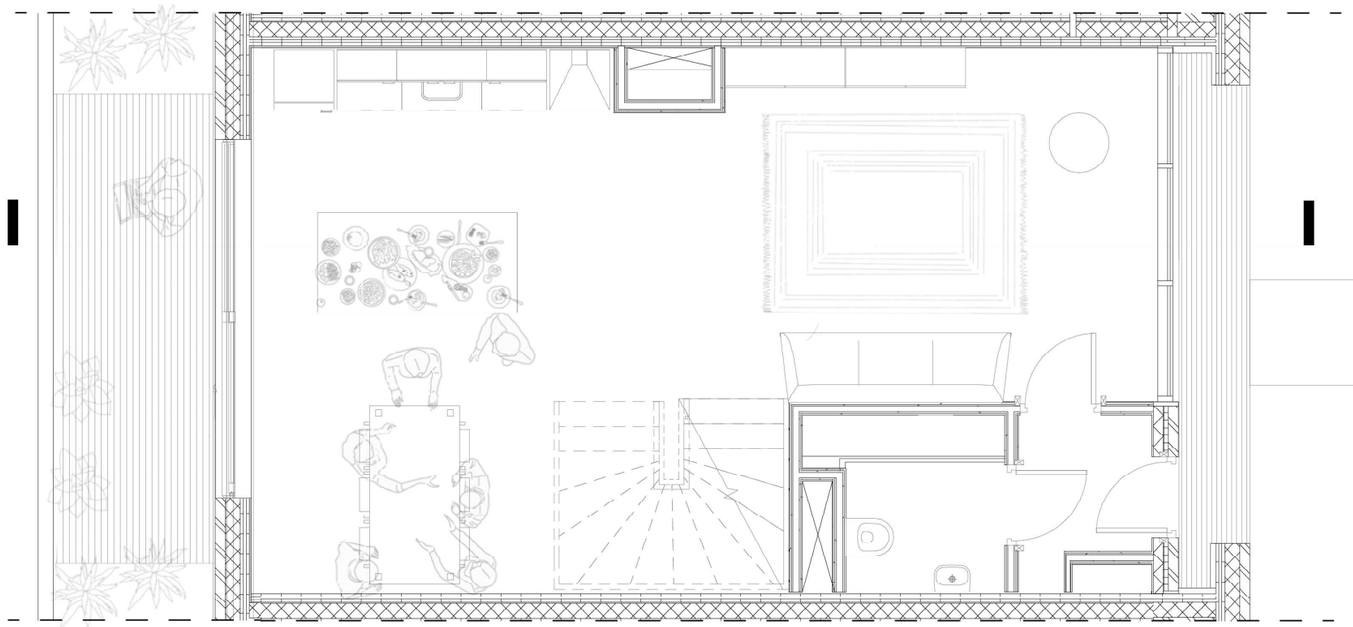




Section Dwelling typology
Townhouse



Floorplan Dwelling
typology Townhouse



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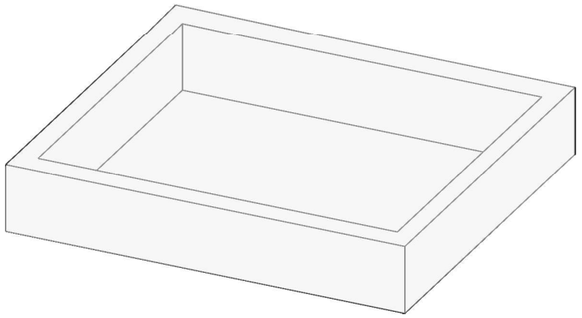
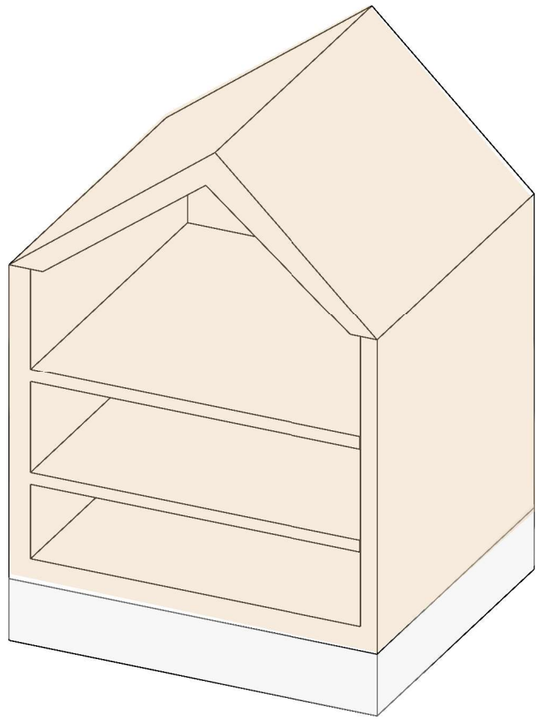
A CARING PLACE

