

# SKANSHUSET

Health promotive intergenerational co-housing project

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Healthcare direction

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**CHALMERS - 2021**  
UNIVERSITY OF TECHNOLOGY

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Supervisor: Elke Miedema, Morgan Andersson



Master thesis, Spring 2021

Skanshuset  
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Architecture and Urban Design, Msc Progr – MPARC  
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# Introduction

## Abstract

## Abstract

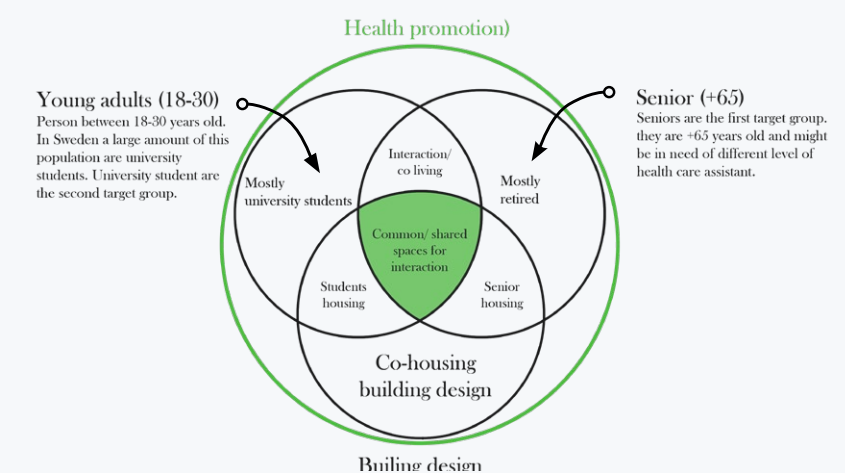
Social isolation causes a lot of problems both for a person and society. This problem can affect everyone's health. Seniors (+65 years old) and young adults between 18-30 years old who are mostly university students are suffering a lot from loneliness. That's why taking extra attention on these two target groups become an issue to cope with.

This master thesis aim is to design a health promotive co-housing project for both university students and seniors. According to this the health promotion become the main focus of study and design strategy.

Research for design is the chosen method for this study which has firstly led to studying pieces of literature. Secondly, investigating architectural elements that can encourage interaction between users in different existing projects. Thirdly interviewing seniors, student and staff to hear more about their needs and thoughts by living and working in a cohousing project and finally using a survey to complete and form the program for the proposal idea.

In intergenerational co-housing projects, common spaces are very important as a health promotive environment because all the interactions and activities happen there. Common spaces start from the most private to the most public spaces. The most private space is located in our apartment and the most public space is located outside of the building. It is considered that most of the times, an environment impacts more than one aspects of health.

The result of this master thesis shows that architecture can improve health by creating spaces that people can take more control over factors that can improve their health and life quality. Furthermore, there is more responsibility on us as human to provide safe and manageable situation both for ourselves and others.



The figure illustrates the scope of the study

Keywords: co-housing; intergenerational program; student housing; senior housing; health promotion; health promotive environment



Special thanks to Elke Miedema and Morgan Andersson for giving me the support and knowledge needed to be able to realise my idea in this master thesis.

## Who I am?

### Saman Aliramaei

Working with people to make better changes is always my passion. This is why I started to think about two vulnerable target groups , Seniors and university students. I wanted to implement the health promotion idea for their daily life in their living, working places. They should be known by their strength and not their weakness and I see a fantastic complementary between these two generations and it leads me to investigate how architecture can improve health and social inclusion between them and by that encourage them to support each other.

### Education:

#### **Bachelor in Architecture:**

Payamnour University of Bokan, Iran, 2012

#### **Master in architecture:**

Chalmers University of Technology, Sweden. 2021

#### **Courses during master education:**

Future visions for healthcare, Primary healthcentre, 2020, **Examiner:** Cristina Caira

Architecture and Urban Design, Hyperbuildings, 2020, **Examiner:** Kengo Skorick

Nordic Architecture, 2020, **Examiner:** Prof em Claes Caldenby

Light and colour course, 2020, **Examiner:** Monica Billger

Future vision for healthcare, Residential for senior, 2019, **Examiner:** Morgan Andersson

Sustainable development, 2019, **Examiner:** Liane Thuvander

### Work experience:

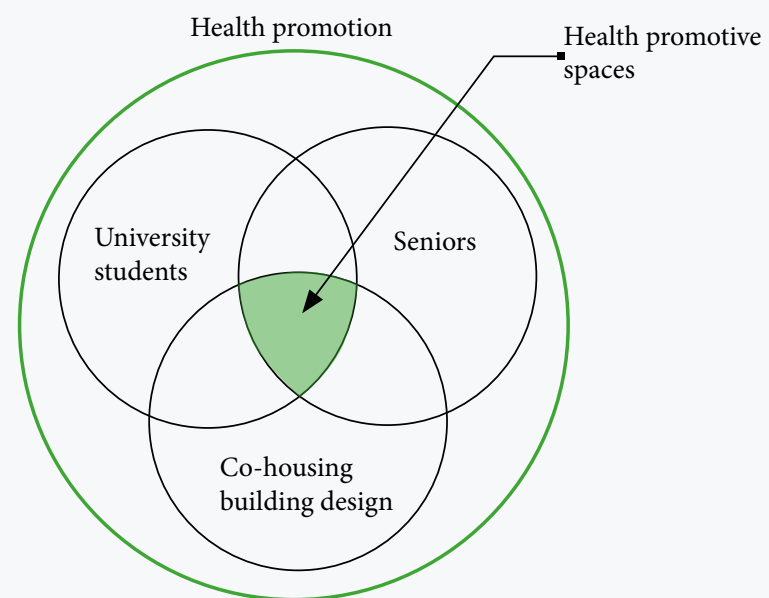
#### **Rstudio, Sweden, 2019**

Responsibilities: We were working mostly with Residential projects. I worked on illustrations, 2D and 3d drawing with cooperation with the head designers.



## Focus question

How a co housing project can be designed to promote physical, mental and social health when seniors and students are living and interacting with each other ?

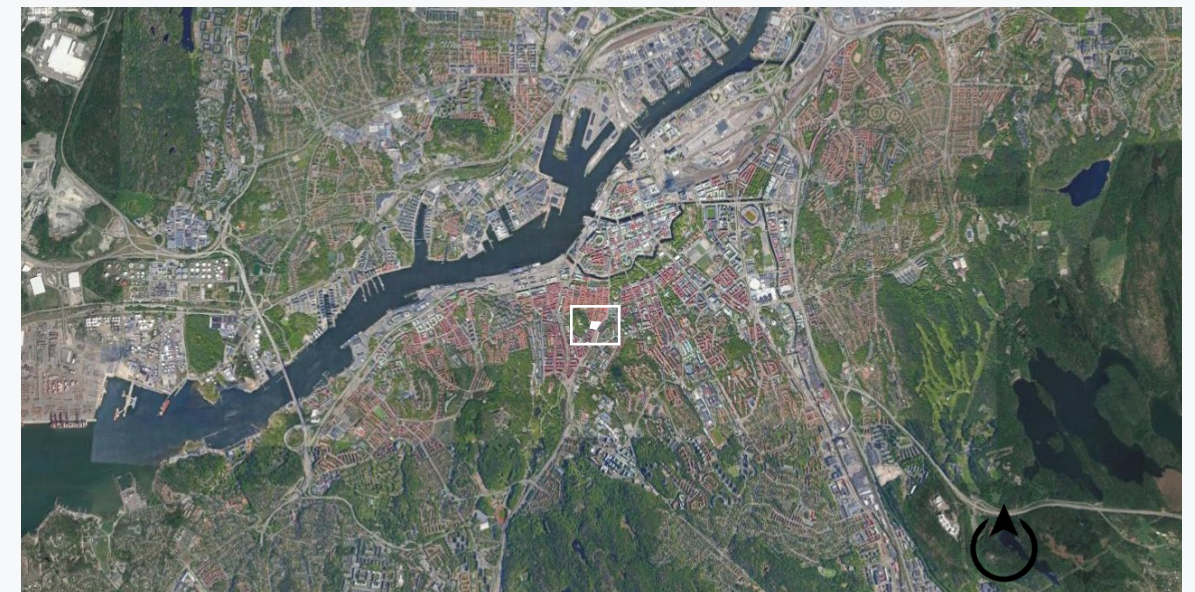


This figure illustrates the scope of the study

## Site background

This project is located at Skanstorget, the southern part of Haga in Gothenburg in Sweden. The current use of the square is a parking lot both for private and public sectors. The square is surrounded by shops, restaurant, one of the Gothenburg university's departments and Skansen Kronan which is a historical building and very dominant in the area.

Skanstorget has a big potential to be developed and become a living and meeting place not only for those who live there but for all citizens. Because of its central and existing diverse services in the area nearby there are some discussions around changing the functionality of the Skanstorget to residential and in their vision they hope that it can be place that increase safety and accessibility in this part of the city (Göteborg & November, 2014).



Location of the Skanstorget in the city of Gotenburg



Skanstorget and its relationship with the surrounding



## Cultural history

1800 century Skanstorget started to develop because of migration from villages and industrial development. And then different movements in the country as workers' movements and church movement used skanstorget as a platform to express themselves. As soon as Skanstorget got its name and built as a shop centre in 1889 it became a natural place for people to meet and make their businesses. In that time Skanstorget had a completing roll with järntorget in selling. 1941 Skantorget lose its identity as shop centre and change its functionality to the current use as a parking spot.



View of skanstorget after 1889 development

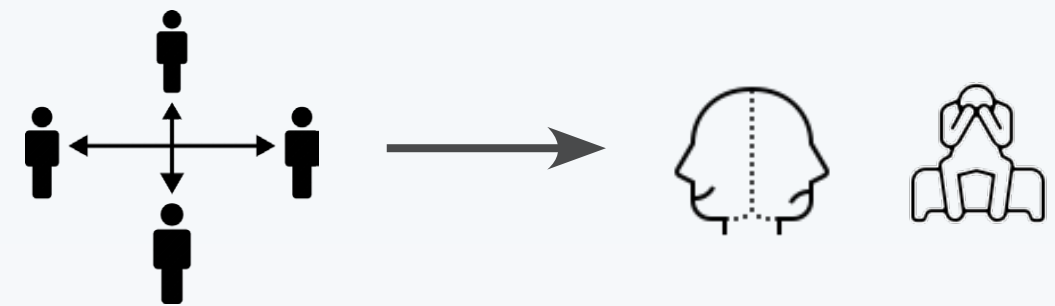


Current situation of Skanstorget

## Motivations

### Social inclusion

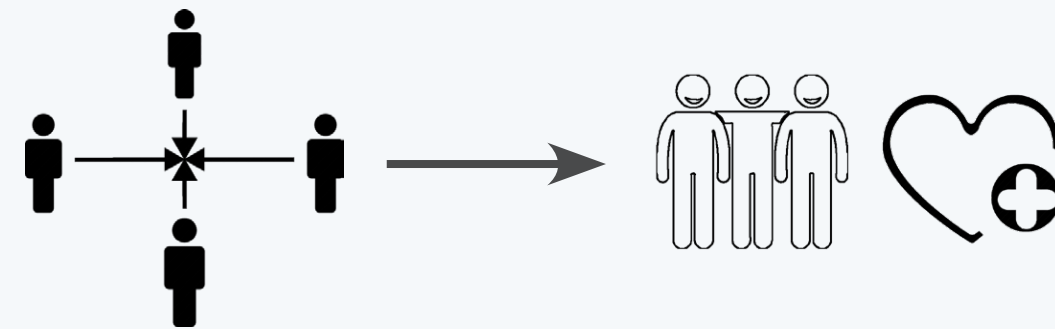
**Loneliness** impact not only psychologically as depression, less self-confidence, less self-esteem and depression but increase the risk of physical disease as Alzheimer and heart problems (Boinstitutet, 2020). Having less social engagement will increase the progress of chronological disease especially between older adults (Biddle et al., 2019). In addition to this the risk of death are higher between men and women with fewest social ties (Berkman and Syme (1979). Loneliness happens because of mismatches between social needs, relations and actual social relationships (Perlman and Peplau, 1998). And since loneliness is subjective being isolated will magnify it (National Academies of Sciences, 2020).



These icons illustrate the effect of social exclusion

Social isolation and loneliness are two different terms that work differently in a person's life. Social isolation is an objective phenomenon that refers to a lack of social contact with other people and causes the person to live alone. Loneliness is a subjective phenomenon that is about being alone.

Being physically and social active are very important for our health. Being physically active has impact not only on staying healthy and preventing disease but also achieving better health outcomes after treatment. Physical activities increase health both physically and mentally (Miles, L. 2008). Having creative and social interaction will reduce stress, depression and sense of loneliness; increase well-being, optimism, enjoyment of life and awareness about the situation and improve the quality of sleep and friendships (Greaves, C. J., & Farbus, L. 2006).



These icons illustrate the effects of social inclusion

## Ageism

Anne Karpf (2015) in her book called “How to Age” write about how Ageing has become a fear to everyone regardless of their age and how this attitude makes ageing painful. The book is not about how not to get old but about how to get old properly. She believes that we should experience our lives as fully as possible. When we are older we don’t become anyone else. We are the same person, with the same feelings and wishes. We will be a little weaker in body or brain but stronger in other sense as acceptance, wisdom, caring for others, understanding others.

I believe that we need to know seniors and students by their abilities and not disabilities and weaknesses. This thought encourages me to work on the intergenerational co-housing project to design an environment that people especially seniors and university students can live and interact in a way that helps each other to control their health and life in a better way.



The book “How to Age” (2014) by Anne Karpf

## Aim and Delimitation

### Aim

The main aim of this thesis is to design a health promotive building where seniors and students are living and interacting with each other. In this thesis, I do pay attention to the social and environmental aspects of health promotion. The building design encourages users to be physically and socially active.

### Demilitation

In this thesis, I do not pay attention to political, personal and health care system change aspects of health promotion. The thesis will not cover the pathogenic approach to health promotion. In the salutogenic approach, health behaviour and health equity perspectives are applied for proposal strategies. In the design proposal, the main focus will be to create healthy environments and I will not consider economic aspects.



# Background

## Ageing



These icons illustrate ageing process

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*Ageing is a process that affect all of us and has a different definition from being old. Regardless how old we are, we are in this process. In contrast, the term "old" is a relative term which is mostly used when it is about comparison between subjects. For example a child can be older compare to another child (Woodrow, 2002).*

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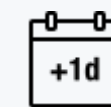
Ageing involves everyone and it shows itself through different ways in a person's life gradually (Woodrow, 2002). There are three different dimensions which can illustrate the development of ageing:



**Physiological ageing** is about losing physical function unnoticeably when we are getting older (Beauvoir, 1970). The progress to decline the physical function are varied but can be related to some behavioural habits and nutrition (Woodrow, 2002).



**Chorological ageing** is classifying a person who reach a specific age number (e.g. 65 years) (Beauvoir, 1970). This number is related to life expectancy in community and can be varied even in different historical periods (Woodrow, 2002).



**Sociological ageing** which has a direct link to productivity and it is related when the person lose its effect on the society or workplace (Beauvoir, 1970). It means older person can experience less sociological ageing by being active and effective (Woodrow, 2002).

