Active care

Health promoting spaces in habilitation facilities

Master Thesis
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January 2018

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Cover page: Illustration of the main entrance

January, 2018

Acknowledgments

This master thesis is the result of my professional and personal ambition to work as a healthcare architect. It was a long and at times challenging process, and I want to thank everyone who encouraged me to take the leap and helped along the way: my family, friends, colleagues.

Special thanks to:

My examiner Peter Fröst, for giving me the opportunity to work with a real situation, establishing the initial contact with the stakeholders, and all his support during the process of this thesis.

The stakeholders from the Kungsgärdets Habilitation Center in Uppsala, Annika Nordberg, Patrik Jonasson and Johanna Wahlin, who gave me important input and offered their time and energy in the initial stages of the research.

My tutor Elke Miedema, who encouraged me throughout the process to push my limits and find solutions which considerably improved the results of this Master Thesis and proved to myself that theory can be applied to design.

Abstract

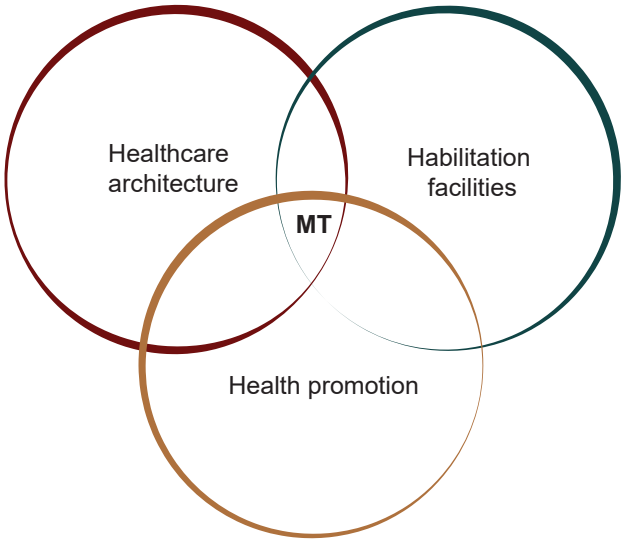


Figure 1. Illustration of research themes

Background

The main theme of this master thesis is building design to support health promotion in habilitation facilities. This includes moving the focus of healthcare from a disease curing approach to a lifelong health development. Habilitation centers are built to provide medical care, but not enough emphasis is placed on the importance of building design that stimulates and sustains an active behavior in a fun and spontaneous way, while relating to the neighborhood. Within this theme, the Master Thesis explores the design project of a Habilitation Centre situated in Uppsala, Sweden, at the location of an existing Habilitation Centre.

Objective

This thesis aims to explore building design solutions for habilitation centers to promote active behavior and facilitate interactions between users and community, by including the needs of building users. *The main research question is: In what way can building design promote active behavior for all types of building users?*

Method

The research question is explored through a research for design approach. The process included an exploration of habilitation and health promotion, combining active design and inclusive design principles, analyzing the exiting context and moving towards a design proposal, through models, interviews, persona development and sketching.

Result

The result is a research informed design proposal, beneficial for the development of the existing Habilitation Center, while also introducing theoretical ideas and design guidelines regarding health promotion. These guidelines include strategies for physical movement such as indoor and outdoor exercise areas, climbing walls and access to nature.

Discussion

The design of a habilitation facilities can play a role in creating a dynamic environment adaptable to the needs of people, a healing environment that helps people reach a general state of well-being, enabling them to seize control over their own health.

Conclusion

This proposal can be used to discuss design and development of habilitation centers in Uppsala and other locations, in relation to new care approaches such as health promotion.

Keywords: healthcare architecture, health promoting architecture, active design, habilitation, habilitation facilities, rehabilitation.

Table of Contents

Introduction

Why is health promotion relevant for habilitation?
What is the aim of this Master Thesis?
Where is the project?
Which are the delimitations?

Health promotion and habilitation

"Health is created and lived by people within the settings of their everyday life: where they learn, work, play and love" (the WHO Ottawa Charter for health promotion, 1986). In this context health promotion is relevant for habilitation centers because patients of this facilities need to be stimulated in their everyday life by an environment that provides spaces and equipment which promote active behavior and create a healthy life style. This way the focus is moved from the medical conditions and disabilities and more importance is placed on user needs and interactions between people.

The aim

The aim is to research building design solution which promote active behavior in the context of an existing Habilitation Center in Uppsala, Sweden. Solutions are tested in a design of a new building on the given plot. The design solution is built on a theoretical frame, taking into consideration the expressed needs of the clients and the possible needs of users.

The design is intended as an inspiration for decision makers involved in the development of the Habilitation Center and as part of the discussion concerning health promotion.

Location

The project is developed in the context of an existing 'Health and Habilitation Center' in Uppsala, Sweden. Currently, on the plot known as the Kungsgärdets center, there is a Habilitation Centre functioning in nine buildings. Both the county council and the staff are displeased with the current buildings and they are looking into solutions to revitalize the center.

The project is part of the pre-study for the development of the new Healthcare and Habilitating Centre. The Decision Makers are open to new ideas and concepts and want to have also an outlook from a student, an inspiration and proposal on how the center could be developed without any economical constrains.

Delimitations

As the plot of the center is quite large, with many functions which need to be design, and having a limited time for the Master Thesis and a theoretical purpose, the focus will not be placed on all the buildings on the plot. The design process analyses the existing localities, proposes the buildings which are to be demolished, followed by the development of a master plan for the plot. The focus however is on the design of the localities for the Habilitation Center.

Methodology

Process of the Master Thesis

The process of the Master Thesis started with a Research Question moving towards a Design Proposal (see Figure 2). The progress was iterative in nature, moving from one investigation to another in a recurring manner. Each investigation informed the other and all circled back the research question which informed the design process leading to the Design Proposal.

To understand the different needs and wishes of users and clients the thesis involved reading scholarly literature and studying reference projects, imagining personas and interviewing a person who went through a rehabilitation treatment. The interview helped to better understand a patient's journey and to grasp the difference between rehabilitation and habilitation.

The next step was understanding the social and architectural context. The social context was studied by organizing interviews and a workshop with the stakeholders. Furthermore, during the visit to the center the staff and patients were observed. The behavior investigated was the way visitors and relatives are received and how they spend their time before and after the consultation. The architectural context was studied through an informed urban analysis of the city and the neighborhood, and by visiting different departments in the existing Habilitation Center.

These studies provided information that could be translated into design tools such as diagrams, sketches and models, tools used to develop the Design Proposal.

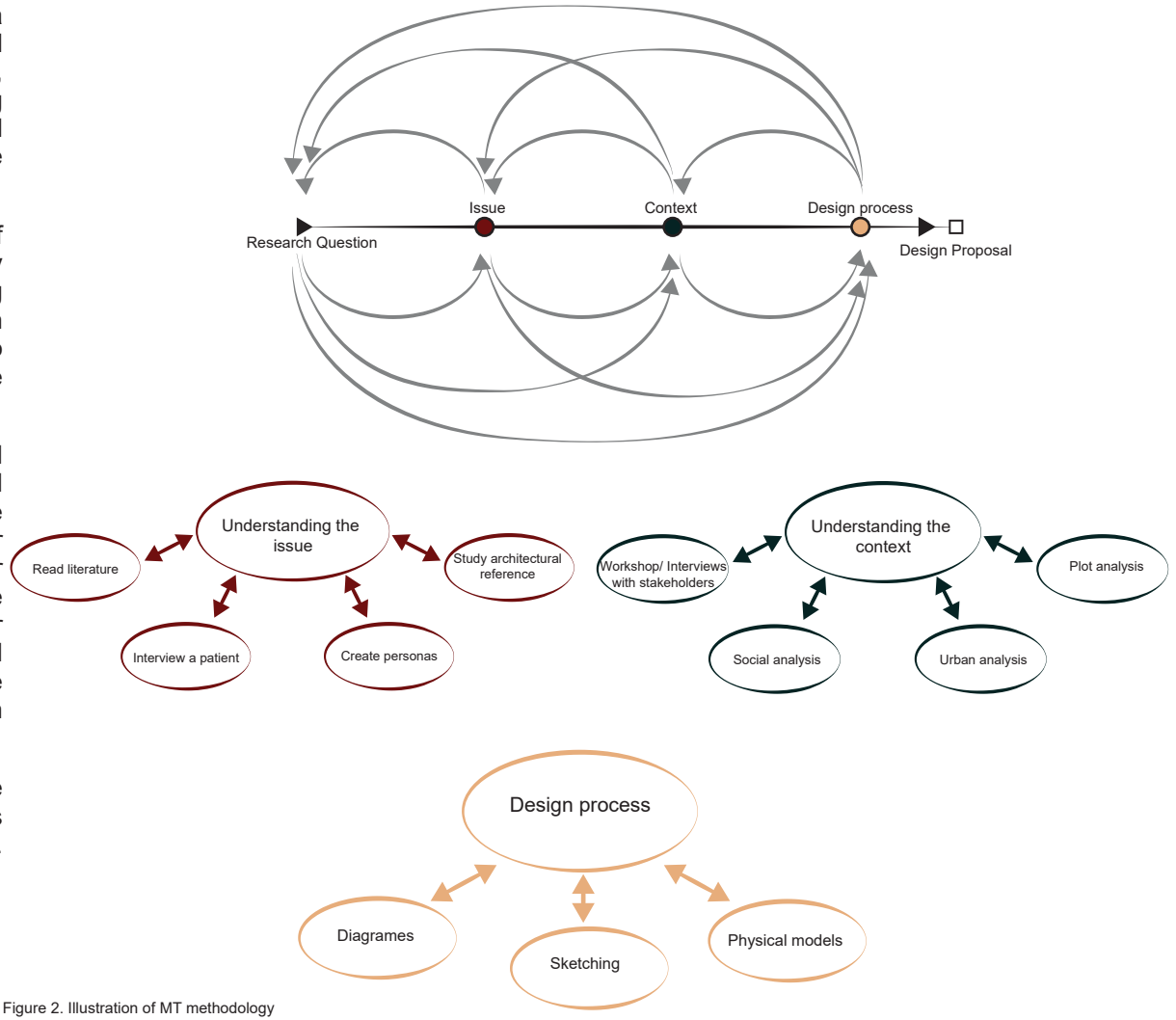


Figure 2. Illustration of MT methodology

Part 1

Theory - Understanding the issue

Figure 3. Illustration of west facade in spring

Healthcare architecture

What is the issue?

Healthcare and healthcare architecture are important parts of our life and cities, however we often forget about their importance when we are healthy. But what does it mean to be healthy? When is one healthy? If we consider the salutogenic approach we are in a continuum of ease-dis-ease, perpetually moving from an ease pole to a dis-ease pole (Figure 4). This movement can have different speeds and spectra, meaning that 'being healthy' is relative, and could represent different states of well-being which are independent from a medical diagnostic. This is important to understand if we consider habilitation facilities, the issue of this thesis.

Habilitation facilities are medical centers which address the needs of people that are in a state of what can be called 'dis-ease'. They do not move in the continuum of ease-dis-ease and they have to learn to live a healthy, active life while managing a medical condition (Figure 5). This means they can and should have a wholesome state of well-being beyond the traditional view about what "healthy" means. The needs of the users can vary, from accessible routes and building equipment designed for less mobile people, to positive distractions such as greenery, meeting places and sport equipment. The building needs to provide an environment that challenges without harming, because an environment that lacks challenges leads to atrophy but too much challenge can be damaging (Golembiewski, 2010).

Architecture plays an important role in enabling users to find what a 'healthy status' means for them and providing the tools to reach a state of balance between stressors and manageability. As architects of medical centers we should understand our role in creating the setting on which individuals can develop their own habilitation process and reclaim agency over their health.

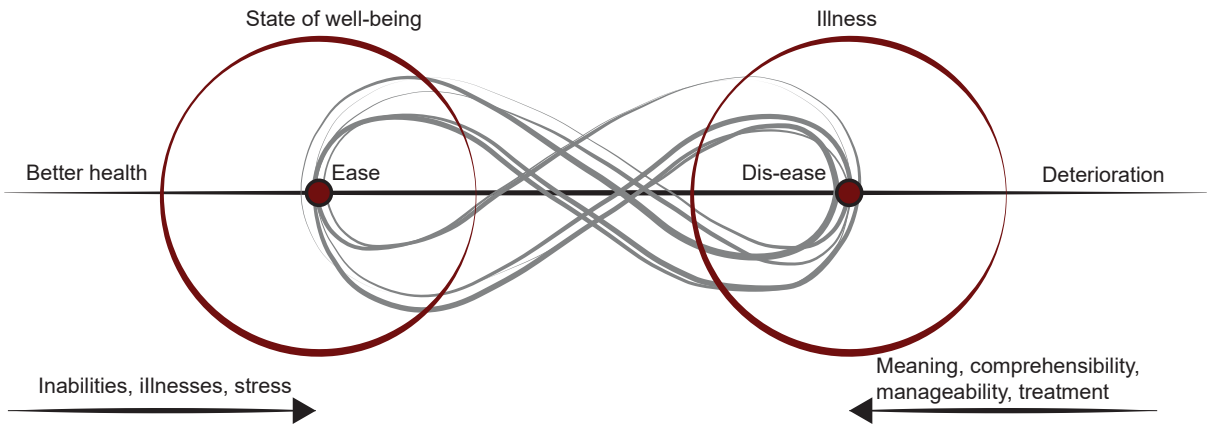


Figure 4. Illustration of ease-dis-ease continuum. Reinterpretation of the ' The salutogenic effect' (Golembiewski, 2010)

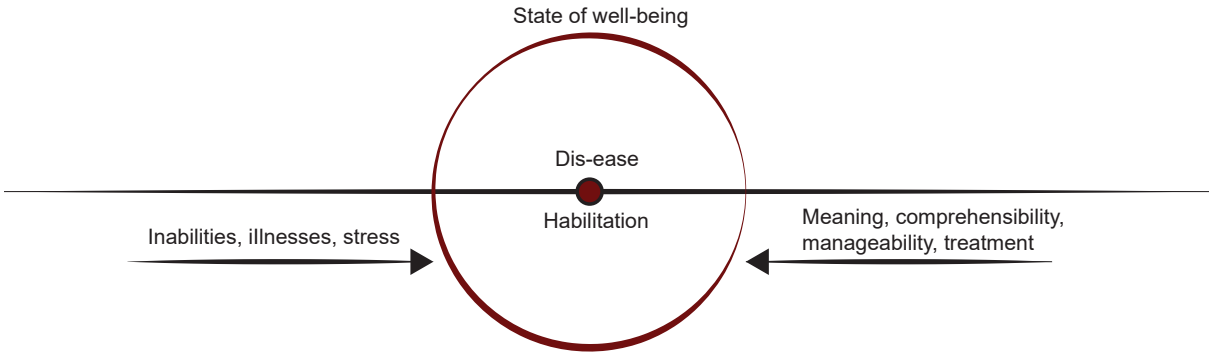


Figure 5. Illustration of the process of habilitation in the context of well-being. Interpretation of 'the salutogenic effect' in the context of habilitation. (author)

Habilitation

What is habilitation?

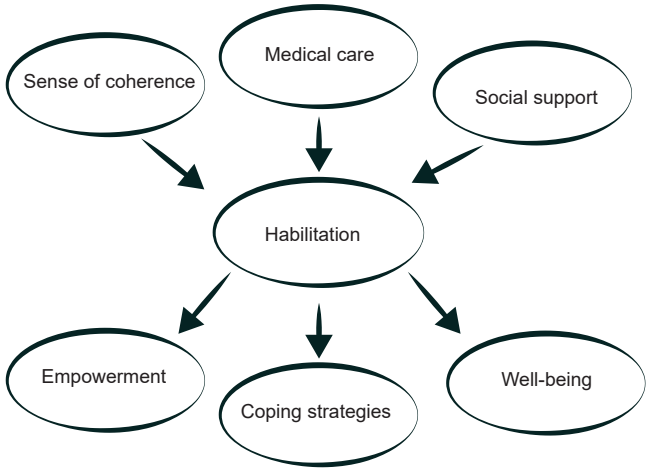


Figure 6. Illustration of the habilitation theme

Habilitation is a term rarely used, if not in Sweden certainly in other countries. Rather Rehabilitation is often used as an umbrella term. However, there is a difference between rehabilitation and habilitation. Habilitation refers to people that were born with a condition, or people whose health deteriorated to a point that it will never recover. So it's not a question of Rehabilitating, or Regaining a previous health status, it's about learning to live with a certain health condition. This is relevant and meaningful because a Habilitation Center caters to the needs of strong individuals who should never feel stigmatized because of their health condition. Having a disability doesn't mean one should feel different but empowered, patients visit a habilitation center every week, which means the built environment becomes influential for them and should be a space which promotes health.

So often we refer to healthcare when we actually mean disease-care because we follow a pathogenic paradigm of curing a sickness, but a habilitation center, doesn't cure, it helps people cope with a certain health status. Rehabilitation, and by extension habilitation, was named the "third phase of medicine following preventive medicine and acute care" (Campagnol, Shepley, 2014) and this is important to note because habilitation facilities should receive the same attention as all the other medical centers, more so because people come to these facilities weekly for many years. These spaces become an integral part of their life and it should give them social support and help them develop a sense of coherence-comprehensibility, manageability and meaningfulness. Thus the surrounding environment needs to facilitate physical activity, attention restoration, stress reduction and positive emotions (Lindern E von, Lymeus F, Hartig T 2017).