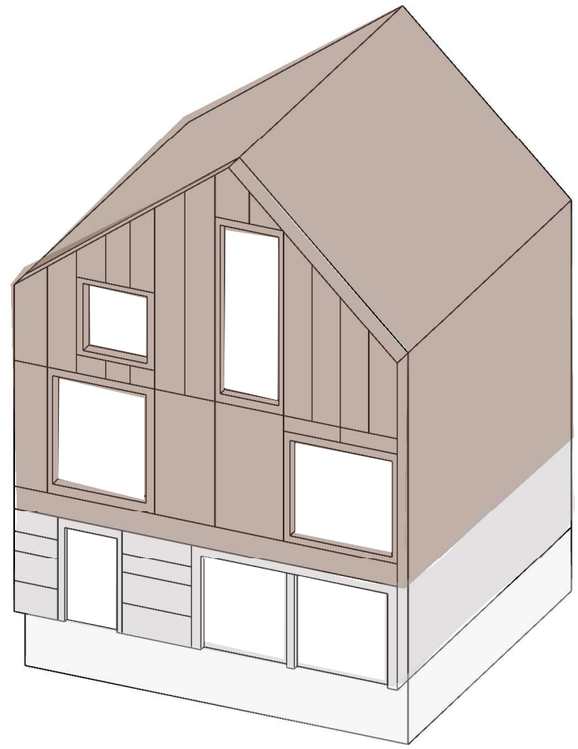
7.6 Construction



Concrete basement



CLT load-baring structure
Floors/walls/roof



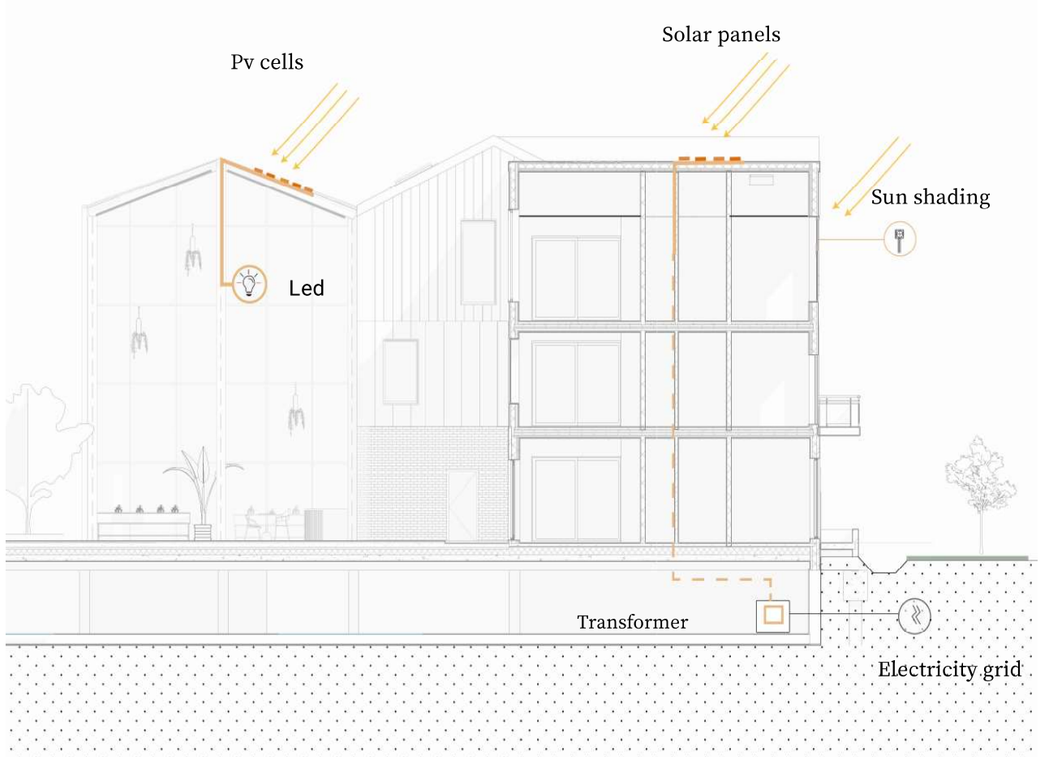
Prefab skin
Brick strips
Zinc cladding

Construction

- Concrete
- Bricks
- CLT

A CARING PLACE

7.7 Climate



Watermanagement

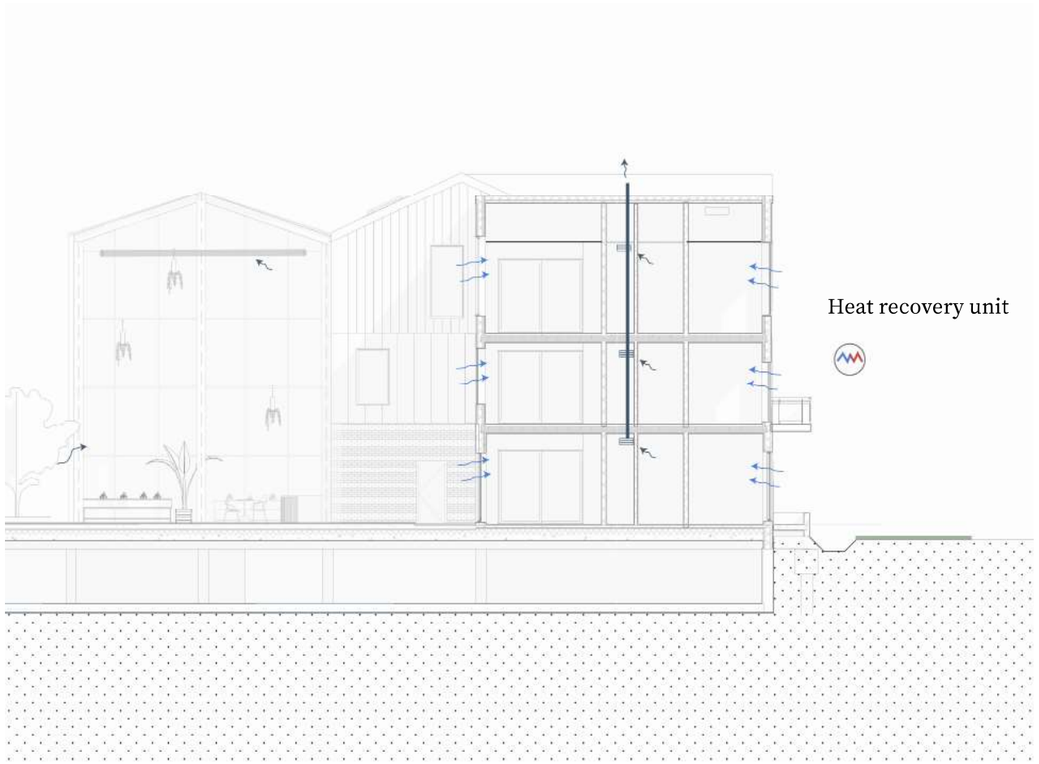
- Rainwater is collected, purified, and utilized to irrigate the plants in the orangery and courtyard.
- Rainwater is collected in the wadi and courtyard's soil.
- The courtyard and orangery stimulate biodiversity.

Sun Exposure

- Solar panels and photovoltaic cells generate energy.
- Blinds on the south façade
- During the summer, trees to the south provide shading.