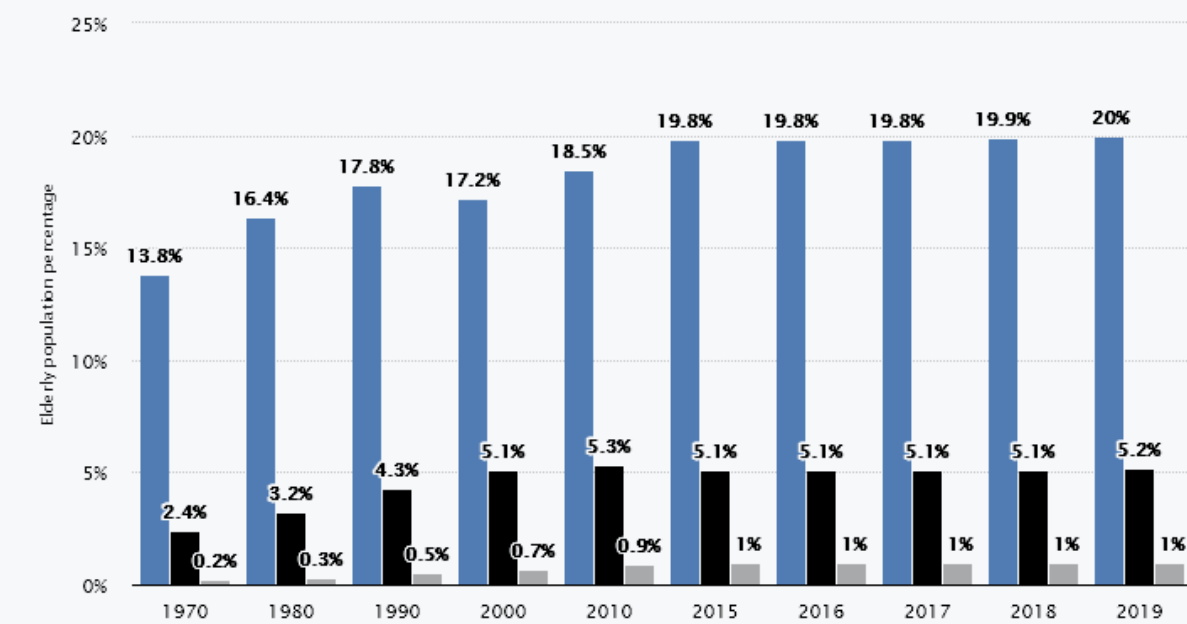
In addition ageing is a process that affects us mostly mentally. We feel old when we are isolated and have no friend or relatives around us. We feel old when we can not care for ourselves, we feel old when we think that we are not productive or useful anymore, we feel old when we get sick all the time, we feel old when our age number is increasing. But I believe by being more active and open to people and opportunities we can stay healthy and effective; and then we can enjoy our ageing process because we will always have people around us to interact an socialize with.

## Ageing in Sweden

In Sweden, most elderly leave their homes to an elderly facility when they cannot meet their needs by themselves. It means that they are very frail and need a lot of assistance (Anderzhon, 2007). By ageing people are more willing to stay at their home (Falk 2010). It can be because they are emotionally attached to their friends, neighbours and home (Hurtig, 1995). Furthermore, by moving to a new place, their social range will be re-

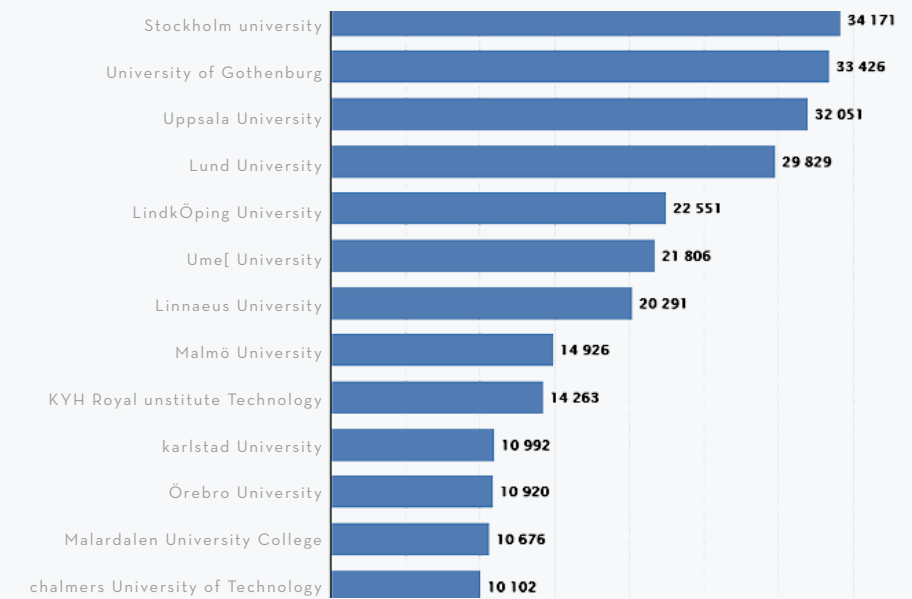
duced as well (Pastalan & Schwarz 1993). I think intergenerational co-housing can help seniors to experience less loneliness and social isolation by creating a health promotive environment where they live and interact with new people both within their generation and and younger generation.

## USERS



Elderly population percentage, (Statista Research Department, 2020)

Seniors are the first target group. They are +65 years old and might be in need of different level of health care assistants. In Sweden around 20 percent of population are 65 years old and older (Statista, 2020). Statistikmyndigheten estimate that elderly population in Sweden is going to increase continuously (SCB, 2018). And it shows the increasing demand of elderly care in Sweden.



Number of registered students in Sweden universities, (Statista Research Department, 2020)

A young adult in age 18 to 30 life is changing rapidly from being at home to be responsible for their life. In Sweden, a large amount of this population is university students. They need to build their future and decide on their education, career and social interaction (Coon & Mitterer, 2013). In this period having friends and intimate relationships are essential to healthy psychosocial development (Rokach & Sha'ked, 2013). Meanwhile, there are difficulties to be a part of a larger community or finding relationships, loneliness will be the result (Rokach & Sha'ked, 2013). Gothenburg has at least 45,000 registered students and is one largest host for students (Statista, 2020).

The result of a study by Boinstitutet in 2020 shows that one of four young adults (19-24) feel alone in their homes in Sweden. It means they don't have friends nearby and it causes them to be isolated in their homes (Boinstitutet, 2020). This organisation's focus is on social sustainability and sustainable housing, and they are looking for new ideas for living. The Report shows that youth are willing to arrange social activities with others in the neighborhood. It needs to create places for some interesting activities such as kitchen, celebrations room and gym (Boinstitutet, 2020).



The figure illustrates some physical and social activities, such as kitchen, celebrations room and gym

# Health promotion

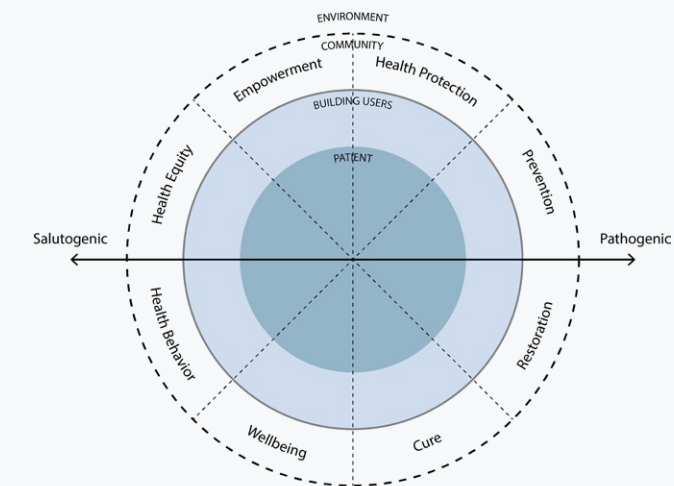
“The process of enabling people to increase control over and to improve their health [in which] health is a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity’ (WHO, 1986).”

*Health promotion definition*  
**The World Health Organization (WHO 1986)**

The term “health” has been thought of a resource for life, rather than the object of living’ (WHO, 1986a). Then Health is an opportunity for people to be productive in individual, social and economical aspects of their lives (WHO, 1986a).

There are many definitions and understandings of health promotion (Green et al., 1999). They may have differences but convey the same concept. It varies based on the context that health promotion is discussed (Johansson, Weinehall, & Emmelin, 2009). One of the holistic definition of health promotion has been presented by Elke Miedema, she is an architect and has researched on Health promotive building designs concepts. She defines health promotion as:

‘A process devoted to empowering (vulnerable) individuals and communities to take control over the factors that positively influence their health and quality of life including their social, natural and built environment’ (Miedema, 2020).



Dimensions of health promotion (Miedema, 2020)

Miedema (2020) describes two different approaches for health promotion which are salutogenic and pathogenic orientations. Salutogenic is focusing on improvement of health and pathogenic pay attention to the diseases. The result will be better if we pay attention to both salutogenic and pathogenic as a parallel process (Miedema, 2020).

## Salutogenic



**Wellbeing:** this perspective has focused on individual health and describes a general view of health. An environment that for example can create a positive distraction, feeling of safety and comfort is a wellbeing promotive design (Miedema, 2020).



**Healthy behaviour:** this perspective has focused on stimulating health promotive behaviour as physical activity, social interaction, and healthy nutrition. A design will encourage a person to take the stairs instead of the elevator or motivating them to cooperate and meet in common spaces and consume healthy foods is stimulating healthy behaviour (Miedema, 2020).



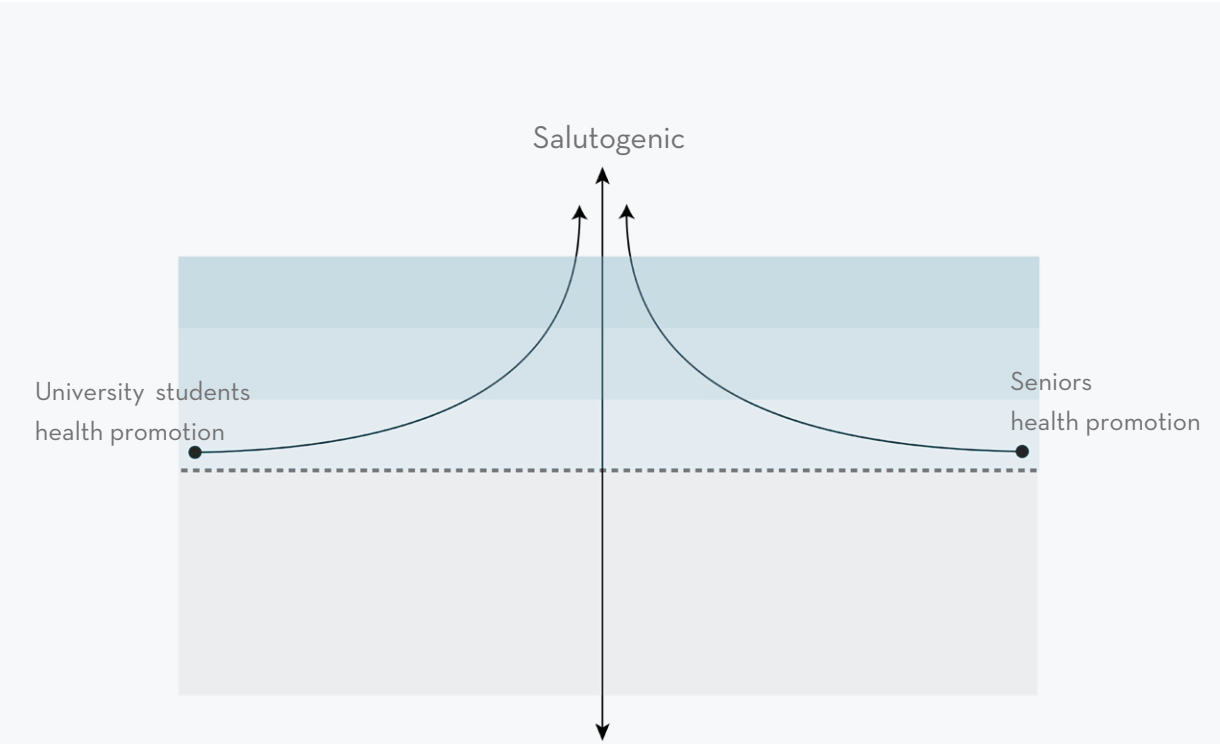
**Health equity:** Accessibility is about existing physical, economic and information accessibility for everyone regardless of their disability or weakness (Miedema, 2020).



**Empowerment:** this perspective is focusing on giving the participant or users the control and part to take care of their health by involving them in the design process and buildings routine. It can create sense of belonging and responsibility in the person.

As long as no diseases have been defined for the users and residents in the co-housing designed for seniors and students, the salutogenic approach will be considered to achieve health promotion. In the salutogenic approach health behaviour and equity perspectives will be the main focus in the design proposal.





This diagram shows the common approach of health promotion in salutogenic orientation for seniors and university students

As there is no sicknesses or conditions that have been defined for seniors or university students, the goal of this project will be to find a common and holistic approach to improve health for seniors and university students in salutogenic orientation.

The chart below define health promotion , health promotion for each users and the outcome of a health promotive building by paying attention to the definition of health promotion in the context of senior and student cohousing design.

Health promotion	Is a process that people are enabled to take control over factors that can improve their social, physical and mental wellbeing.
Health promotion for university students	Is a process that enables university students to take control over factors that can improve their social, physical and mental wellbeing.
Health promotion for seniors	Is a process that enables seniors are to take control over factors that can improve their social, physical and mental wellbeing.
Health promotive building design	Is a build environment that provides, supports and maintains health promotion (Miedema, 2020).

# Health promotive building design

There are several design guideline lines related to the building and its surrounding that we can use while we are designing a health promotive build environment (Dumitrache et al., 2020).

## The buildings guidelines:



**Stimulate physical activity:** spaces that motivate users to be physically active as gym, climbing walls, multipurpose rooms or large open spaces.



**Wayfinding:** Using landmark and courtyard to create both interesting views and clear wayfinding structure.



**Challenging ground for diverse users:** designing ramps and stairs in combination with other circulation elements to create easier acceptability.



**Access and views to nature:** it is very important to have visual and physical accessibility to nature inside and outside of the building.



**The place for social interaction:** spaces to create informal interaction between the users in common areas.

## The surroundings guidelines:



**Access to healthy food:** existing food and fruits markets or opportunity to plant in or near the building.



**Lively urban site:** having diverse programs, spaces and services to be part of the neighbourhood. These places are park, cafe, gym, art exhibition, walking path, places for events, places for gatherings.



**Support physical activity:** walking path, playgrounds, cycle band, bicycle repair workshop, running path which can open for the local community as well.



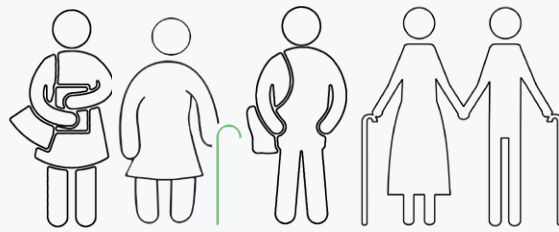
**Seasonal design:** create an outdoor environment suitable for different climate and seasons.



**Access to nature:** spaces that motivate restorative activities like gardening and being in nature.

## Intergenerational programs

Intergenerational interactions and friendship reduce ageism and it happens in both direct and indirect forms. Face to face direct contact can easily happen in daily life; in living and working spaces (Gentile, 2017). Being in contact with other generations has positive effects on young people to control their thoughts about ageing and it brings more energy to older adults when they have contact with young people with positive attitudes (Gentile, 2017). As it is mentioned the quality of these interactions are more important than their frequency (Gentile, 2017). Some activities which can improve interaction are those that require cooperation, sharing goals and information and possibilities to learn from each other (Drury et al., 2017).



Seniors and students icon

### Recommendations for Intergenerational Contact Programmes

Intergenerational social interaction and health promotion might be more easily achieved when participants are equal in the number of people of a different generation, program occurs in a neutral environment, possibility to meet people with same interests and status, spending time together and coworking for the same goal (Drury et al., 2017).



1) Equal number



2) Neutral environment



3) Equal status



4) Spending time together



5) Cooperation for same goal

To fulfill the intergenerational programmes' recommendations, there are almost the same amount of apartments for each generation including single and couple apartments in the design proposal. Common areas have almost the same environmental quality as structure, layout, finishing and accessibility. The couple apartments are located on the same floor to create an equal marriage status between residents. The activities are varied and the person can take a different level of participation in them and it can easily encourage residents to spend more time with each other by cooperating for the same goal.

# Research

## Shortly about the chapter

This chapter presents what I have learned from studying different projects, interviews and survey. The Research chapter has fifth parts, the first part I will compare two projects from different architectural aspects. In the second part, six existing and relevant projects are presented shortly and I will highlight one or two architectural elements in them. In the third part, I will share some parts of the interviews that I have done with two students, three seniors, and three senior housing staff. And in the fourth part, I will present the online survey outcomes and finally the architectural interpretation out of the survey and interviews.



Case study and reference projects



Interviews

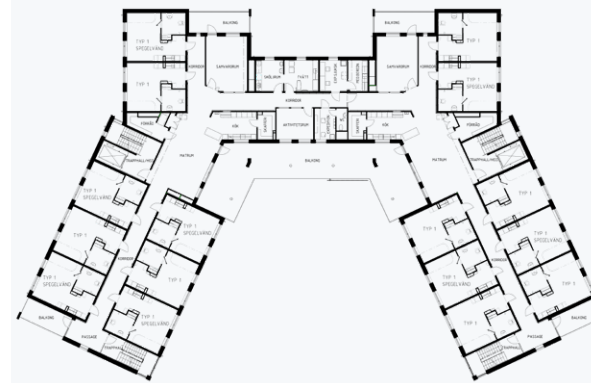


survey

## Case study

In this section two projects will be introduced and compared in different aspects as form, size, contribution of spaces, circulation and the daylight entrances into the building.