Since neurotransmitters react to environmental stimuli design becomes a tool in shaping the sense of coherence of users (Lindern E von, Lymeus F, Hartig T 2017). This can be achieved by providing good way-finding, using colors, keeping people engaged in the world around them and providing social support. People undergoing habilitation treatment can often feel like they are disconnected from society and belong to a minority group and this can lower their sense of coherence (Lindern E von, Lymeus F, Hartig T 2017). This is why a Habilitation center should have a strong connection with the community around it and be part of the neighborhood. A habilitation center should be more than the treatment rooms and corridors of a traditional medical center. It should be a place which challenges and empowers, which motivates and prompts an active behavior for all users regardless of age, gender and medical needs.

Health promotion design

What is health promotion?
What is active design?

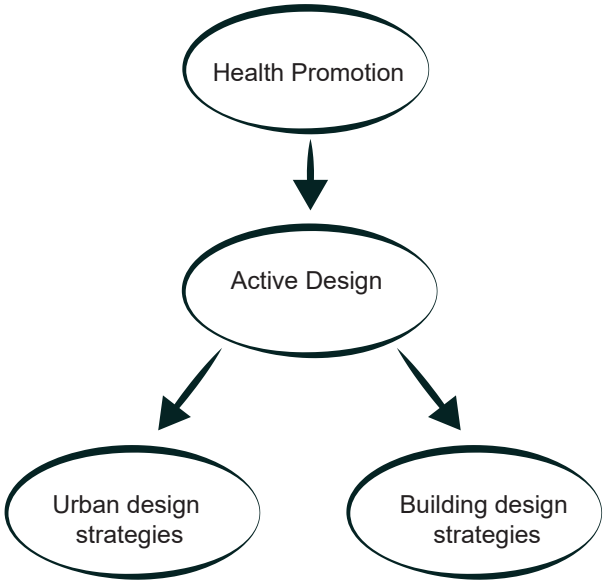


Figure 7. Illustration of the Health Promotion theme

Health promotion is a vast subject which can have different definitions and perspectives (Miedema, Lindahl, Elf, 2017). Among the most common definition is the one detailed by the World Health Organization's (WHO), here health promotion is described as "the process of enabling people to increase control over their health and its determinants, and thereby improve their health". As health promotion is such a vast subject there are still many issues to be discussed, analyzed and tested, especially when it comes to active design.

The main perspectives of health promotion are: health behavior, health equality and the salutogenic perception of health promotion, these perspectives have overlapping topics but can also differ in their approach (Miedema, 2017). However, in order to design a health promoting building one has to evaluate all these perspectives and distil the guidelines that can be translated into design.

This thesis explores strategies based on the Health Behavior Perspective.

The Health Behavior Perspective relates to approaches which stimulate a healthy lifestyle, prompting physical activities, social interaction and health diets (Miedema, 2017).

An intrinsic part of health-promotive design is Active design which can translate in strategies and design features (Miedema, 2017).

Active design refers to the process of creating spaces and opportunities which promote regular physical activities both in outdoor and indoor environments (Active Design, 2010).

A selection of representative guide lines, which can be integrated in the design of a Habilitation Center are:

Urban design strategies: developing parks and plazas; enabling access to fresh produce through: food markets, farmers' markets and urban farming; proving covered sidewalks, bicycle lanes, bicycle parking, running tracks, walking paths, sport courts and playgrounds; ensuring good outdoor lighting, a variety of climate environments, for different seasons, after hours activities such as cafes, concerts, cultural events, art exhibitions and establishing the 'imageability' of the place by making it part of a city network of landmarks (Active Design, 2010).

Building design strategies: arranging exercise rooms and spaces; designing multipurpose rooms, stairs for everyday use, grand stairs, porches, terraces; incorporating art and interesting views along the paths of travel within a building and equip the building with incremental distance markers and signage which help people set goals (Active Design, 2010).

Part 2

Analysis - Understanding the context

Figure 8. Birds-eye view of existing Kungsgärdets center

Kungsgärdets center

Stakeholders and context

The stakeholders for this project are the Users of the building and plot and the Decision Makers/Clients. In order to develop a coherent proposal their needs were considered, analyzed and translated in building design proposals.

The Decision Makers are mostly interested in solving the circulations flows and patient/staff flows and seeing if the project can be developed in stages in order to sell/ rent the land/functions, make profit and invest more in the center. They want an overlook on the property and on what could be achieved in the future on the plot and in the Habilitation Center.

The intention expressed is of establishing a new approach on how users move through the center, interact with each other and how staff areas are developed. They envision the center becoming a place where patients find all the help they need without going to another institution, centralizing all the needs of the patients.

The needs of Users are researched by reading literature, interviews and creating personas. They are approached in the context active design, researching how they can inform the building design solution.

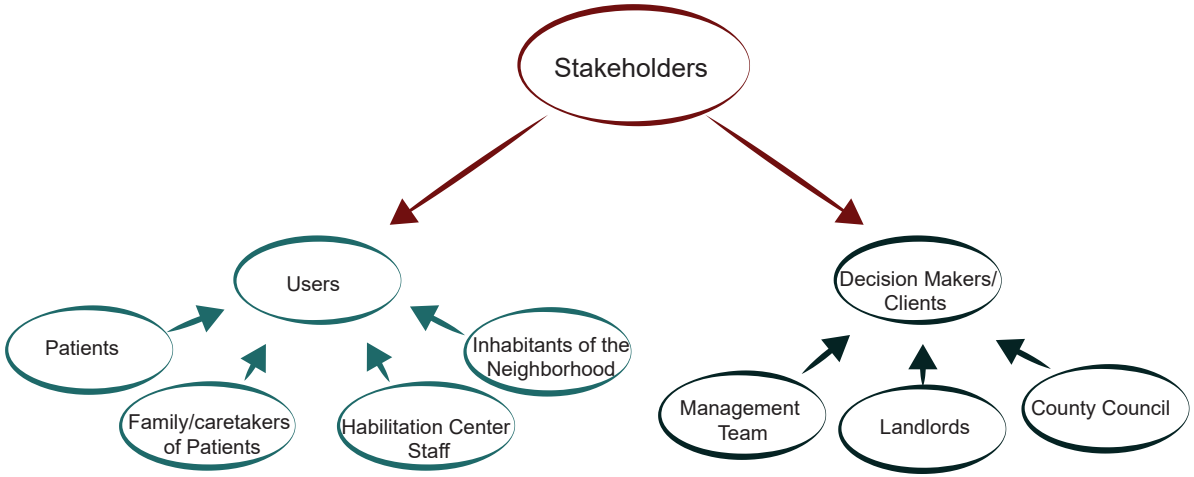


Figure 9. Illustration of the stakeholders of the project

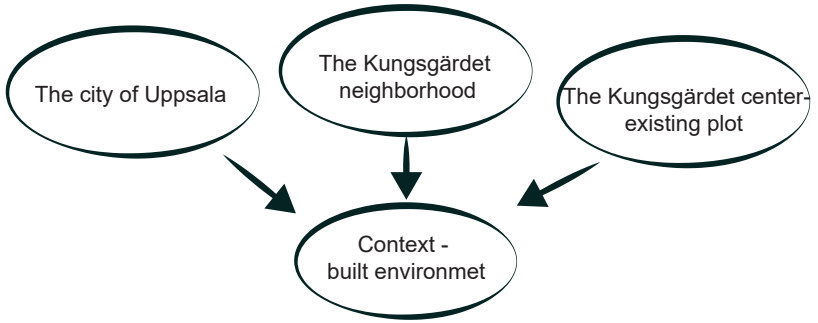


Figure 10. Illustration of the built environment context

Urban analysis

Urban scale

Uppsala, the fourth largest city in Sweden, is located 71 km north of the capital Stockholm. The proximity to the capital makes the city very accessible and affects the amount of people coming to seek treatment at the Kungsgärdets center. At the moment the center serves not only people living in Uppsala but also those living in the nearby area.

Uppsala University is the oldest center of higher education in Scandinavia, making the city a student center. It can be said that this gives the city its characteristic image and shapes the community. A large part of inhabitants are students, and vast areas are dedicated to student housing and universities. This is noticeable in the area surrounding Kungsgärdets center. The site is located between student housing and universities, making the area around it accessible especially to students. The proximity to the capital and student areas gives great potential to the center which can become relevant not only to people visiting the medical facilities but also to people living in the neighborhood.

The city has also many parks and gardens and the site is connected to this green network. When asked which are the aspects they like about the center, the people interviewed said: “for me the existing buildings are not important at all, what I like about the center are the mature trees, I like that there are big, grown trees here“. Another notable green space in the area is the Old cemetery (Gamla Kyrkogården), people interviewed said they like the cemetery park and they see it as an important part of the neighborhood, “something that will be here for many years to come”.

Figure 11. Illustration of project location

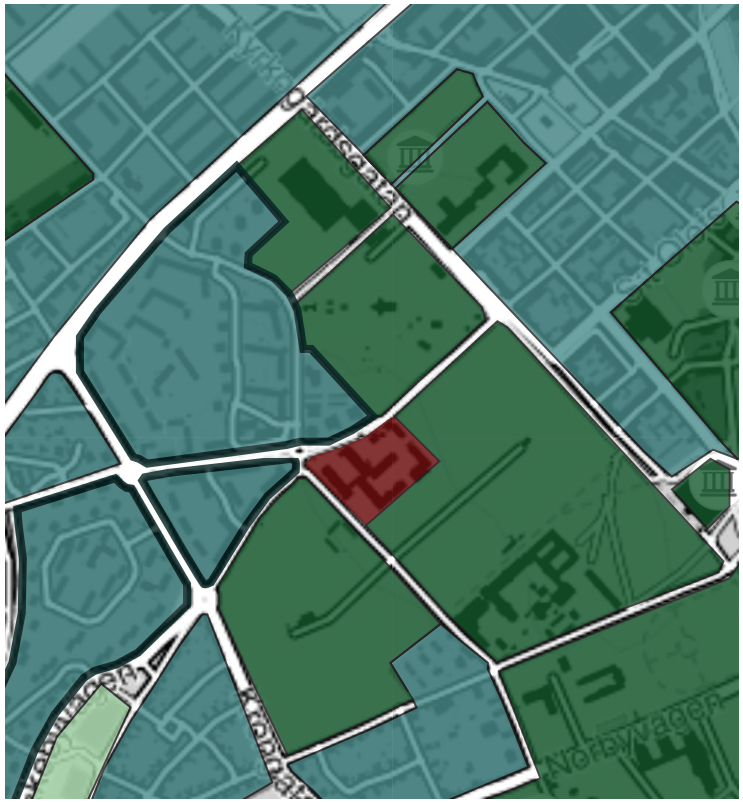


Figure 12. Illustration of distribution and proportion of the main functions in the analyzed area

Site

Greenery

Housing

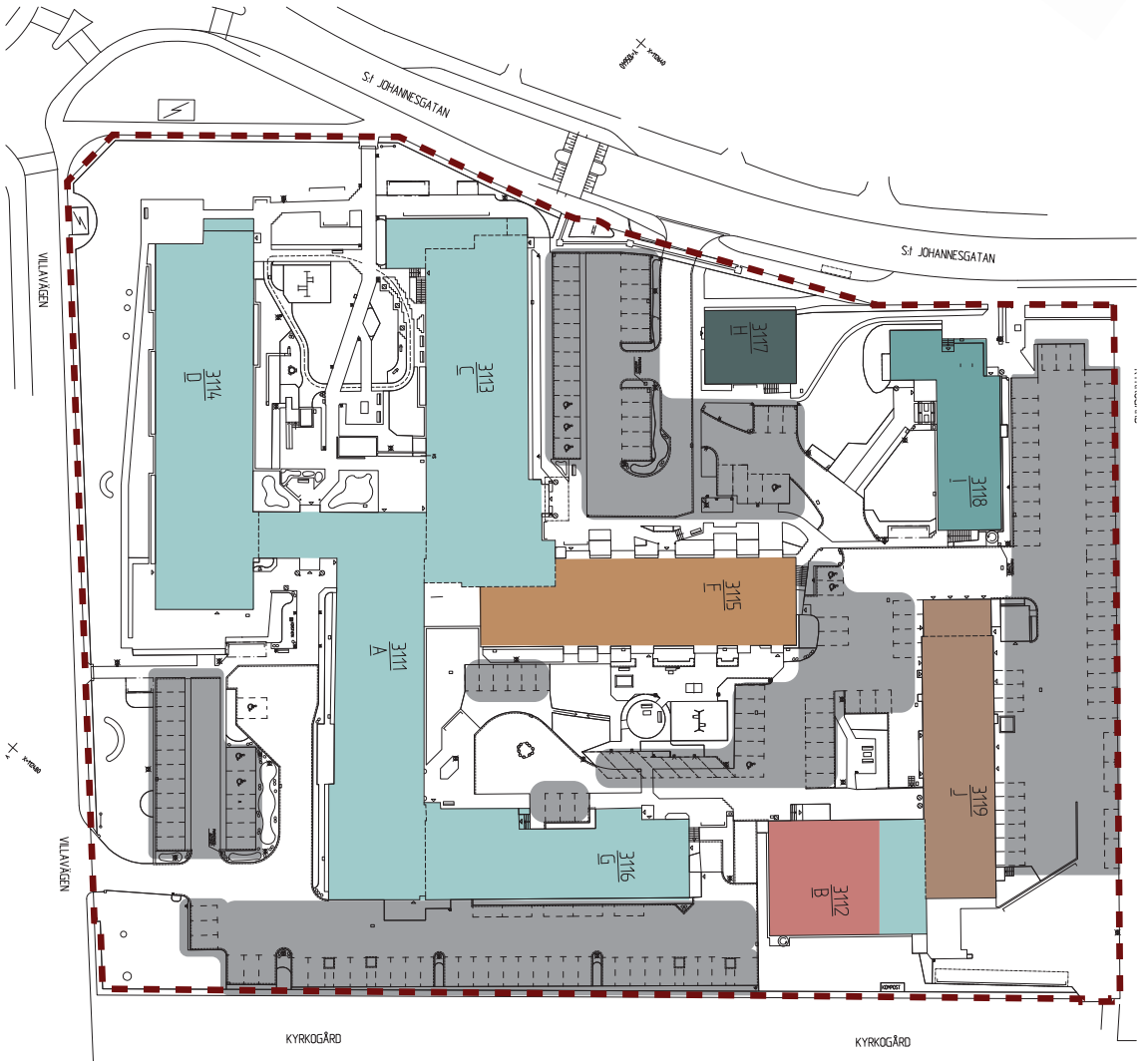
Student housing

Sport facilities

Plot analysis

Existing zoning

- Habilitation related functions
- Offices
- Elderly care and mobile unit
- Infoteket
- Technical functions
- Rented building to guest functions
- Parking



Plot analysis

Existing buildings

Unfortunately the existing buildings on the plot don't have an interesting architecture, and do not function very well. They are too small, outdated and even harmful for the health of the users, in one of them staff reported feeling sick which determined the evacuation of most of the building for refurbishment work. The site also has problems with the flows, which often are mixed, creating confusion for the visitors. The need for new localities lead to considering the redesign of the plot and the addition of new functions such as: elderly care, extra administrative functions and community information, as well as the possibility of renting or selling part of the plot.

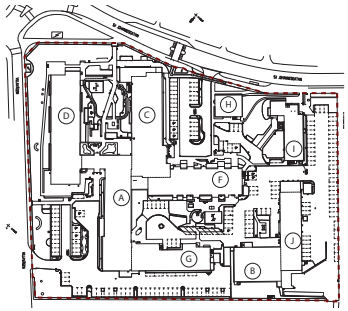


Figure 13. Illustration of buildings on the site

Figure 14. Photo of Building A

Figure 15. Photo of Building B

Figure 16. Photo of Building C

Figure 17. Photo of Building D

Figure 18. Photo of Building F

Figure 19. Photo of Building G

Figure 20. Photo of Building I

Figure 21. Photo of Building J

Plot analysis

Existing functions and departments

Existing departments per building, including support rooms, circulation and administration area.