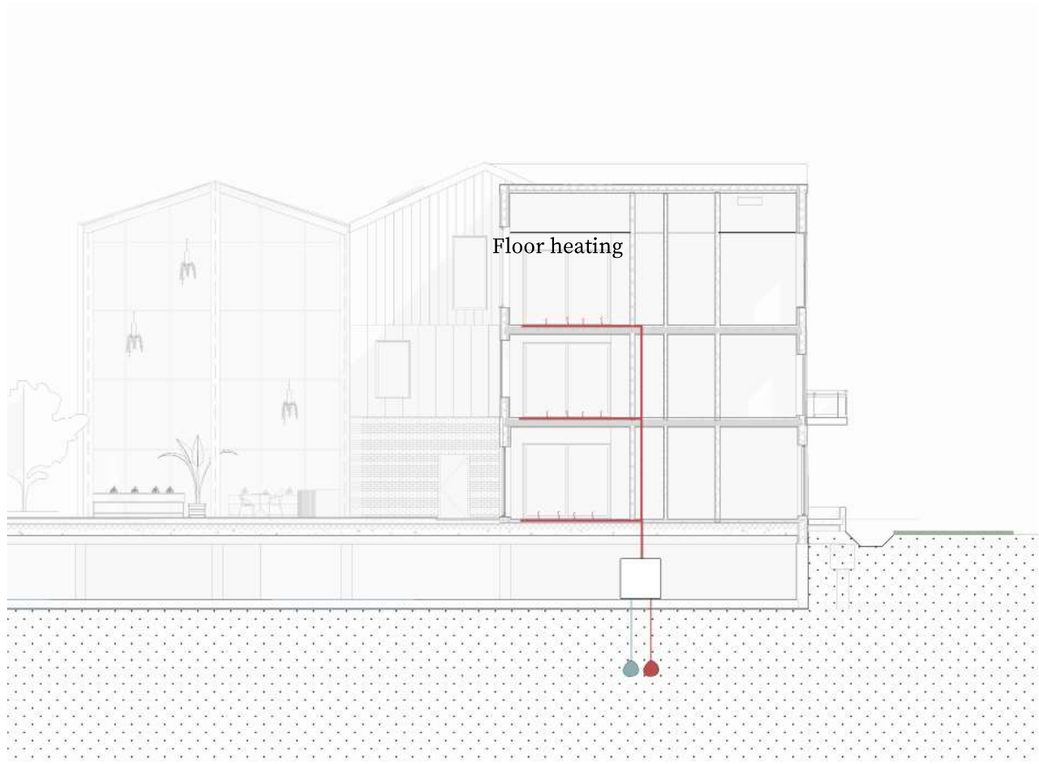
A CARING PLACE

Climate



Ventilation

- Hybrid ventilation system
- Through the windows, there is cross ventilation.
- The air is extracted from the core through the shafts.
- Units for heat recovery



Heating

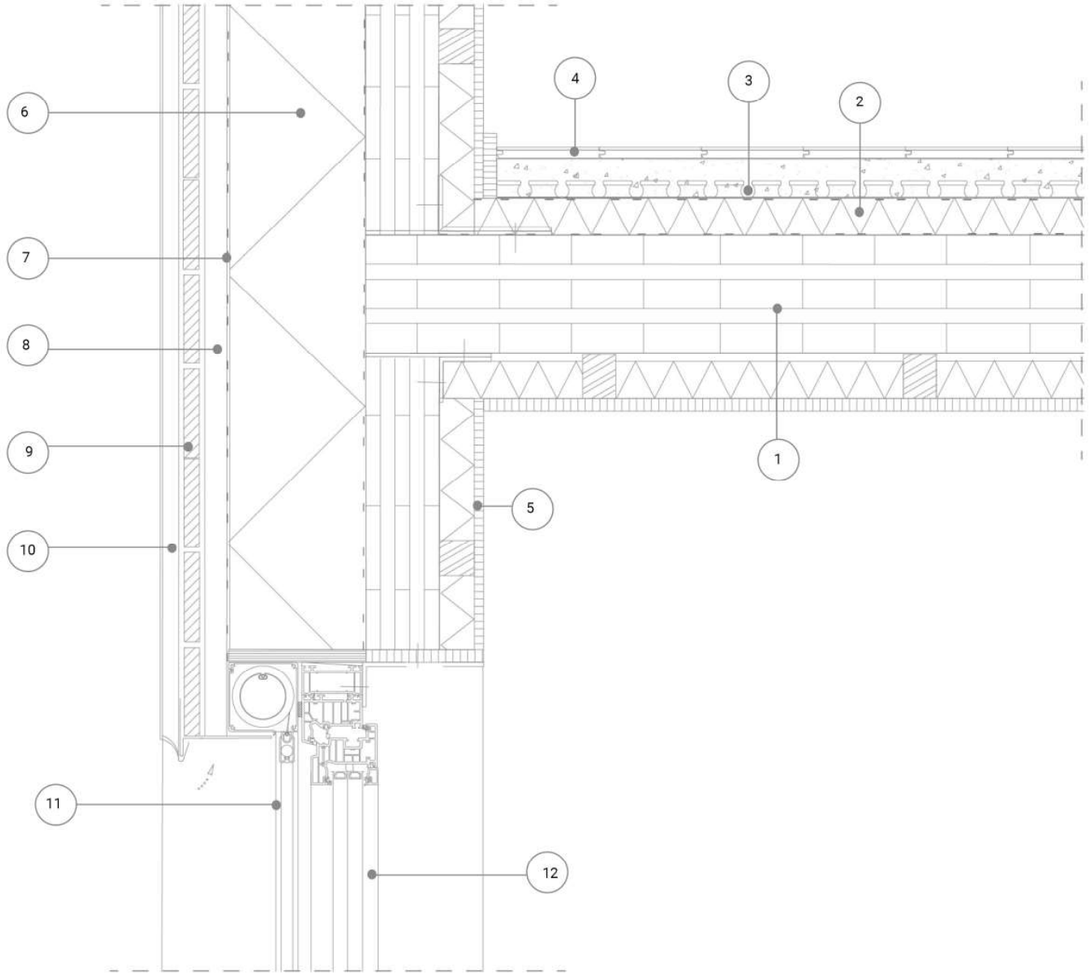
- WKO system
- Heating system for the floor