**Project one:** The first project is Karlslundsgården senior housing, Located in Örebro, Sweden, for those who are suffering from special sicknesses. Karlslundsgården has 68 apartments which has been divided in nine units between four floors. Each floor includes apartments, common spaces, balconies and place for the staff. Dining room, lobby, activities room are all placed on the ground floor.



First floor plan



View of the courtyard

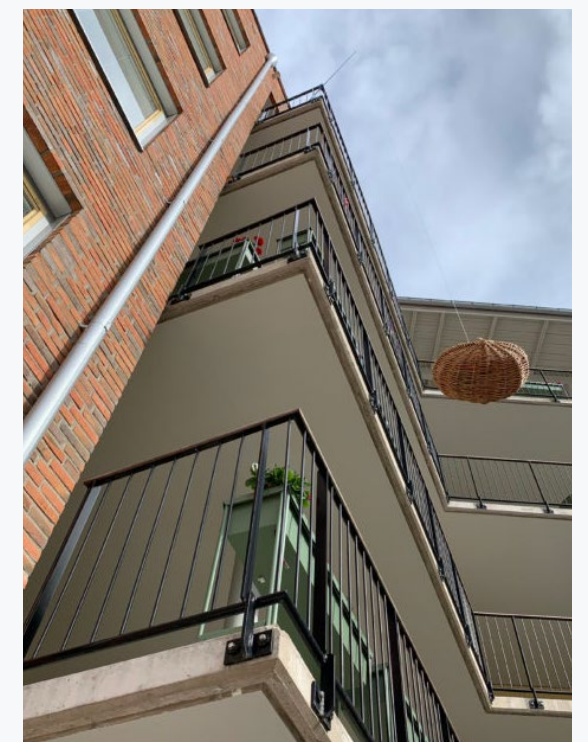


Single apartment

Couple apartment



Active connected balconies



View of balconies



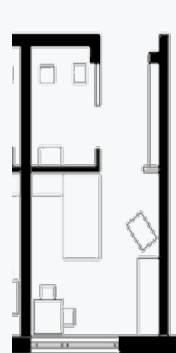
**Project two:** The second project is Nursing and Retirement Home in Leoben, Austria. This project has fifty apartments which are divided in two floors and each floors include apartments, common spaces, terraces, administration and Courtyard but most of the public and semi-public spaces are located on the ground floor.



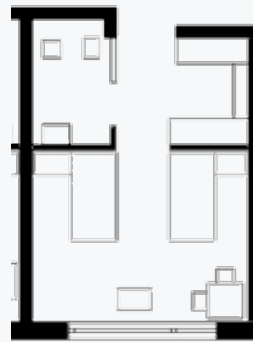
First floor plan



Entrance view



Single apartment



Couple apartment



View of balconies



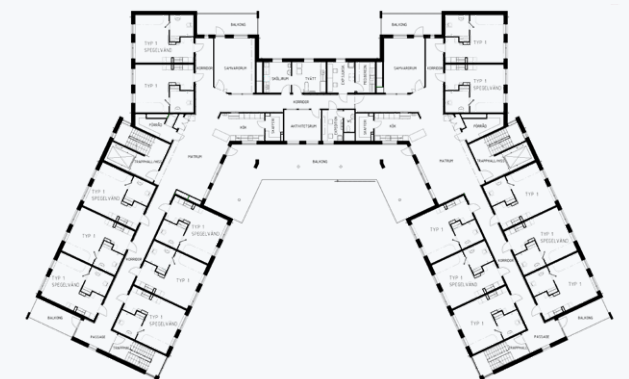
View of the courtyard

## Spaces distribution

Apartments, common spaces as meeting rooms and kitchen, balconies, administration and spaces for circulation as corridors and stairs are common in both projects on the first floor which has been distribute in different ways. In Nursing and Retirement Home of Leoben all spaces are located around the administration and courtyard and in the Karlslundsgården spaces are located in two wings of the building. In the Leoben home meeting places are contributed in different corner but in the Karlslundsgården the main meeting environment is located in the middle of the building.



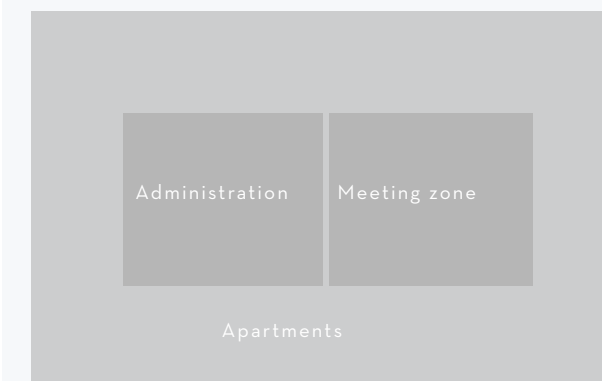
First floor of Leoben home



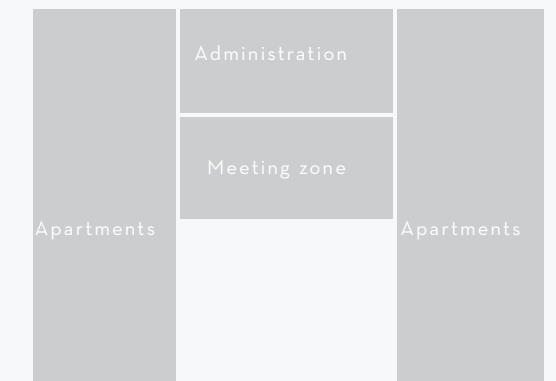
First floor of Karlslundsgården

## Plan simplification

In this illustration first floor plan has been simplified to understand more about spaces and their distribution on the plan. As it is shown administration and common spaces has been located near to each other and it can be because of having better focus on residents in theses specific areas and respect privacy for the residents. In another word residents can experience both individual and social life by their own willingness. Meeting spaces in both project has direct access to the daylight during the day.



Leoben home plan simplification

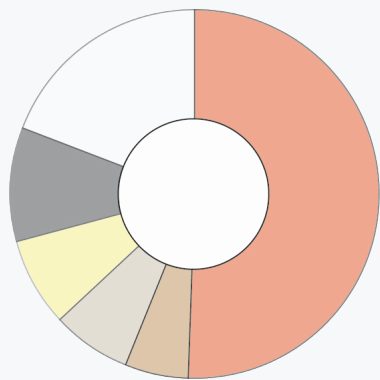


Karlslundsgården plan simplification

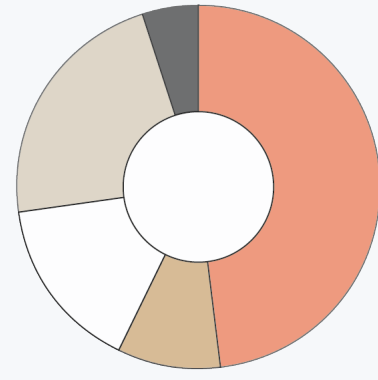
## Room percentages

This illustration shows how many portions each space has been taken on the first floor. As it is projected in both projects near to half of the spaces belong to the apartments and then common areas and balconies. Circulation is an important factor in the senior housing as well which is motivating resident to be physically active and walk around to find their destination.

■ Apartments    ■ Common spaces    ■ Balconies  
■ Circulation    ■ Administration    ■ Courtyard



First floor room percentages of Leoben home



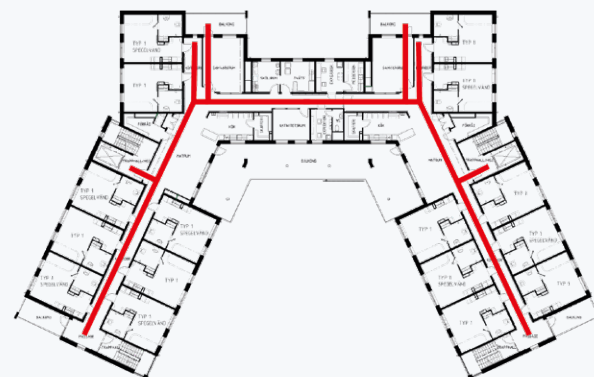
First floor room percentages of Karlslundsgården

## Circulation

Vertical and horizontal communication are important that can make accessibility easy and health promoting or difficult and harmful. In the Leoben home circulation occurs very central along the courtyard and administration and in the Karlslundsgården circulation is formed more separated and it is because of the shape of the building and placements of the different rooms. In the Leoben home there is only one core for vertical communication but in the Karlslundsgården there are four cores located in different parts of the building.



First floor of Leoben home



first floor of Karlslundsgården

— Circulation through the building

## Daylight

Daylight as an important element for promoting health and offering a place for gathering has been used in both projects. In Leoben home, courtyard and glass roof provide daylight into the building in different spaces. Daylight goes through all levels and creates a bright, airy atmosphere with a combination of light wood and glass inside.

In the Karlslundsgården there is no courtyard or inner garden to allow daylight inside but the Central terrace with the view to the yard and winter garden has created a place to get sun and enjoy participating the activities that occur outside.

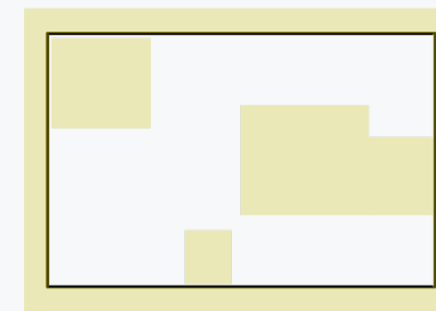


Leoben home courtyard

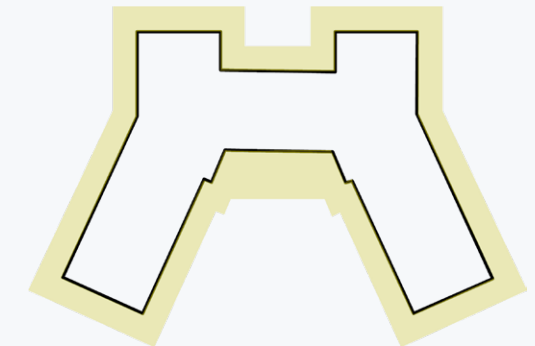


Karlslundsgården courtyard

The illustration below projects the openings as windows, courtyard and balconies that provide daylight inside the building.



Leoben home approach to get day light



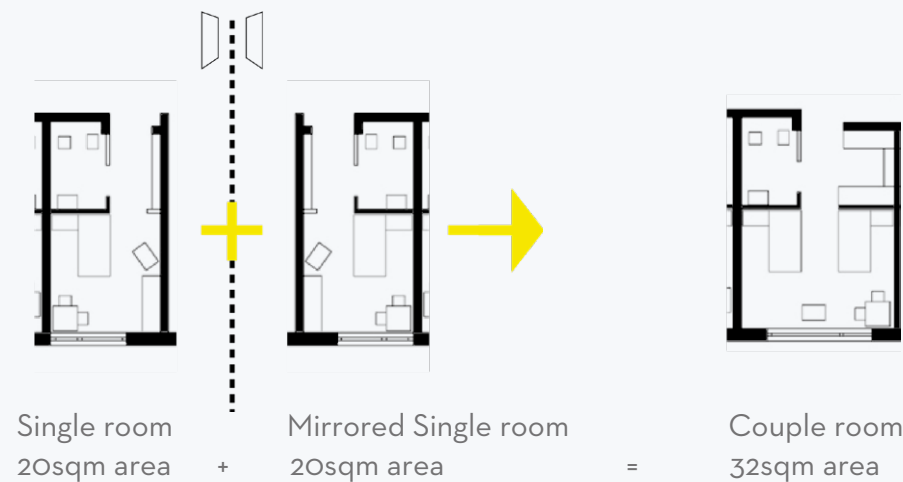
Karlslundsgården approach to get day light



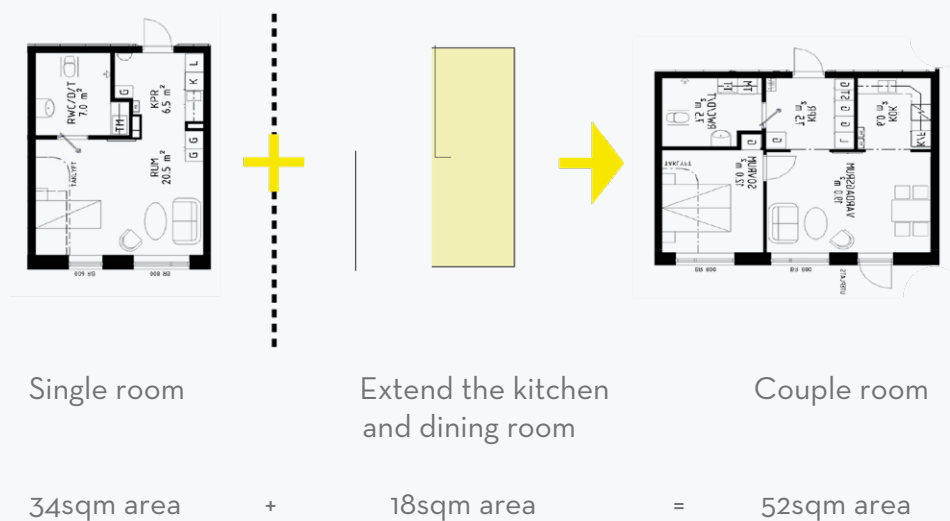
## Apartment's prototype

Apartments are the most important spaces in a residential project that is considered as home and zone of comfort. Here both single and couple rooms will be compared in terms of their sizes, zones and accessibilities to zones.

In Leoben home single room is around 20 sqm and couples room with around 30 sqm area are a simple combination of single room plan with its reflection.



In the Karlslundsgårde both single and couple rooms are larger compared to the Leoben home. A single room has around 34 sqm area and a couple room with 52 sqm area offers a separated bedroom for the residents.



## Reference project

Student dormitory, Tietgen Dormitory, Copenhagen, Denmark



View of inner garden



View of building entrance

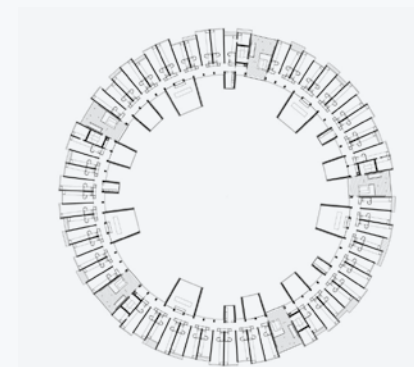
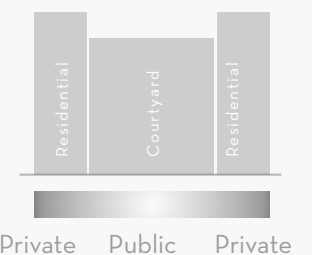
Tietgen Dormitory is a project made by Lundgaard & Tranberg Architects in 2005 in a nearby area of the urban context in Copenhagen. The intention of implementing this project was to realise 'the dormitory of the future' idea through a clear vision in architecture. This house includes 400 rooms for students in addition to a variety of common spaces (Lundgaard & Tranberg Architects).

The courtyard which is located in the centre of the cylindrical volume offers the communal space for all resident to meet and interact. Inner common spaces are all facing the courtyard and the rooms are toward the outside (Lundgaard & Tranberg Architects). There are five units on each floor and each unit consist of twelve rooms, common spaces and a kitchen. The kitchen and common spaces have a face toward the garden and rooms are face to the outside.

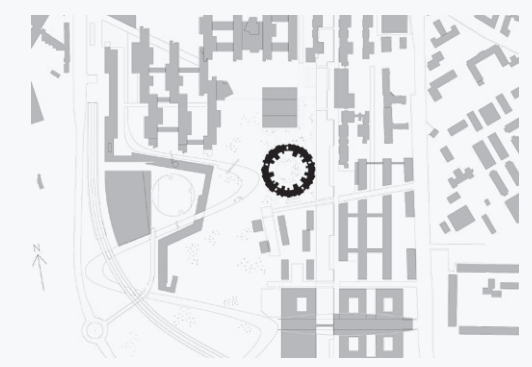
### My reflection:

Inner garden and privacy gradient are two considerable architectural elements in the project. Courtyard has created an interesting view and at the same time simplified the wayfinding through the physical environment.