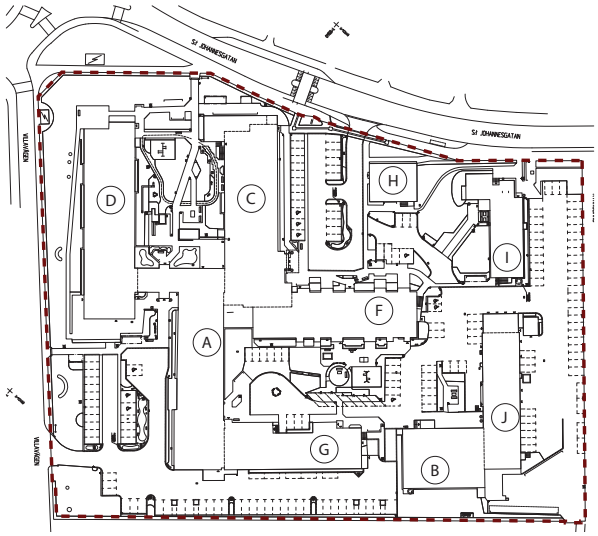


Figure 22. Illustration of buildings on the site

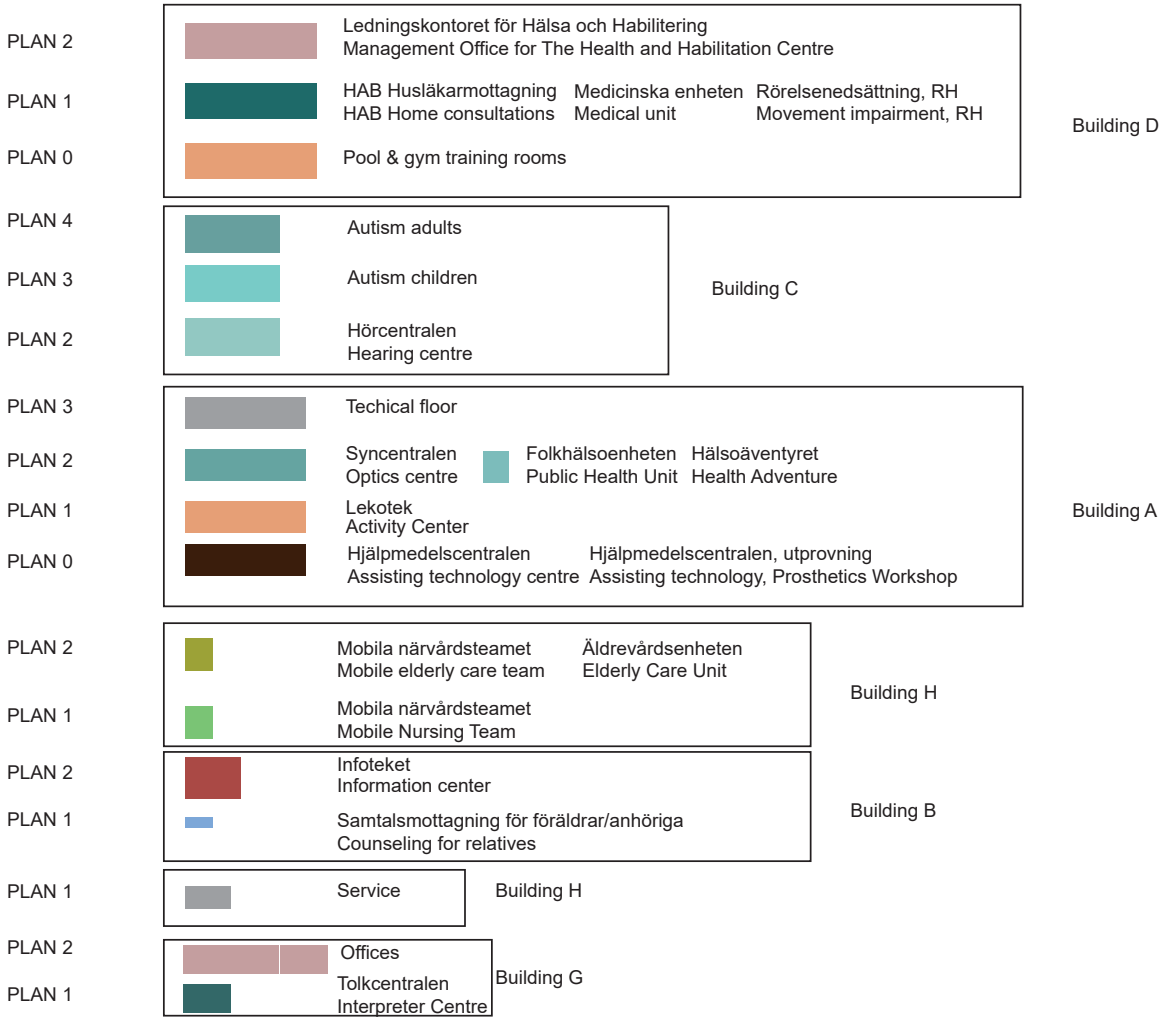


Figure 23. Illustration of functions on the site

Plot analysis

Existing flows

Bicycle roads

Automobile access

Visitors pick-up/drop-off

Goods/Waste management

Walking tracks

Pedestrian access

Traffic congestions

Problematic mix of flows

SWOT analysis

Strengths	Weakness	Opportunities	Threats
• Good position in the city • Good access to nature • Good access to the main hospital and other healthcare related functions • Easy to be accessed by car, public transportation, pedestrians and bicycles • A very lively area, with many students and people passing by the center • Beautiful nature, with mature trees and views to the old cemetery • People like walking in the cemetery	• There are no parking spaces nearby, only street parking • In the vicinity of the site there are only fast-food restaurants • There is no restaurant/cafeteria at the center • There are no pharmacies in the vicinity of the site • There is a mix flow of circulation on the center, with congested areas • It's hard to orientate in the courtyard • It's hard to orientate in the buildings • The buildings are outdated • Employees reported feeling sick in Building C • The waiting areas are small and uninteresting	• Close to student housing • Close to kindergartens and university area • Close to main city landmarks • Mixed use of the site, the landlords are considering selling part of the land on the center. This can determine an interesting mix of functions and ages and bring more functions in the center, making it more interesting. • The administration wants to work with flex offices • The staff is opened to new ideas and concepts • The administration is opened to the idea of integrating other activities after working hours	• Limited usage of the area with no other activities except parking and access to the medical center • Taking much space in the community without giving anything back. • Loosing the center's character if all the buildings are demolished.

Part 3

Vision - Developing the design

Figure 24. Illustration of east facade in summer

Architectural references - 1

Project: Rehabilitation Centre Groot Klimmendaal

Figure 25. Photo of facade

Location: Arnhem, The Netherlands
Architects: Architectenbureau Koen van Velsen BV
Area: 14,000 sqm
Project Year: 2011

The sport and entrainment facilities requiring large and tall rooms are accommodated in the center of the building. These facilities are a sport hall, fitness rooms, swimming pool and a theatre. These spaces are used not only by the patients but also by family members and members of the local community.

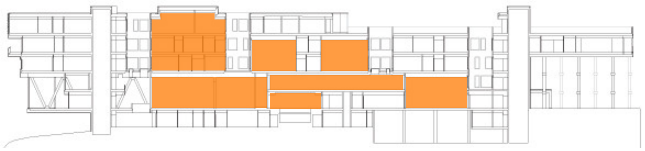


Figure 26. Section through the building illustrating the distribution of sport areas

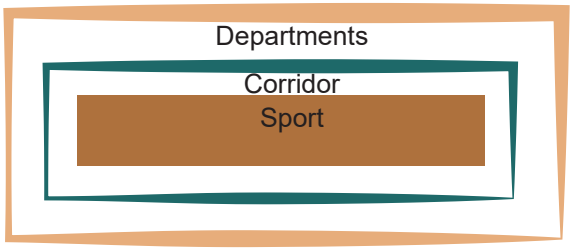


Figure 27. Illustration of layout flexibility strategy

The layout of the floors allows for a clear orientation and provides an easy separation between departments and sport facilities. This way the departments receive daylight while being able to change in size if required. This makes the building flexible for future changes.

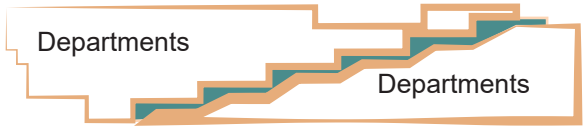


Figure 28. Illustration of Health Promotion strategy

The stairs that go along the building encourage an active behavior for both patients and staff.

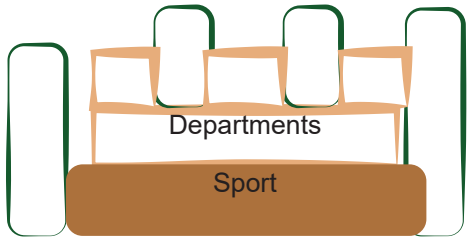
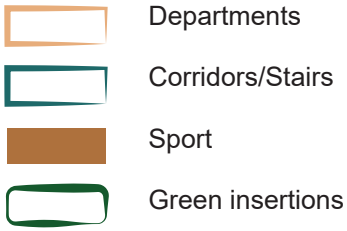


Figure 29. Illustration of daylight and greenery access

Daylight requirements can be achieved even in the core of the building by adding light wells and voids. This also helps with orientation through out the building since every void can have its own identity. Moreover, the light walls can become interior courtyards with greenery.



Architectural references - 2

Project: REHAB, Centre for Spinal Cord and Brain Injuries

Figure 30. Bird eye-view photo

Location: Basel, Switzerland
Architects: Herzog & de Meuron Architects
Area: 22,890sqm
Project Year: 1999-2002

Connection to nature was an important design factor. This is achieved by large courtyards that serve as orientation and allow daylight to penetrate the entire building. Another feature is that everything happens in one place, the building becomes a small town with streets, plazas, gardens

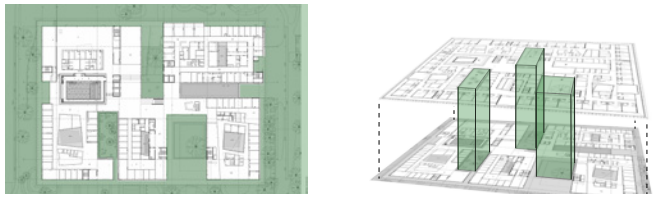


Figure 31. Plans illustrating the distribution of courtyards

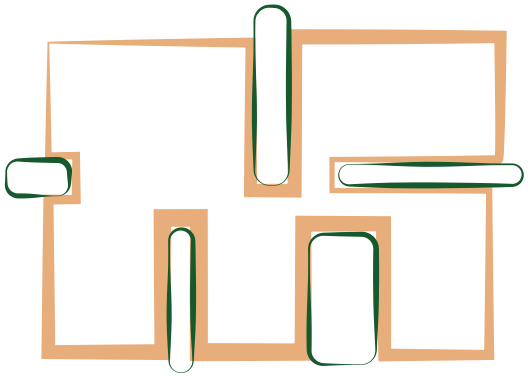


Figure 32. Illustration of access to nature

The courtyards help the users to orientated and give physical and visual access to nature.

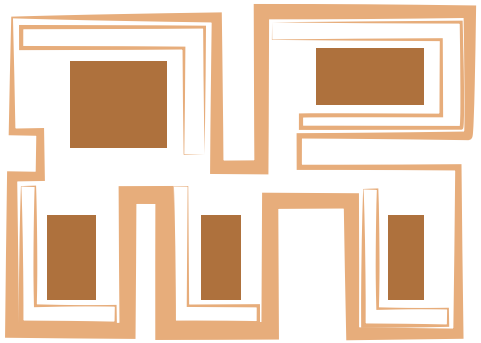


Figure 33. Illustration of layout flexibility

Having the support functions in the core of the building makes the building more flexible for possible changes in the future.

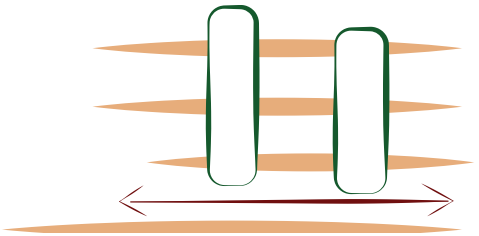


Figure 34. Illustration of layout orthogonality

The horizontal, orthogonal layout enables fluent movement throughout the building.

Architectural references - 3

Project: Frederiksbjerg School

Figure 35. Photo of interior

Architects: Henning Larsen Architects, GPP Architects
Location: Aarhus, Denmark
Area: 15,000.0 sqm
Project Year: 2016

The building is organized around a center atrium that becomes the main feature of the building. Sport activities take place not only in the sport hall, but also throughout the building, in designed play areas where children can meet and have fun.

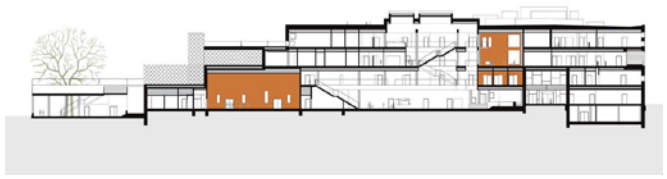


Figure 36. Section through the building illustrating the distribution of sport areas

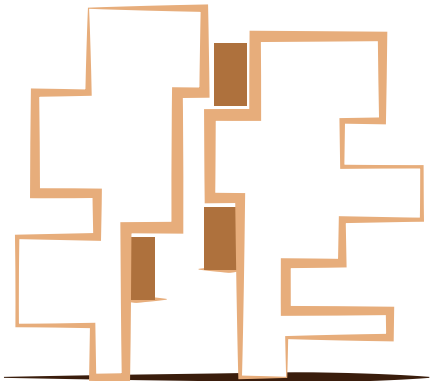


Figure 37. Concept section illustrating the layout of sport activities

In the atrium there are numerous activity spaces that are visible from all levels.

Figure 39. Concept plan illustrating the layout of sport and core areas

The building is organized around a central core that spans vertically helping with orientation .

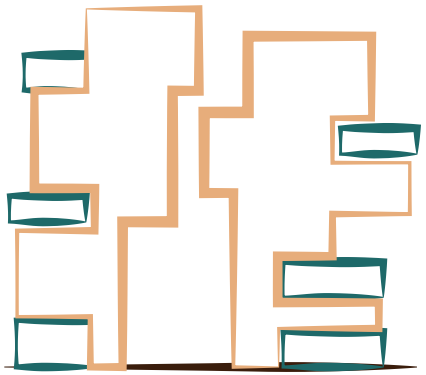
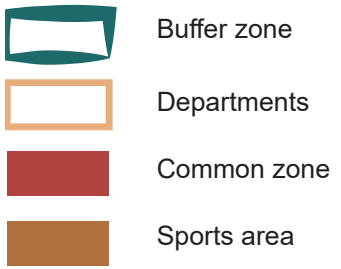


Figure 38. Concept section illustrating the layout of buffer zones

The terraces function as outside classrooms, meeting places for the community and ultimately as buffer zones between the city and the school.



Design ambitions

From research to design ambition

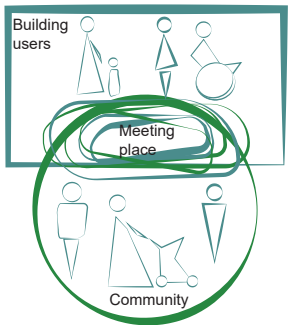


Figure 40. Illustration of the relationship between community and users

Creating opportunities for the users of the building and people from the community to meet and interact.

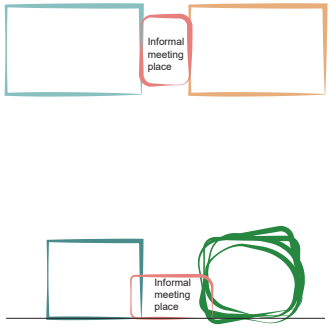


Figure 41 Illustration of spaces for informal meetings between different areas

Enable informal meetings between users.

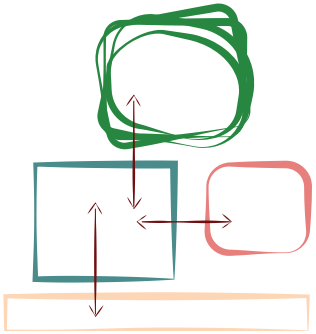


Figure 42. Illustration of the circulation between different areas of the building

Providing different options of circulation throughout the building.

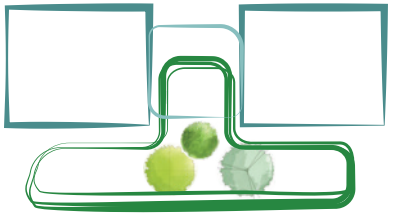


Figure 43. Illustration of the extension of outside space inside an atrium

Relating the interior space with outside areas.

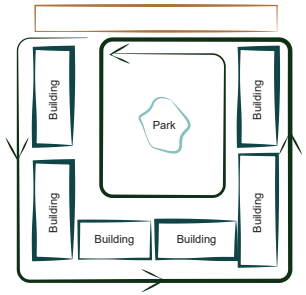


Figure 44. Illustration of health promoting walking/running tracks

Promoting physical activities such as walking and running.

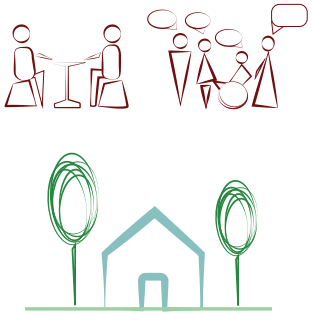


Figure 45. Illustration of positive distractions: talking, urban farming in greenhouses.

Encouraging restorative activities such as talking and gardening.

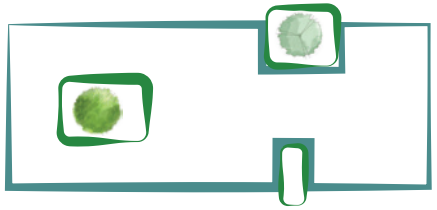


Figure 46. Illustration of greenery insertions

Insertions of greenery throughout the building.

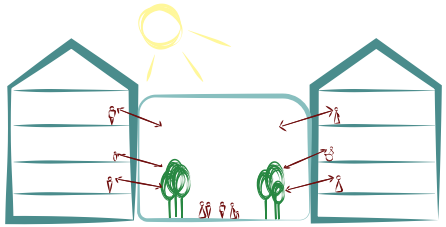


Figure 47. Illustration of how an atrium can help way-finding

Providing good way finding and place recognition.

Design strategies

From ambition to design strategies

Strategies for Active behavior:

*Building Design strategies for **movement through the building**:*

- Different levels of ground and floors
- Easy accessible stairs in different departments.
- Grand staircase.
- Different landmarks in the building and courtyard.
- Interesting views along the paths of travel.
- Common functions on the ground floor.
- Terraces and access to outside environment.