A CARING PLACE

7.8 Details

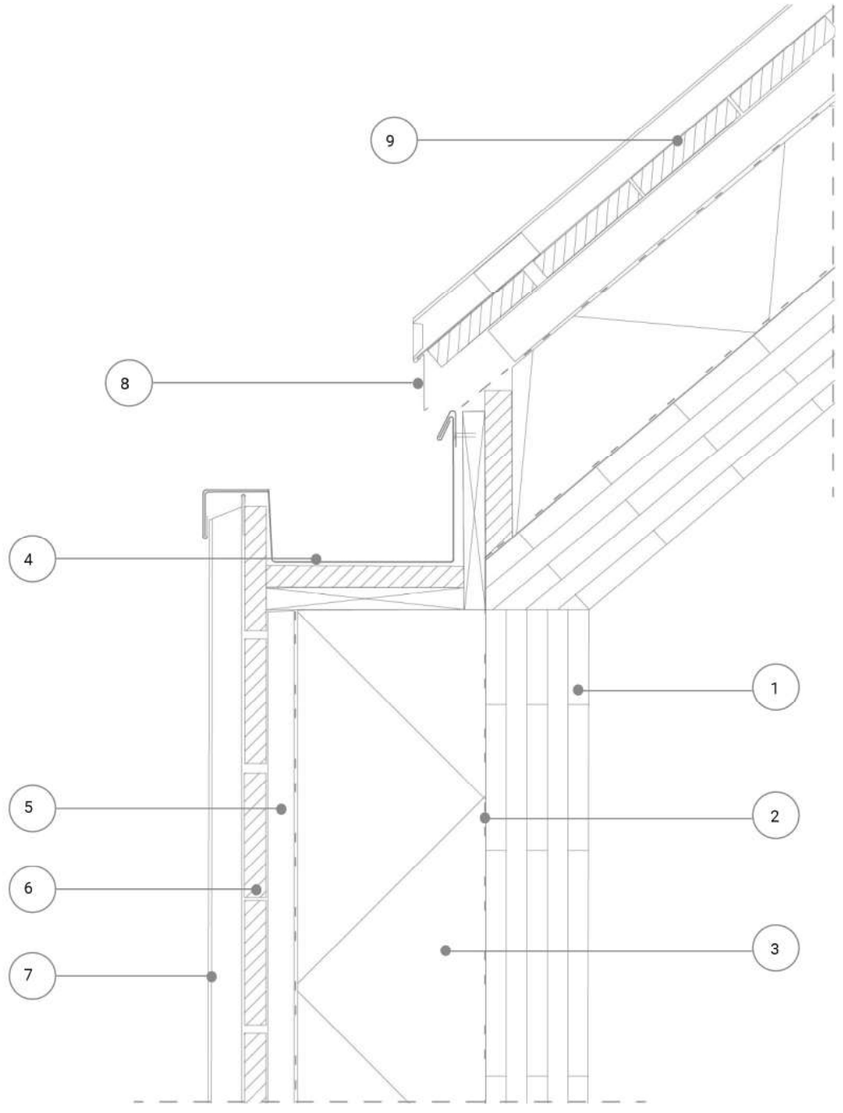
Detail V2

1 CLT Load-baring structure 160mm
2 Sound Isolation
3 Floor heatingTimber floor
4 Timber floor
5 Gipson wall
6 Mineral wool 180mm
7 Waterproof layer
8 Air shovel
9 Multiplex
10 Zinc cladding
11 Sunshade