Considerable architectural elements



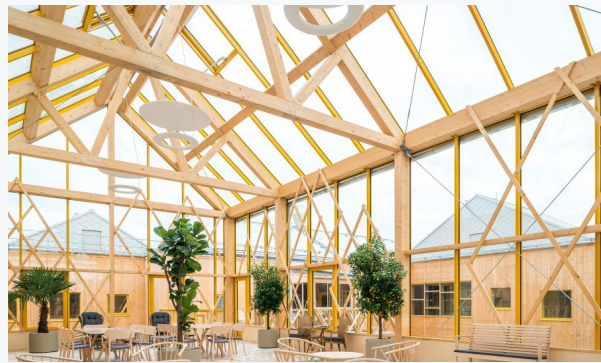
Second floor plan



Site plan



## Senior housing, Trädgårdarna. Örebro, Sweden



View of winter garden



View of inner garden

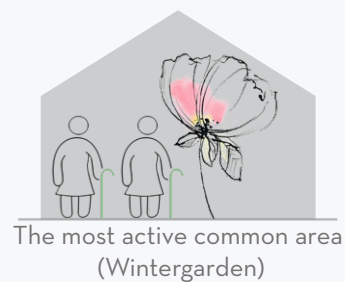
Trädgårdarna is located in Örebro in Sweden with a very good connection to the city centre. The house has made a fantastic opportunity for residents to participate in gardening and taking care of the plants (Örebro kommun). Studies show that gardening has a positive impact on physical, psychological and social health and can prevent health issues that we are facing today (Soga et al., 2017).

The house provides 81 single apartment divided into ten units in addition to four couple apartments units. Residents are experiencing that they are living on their requirement and beside their private life they are sharing their time with others in different zones provided for different interests and needs in the house inside and outside the house (Soga et al., 2017).

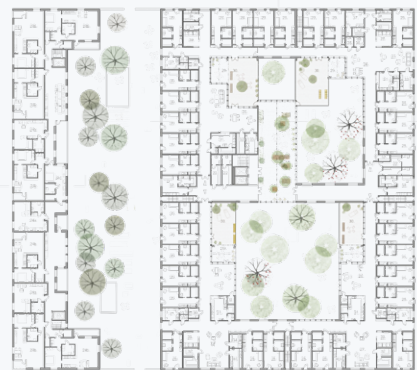
**My reflection:**

The building design provides different common space environment due to marital status. Common spaces have a public gradient and between the most public area is courtyard which can be used in every season of the year with a view of the courtyard and sky.

Considerable architectural elements



The most active common area (Wintergarden)



Second floor plan



Entrance view

## Co-housing, Vindmøllebakken, Stavanger, Norway



View of inner garden



View of building entrance

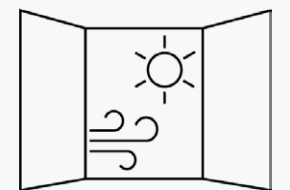
Vindmøllebakken is a co-housing project located in an urban context in Stavanger that offers 52 apartments in different sizes. The main idea of the project is to build a sustainable living space that reduces carbon footprint and improve health for the residents at the same time. This place suite for anyone willing to live near others.

Siv Helen Stangeland who is one of the architects for Vindmøllebakken believes that living in the cohousing projects will benefit resident both socially and financially.

**My reflection:**

Wood and daylight are two elements that are working very tightly together to improve the quality of spaces in the building. Using big windows and openings let the daylight inside from different corners. I believe that light material makes the space more spacious and at the same time understandable for users to orientate themselves.

Considerable architectural elements



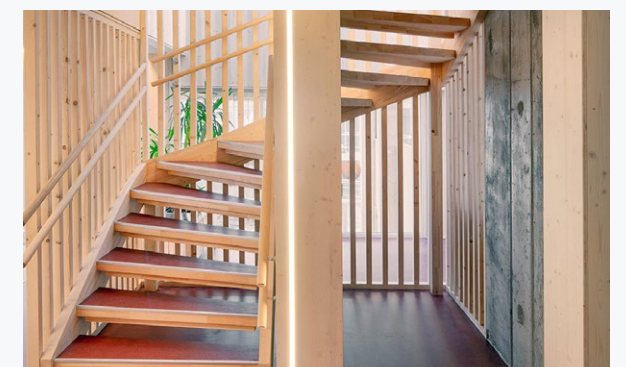
Big openings



Light wood



Second floor plan



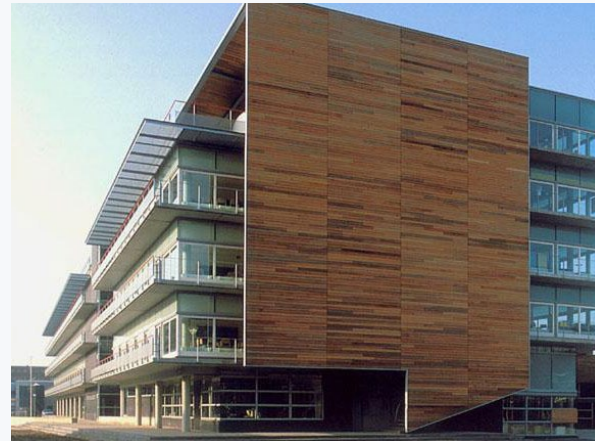
Work with light and material (View of stair)



## College, Montessori College Oost, Amsterdam, The Netherlands



Spacious atmosphere inside



View of balconies

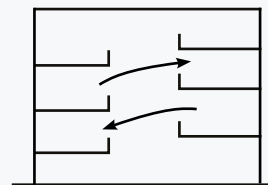
Montessori College Oost has been designed by Herman Hertzberger who is a Dutch architect in 2000. Montessori College Oost is a school with almost no corridors but a lot of voids. In the school floors do not have the same level and it is because of increasing visual contacts between students.

The classrooms are located on the edge of the building and the main void in the middle provided space for the vertical and horizontal circulation (fig B). The central void has not only provided a space for circulation but also creates an opportunity for daylight to shine inside from the roof.

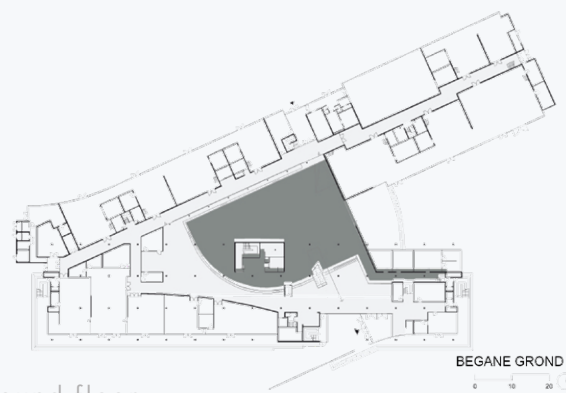
**My reflection:**

The most interesting architectural element in the project that increases visual interaction between users is the corridors connected to the central void. Users can even communicate from one side to the other side and even downstairs and upstairs.

Considerable architectural elements



Visual contact from corridors



Ground floor



Visual contact

## Library, Samling, Village of sand, Norway



Spacious atmosphere inside



View of entrance

The Samling library project has been made to revitalise the community in socially, culturally and economically aspects. There are different spots in the building for visitors to socialise, reading books, meeting others or enjoying the outside view. The central atrium providing daylight while the outer sections face the outside.

The double-height of the living room in the building has created a space that is both grand and modest. This double height with the combination of light timber wood and daylight has made an airy spatial environment and a natural meeting place for the visitors.

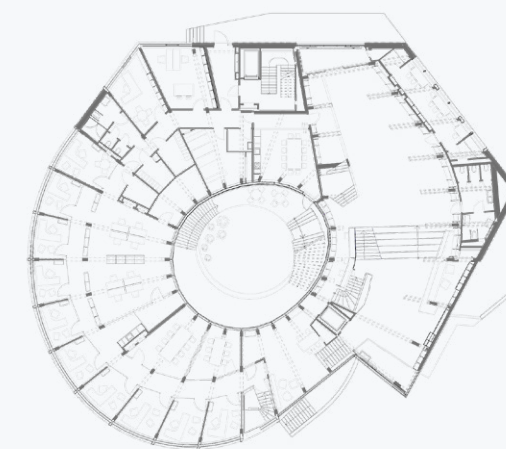
**My reflection:**

I think that the combination of the high ceiling, large windows and light texture on finishing have created an attractive common area to spend time for different reasons.

Considerable architectural elements



Visual contact and double height ceiling



First floor plan



Interior view



## Co-housing, R Way of Living, Amsterdam, The Netherlands

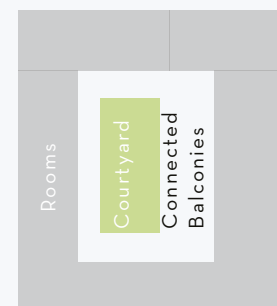


R Way of Living is a small-scale social housing model that brings residents together through a unique combination of activities. On one hand, the spatial concept provides an intimacy within the residents, and on the other, it provides access to the environment. The linking element between the courtyard and the public square is a multifunctional pavilion in the centre of the building. Rooms are located around the courtyard which are connected by balconies. The stairs are located outside and it forms accessibility from the courtyard.

**My reflection:**

I believe that we need new concepts in architecture to motivate people to interact with each other and the environment in the surrounding. R way of living is presenting an idea to achieve this goal. Space for activities, courtyard, connected balconies are the main architectural elements that have been used to encourage users to interact with each other and the environment in the surrounding.

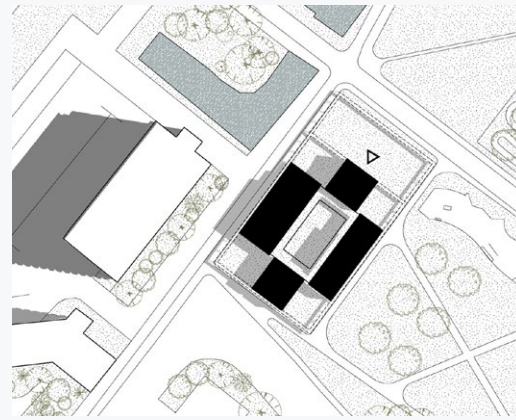
Considerable architectural elements



Connected balconies around the courtyard

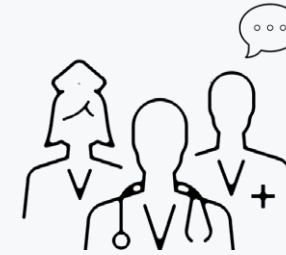


Second floor plan



Site plan

## Interview



To create a better understanding of the situation during the interviews with people who are going to use the project is very essential. I have tried to talk with three targeted groups as follow: seniors, students and senior housing staff to investigate different perspectives. But unfortunately because of pandemic limitations I was not able to interview seniors who are living in senior housing but I could talk with some persons that are in this age target group living independently in their homes. In addition to these interviews, I used pieces of information that I received from an elderly housing studio, a course that I have participated in at Chalmers university in 2019. Here are some summary and point of views which are interesting to be considered in the senior and student cohousing project.

**Interview with university students**

The participants were questioned about the quality of their rooms and dormitory. We talked about spaces that could motivate users to interact from their perspectives and then I used some parts of the interviews that are related to my thesis.

**Person one:** Ida is 34 years old and was studying art in London 5 years ago.

The most usable spaces in our complex were common spaces where my friends and I gathered to do different types of activities together. We watched TV, played games and celebrated together. But because of the noise, common spaces were on the ground floor far away from our rooms. Bad isolation causes noise inside our rooms and we could not rest or concentrate when people were using the common spaces. We did not have a toilet and shower in our rooms and it was very hard and irritating to use the services out of my room. I believe that being social and interactive with others was a good opportunity for me to learn and practice social life.



**Person Two:** Thomas is 25 years old and was studying engineering program last years.

In our dormitory, only engineers who were studying the same program had access. The ages of users in those facilities were between 18-25 with some older adults at the age of 30-45. I would say that facilities that have students and older adults could work. I believe the biggest issue is that lots of students are loud and cause noise. Students' facilities that have shared kitchens are also very nasty and the same goes for the sanitary facilities. However, I have visited some elderly facilities with shared kitchen that are very clean compared to student housing.





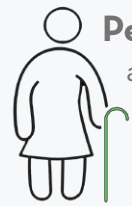
## Interview with seniors

Because of Covid situation I could not visit any elderly home this year but I used my experiences from previous course. Beside that I could talk with and interviewed a few seniors who are living in their places. We talked about a seniors daily challenges, intressts and relationships with youth. In the end I pointed out some point of views from the interview.



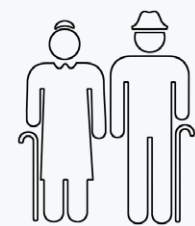
**Person one:** Reza is 70 year old and living alone in Gothenburg.

I gradually got some problems with hearing, walking and remembering daily activities. It means that I can manage my life but I need someone to help me when I am in need. I try to be more scheduled and have a focus on my daily activities. I like to interact with others especially young and kids and besides that those time that I can be by myself. I feel much better when I meet my friends and family members. I visit them mostly in my place and sometimes we eat together in a restaurant or outside.



**Person Two:** Emilie is 60 years old and has experiance to live with a student for a few years in Gothenburg.

It was a win-win situation while Anna was living with me. She helped me with some daily activities and I could cook and warm food for us. We had a good relationship and communication. She raised my energy and reminded me about myself. I tried to support her as much I could. I remembered that she said that I could help her to increase her confidence. In addition, she was emotional support for me and I am thinking to live with another student after the COVID 19 pandemic.



**Person Three:** Kelvin is around 60 years old and living with his wife in Gothenburg.

I love my home and family and I will be sad if one day I have to leave my home. This mixed housing doesn't only mean students and seniors together, but also seniors with other seniors. I have some older friends who applyed for elderly homes because they are lonely, but when they get there they still feel lonely because they were at a place where their neighbours are very sick and can't socialize. I think this mixed housing for students and seniors would benefit both sides. Everything as life experiences, wisdom, cooking, conversation, empathy and respect could be shared and developed.

## Interview with staff

I asked participants about their daily work, challenges and possibilities. I presented my thesis idea and then we talked about important elements that can increase the quality of working and living conditions in a cohousing design especially senior housing.

**Person one:** Farsad is 50 years old has been a nurse in the seniors housing for many years in many elderly facilities in Gothenburg.

The main thing in our job is that everyone should feel good. There are sickness and disabilities that could discourage both caregivers and caretakers but it should not stop us from feeling good. There are a lot of things that can improve our work and the cooperation between staff which are equipments and accessibilities to different services in the building. Size of corridors, stairs, doors and windows are those elements in architecture that effect better outcomes which make staff experience better working environmen at the end. Some residents' needs more help than the others so relationships between their rooms and the staff room is very important within a unit. One unit should not exceed ten persons otherwise it will be difficult to manage the situation in case something happens.



**Person two:** Yalda is 40 years old and has been working as a nurse in elderly home in Gothenburg.

I liked your co-housing idea for students and seniors and I acknowledge that there is a need for the elderly to feel better about themselves and youth can eventually help them. As a simple example, seniors could talk about daily life and school instead of talking about their sicknesses and pains. It can help them to remember their adventures while they were younger and by just thatyouth can learn from their experiences. There is some consideration which you have to consider like diseases spread, noise, schedule, fire exit and smell.



**Person three:** Milad is 35 years old and has worked in a senior housing in Gothenburg.

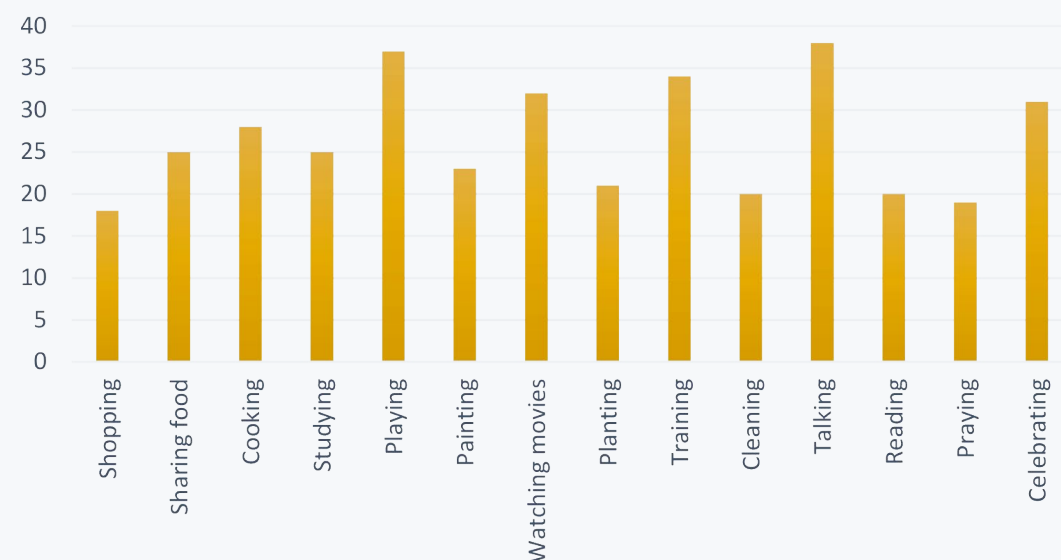
I believe anything that can improve seniors' health can impact my health as a caregiver as well because caregivers are all the time with seniors and we experience the same environment and room qualities that seniors do. I enjoy experiencing nature, sunlight and food with seniors. I appreciate working as a team and being positive. Besides interaction with seniors are all opportunities to develop both as a person and one's career.