*Building Designed spaces for **physical exercise**:*

- Indoor gym
- Exercise spaces with different sizes.
- Climbing walls
- Multipurpose areas
- Large open spaces for different activities

*Strategies for **community interaction**:*

- Access to after working hours activities such as gym and café.
- On site running tracks and walking pathways
- Outdoor exercise areas, playgrounds and sport court.
- Urban farming.

*Strategies for **future proofing**:*

- Floor plan with fixed core and general sized rooms, this enables the departments to change size in time.

***Environmental** strategies:*

- Recycled brick
- Greenery

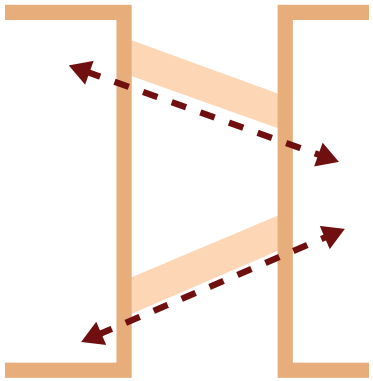


Figure 48. Illustration of everyday use stairs/ platforms

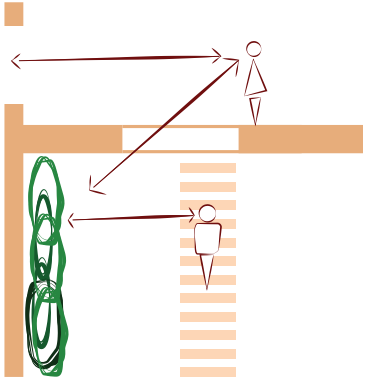


Figure 49. Illustration of interesting views along the paths of travel

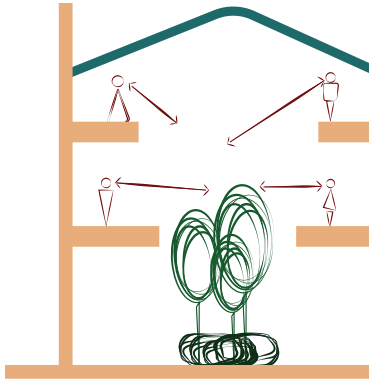


Figure 50. Illustration of large open spaces

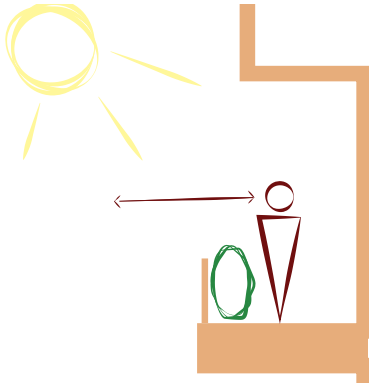


Figure 51. Illustration of terraces and access to outside environment

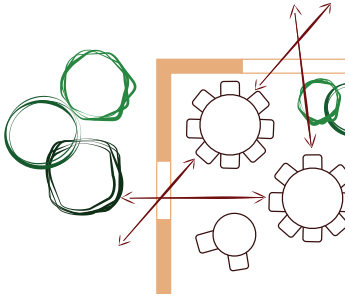


Figure 52. Illustration of multipurpose rooms with outside views

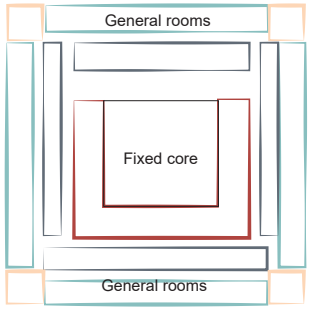


Figure 53. Illustration of future proofing strategy

Future development

Kungsgärdets center - tomorrow

Main Urban Design Concepts of plot development:

Opening the plot to the main directions of the neighborhood

The main directions of the neighborhood are the Old Cemetery, the University building and the City Center. By designing directions that can be physically accessed the site opens to the neighborhood and becomes accessible for everyone. The site has also meeting places which can attract people to access the plot.

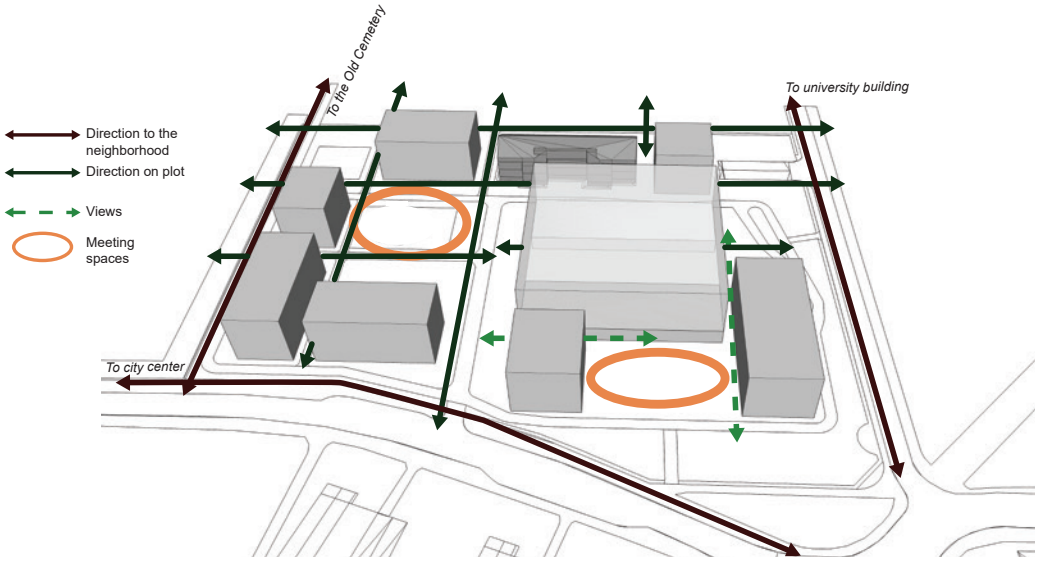


Figure 54. Illustration of directional paths and meeting spaces

Creating continuous paths for movement and greenery

On the plot there are two main paths which have different characteristics:

The Green Path which is a running/walking path that circles the site.

The Activity Lane which connects different fitness areas.

Another layer on the plot is the greenery, with features such as urban farming and pocket parks. These elements are also connected continuously, intersecting with the main paths, creating a dynamic and engaging experience for users.

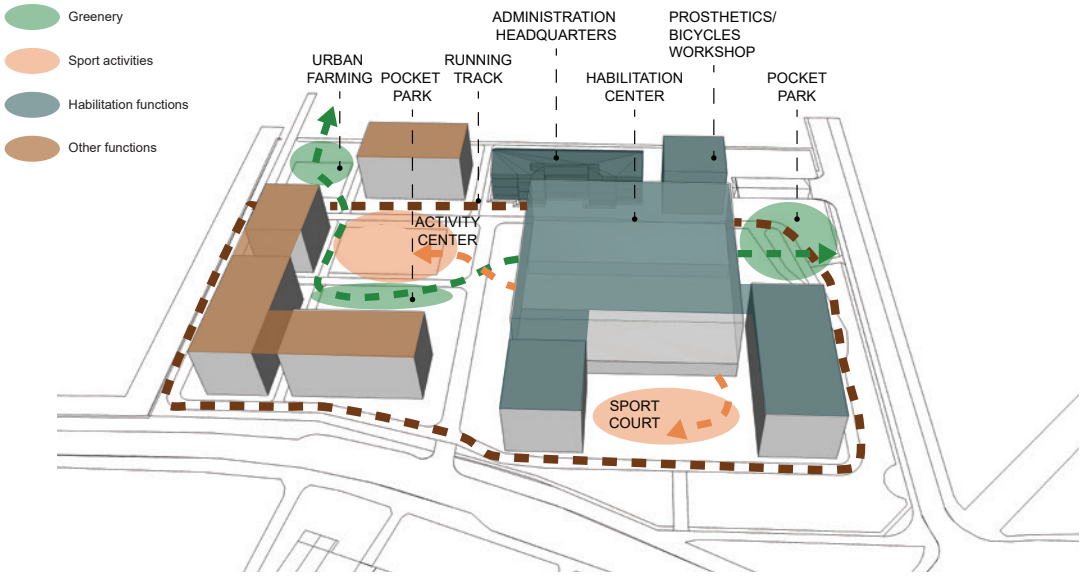


Figure 55. Illustration of functions and paths

Patient needs

Interview with female patient recovering from shoulder injury

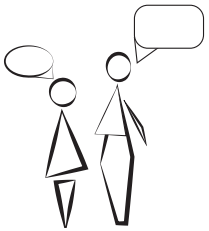


Figure 56. Illustration of patient interview

General information about the patient

The patient, Anna, suffered an injury at her shoulder while playing volleyball, she underwent surgery and after this, physic rehabilitation for 8 months.

Being an architectural professional most of the remarks where related to the build environment sometimes very specific, such as position of coat room.

Positive elements identified by the subject:

- Good to **see the reception** as soon as entering the building, it gave a reassuring feeling and helped with orientation.
- Good to have the **coat room close to the entrance** because it made it easier to become comfortable as soon as entering the space
- Nice to **wait with other people**, see/talk with other people going through the same experience
- **Comfy/home-like furniture**
- **Music in the waiting room** and around the locality
- **Training personal in training clothes** and not in hospital uniform
- The **possibility to adjust the equipment** and surrounding environment, for example the mirrors
- **Nice to have stairs**, there people can walk and train
- **Good for the rooms to have large windows** and windows which open to different angles and views.
- Important to have **natural light**
- Nice to have **wood on floors** and on other surfaces
- **The location of the facility is good to be central** as traveling may prove challenging
- Good to be in **constant contact with the trainer**, by phone but more specifically by email

Negative elements identifies by the subject:

- Some areas did not have sitting arrangements
- Difficult way finding
- Hard with public transport – it's better with buses that provide direct shuttle (flexlinije)
- Hard to make acquaintance, it might have been easier if they would have had the possibility to meet each other
- A room for children, where they can stay and play while their parents are undergoing treatment.

Rehabilitation time as seen by the patient:

Learning how to do simple things again, and regaining control of one's body	Fun time – when one can train and enjoy fun training activities

Client needs

Interviews and workshop with stakeholders

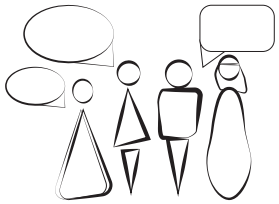


Figure 57. Photo of workshop

The semi-structures interviews took place in two different days, in different contexts and groups. During the last interview a workshop was conducted as well, with a hands on approach, where the participants drew, marked issues and moved scale buildings on the site. Current problems in the center were discussed and certain issues where highlighted.

The stakeholders in Uppsala:

- *Annika Nordberg*, Real estate manager, Landstingsservice – Fastigheter och Service, Region Uppsala

- *Patrik Jonasson,* Project planner, early phases, Hälsa och Habiltering, Region Uppsala

- *Johanna Wahlin*, Economics manager, Hälsa och Habiltering, Region Uppsala

The main issues identified are:

- **Congested areas** in the courtyard due to **mixed flows** between patients, cars and goods;
- **Inadequate parking**;
- **Mixed flows in the building** between different departments and decentralized way of working which requires the patients to move for long distances;
- **Orientation problem,** both in the courtyard and the buildings;
- **Lack of a cafeteria** for the patients and staff;
- **Too many entrances** and no main reception;
- **Sport facilities** for physiotherapy that are **too small** and not functioning well;
- **Deteriorated condition** of existing buildings.

The stakeholders were very positive to the idea of opening the center for people from the community and feel that the center would benefit from the interaction with students and from having early/late working hours. They suggested introducing volunteer programs for students which can be translated into a program where the students that volunteer in the center could have access to the training area, the pool area, gardening facilities and discounts in the cafeteria. Another program could be dedicated to foreign and new students that don't know the city, it could become a program that would help the students to integrate and the patients to engage in social activities. Another volunteer program could be a language café that can take place in the centers' cafeteria and would help people new to the country. All these different programs would transform the center into a modern agora which would be beneficial for the users of the center, the community and ultimately the stakeholders.

Users needs

Persona 1 - Female patient with hip pain

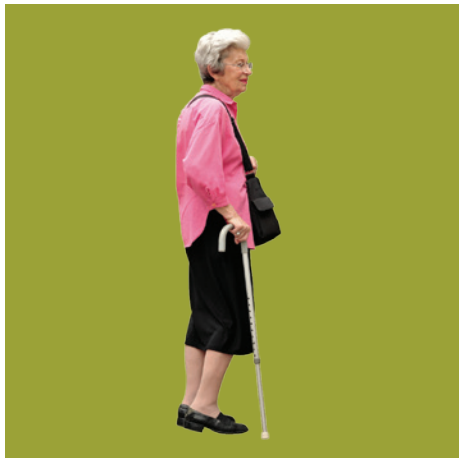


Figure 58. Illustration of persona 1

General information about the patient

Maria is 68 years old, former nurse, needs habilitation to relief pain in her hip caused by falling and arthritis. She didn't undergo surgery but needs physical therapy to reduce pain and improve joint mobility. She comes at the centre once a week. As she was a nurse she feels comfortable in the medical setting and enjoys coming to the rehabilitation center, especially if she can train with other elderly people and talk with the staff, though she is afraid she will fall again this time breaking her hip and needing surgery.

As she also has a heart condition she is aware that at her age a hip surgery could prove difficult: Geriatric hip fracture is associated with increased morbidity, functional decline, and use of nursing home services, as well as a higher mortality rate: One in 5 hip fracture patients dies within a year of the injury. (Close, J. D., Swartz, K., & Deu, R. 2013)

Positive elements helpful for the patient:

- **Easy access to the center**, she needs to be able to come alone
- She would like to **live as close to the center as possible**, she could consider moving to an assisted living facility where she would feel more comfortable having 24 hour assistance.
- She **enjoys group exercise** with people of her age, not younger
- She **enjoys chatting after the training sessions** and would like an informal space where she could have a coffee and talk
- She **enjoys walking** but is afraid she might fall and will not be able to get up, would benefit from a walking track where she could be overseen by staff.
- She would **benefit from nutrition classes** where she can learn about diets rich in vitamin D and balanced diets what would help with her bone and heart problems

Rather than focus on a single exercise, however, a combination of activities—Tai Chi and walking, for instance, or weight lifting and cycling —appears to have the best likelihood of fall reduction. Whenever possible, physical activity for older patients should include challenges in executive function, as well. In a recent study comparing regular walking with trail-walking between sequentially marked flags, participants in the more complex activity had a greater decrease in fall rates. (Close, J. D., Swartz, K., & Deu, R. 2013)

Negative elements influencing the patient

- She finds it hard to orientate due to poor sight
- She can't walk long distances or take the stairs
- Sometimes she gets confused and can't recognize places

Users needs

Persona 2 - Child with Autism

Figure 59. Illustration of persona 2

General information about the patient

Alex is an 8 year old boy with autism. He has a younger sister and a loving supportive family. He can perform some tasks alone but relies on his parents for many day to day tasks and cannot interact with strangers.

He is taken care mainly by his stay at home mother and has weekly interactions with an assistant that comes at his home.

He comes at the center 10 hours per week for therapy.

Positive elements helpful for the patient and his family

- His mother must come with him for each visit and brings the younger sister along, they would benefit from **a space where the sibling could stay and play** while the mother discuss with the therapist or engages in therapy with her son (for example floortime therapy)
- The mother would benefit from **a space where she could relax while waiting** for the therapy to end
- The parents would benefit from participating to **meetings where they meet other parents** going through the same experience, this can be a place designed for more formal group meeting monitored by a therapist or as an informal meeting while having coffee.
- The boy would benefit from **free play in a natural, safe environment and breaks in a pleasant space** – this can be correlated to Physical Therapy.
- It could be **good to have group rooms** for Social Communication/Emotional Regulation/ Transactional Support (SCERTS) Therapy or for Speech Therapy conducted in small groups, or in a classroom setting
- Different types of therapies: Speech-Language Therapy (SLT), Occupational Therapy (OT), Sensory Integration (SI), Physical Therapy (PT), Social Skills, Picture Exchange Communication System, Auditory Integration Therapy, Gluten Free, Casein Free Diet (GFCF)
- The mother would benefit from **nutrition classes** where she could learn more about dietary restrictions and balanced diets that might help the boy

Negative elements influencing the patient and his family

- He gets agitated when seeing new people, his interactions have to be well planed
- He needs to come to an environment that feel home-like and safe

Design requirements

A network of problems and solutions

After exploring the subject and the context it became clear which issues had to be addressed by the design solution:

- Problems expressed by stakeholders
- Design ambitions which reflect user needs
- Design solutions for active design.

These issues are linked to problems, requirements and design strategies, some interacting with each other.