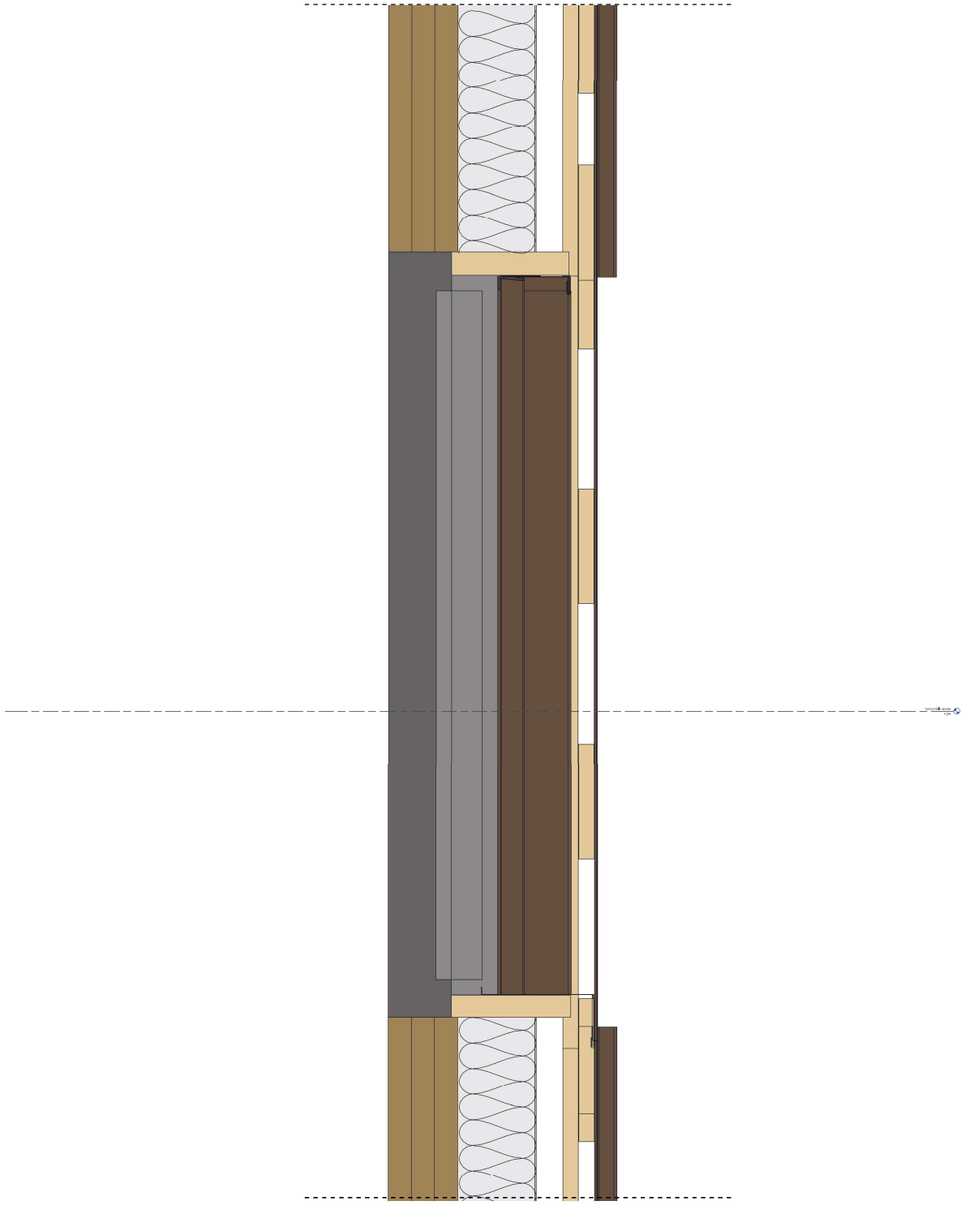
Detail V3

1 CLT
2 Vapor permeable layer
3 Isolation
4 Downspout
5 Air shovel
6 Multiplex
7 Zinc cladding
8 Drip list
9 Seamed band

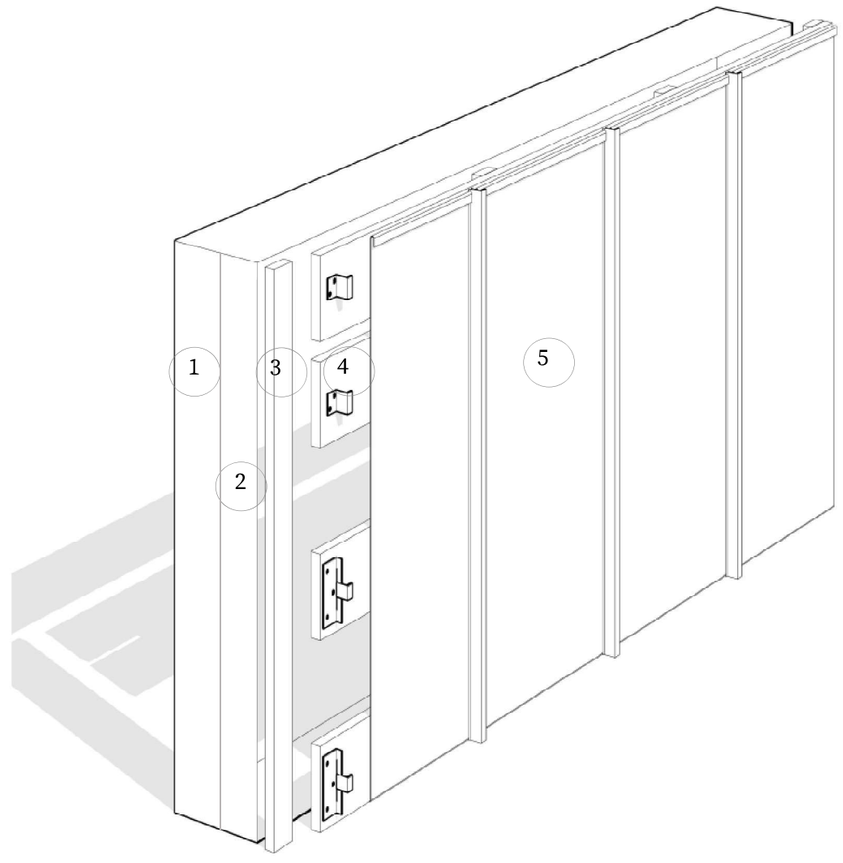


A CARING PLACE

Section facade

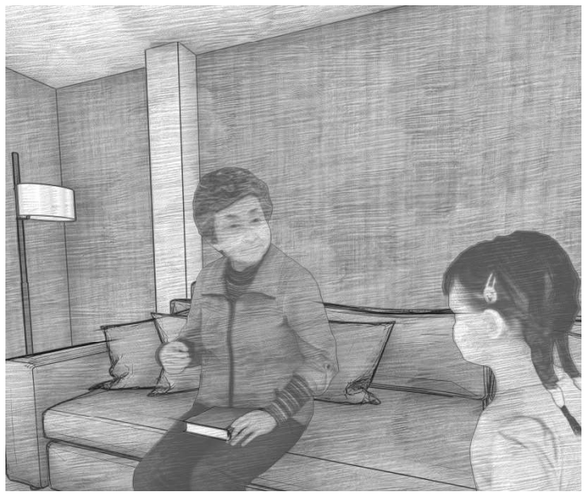


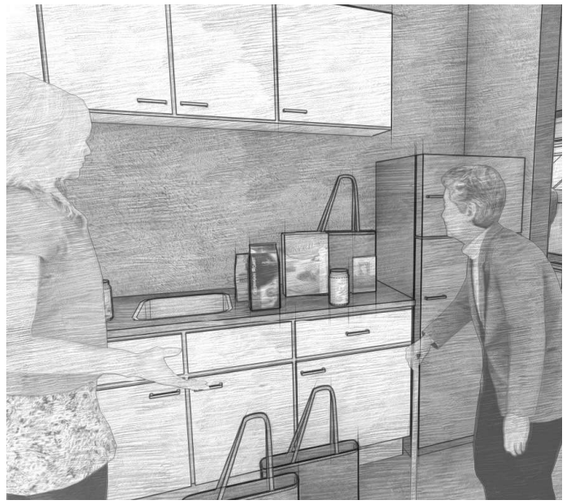
Isometric facade



1 CLT
2 Isolation Vapor permeable layer, Waterproof layer
3 Multiplex cladding system
4 Aluminium profile
5 Zinc

7.9 Graphic Noval





Reflection

1. The relationship between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS).

The Advanced Home Design Graduation Studio aims to investigate how housing design might reduce the ecological imprint of residents while simultaneously promoting social inclusion. My project goal is to establish a caring climate based on the premise and concept of intergenerational relationships. The intergenerational concept is built on generational social relations and inclusion. The reoccurring theme of care was mainly focused on care between humans. However, this expanded into care between humans and their environment, which drove my project's focus on the second fundamental theme of our studio, ecology.

To take the first steps toward developing a 'Caring Place'. I asked myself the main research question, "How can one create an intergenerational building that takes aspects of ageing and caring into account?"

This research question is divided into three sub-questions to gain a deeper understanding: What are the intergenerational care and supportcycles, and how can they be spatially articulated?

What are each target group's residential, spatial and programmatic needs?

How can one create opportunities for intergenerational encounters through the programming and design of collective spaces?

2. How did your research and design investigations influence your final design? Graduation manual: "the relationship between research and design"