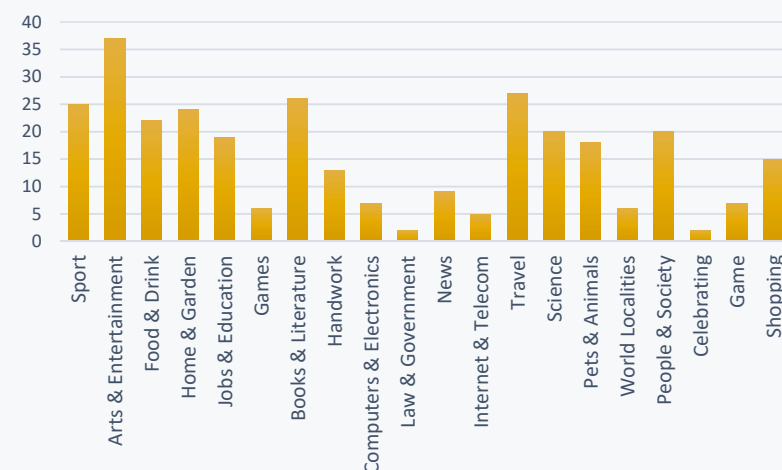
## Survey

A survey was conducted online with 44 persons as participants that represent more than 60 per cent of the 25-34 age group; around 60 per cent of the participants were female. The survey published is to develop understanding about the willingness of participant to share their spaces, time within their age group or other age group.

General idea about sharing time and spaces was very positive as larger proportion of the participants demonstrated the willingness to interact with others in their own age group and other age group. They think sharing facilities inside a building with others if it's limited and managed. Most of the participants know about the difficulties in living with their age group and among diversified generations. Notwithstanding they expressed the positivity of sharing and interaction. Here is a chart of activities that participants are willing to do with others.



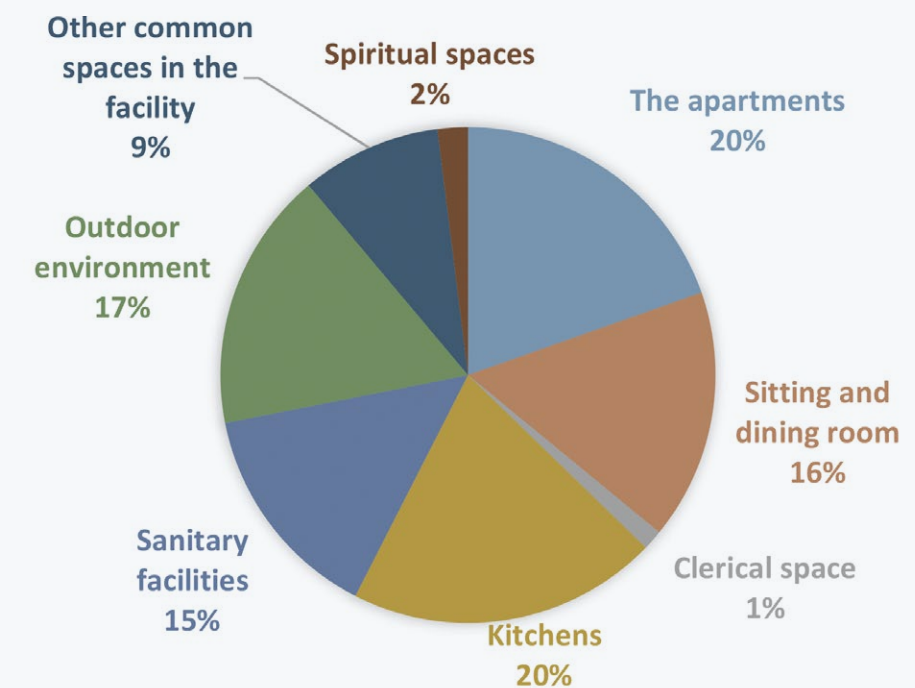
The interests between participants were varied but cooking, sharing food, playing, training, talking, celebrating, watching movies and planting were those favourite activities that they prefer to do with others.



## Important Spaces in a co-housing project

Participants preferred to meet others in different environment depending on how much they know the person. Here is the list of preferable places that participants were willing to meet, their family, friend and new friends.

Participants believed that firstly the apartments and kitchen and secondly dining room, sitting room and outdoor environment are the most important spaces in the building.



## The Architectural outcome of interviews and survey

After interviewing and doing the survey it become more clear that a person regardless of age and gender can have similar interests and idea about their living place. But at the same time there are oppurtunities to be involed in new activities.

Doing individual and group activities both inside and outside of their building are also the common point of view.

Training, celebrating, cooking, playing and talking are the most common interests between participants. This information shows that spaces like kitchen, sitting area, gym, exhibition, workshop, library, planting and restaurant can become beneficial in a cohousing project. While participants agreed to allow people into common spaces so as to participate in some activities it can be a good option to place most active spaces in the ground floor.

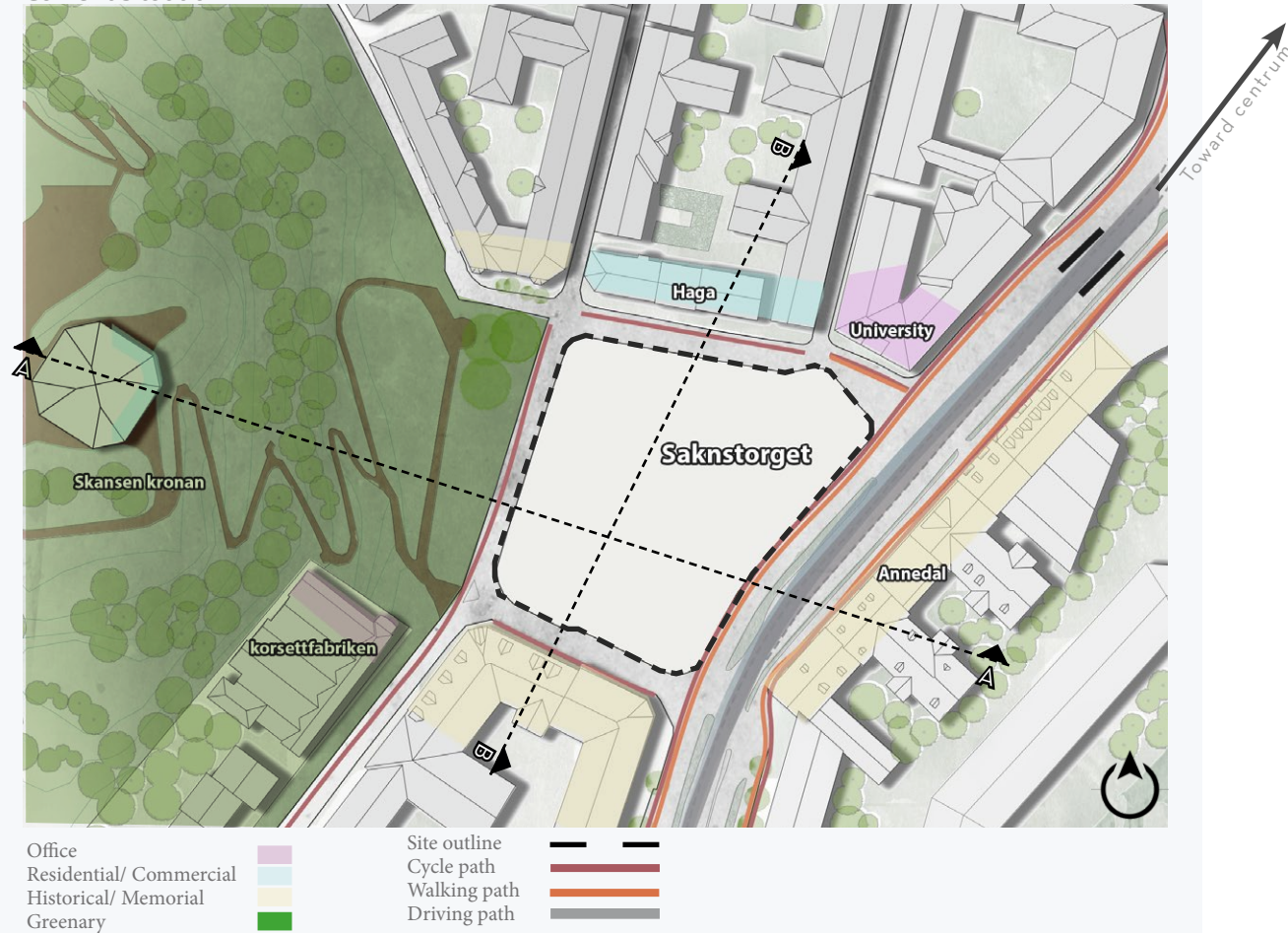
There can also be some down sides as possibilties to have conflic between residents, irritation due to noise, smoke or smell of foods and cleaning. But they can be easily solved firstly if residents feel more responsible for their and others rights and using material and floor layout that residents can find more convenience. Survey reveals that some people are willing more than others to socialise and some people want to be in smaller gatherings than others. but there are no participant wanted to be completly isolated from others and it shows that participants are willing to meet others to interact within a given environment.

## Program and Brief



## Site analysis

Current situation



### Strength

- 1) Nature in near by
- 2) Easy access to public
- 3) Shops in near by
- 4) Located in an urban area

### Weakness

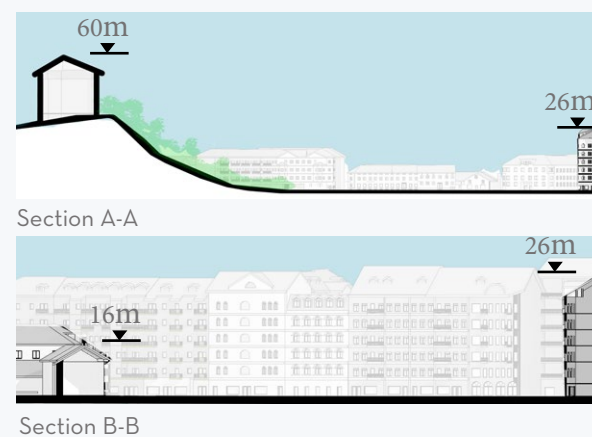
- 1) Noise
- 2) Site limitation
- 3) Current Function

### Opportunity

- 1) Bring public to the building
- 2) Involving residents to work in public services

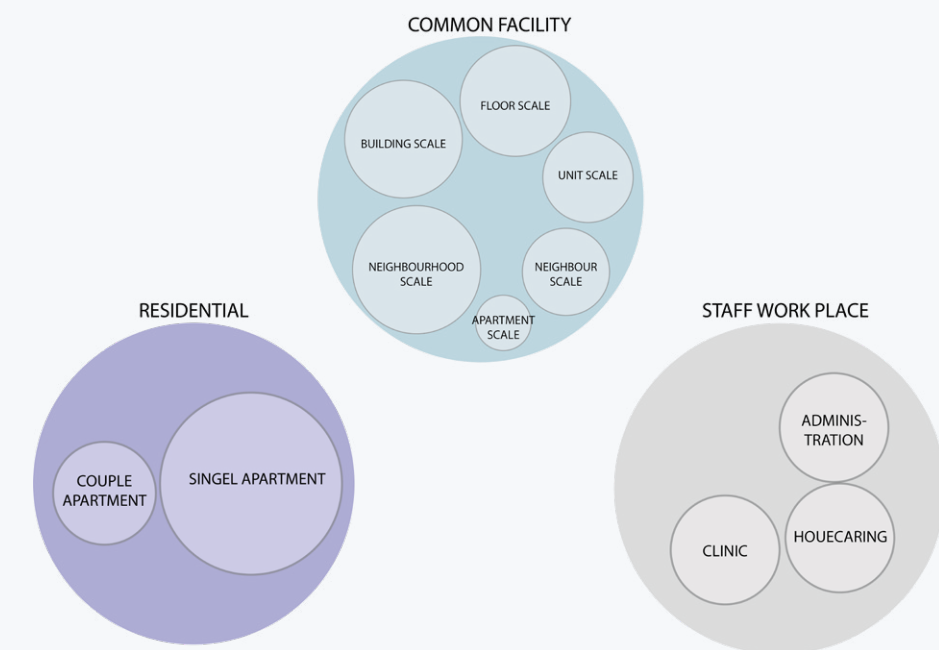
### Threat

- 1) Trafic can couase stress
- 2) limit the view of skanskronan
- 3) limit direct day light for some building in some hourse

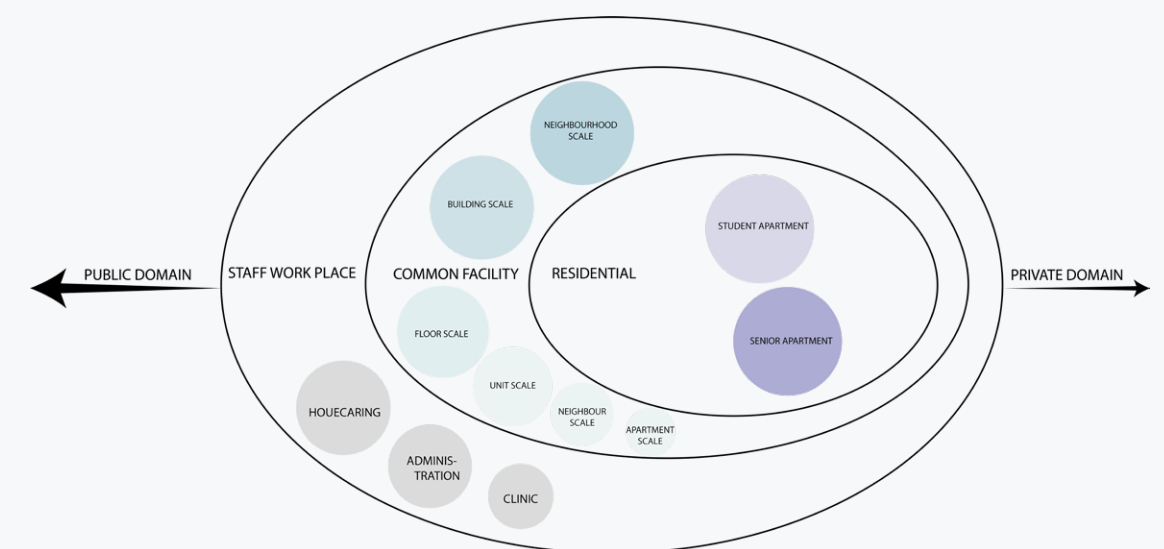


## Departments

Residential department, common facility department and administration department are three departments that will be in this project. Departments can be divided and work separately or integrated and work tightly together. In this proposal, these three departments are highly integrated and this approach aim is to involve more seniors and students in the building programs and activities. Common spaces are located between units and the staff workplace area cover all other departments.



### Seperated departments concept



### Integrated departments concept

According to privacy and publicness

Common spaces have been categorized in Apartments scale, neighbour scale, unit scale, floor scale, building scale and neighbourhood scale. Each category has different rooms for different activities. By having these data in consideration we understand the size and number of the common spaces are going to increase gradually depending on the activity type and amount of people who are going to use it.