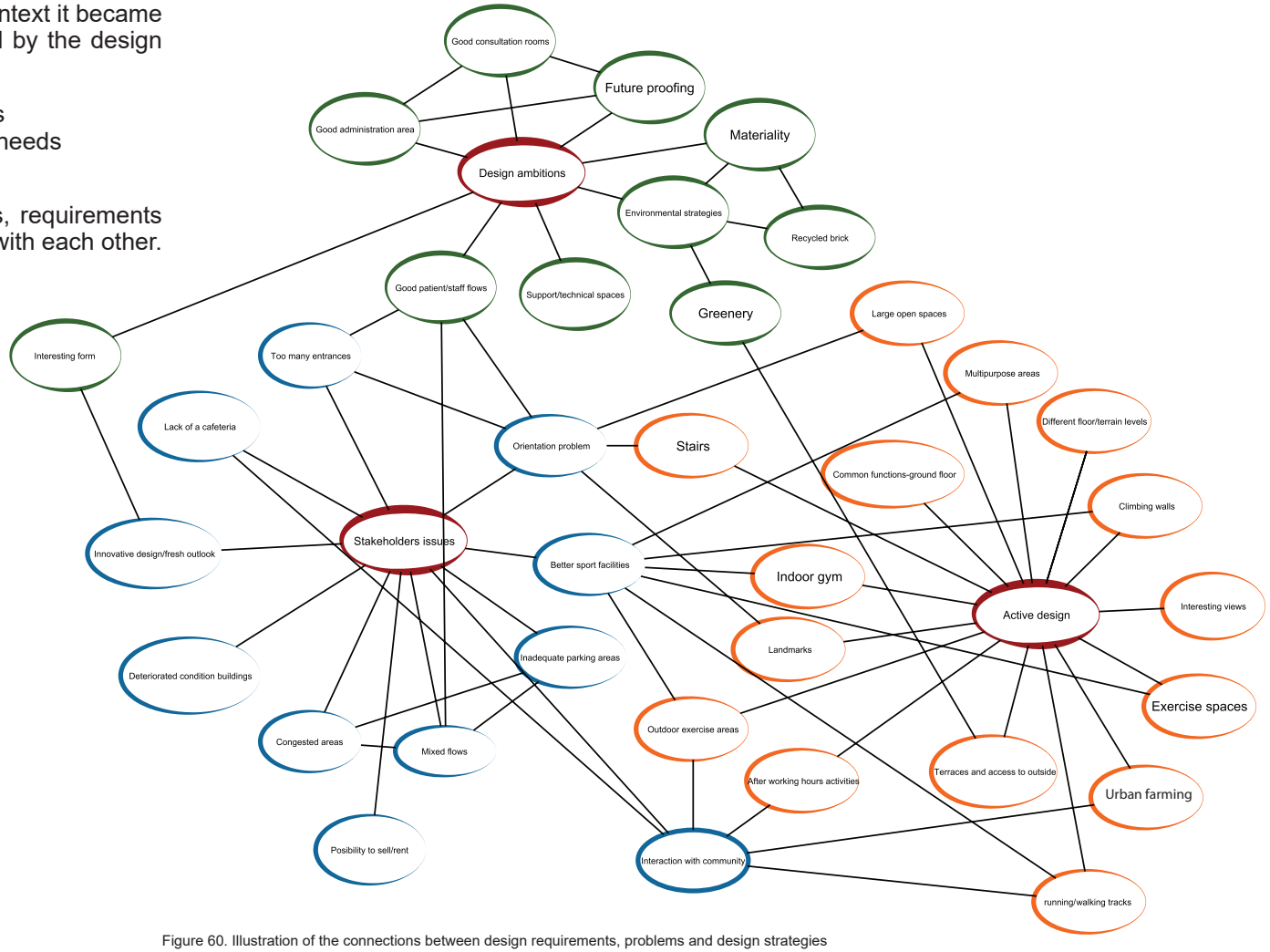


Figure 60. Illustration of the connections between design requirements, problems and design strategies

Design concept

A modern agora

The concept for the new development is of a modern healthcare center, suitable for new medical technologies while providing a fresh outlook on users' needs and health promotion. The new Habilitation Center in Kungsgärdets center, should promote an active behavior for its users and facilitate interactions between them and people from the neighborhood. The purpose is to provide a meeting place where people can find the required medical attention, as well as an environment where they can exercise, relax, restore, and heal in a holistic way.

This relates to the concept of the Greek Agora, which was the heart of public life in ancient times and a place where ideas and material possessions were exchanged. 'Agora' literally means meeting place, a space accessible to every citizen where both functional and intellectual activities took place, a place to meet and greet with friends and colleagues, but also engage in professional exchanges. The proposal of this thesis aspires to be a modern agora, a space for public gatherings and recreation activities for everyone in the surrounding region, to serve the hopes and aspirations of the residents and users, not just as a 'green space' or 'sport venue' but a place of contemplation and restoration. Additionally, the design will promote future proofing and environmental strategies which will enhance the proposal.

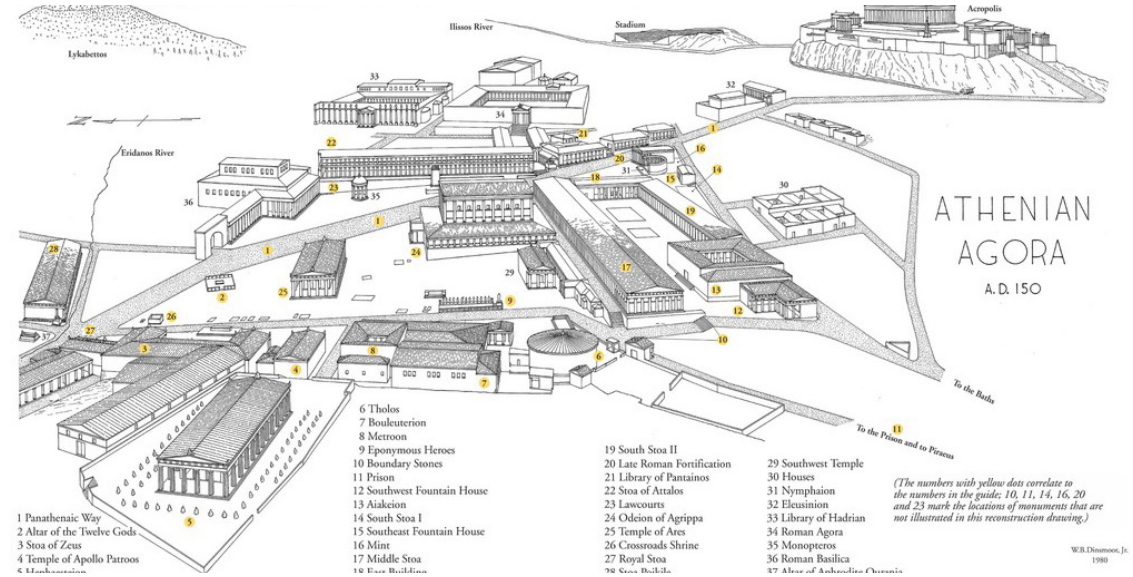


Figure 61. Ancient Greek Agora in Athens. Source: http://www.agathe.gr

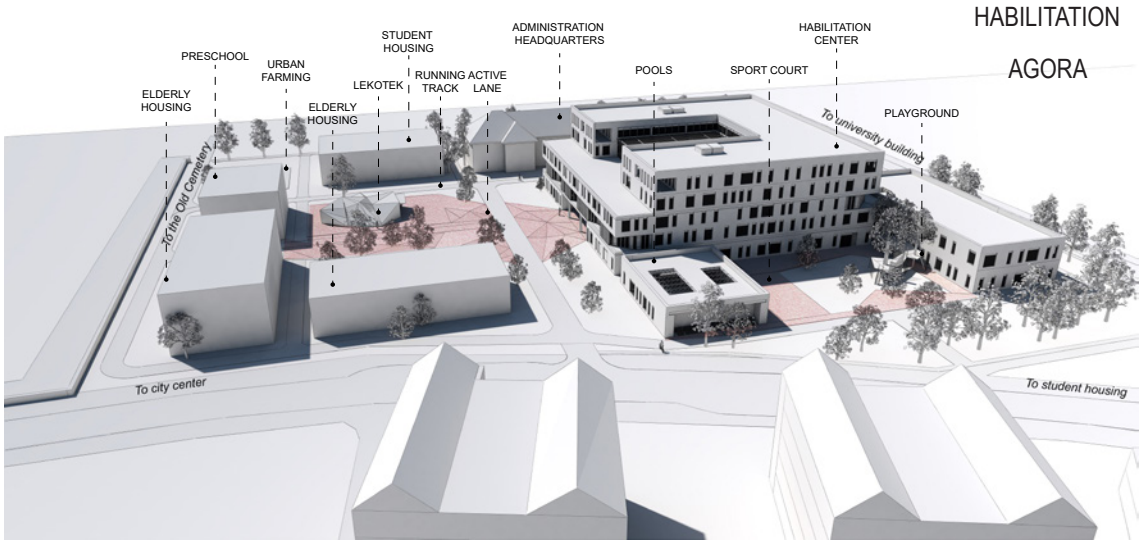


Figure 62. Modern Agora. Proposal for Habilitation Center Uppsala

Part 4

Design proposal

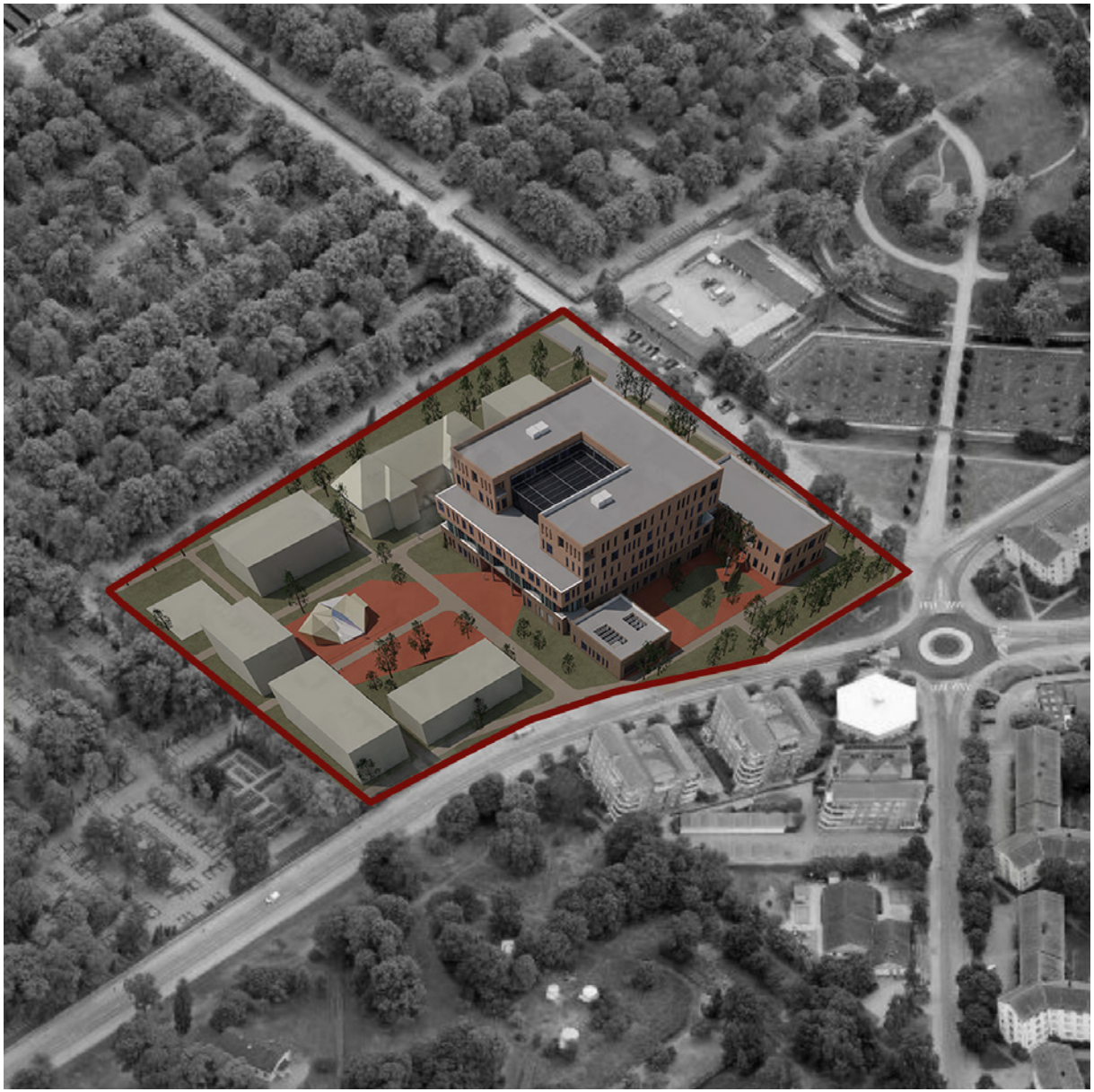


Figure 63. Birds-eye view of proposed Kungsgärdets center

Proposal concepts

Main Building and Urban Design Concepts

Multiple informal meeting places that relate to urban meeting places.

Inside the building there are different types of meeting places which can have different characteristics and sizes and all relate visually or physically to urban spaces on the plot. For example the atrium, the largest meeting place is in direct connection to the Activity Center on the plot and the meeting places on floors 2 and 3 have views to the outside greenery.

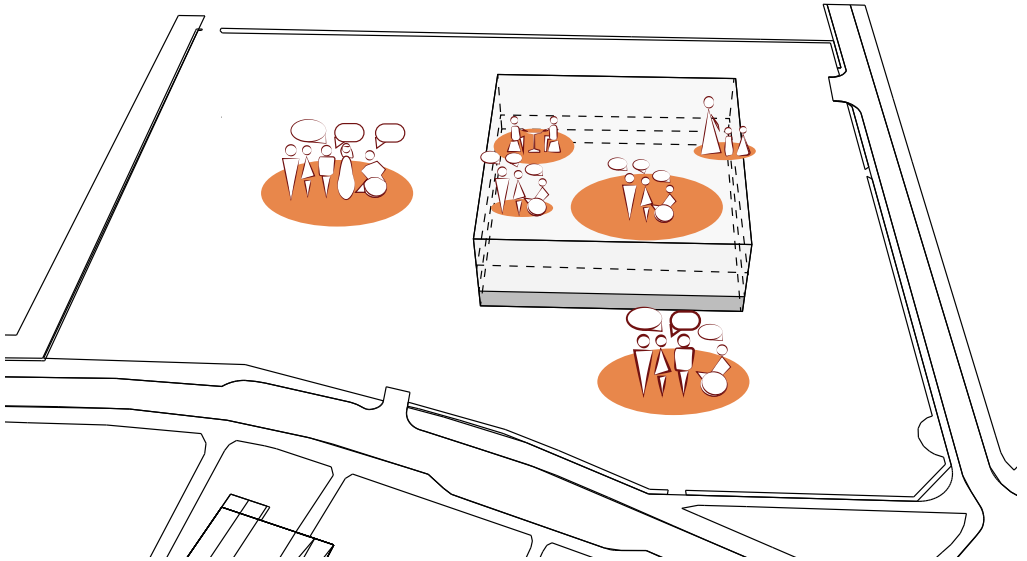


Figure 64. Illustration of the concept of multiple informal meeting places

A continuous path of Building and Urban Active Design Strategies

The Urban Active Design spaces are connected with fitness promoting spaces in the interior of the building creating a continuous path, both horizontally and vertically.

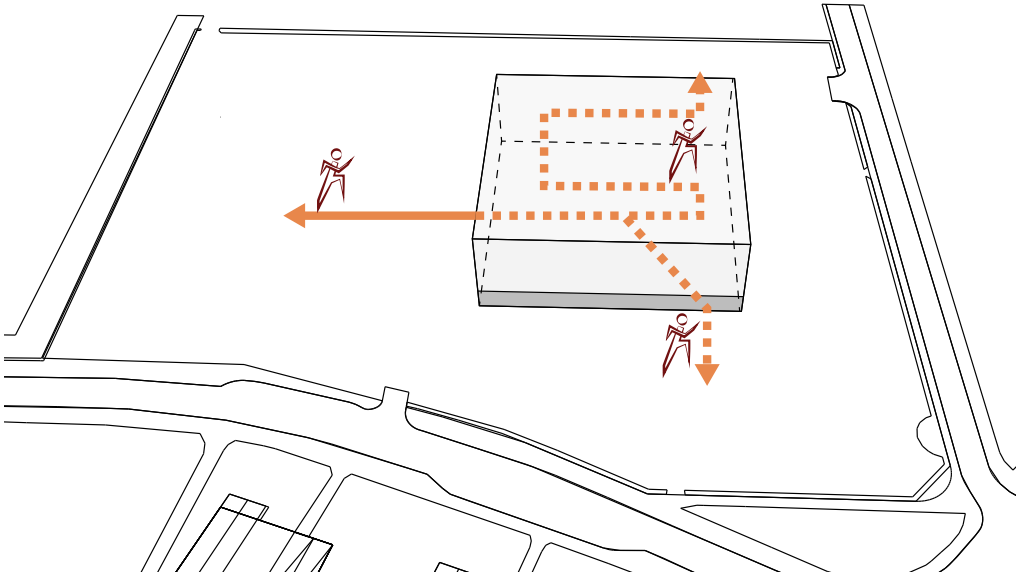


Figure 65. Illustration of the concept of a continuous path of Active Design Strategies

Demolition proposal

The problem of inadequate buildings

In order to solve the problems expressed by the clients regarding the inadequate conditions in the buildings, in connection to problems with flows of traffic, I propose the demolition of eight out of nine buildings on the site.

None of the buildings are historically protected, however I decided to keep the oldest building in order to preserve some of the site's character as a reminder that the area has old roots.