According to my research findings, It is crucial to understand the requirements of the user groups' and understand current social challenges and preferences. By examining different case studies on family/elderly households, co-housing units, and intergenerational structures. I discovered that spatial arrangements, architectural design approaches and programming are crucial for fostering social inclusion.

I developed architectural design strategies. Most of these strategies are reflected in my design and design approach. I divided my research and design strategies into four design domains: Site, Building, Dwelling and Shared Spaces.

- Site

My choice of plot in our urban planning was based on the findings of existing intergenerational programmes, which indicated that the location should be in a safe environment with essential facilities within walking distance. The chosen plot is centrally located and surrounded by building barriers from the railway lines and the busy road. On top of that, the railway station is just 2 minutes away from this property, and all necessary amenities are within walking distance. This plot in our urban master plan offers a car-free zone and a safe environment for children to play outside and older people to walk or cycle around comfortably.

- Building

I determined that the building typology and circulation space are critical for bringing residents together and encouraging interaction based on the case study and literature research. As a result, I chose a courtyard typology in which the circulation area also serves as a gathering space. I uncovered the core of the courtyard's landscape design and the smooth transition between private and public when investigating the courtyards in my case study. Additional terrace spaces was added as a threshold area for the residences at the building's edges, and the personal living space on the street side was raised above ground level.