## Residential

Apartment area	
Single room area	29 sqm
Couple room area	43 sqm
Total area :	~ 5000 sqm

### Common spaces (unit scale, floor scale and building scale)

<b>Tv room</b>	11	<b>Study room</b>	2 spots,
spots, total area: 243 sqm		total area: 24 sqm	
<b>Sitting area</b>	15	<b>Wintergarden</b>	8 spots,
spots, total area: 870 sqm		total area: 92 sqm	
<b>Common balocony</b>	15	<b>Bastu</b>	1 spots,
spots, total area: 381 sqm		total area: 90 sqm	
<b>kitchen</b>	10	<b>Recycle room</b>	1 spots,
spots, total area: 413 sqm		total area: 101 sqm	
<b>Storage</b>	12	<b>Total area :</b>	~3,663 sqm
spots, total area: 221 sqm			
<b>Laundry</b>	8		
spots, total area: 156 sqm			
<b>Rwc</b>	12	<b>Greenary</b>	
spots, total area: 52 sqm		<b>Courtyard</b>	1 spots,
<b>Sitting area</b>	15	total area: 1000 sqm	
spots, total area: 870 sqm		<b>Roof terraces</b>	4 spots,
<b>Cycle parking</b>	2	total area: 3,218 sqm	
spots, total area: 128 sqm			
<b>Post room</b>	1	<b>Total area :</b>	~4,178sqm
spots, total area: 17 sqm			
<b>Tv play room</b>	2		
spots, total area: 55 sqm			

Common spaces( neighbourhood scale)

<b>Restaurant</b>	1 spots,
total area: 330 sqm	
<b>Haircut</b>	1 spots,
total area: 50 sqm	
<b>Dogcare</b>	1 spots,
total area: 73 sqm	
<b>Cloth shop</b>	1 spots,
total area: 58 sqm	
<b>Salad bar</b>	1 spots,
total area: 68 sqm	
<b>Gym</b>	1 spots,
total area: 450 sqm	
<b>Workshop</b>	1 spots,
total area: 164 sqm	
<b>Cycle store</b>	1 spots,
total area: 33 sqm	
<b>Cycle parking</b>	1 spots,
total area: 24 sqm	
<b>Pharmacy</b>	1 spots,
total area: 168 sqm	
<b>Multifunctional room</b>	1 spots,
total area: 227 sqm	
<b>Library and computer hall</b>	1 spots,
total area: 227 sqm	
<b>Game hall</b>	1 spots,
total area: 227 sqm	
<b>Common balocony</b>	6 spots,
total area: 219 sqm	
<b>Café</b>	1 spots,
total area: 72 sqm	
<b>Fruite store</b>	1 spots,
total area: 102 sqm	
<b>Flower store</b>	1 spots,
total area: 143 sqm	

**Tottal area:** 2,685 sqm

Administration and staff workplace

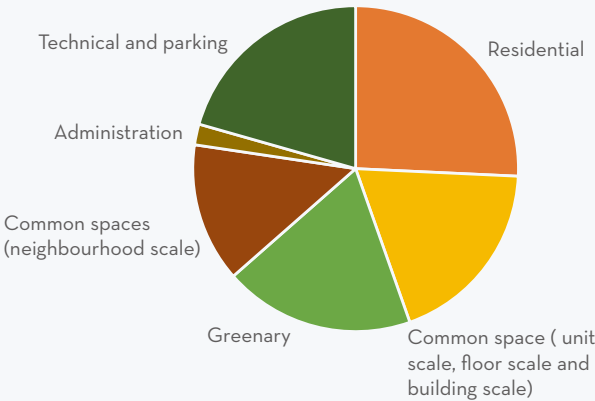
<b>Clinic</b>	1 spots,
total area: 86 sqm	
<b>Office</b>	3 spots,
total area: 128 sqm	
<b>Changing room</b>	2 spots,
total area: 62 sqm	
<b>Conference room</b>	1 spots,
total area: 32 sqm	
<b>Tottal area:</b>	308 sqm

Technical & mechanical room & parking

<b>Technical &amp; mechanical room</b>	21 spots,
total area: 1,270 sqm	
<b>Car parking</b>	79 spots,
total area: 2,760 sqm	
<b>Tottal area:</b>	4030 sqm

Construction area

Area of the site	~4500 sqm
Basement	~3500 sqm
Ground level	~3000
First level	~3700sqm
Secound level	~3000 sqm
Third level	~3200 sqm
Fourth level	~1800 sqm
<b>Tottal area:</b>	~18,200 sqm



Proposal



## Site plan

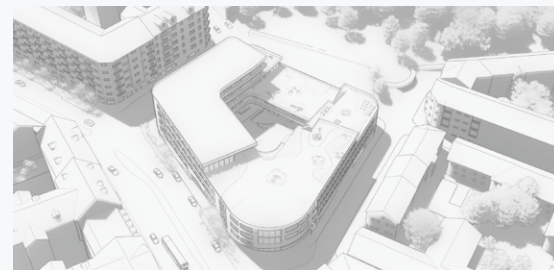


Scale 1:1200 0 5 10 20

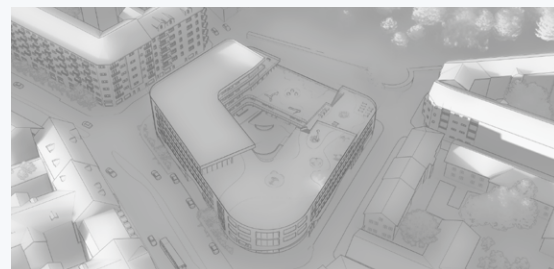
## Shading analysis



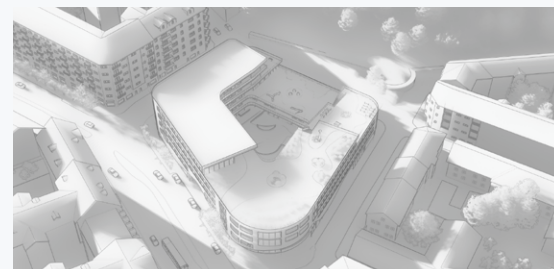
JULY 10 AM



JULY 4 PM



DECEMBER 10 AM

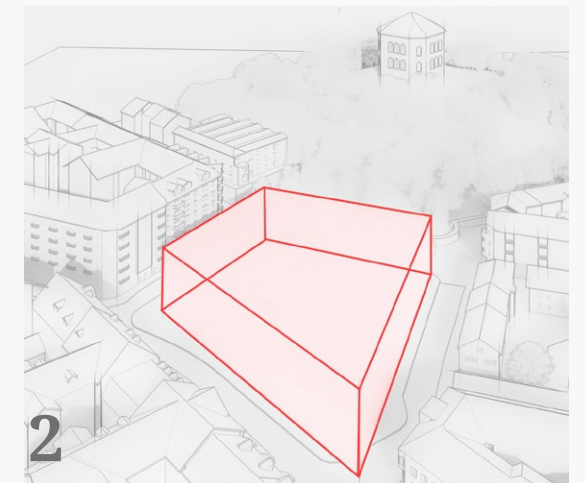


DECEMBER 4 PM

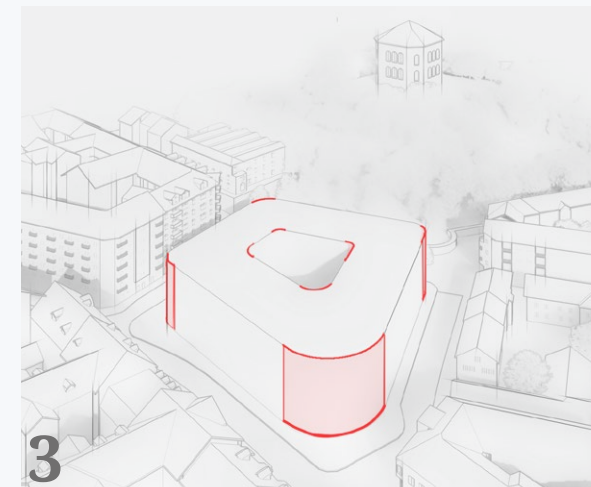
## Concept process



1 The site borders



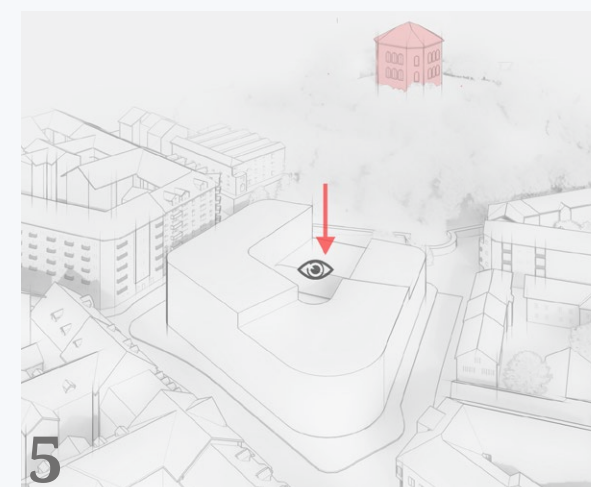
2 Starting with a box that follows mainly the site borders



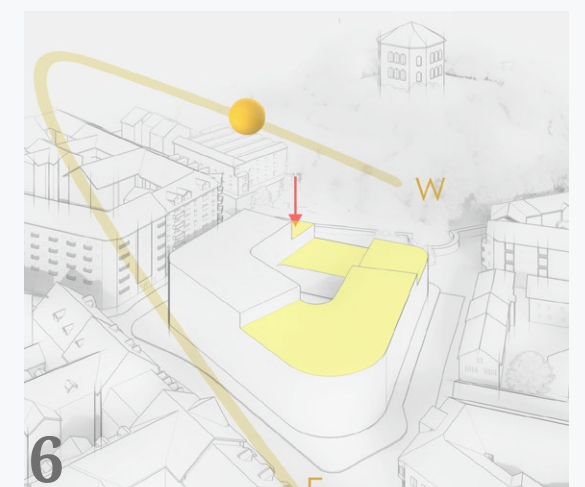
3 Rounding corners to create safe and welcoming environment



4 Adapting the height to surrounding building

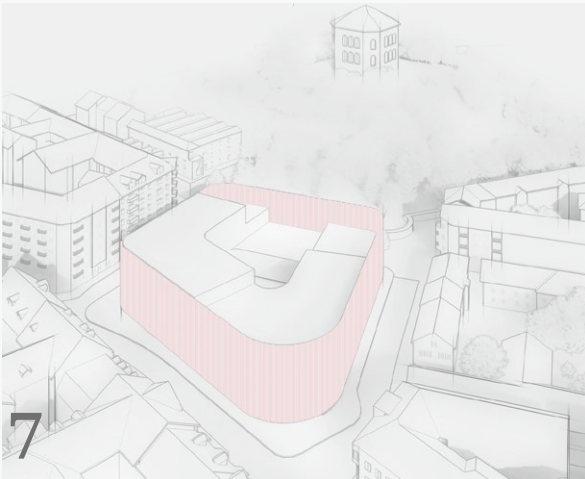


5 Increasing the visibility of Skansen Kronan from the courtyard



6 Increasing accessibility to the natural elements in the south part





7

Applying a wooden skin to create a comprehensive elevation



8

Forming and cut through the wooden skin



Finalization the concept

# Connections and departments

Fourth level

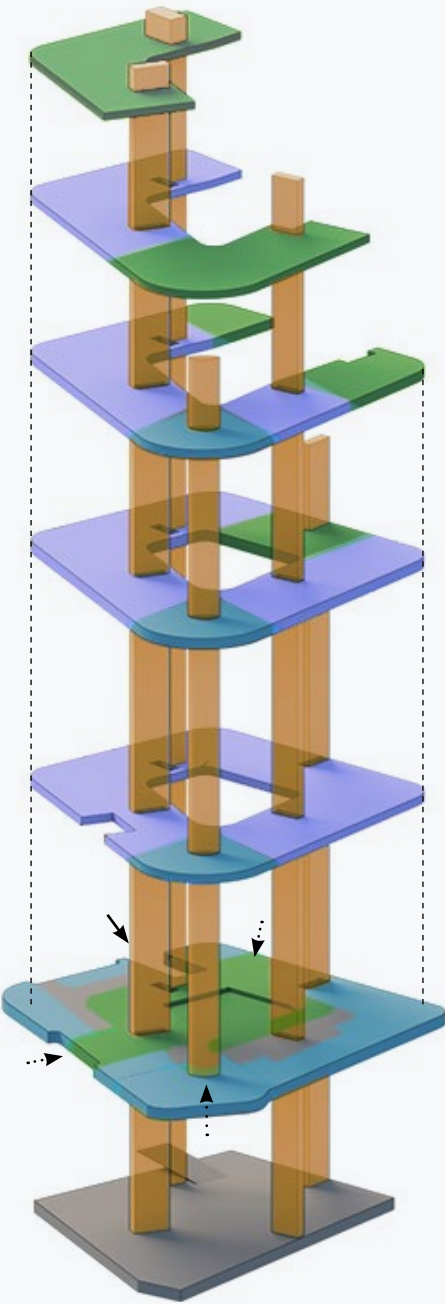
Third level

Second level

First level

Ground level

Basement



## Departments legend

- Residential department
- Shared space-neighbourhood scale
- Courtyard/ Roof terraces
- Parking

- Parking entrance
- Entrance
- Residents vertical access
- Staff vertical access
- Public vertical access





## Ground floor

Department



- Departments legend
- Seniors apartment
  - Students apartment
  - Shared space-unit scale
  - Shared space-floor scale
  - Shared space-building scale
  - Shared space-neighbourhood scale
  - Office and administration
  - Balcony
  - Courtyard/ Greenary
  - Pond
  - Vertical circulation
  - mechanical and technical room
  - Public Facilities Entrance
  - Entrance
  - Lobby entrance
  - Parking entrance

Scale 1:700

0 5 15 20

Most of the public services are located on the ground floor. The building has no backside and that because all the facades are important but there are some differences between them.

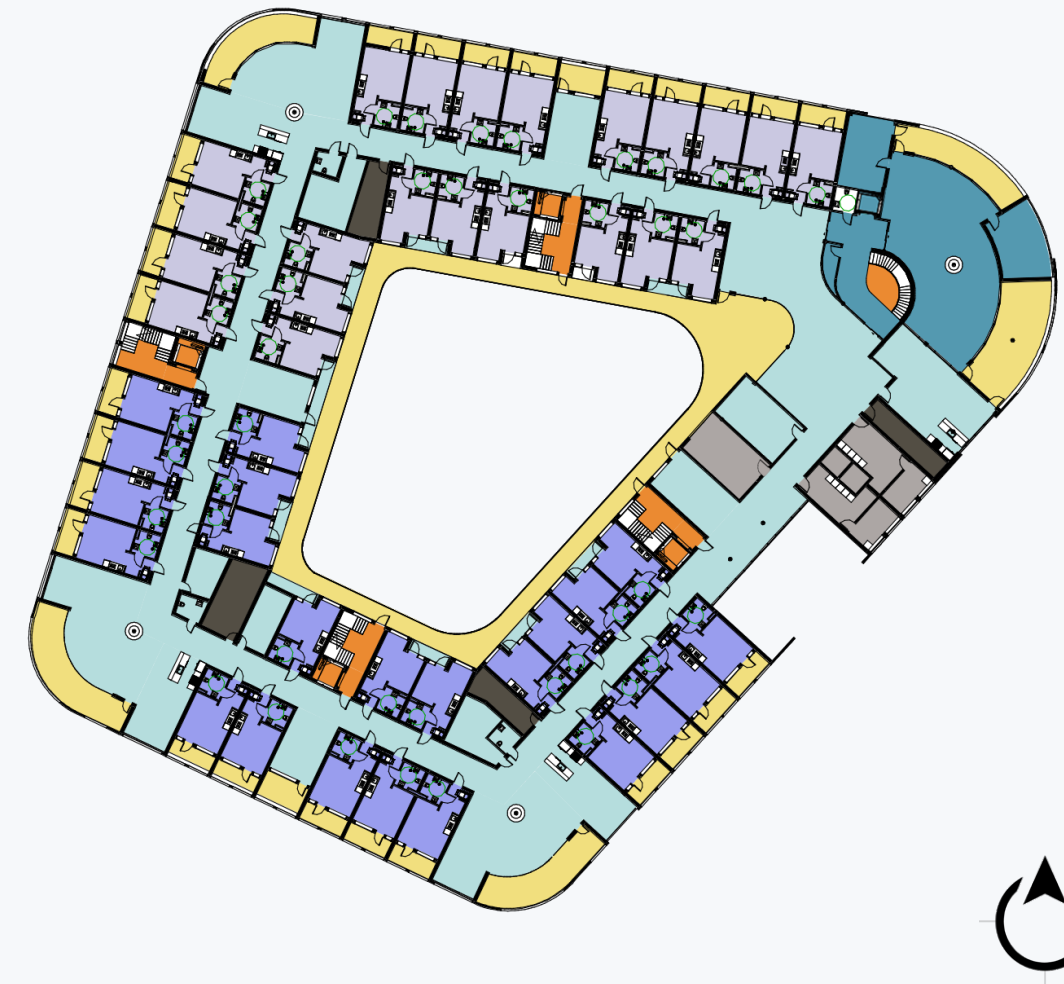
The eastern facade is the most urban active side that because the restaurant, cafe, pharmacy and stores are located in this part.