Legend

Existing buildings

Buildings proposed for demolition

Site area

Floors	Ground area (sqm)	Usable area(sqm)	Name Building	Site area(sqm)	Plot area
2	1050	2100	D	23132	16767
1	122	122	D-annex		
3	1027	3081	A		
4	1075	4300	C		
1	10	10	C-annex		
1	115	115	C-annex		
1	784	784	F		
3	628	1884	G		
2	530	1060	B		
1	532	532	J		
1	71	71	J-annex		
1	30	30	J-annex		
2	391	782	I		
	Total	Total			
	6365	14871			

Figure 636. Photo of Building G - building not demolished

Plot development phases

The problem of selling/renting spaces

Phase 1

- Technical functions move from building 'J' to a building outside the center.
- 'The Infoteket' moves temporarily in a building outside the center, preferably close to the main library.
- Guest renters from building 'F' move functions outside the center.
- Main administrative functions of the center move to building 'G' which becomes the permanent administrative headquarters.
- Functions from buildings 'H' and 'I" move in buildings 'F' and 'C'.
- Buildings 'H', 'I', 'J', 'B', 'H' are demolished.

Phase 2

- One building from the new ones is sold or rented.
- Activities from buildings 'D' and C' move in the new buildings that are not sold/rented.
- Buildings 'D' and 'C' are demolished.

Phase 3

- The functions from buildings 'A' and 'F' move in the new buildings that are not sold/rented.
- Wings of the new Habilitation Center are built (HAB-a, HAB-b).
- Buildings 'A' and 'F' are demolished.

Phase 4

- The final stage of the development.
- The site is divided in to main areas: one to be sold/ rented and one managed by the Habilitation Center.
- The Lekotek and the connections between wings HAB-a and HAB-b and main building are built.

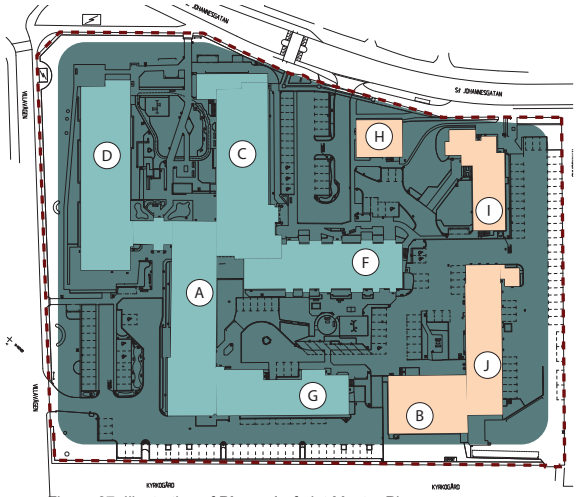


Figure 67. Illustration of **Phase 1** of plot Master Plan

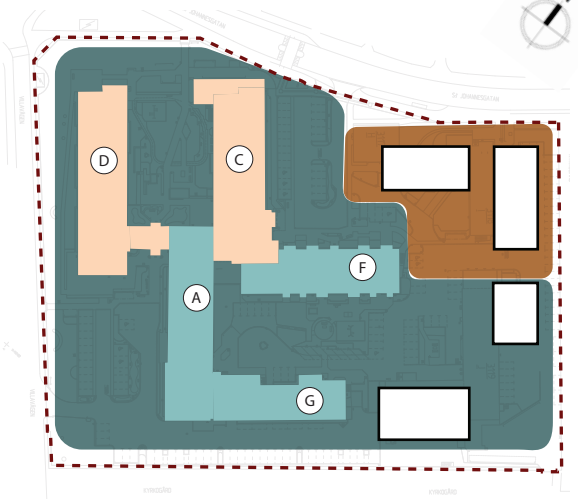


Figure 68. Illustration of **Phase 2** of plot Master Plan

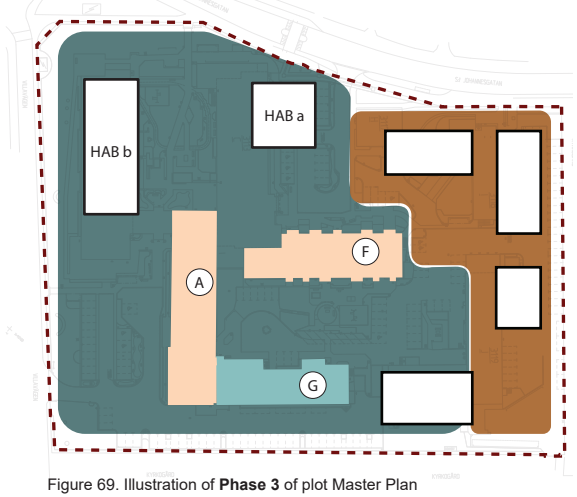


Figure 69. Illustration of **Phase 3** of plot Master Plan

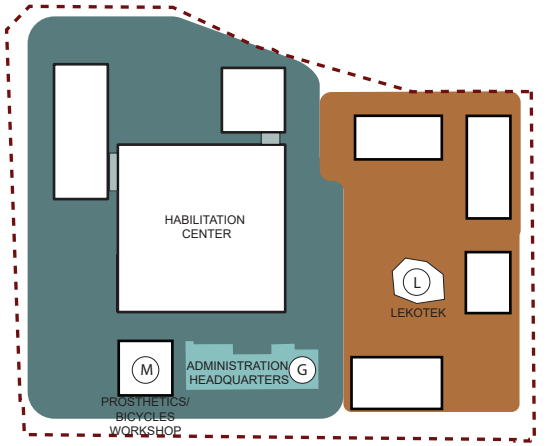
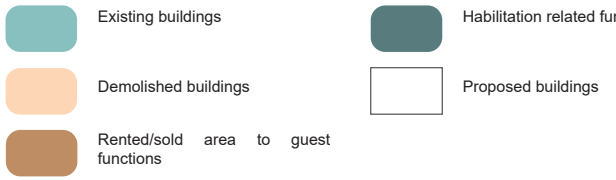


Figure 70. Illustration of **Phase 4** of plot Master Plan



Site proposal concepts

Composition and Urban Active Design Strategies

The main Urban Design Concepts regarding directions, movement and greenery are complemented by the concepts of Multiple Informal Meeting Places and continuous Paths of Activities. All this meeting places are design to enable socialization and collaboration between different user groups, especially patients in the Habilitation Center and students, which are the majority of inhabitants in the neighborhood.

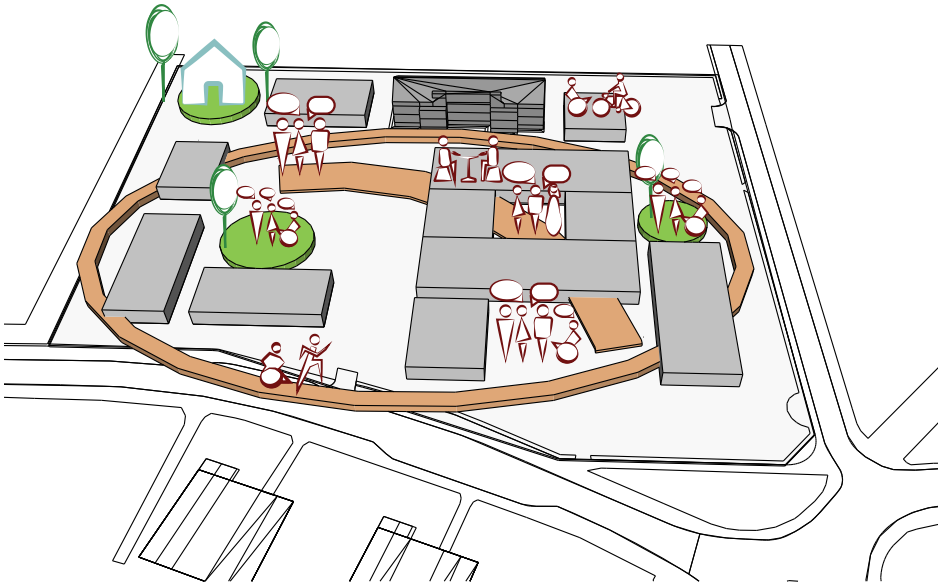


Figure 71. Illustration of master plan composition

Figure 72. Illustration of meeting place in cafe function

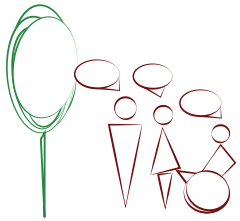


Figure 73. Illustration of meeting places in pocket parks function

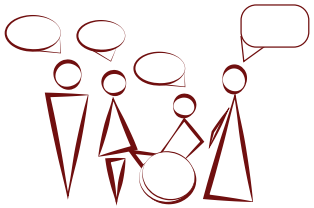


Figure 74. Illustration of informal meeting places function

Figure 75. Illustration of urban farming function

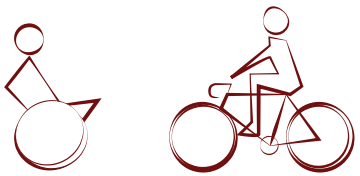


Figure 76. Illustration of meeting place in Prosthetics Workshop with a Bicycle Workshop function

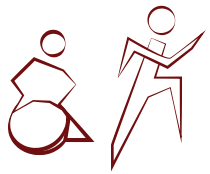


Figure 77. Illustration of running track function

Proposed master plan

The building can be accessed either from the main street or from the Cemetery Park. Placing the main entrance between this two accesses gives better accessibility to the building.

The Habilitation Center dominates the site but relates to the proposed buildings on the plot and to the neighborhood.

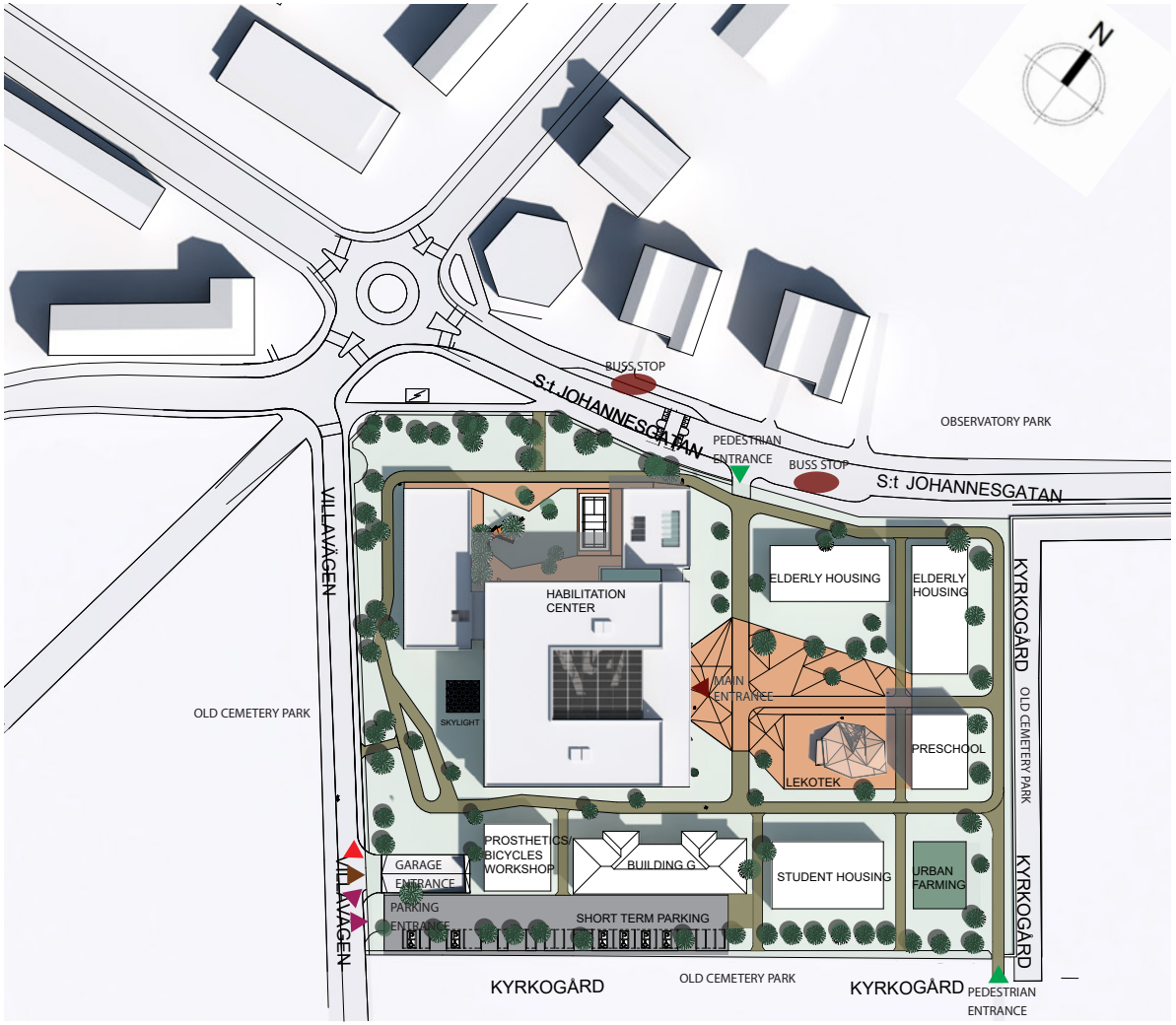


Figure 78. Site plan. Scale 1:2000

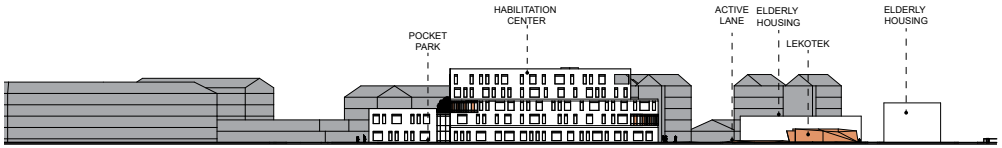


Figure 79. Section through site plan. Scale 1:2000

Building proposal concepts

Shape and composition

The building is designed with a central core, the atrium, which becomes the main feature of the building and a meeting place between everyone in the building and people from the neighborhood, it also helps with way-finding.

The other main meeting places of the building are distributed on floor 2 and 3 as to offer as many socializing opportunities as possible for patients, relatives and staff.