Moreover, study showed that the unit arrangement is essential and that the number of units per floor or entry determines the effectiveness of the building's meeting potential. I, therefore, incorporated clusters. A single-family residence and a senior or single-family dwelling make up each cluster. This was done to strengthen the link and expand the possibility of interaction and relationship between these two groups. This is an experimental finding of my and of course, it remains to be seen whether this concept will truly work.

- Dwelling

As the research on dwellings and flexibility has revealed, an open floor plan may define a space without making it seem small. As well as establishing spatial continuity between places, I mostly employ open-plan studios in my designs. A sliding door might be installed to block off these areas. Secondly, I expect that there would be greater inclusivity among various target groups with multiple typologies.

My units, for example, range from townhouses to apartments with rooms ranging from one to four. Additionally, the kitchens are oriented toward the courtyard so that observers may witness the activities that occur there during the day. Parents may watch their children as they play in the garden.

The design component underscored the need to create areas for individuals to be active, creative, engage with others, and seek inspiration. Consider the role of materials and light; As a result, I picked broad window sections, warm materials like wood, and warm dark brown and light colours.

- Shared spaces

I have mainly focused on the 100 corner concept in my design approach to shared spaces. Where the shared pace is placed in a high-activity location. In my design, this is near the entrance. This communal area will always remain the entrance that everyone passes through. As part of the program, I discovered that gardening and cooking are two of my target group overlapping interests, a common good based their daily routine and interest. I learned that gardening is an excellent program and activity for individuals of all generations to come together and share a voluntary responsibility. As a result, I've decided to include an orangery as a communal space in my design.

A CARING PLACE

Reflection

As a result, throughout our site analysis, I mainly focused on the social conditions and challenges in the area. The Emma house, on our site, is a senior residence in the middle of the bustling city of Rotterdam. Hearing the residents indicating that they would like to remain in the area, they have a strong connection and are familiar with it. This awakened my memory of the relationship I had with my elderly neighbour. This led to my research topic on intergenerational care and relationships.

While recent sociological studies have focused on intergenerationalties, architecture studies have tackled this problem less frequently. Most relevant architectural research has focused on elderly care or ageing in place. I identified recurrent core topics since there are gaps in the research on how design might contribute to intergenerational care possibilities.

I divided the literature study into subsections that addressed different aspects of my study issues researchers on historical, sociological, anthropo¬logical and architectural analysis, which I then supported with case studies. The case studies taught me not just how to learn from existing architectural spaces and societal opportunities but also how to avoid potential mistakes.

I discovered substantiating narratives through my interviews, which supported the literature research and case studies. And with the guidance of a graphic novel, I was able to visualize the project coming to life and develop a storyline and vision. I believe this approach has contributed significantly to the development of the architectural design tools.

How does your project relate to contemporary societal issues and challenges including the changing role of the architect?

The number of solo dwellers, solo-dwelling elderly and people living in cities is set to rise. And with age segregation, social isolation, and loneliness being current major social issues. I believe architects must consider adapting and improving cities to combat these challenges. I asked myself how environments that provide social inclusivity can be created. And if I could come up with a design proposal that would be more sensitive to the changing population's demands.

I proposed a study of opportunities for a socially inclusive and caring neighbourhood in these changing demographics, particularly considering people's desire to continue living in their own homes as they age. Based on the literature, pan analysis, and a praxeological approach of narrative biographic interviews, it is possible to conclude that intergenerational care and support are vital factors to consider as demographic, prognoses, and social challenges develop.

Existing intergenerational programmes have demonstrated the need and value of fighting societal challenges such as social isolation and age segregation. I believe I have explored an innovative and residential design that might be one of the answers to these social challenges and demographic shifts in the Netherlands.

Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.

Finding a vision and a project goal was the first step in my study. This became clear to me after the initial analysis of the site and readings. I wanted to create a community where residents felt included, and human bonds could provide care. My case study's decisions were based on their perceptions that they had effectively built these solid social bonds among their neighbours.

However, determining the variables that contributed to establishing these social networks and desirable living environment was challenging to find at first sight. And the large mass of resources and studies accessible to me was overwhelming. Picking the correct components from the big data I had collected to complete my study was the biggest challenge. I believe that if I had started my case study analysis sooner, I would have had more solid study finding and would have arrived at more relevant results sooner. This occurred to me very late in the research stage.

When it comes to design, you must work with what you have, such as the plot space. This was the most challenging element of the design process for me. I wanted to use as many of my research and design tools as possible in my project. Unfortunately, on a small plot, I was unable to scale up the notion of establishing micro-communities with varied common spaces in between. I discovered that fitting everything you want into one project is challenging and that harsh decisions must be made to focus on the most significant and feasible essential aspects. It resulted in multiple trials and errors of developing a design concept that met my requirements. However, I believe that I eventually found the right essential tools to still achieve my project goal.

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