The North and west facade facing Haga and Skanskronan are the calmest side of the building. Dog care, haircut, sports shop, salad bar, gym and clinic are all along the north and west facades.

The southern road is the second active road especially for cars and that because the new parking entrance is on this side. In addition, the public cycle parking and cycle repair store and delivery are all located along the southern facade.

## First floor

Department



- Departments legend
- Seniors apartment
  - Students apartment
  - Shared space-unit scale
  - Shared space-floor scale
  - Shared space-building scale
  - Shared space-neighbourhood scale
  - Office and administration
  - Balcony
  - Courtyard/ Greenary
  - Pond
  - Vertical circulation
  - mechanical and technical room
  - Entrance to the building

Scale 1:700

0 5 15 20

On the first level, there are three students' units and three seniors' units. Apartments are located against each other but an apartment's door never opens exactly against another apartment's door. This is because of the respect for the privacy of residents. Each unit has adjacent accessibility to a staircase and common spaces. Every three units has one laundry and one storage.

Main common spaces are in the corners in addition to small tv spots in the middle of the building sides. Three corners are mostly calm and used for eating, talking and studying. On the opposite, the northeast corner is the most active and public; for instance on the first floor is defined for gaming.

All common spaces have access to balconies and by that access fresh air, daylight and outside view. The central balcony connects the inner located apartment and leads them to the Northeast corner of the building. Changing room for staff and shared eating room is located on this floor to engage more staff in the current events in the building.



## Second floor

Department



### Departments legend

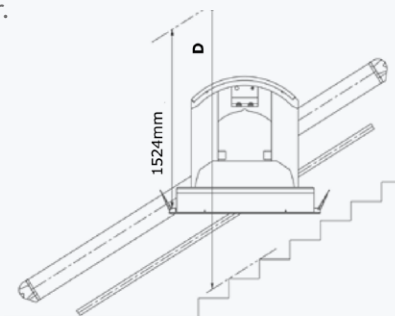
- Seniors apartment
- Students apartment
- Shared space-unit scale
- Shared space-floor scale
- Shared space-building scale
- Shared space-neighbourhood scale
- Office and administration
- Balcony
- Courtyard/ Greenary
- Pond
- Vertical circulation
- mechanical and technical room

Entrance to the building

Scale 1:700  
0 5 15 20

On the second floor, there are one students units and two senior units that offer the couple apartments. Units and apartments are almost following the same layout structure as the first floor.

The main difference is that the inner balcony extends to the roof terrace where the resident can plant and get access to other roof terraces by outer stairs equipped by wheelchair accelerator.



Detail for wheelchair accelerator(Garaventlif)

## Third floor

Department



### Departments legend

- Seniors apartment
- Students apartment
- Shared space-unit scale
- Shared space-floor scale
- Shared space-building scale
- Shared space-neighbourhood scale
- Office and administration
- Balcony
- Courtyard/ Greenary
- Pond
- Vertical circulation
- mechanical and technical room

Entrance to the building

Scale 1:700  
0 5 15 20

On the third floor, there are one student's unit and three seniors' units. At the end of every corner, there are roof terraces connected by balconies. The northeast corner is programmed to be the library and computer hall.

# Fourth floor

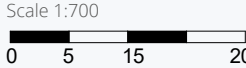
Department



Departments legend

- Seniors apartment
- Students apartment
- Shared space-unit scale
- Shared space-floor scale
- Shared space-building scale
- Shared space-neighbourhood scale
- Office and administration
- Balcony
- Courtyard/ Greenary
- Pond
- Vertical circulation
- mechanical and technical room

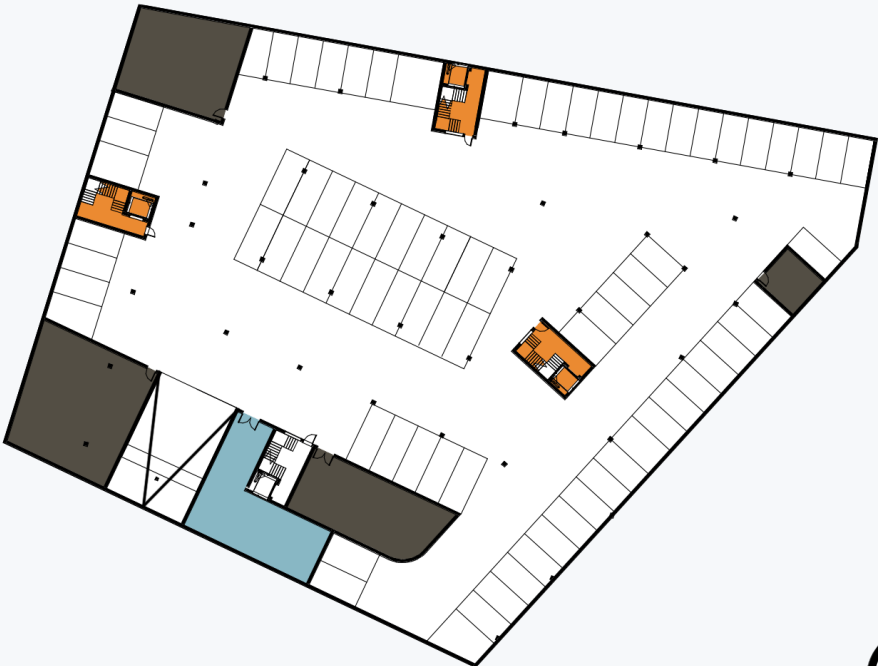
Entrance to the building



On the fourth floor, there are one student's unit and one senior's unit. One part of the floor is residential and one part is roof terrace. There is a glassed Wintergarden at the end of the student's unit. But of course, seniors can also reach there through the building or by the balconies outside.

# Basement

Department



Departments legend

- Seniors apartment
- Students apartment
- Shared space-unit scale
- Shared space-floor scale
- Shared space-building scale
- Shared space-neighbourhood scale
- Office and administration
- Balcony
- Courtyard/ Greenary
- Pond
- Vertical circulation
- mechanical and technical room

Entrance to the building

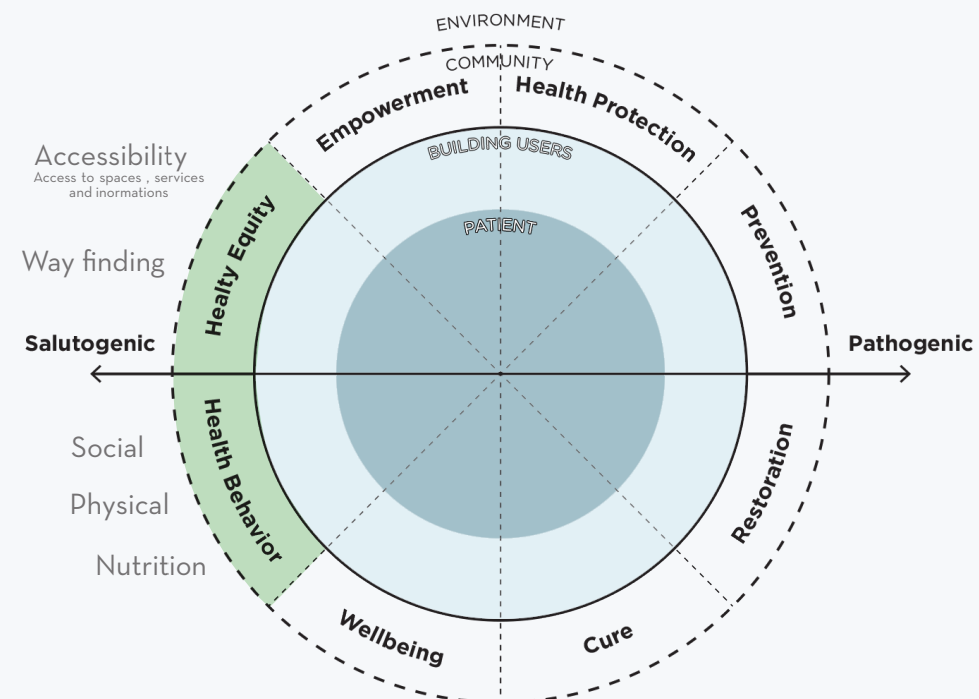


In the current situation, there are around parking 120 spots but in this proposal, there are just 80 spots on the basement floor. The amount is less because of reducing car traffic in the area. Traffic cause stress, noise and unsafety for outside movements.

# Strategies

## Health promotion

Strategies	Rooms list that strategies has been applied on
Health Behavior	<b>Social</b> Sitting area inside an apartment- Shared balconies- Tv room- Bastu-Gym- sitting area- Restaurant- Café- Workshop- Talking corner - Multi-use rooms- Greenary roof- Courtyard.
	<b>Physical</b> Gym-Bastu- Stairs- Green Roof- Different level roof terraces- Cycle support facilities as cycle parking and cycle repair store-Courtyard.
	<b>Nutrition</b> Plating area-Restaurant- Café -Fruit and salad store- Flower store- Pharmacy- Common kitchen-Greenary roof- Courtyard.
Health equity	<b>Accessibility</b> Access to spaces , services and inormations Ramp- Stairs- Elevator- Clinic- administration- Balconies to move inside and outside of room- Different level roof terraces- Wheelchair accelerator for stairs between terraces- Car parking.
	<b>Way finding</b> Inner garden- Light corridor- Roof terraces- Restaurant- Following the same floor layout.



# Ground floor

## Health promotion strategy

There are different spots on the ground floor where residents can meet others. The courtyard is not only a meeting place but also the main element for wayfinding and accessibility to the spaces inside the home. There are several Physical activity supports on the ground floor as a cycle repair workshop, cycle parking, gym, sports shop.

The restaurant and lobby are located at the northeast corner where the public can even go through another floor by using the stairs. Fruits store and flower store are consciously located nearby the main entrance to motivate the residents to consume and plant healthy foods. The salad bar is located near the gym to motivate the users to eat healthy food besides their exercise.

The administration and the clinic are on the ground floor to give more services and information to the residents. The clinic is facing outside to avoid people inside the courtyard when an ambulance taking a patient.



### Health Behavior

- Social
- Physical
- Nutrition

### Health equity

- Accessibility
- Way finding



# First floor

Health promotion strategy

On the first level, the units are located in a way that respects the resident's willingness to socialise. For instance, there is a senior's unit that is just in the nearby of another senior's unit and at the same time, there is a senior's unit that has both senior and student unit in its neighbour. The inner balcony has connected all apartment while outer balconies stand for themselves.

The kitchens are shared between every two units and there can be a place that motivates residents to consume fresh and healthy foods. Near to the kitchens, there are spaces for socializing in a small and larger group. At the northeast corner, there is the most public spot that people can go directly to the upper or lower floor by the stairs equipped with a wheelchair accelerator to support more physical activities.

The central balcony makes accessibility and wayfinding easier. from the inner balcony, there are small spots between apartment for socializing between neighbours.



Health Behavior

- Social
- Physical
- Nutrition

Health equity

- Accessibility
- Way finding

# Second floor

Health promotion strategy

The second floor is following the same way to approach health promotion strategies. The main courtyard as a way-finding element, sitting areas for socializing, kitchen for nutrition and the northeast corner is programmed for a library, two study rooms and computer hall.

The roof terrace offers accessibility on the floor and access to greenery for planting. There is even an outdoor stair to connect the second and third floor. These elements motivate resident to move and exercise to achieve better behavioural health.



Health Behavior

- Social
- Physical
- Nutrition

Health equity

- Accessibility
- Way finding

# Third floor

Health promotion strategy

This floor supports movement and accessibility as well as the second floor. The connected balconies offer residents accessibility to another part of the building from the outside.



Health Behavior

- Social
- Physical
- Nutrition

Health equity

- Accessibility
- Way finding

# Fourth floor

Health promotion strategy

The fourth floor offers the largest roof terrace with a park-like environment concept. Different level of the building is not only motivating residents to move and being physically active but also increasing contact and communications.



Health Behavior

- Social
- Physical
- Nutrition

Health equity

- Accessibility
- Way finding



# Addressing health promotive guidelines

Building design can promote health for users (seniors, university students, staff and public) by firstly, encouraging them to be more physically and socially active. secondly, by providing an understandable, manageable environment and thirdly connect the to the natural environment both inside and in the surrounding. These guidelines have been considered during the design process.

## Health promotive building design guidelines

The buildings guidelines:



Stimulate physical activity



Wayfinding



Challenging ground for diverse users



Access and views to nature



The place for social interaction

The surroundings guidelines:



Access to healthy food



Lively urban site



Support physical activity



Seasonal design



Access to nature

66

# Addressing health promotive guidelines

Courtyard, Ground floor



Stimulate physical activity



Wayfinding



Challenging ground for diverse users



The place for social interaction



Access to healthy food



Access and views to nature

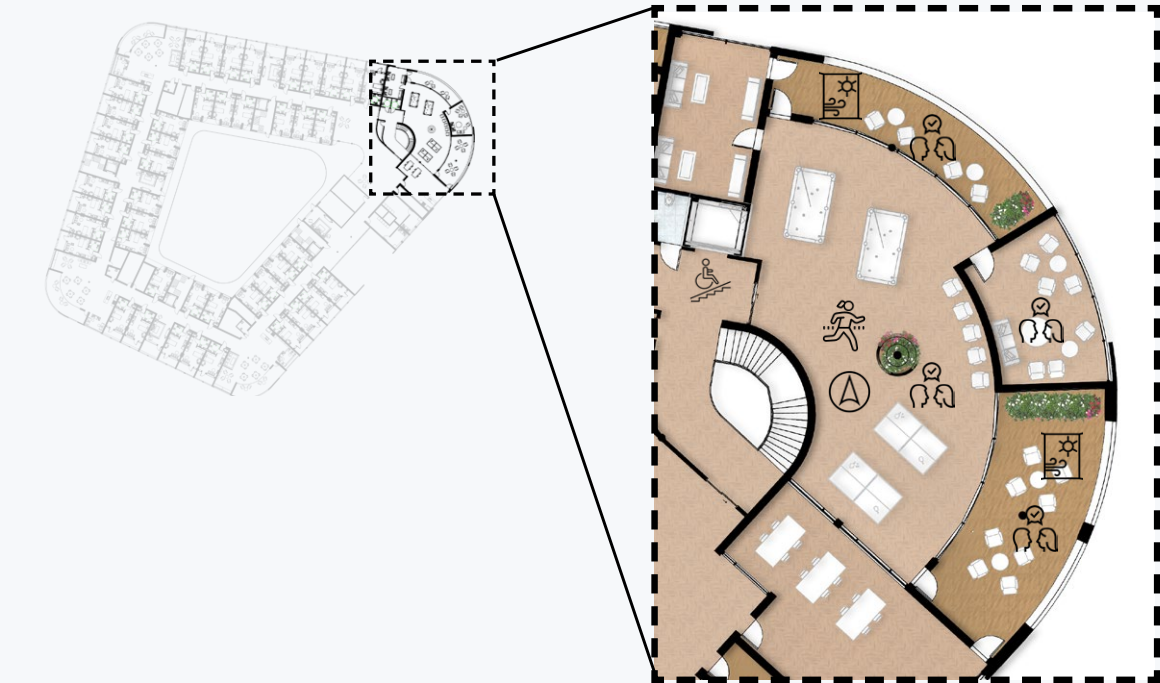
67



Addressing health promotive guidelines



Game room, First floor

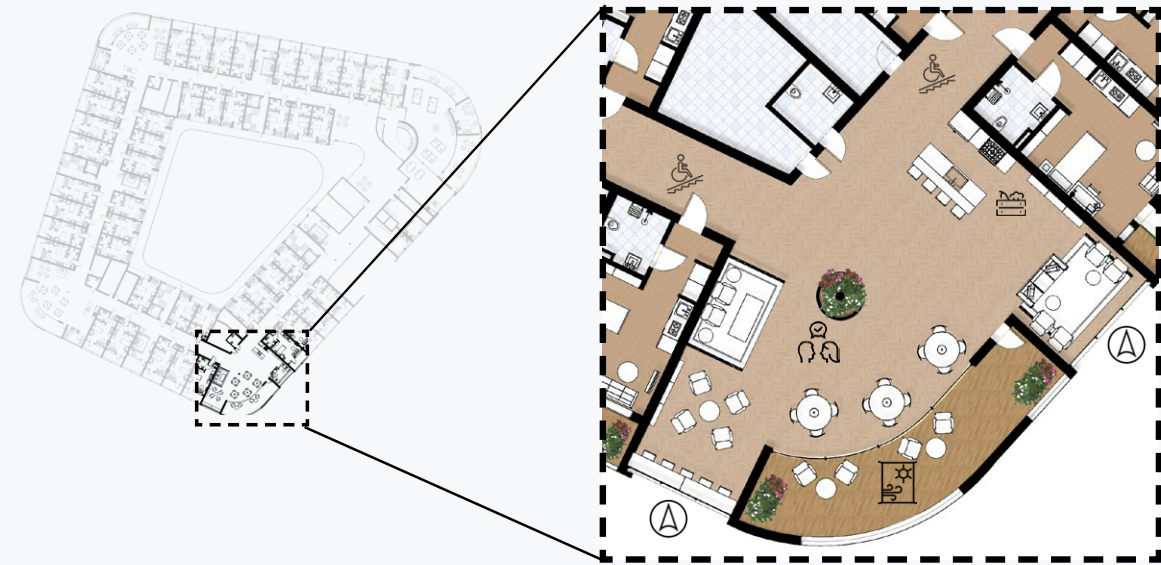


- Stimulate physical activity
- Wayfinding
- Challenging ground for diverse users
- The place for social interaction
- Access to healthy food
- Access and views to nature