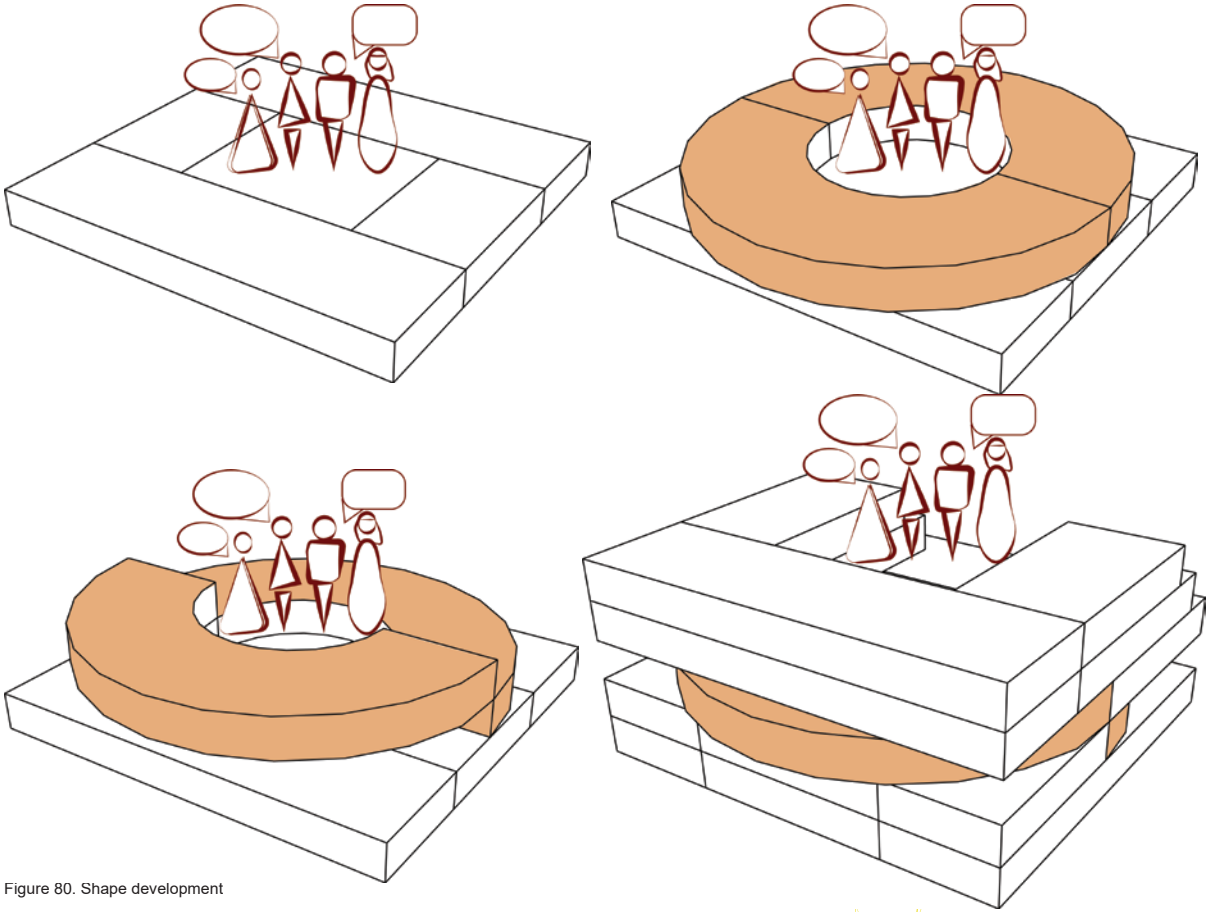


Figure 80. Shape development

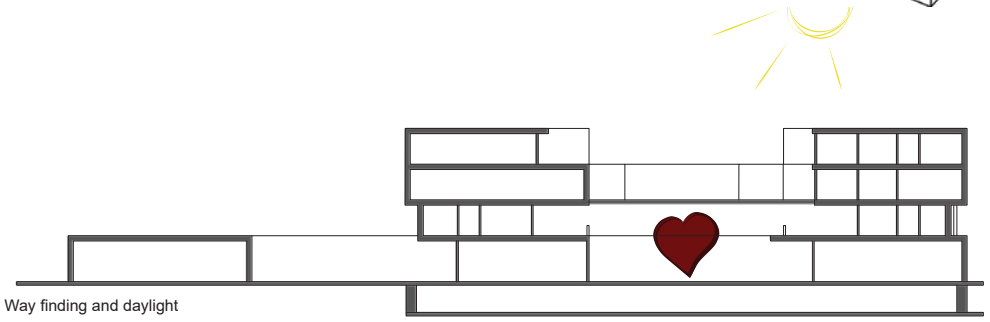
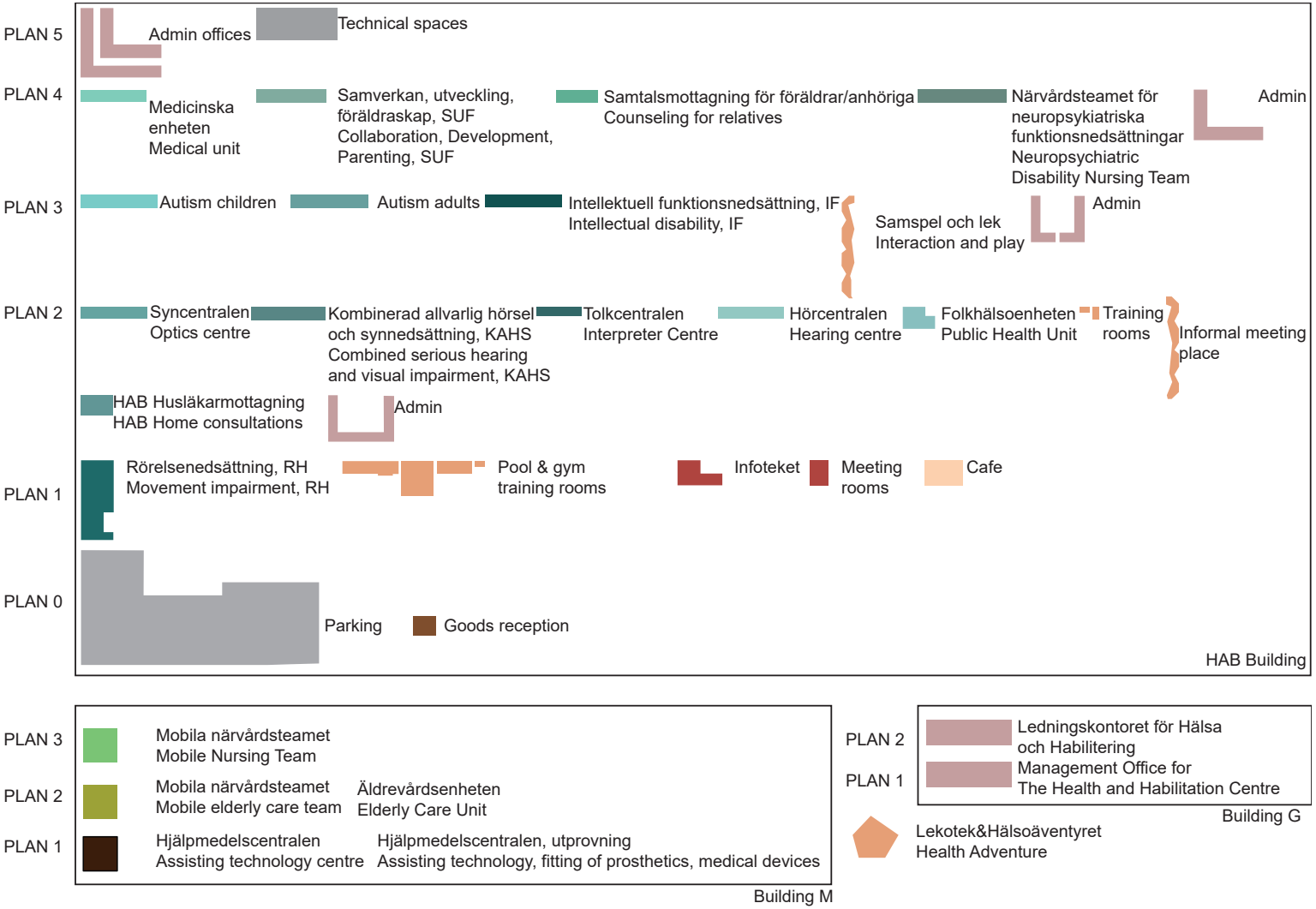


Figure 81. Way finding and daylight

Proposed program

Departments of the New Habilitation Center excluding support rooms and circulation.



Proposed stacking

Private and shared spaces

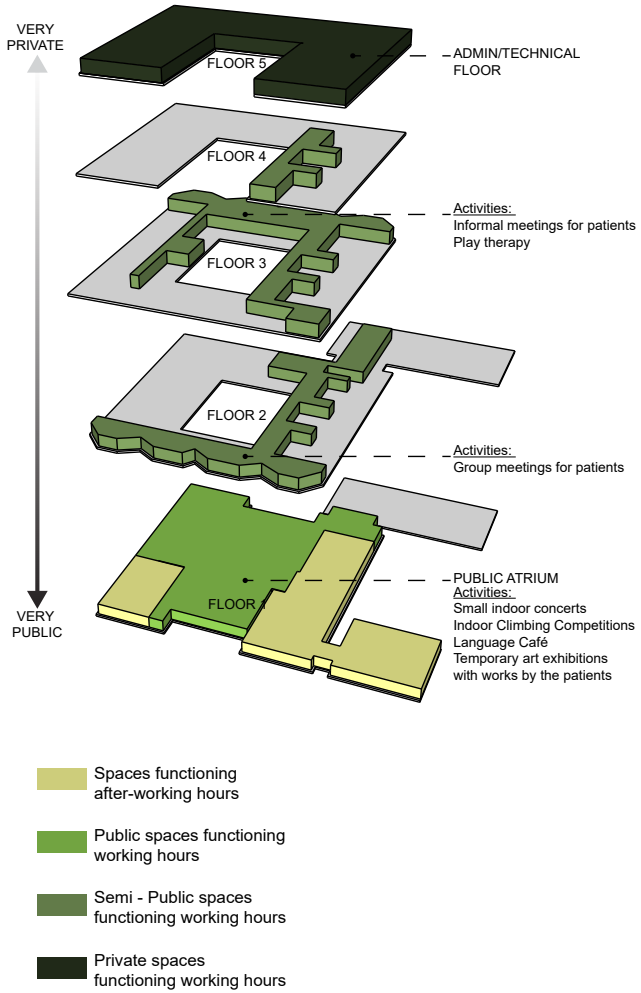
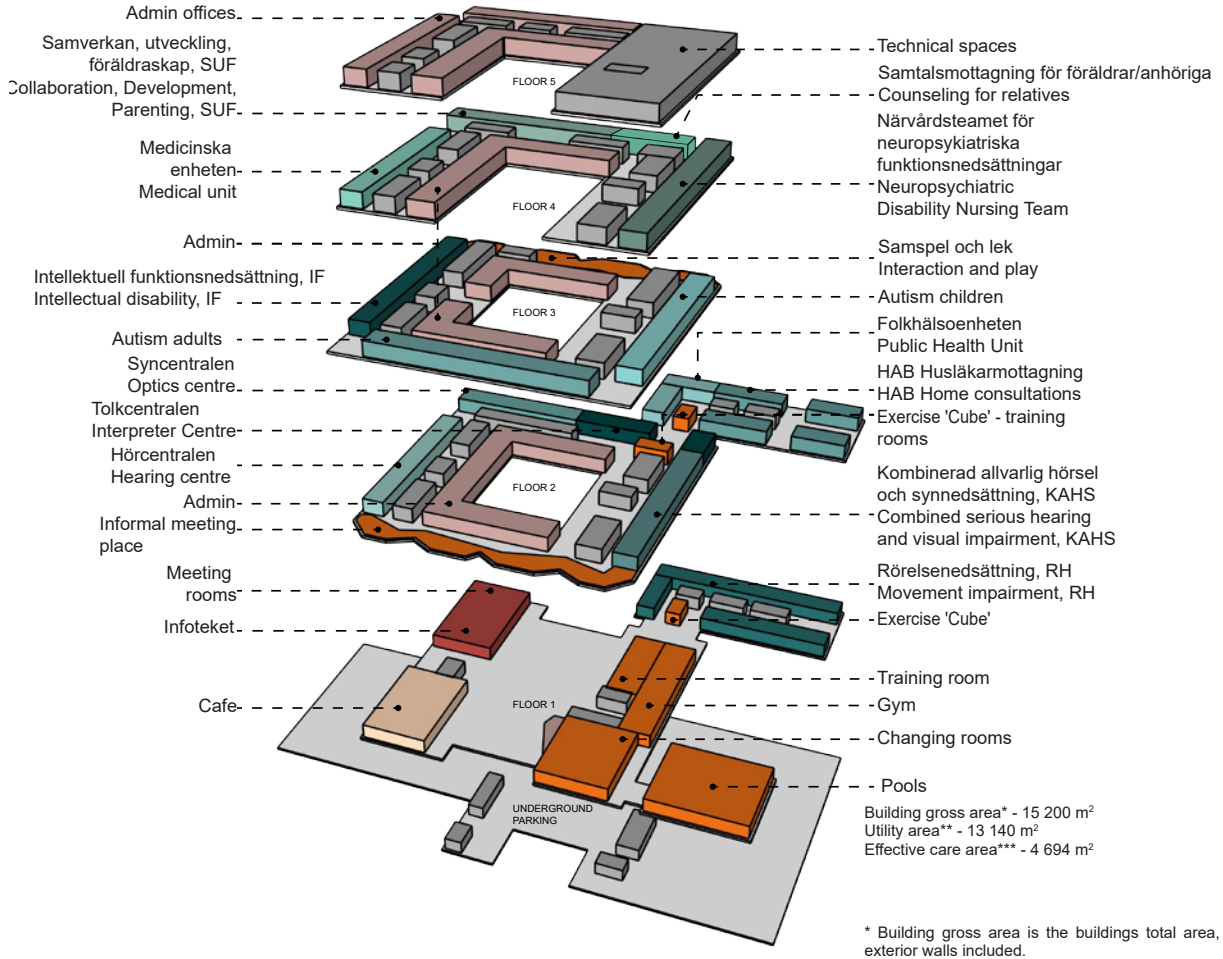


Figure 82. Illustration of privacy gradient

Departments and program



* Building gross area is the buildings total area, exterior walls included.
** Utility area is the total area without exterior walls
*** Effective care area is the area of all rooms without communication, atrium and technical/ support rooms.

Figure 83. Illustration of program stacking

Generality concept

The problem of future proofing

In order to allow for rooms and departments to change the building has a central functional core around the atrium and general sized rooms on the outer sides of the building. The core spaces are staff offices and they will not change their location. Designed as flex offices, they offer a variety of options, serving the needs of the medical staff.

The rooms are designed in a grid of 3.5 x 4.6 m, this makes it possible to have consultation rooms or group room according to the needs of each department. This generality is beneficial in the design step when architects plan for the needs of each department according to the consultations made with the development team, but also for future changes, when a department needs to change size or move location.

This concept is adapted to each floor allowing for different open meeting and activity spaces.

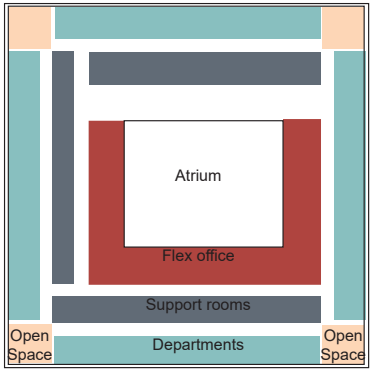


Figure 84. Illustration of generality concept - building

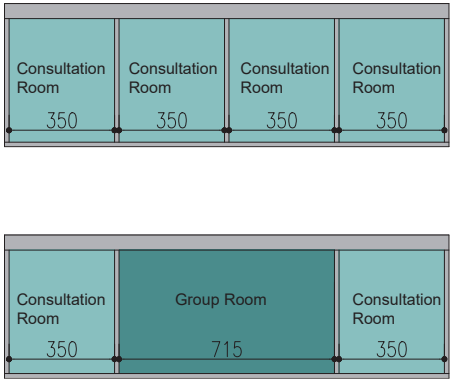


Figure 85. Illustration of flexibility concept- rooms

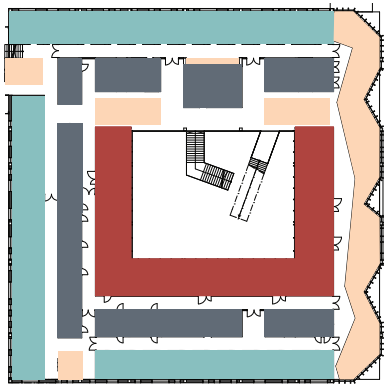


Figure 86. Illustration of flexibility concept - Floor 2

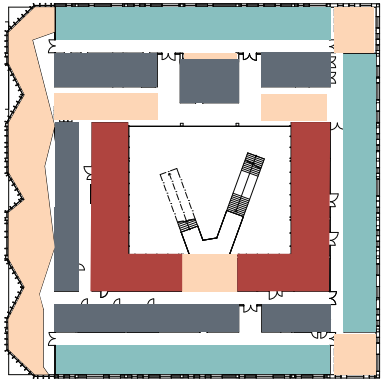


Figure 87. Illustration of flexibility concept - Floor 3

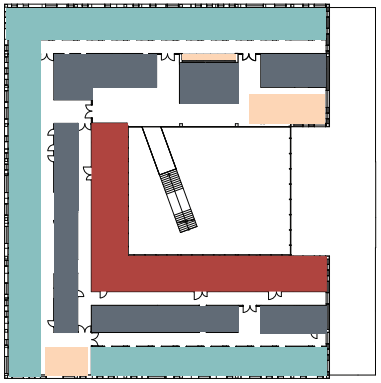


Figure 88. Illustration of flexibility concept - Floor 4

Proposed flows

On site and inside the building

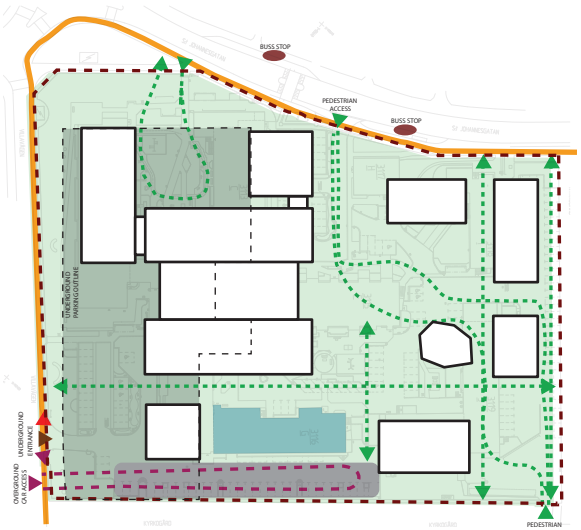


Figure 89. Illustration of proposed flows on plot

Bicycle roads
Automobile access
Visitors pick-up/drop-off
Goods/Waste management
Walking tracks
Pedestrian access
Existing buildings
Proposed buildings
Greenery
Parking

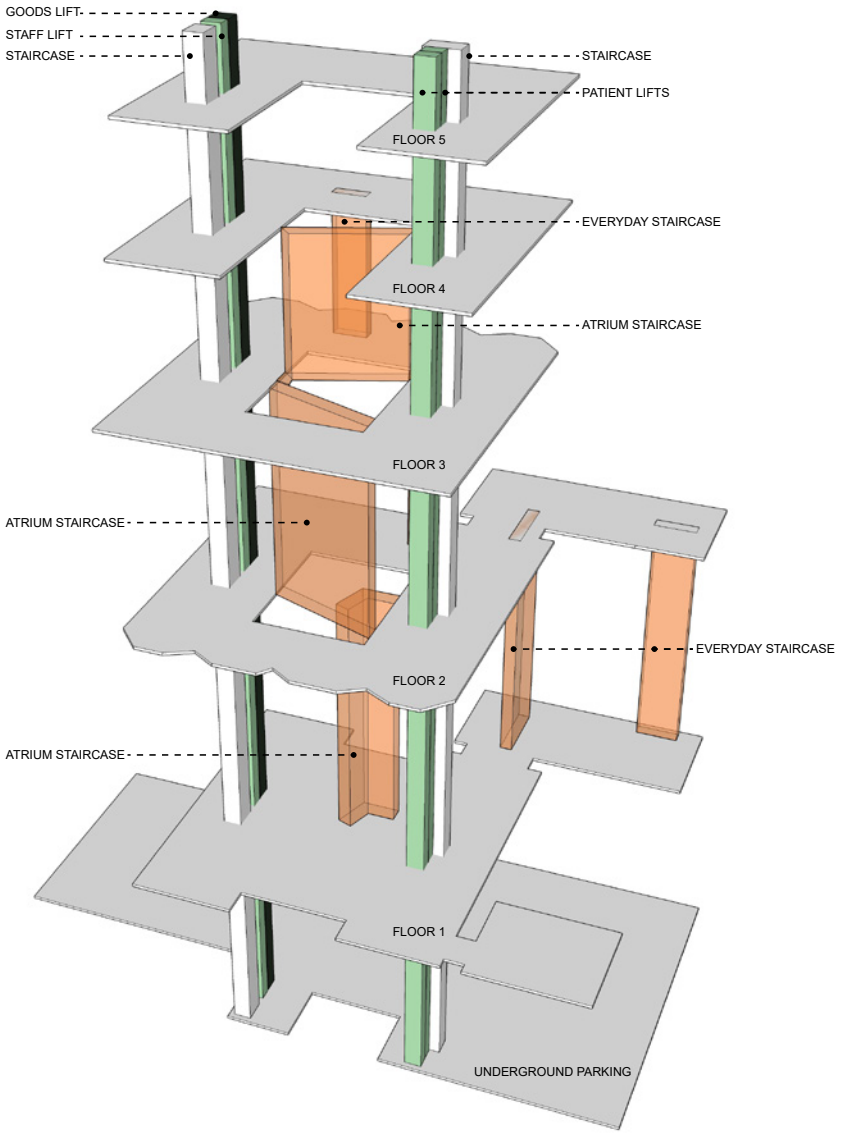


Figure 90. Illustration of vertical flows inside the building

Underground parking

The problem of traffic congestions

In order to solve the congestion and flow problems, an underground parking is proposed. This means all the ground level flows will be pedestrian, except for a small ground parking area for short-time stay and emergencies.