Addressing health promotive guidelines



Common space, First floor



- Stimulate physical activity
- Wayfinding
- Challenging ground for diverse users
- The place for social interaction
- Access to healthy food
- Access and views to nature



# Elevations

Scale 1:700  
0 5 15 20



North elevation



South elevation



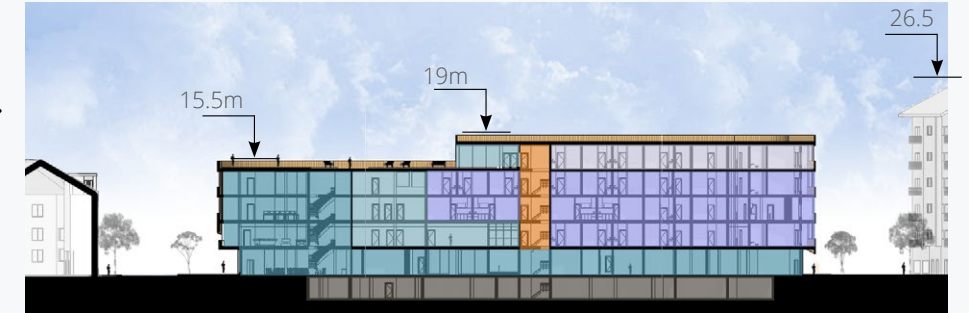
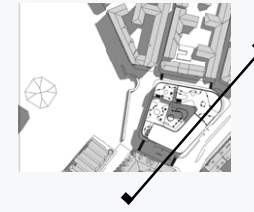
West elevation



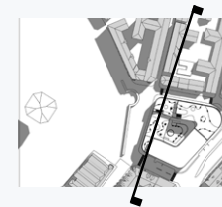
East elevation

# Sections

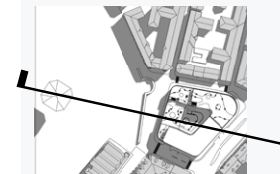
Scale 1:1000



Section A-A



Section B-B



Section C-C

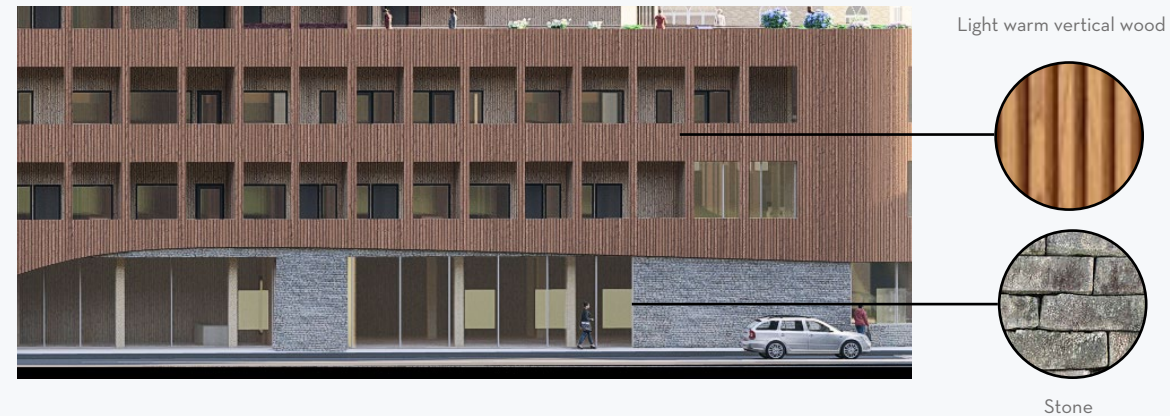
## Departments legend

- Seniors apartment
- Students apartment
- Shared space-neighbourhood scale
- Shared space-floor scale
- Courtyard/ Grenary
- Vertical circulation
- Parking



# Material

## Facade section



## Wall section

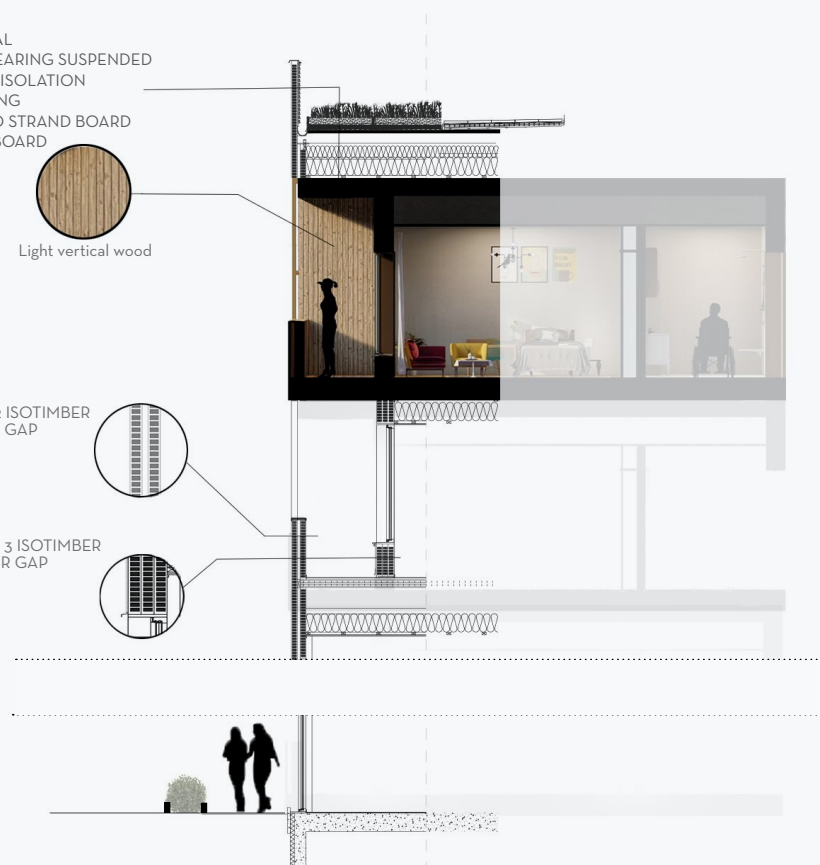
Wood is the main used material in this project both for the finishings and construction. Cross-laminated timber (CLT) is the chosen construction with 30 cm for wall thickness and 6-8 meters for the distance between columns.

VEG TECH PLANTS  
140 PLANTATION DIRT  
40 WATER SUSTAINING LAYER  
12,5 DRAINAGE LAYER  
0,8 ROOT PROTECTION  
22 LAGGING  
22 x 2 LATH  
195 BEAM  
VAPOUR SEAL  
550 LOAD-BEARING SUSPENDED  
CEILING/315 ISOLATION  
45x70 FURRING  
10 ORIENTED STRAND BOARD  
10 PLASTERBOARD

Light vertical wood

100 x 2 ISOTIMBER  
30 AIR GAP

100 x 3 ISOTIMBER  
20 AIR GAP



# Apartments

## Single apartment

Single apartment with large balcony offers good amount of storage even for wheelchair. This apartment is 28.5 sqm and suite both student and seniors.



Section of single apartment



Plan of single apartment



Interior perspective of single apartment



Couple apartment

The couple apartment is 43 sqm and suite for two people regardless of being student and senior. The couple apartments are all located on the second floor. There are some alternative furnitures that show how two persons can live together.



Couple apartment for a couple



Couple apartment for two friends



Couple apartment for two person who are not able to sleep in the same room



Interior perspective of couple apartment

Perspectives



View from skanskronan to Skanshuset



View looking at the south west corner





View looking at the north east corner



View of Skansen Kronan from Övre Husargatan



View from the courtyard



Main entrance



# Discussion

## Discussion

Social isolation causes a lot of problems both for the person and society. Problems that can affect everyone (Berkman and Syme (1979). Seniors (+65) and young adults (18-30 years old) who are mostly university students are experiencing more loneliness in between. That's why having extra attention on these two targeted groups is very important.

In most reviewed projects administration is located on every floor and it might associate healthcare centre on residents. They shall feel like they are living in thier home and can get help if they are in need. Night staff can stay and do their administrative work in their office or in the common spaces.

Compare to some other projects in terms of access to greenery, if users want to go the greenery they should go ground floor but in this proposal, greenery is almost accessible on all floors.

In Sweden, we give a lot of attention to senior housing but still, senior housing is not that active and prosperous as we wish. From my previous study trip experience, in the elderly housing studio, I noticed that residents became very happeid to see us and began to communicate with us. It shows that they were happied to see new people and especially the younger generation and were willing to communicate with them. On another side, students are going through an important period of their life and need to enter to the society. In this period, a lot of students are experiencing loneliness, stress and confusion. I believe that the intergenerational cohousing concept will create communication between generations and by that their understanding of their situation will increase and it is beneficial for both seniors and university students.

In health promotive design considering the structure, layout, openings, furniture and finishing are essential (Miedema, 2020). This approach is from the small scale to the big complex. While developing the concept design for the proposal I gave attention to daylight, view exposure of Skansen Kronen, site integration, safety and privacy. The building follows the site outline and has less height in some parts because of site integration and sunlight exposure.

# Summary

## Summary

This master thesis aim is to design a health promotive cohousing for university students and seniors. According to this the health promotion becomes the main focus of study and design strategy.

Health promotion is a process that people take control over and to improve their health (WHO, 1986a).

This definition is very general and Elke Miedema has redefined it more precise for the architectural field. She defines health promotion as ‘A process devoted to empowering (vulnerable) individuals and communities to take control over the factors that positively influence their health and quality of life including their social, natural and built environment’.

She adds that there are two health promotion orientations one pathogenic and another salutogenic. Pathogenic focus on sickness and salutogenic focus on health improvement. Salutogenic has different aspects but in this master thesis, I will focus more on health behaviour and health equity (Miedema, 2020). Health behaviour is more about being socially and physically active and being able to consume healthy foods. Health equity is more about accessibility and wayfinding (Miedema, 2020).

But in this between the link between health promotion and architecture is the health promotive environment. There are some factors that are helping health promotion as nature and view to nature, daylight, fresh air, places for social interactions, physical activity supports. , accessibly for everyone, wayfinding and places that are usable in every season (Dumitrache et al., 2020).

Intergenerational cohousing or any other cohousing concepts is going to succeed if the environment can increase cooperation and interaction between residents. We should not forget how much common spaces are important and how much diverse they are. Common spaces start from the most private to the most public gradient. The most private located in our apartment and the most public located outside of the building. I have divided the common areas into apartment scale, neighbour scale, unit scale, floor scale, building scale and neighbourhood scale. These categories cover different services and activities.

In the design proposal, I tried to place complementary services and spaces next to each other to create more encouragement to act healthy between the target groups. For instance, the fruits store is near to the entrance and courtyard so if some people want to eat something together in the courtyard the fruit and healthy food become the first option.

In the end, I have to mention that architecture can improve health by being in a place that provide, support and maintain health promotion. Furthermore, these are more responsibilities on us as human to provide safe and manageable situation both for ourselves and others.



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# Survey questions

## Personal information (step 1 of 5)

Image that there is a place were youth, university students (20-30 years old), and seniors (65+) are living together in a building that share different facilities: like a sauna, pool, gym, garden, restaurant, common sitting places, common kitchen and other shared spaces. The possibility to live closer or farther away from the common spaces would exist. If you can relate yourself to one of this social groups (the student or the senior) or would be willing to live in a co-housing environment, then try to answer the questions below in regarding to your own experience and willingness.

Your name: (If you want)

Are you:

☐ Male

☐ Female

☐ N/A

What is your age?

☐ 0-17

☐ 18-24

☐ 25-34

☐ 35-44

☐ 45-54

☐ 55-64

☐ 65 or more

What is your marital status?

☐ Married

☐ Single

Check your interests:

Select as many as you like.

☐ Arts & Entertainment

☐ Beauty & Fitness

☐ Business & Industrial

☐ Finance

☐ Food & Drink

☐ Home & Garden

☐ Jobs & Education

☐ News

☐ People & Society

☐ Real Estate

☐ Science

☐ Sports

☐ World Localities

☐ Autos & Vehicles

☐ Books & Literature

☐ Computers & Electronics

☐ Handwork

☐ Games

☐ Internet & Telecom

☐ Law & Government

☐ Online Communities

☐ Pets & Animals

☐ Reference

☐ Shopping

☐ Travel

Have you lived or visited a senior housing/student housing?

☐ Have visited a senior housing

☐ Have lived in a senior housing

☐ Have visited a student housing

☐ Have lived in a student housing

☐ None of the above

1. I am willing to share my apartment with other.

1

2

3

4

5

6

7

Disagreeing

Agreeing

2. I am willing to share some facilities (kitchen, sitting room, movie room, garden...) in the building with others who live inside the building.

1

2

3

4

5

6

7

Disagreeing

Agreeing

3. I like to clean and cook with others in common areas.

1

2

3

4

5

6

7

Disagreeing

Agreeing

4. I prefer to exist some routines for different activities in the building.

1

2

3

4

5

6

7

Disagreeing

Agreeing

5. It is easy to communicate with other generations for me.

1

2

3

4

5

6

7

Disagreeing

Agreeing

6. I am comfortable to do these activities with others.

☐ Cooking

☐ Painting

☐ Watching movies

☐ Cleaning

☐ Studying

☐ Praying

☐ Celebrating

☐ Playing

☐ Planting

☐ Training

☐ Talking

☐ Reading

☐ Sharing food

☐ Shopping

7. I prefer to socialize with the persons who I know them.....

☐ Outside of the building

☐ In my apartment

☐ In the group

☐ In common areas inside

☐ During an activity

☐ Individually

8. I prefer to meet new people .....

☐ Outside of the building

☐ In my apartment

☐ In the group

☐ In common areas inside

☐ During an activity

☐ Individually

9. I prefer to meet my family if they come to visit me.....

☐ Outside of the building

☐ In my apartment

☐ In the group

☐ In common areas inside

☐ During an activity

☐ Individually

10. I know that there is some limitations/conditions by cohousing and I can accept them. (For examples time to use some facilities or activities are limited)

1

2

3

4

5

6

7

Disagreeing

Agreeing

11. (If I am senior/student) I know that there is some limitations/conditions by living with (students/seniors) and I can accept them. (For examples students are more active and louder or seniors need more time to do their needs)

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Survey questions

12. To be organized is much important than to be spontaneous.

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DisagreeingAgreeing

13. I believe seniors can help students to get a better understanding of life.

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DisagreeingAgreeing

14. I believe that students can bring energy and joy to seniors.

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DisagreeingAgreeing

15. There is possibilities to happen some conflicts between residents for using common spaces.

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DisagreeingAgreeing

16. I have difficulties to focus when people are around me.

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DisagreeingAgreeing

17. I think these environments are the most important spaces in the building.

☐The apartments

☐Sitting and dining room

☐Kitchens

☐Sanitary facilities

☐Spiritual spaces

☐Other common spaces in the facility

☐Outdoor environment

18. In a safe situation, I am willing to share our buildings facilities (parking, gym, restaurant etc.) with people who live in the area.

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DisagreeingAgreeing

19. If you are senior, will your answers be the same as today when you were young? If you are student, will your answers be the same as today when you get old?

☐Yes

☐No

20. Please share your thoughts about benefits/challenges which can be achieved by combining senior and student housing.

Don't forget that you are wonderful! Thanks for your time for answering the survey.