In order to make the garage more pleasant and inviting, a green area is designed in the pick-up/drop-off area. This area receives natural light and is in direct connection to the atrium on the ground floor of the building. A large staircase invites the visitors to move from one area to another along a green wall.

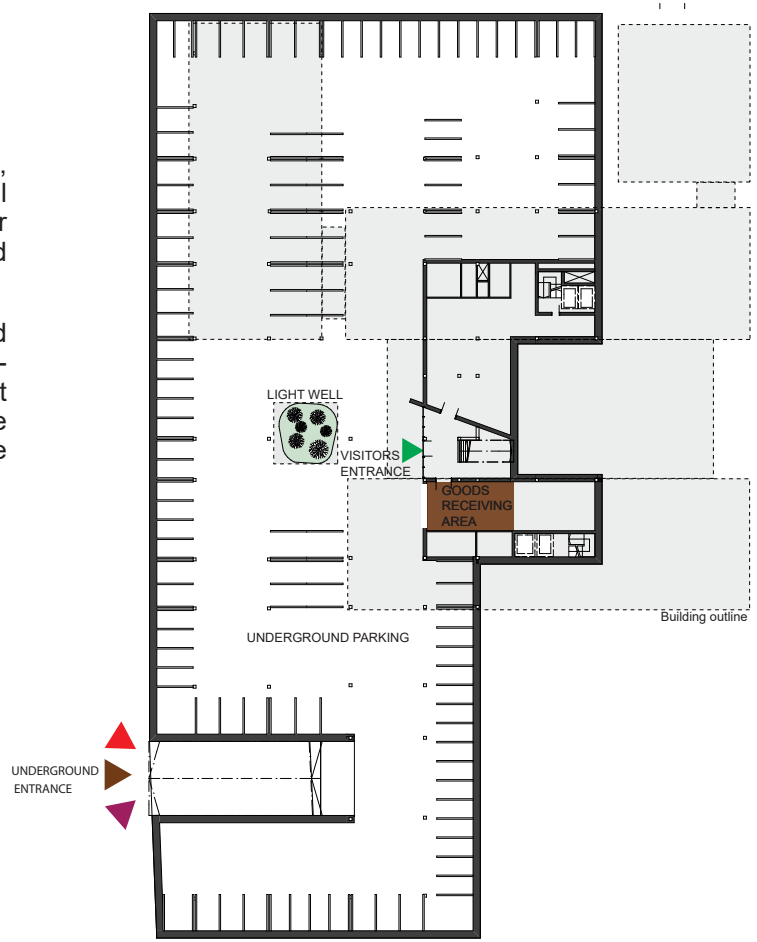


Figure 92. Underground parking

Figure 91. Illustration of the pick-up/drop-off area of the garage

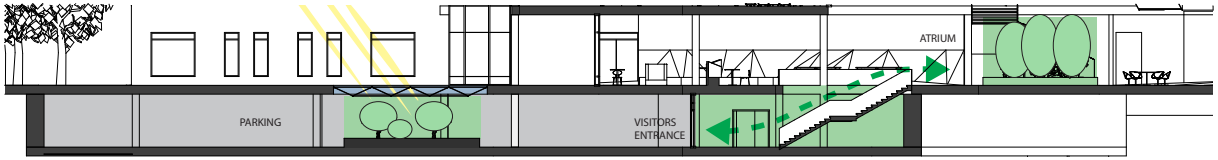


Figure 93. Section through the underground parking illustrating the connection to the ground floor

Proposed ground floor

Building Active design strategies - public ground floor

The main entrance is clearly marked by the ‘Activity Lane’ and it’s easy to find and access. There are two smaller entrances, to the gym area and the café. These are entrances that can be used even when the Habilitation Center is closed, thus making this spaces available to the community.

Proportionally the largest area of the ground floor is dedicated to sport activities: gym, spontaneous exercises, and pools. In the atrium there are also open sitting areas: one for the café, available only during working hours, and one in connection to the Infotek, for studying, reading, etc.

The infotek features a library, quiet reading room – can be accessed from the café as well, and a conference room for lectures.

The atrium is the central core of the building and it’s designed to reflect movement and spontaneity encouraging people to enjoy their time in the building and have fun.

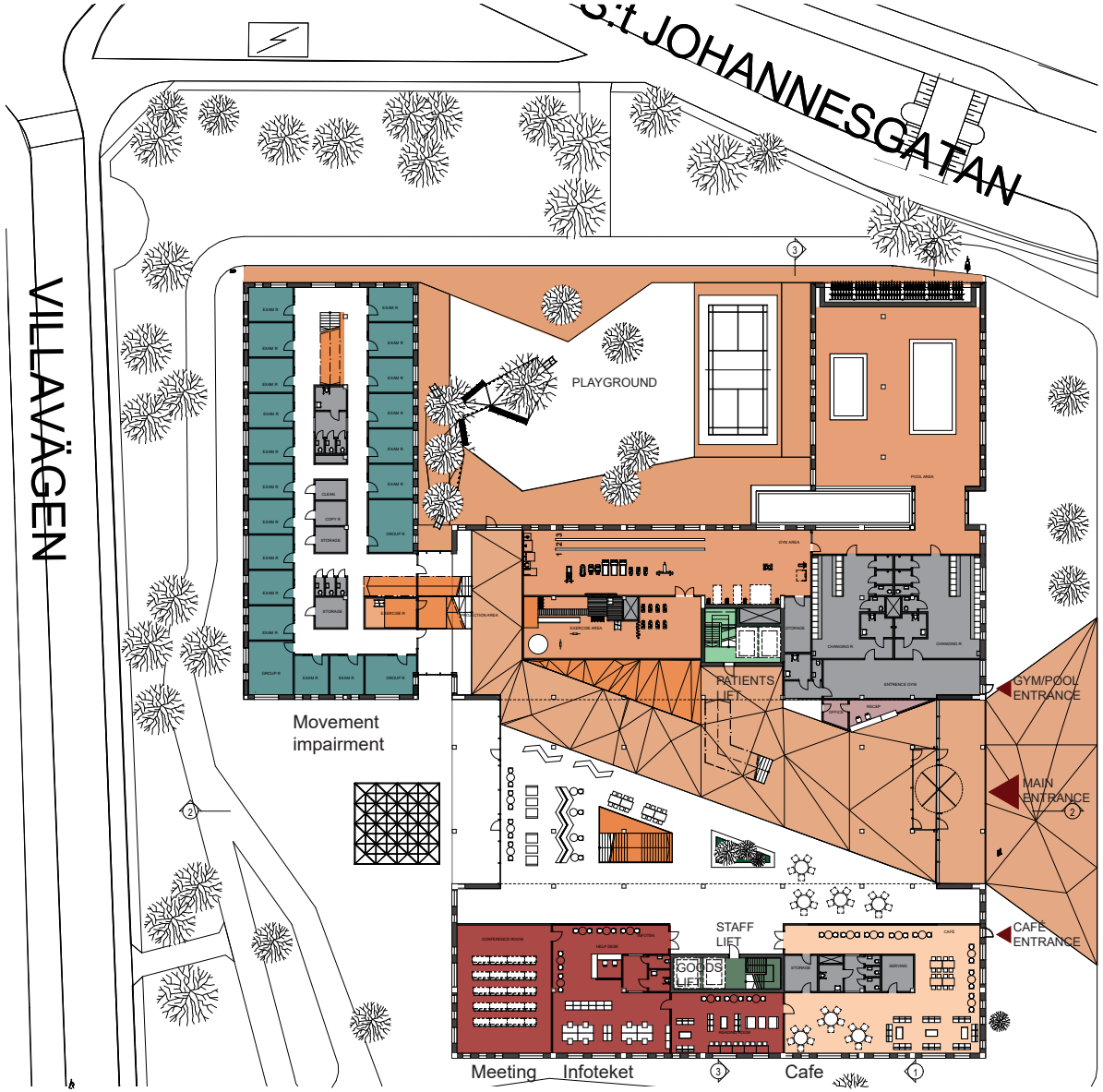


Figure 94. Ground floor Scale 1:1200

Proposed Floor 2

Building Active design strategies - stairs

Everyday movement is one of the main active design strategies. This is encouraged in the building by a grand staircase that links the department floors. It is the first thing a person sees upon entering the building and invites visitors to take the steps rather than the elevator. It reaches the same area as the elevators. Here visitors find an information point and sitting areas for waiting or resting.

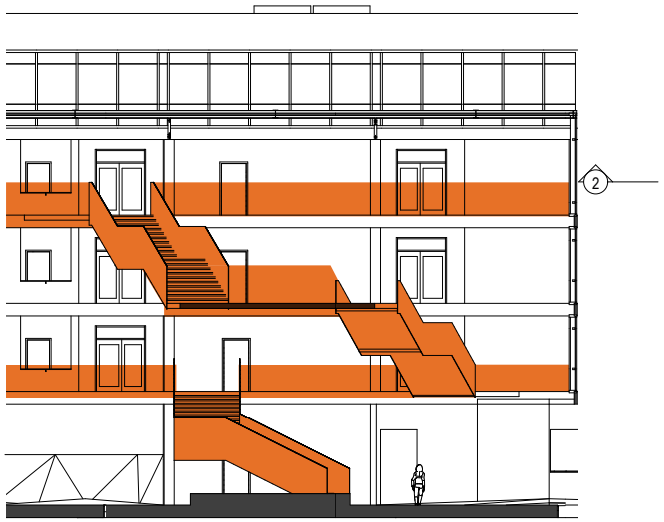


Figure 95. Illustration of the atrium staircase -section. Scale 1:300

Figure 96. Floor 2. Scale 1:500

Proposed Floor 3

Building Active design strategies - play areas

In order to enable spontaneous meetings, fun activities and active behavior two large open areas have been designed on floors 2 and 3. Here people can sit in different arrangements, more public or private, or they can exercise and play. Both have large glazing areas, with outside views, providing positive distractions for visitors and staff.

The area on floor 3 is designed with children in mind because on this floor there is the ‘Department for Children with Autism’. The open space is an extension of the consultation rooms. Children can play here under supervision or interact with their parents and siblings in guided sessions. This is a great waiting space for parents and siblings.

Aside from these two large areas, throughout the building there are other smaller areas designed for different situations. For example, one is in connection to a kitchenette where people can make hot beverages.

Figure 97. Illustration of the open play area. Scale 1:300

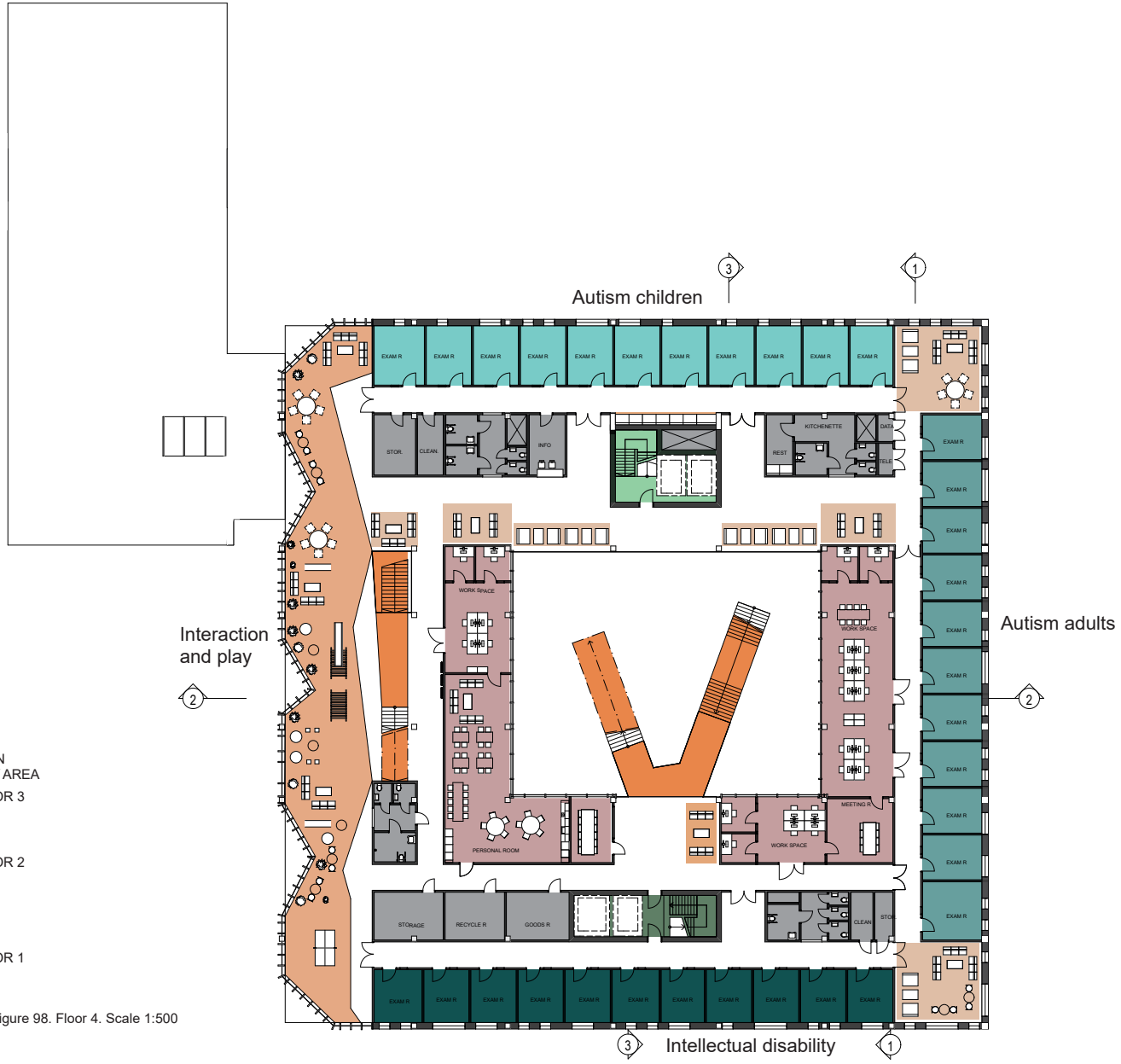


Figure 98. Floor 4. Scale 1:500

Proposed Floor 4

Building Active design strategies - movement

In addition to the main staircase there are other smaller staircases located in the dark core of the floors. They encourage patients and staff alike to use the steps because they are conveniently places and have attractive feature along the way such as open play and exercise spaces.

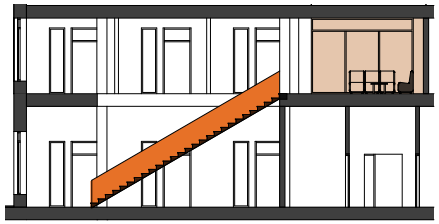


Figure 99. Illustration of a everyday staircase in connection to resting area

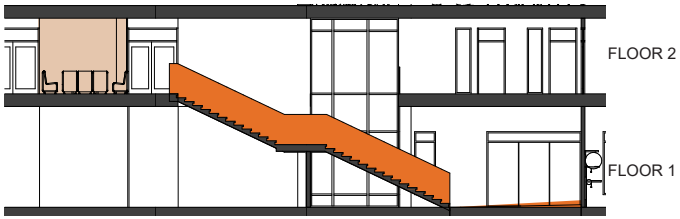


Figure 100. Illustration of a everyday staircase in connection to resting area and outside view

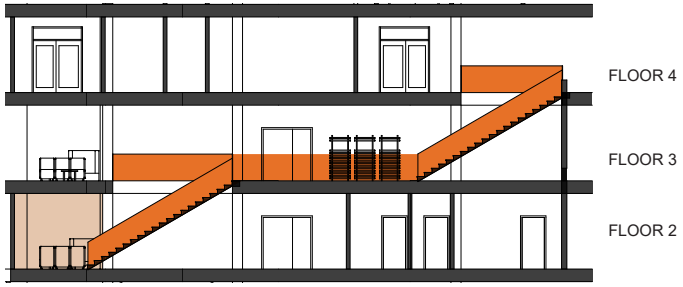


Figure 101. Illustration of a everyday staircase passing by a play area

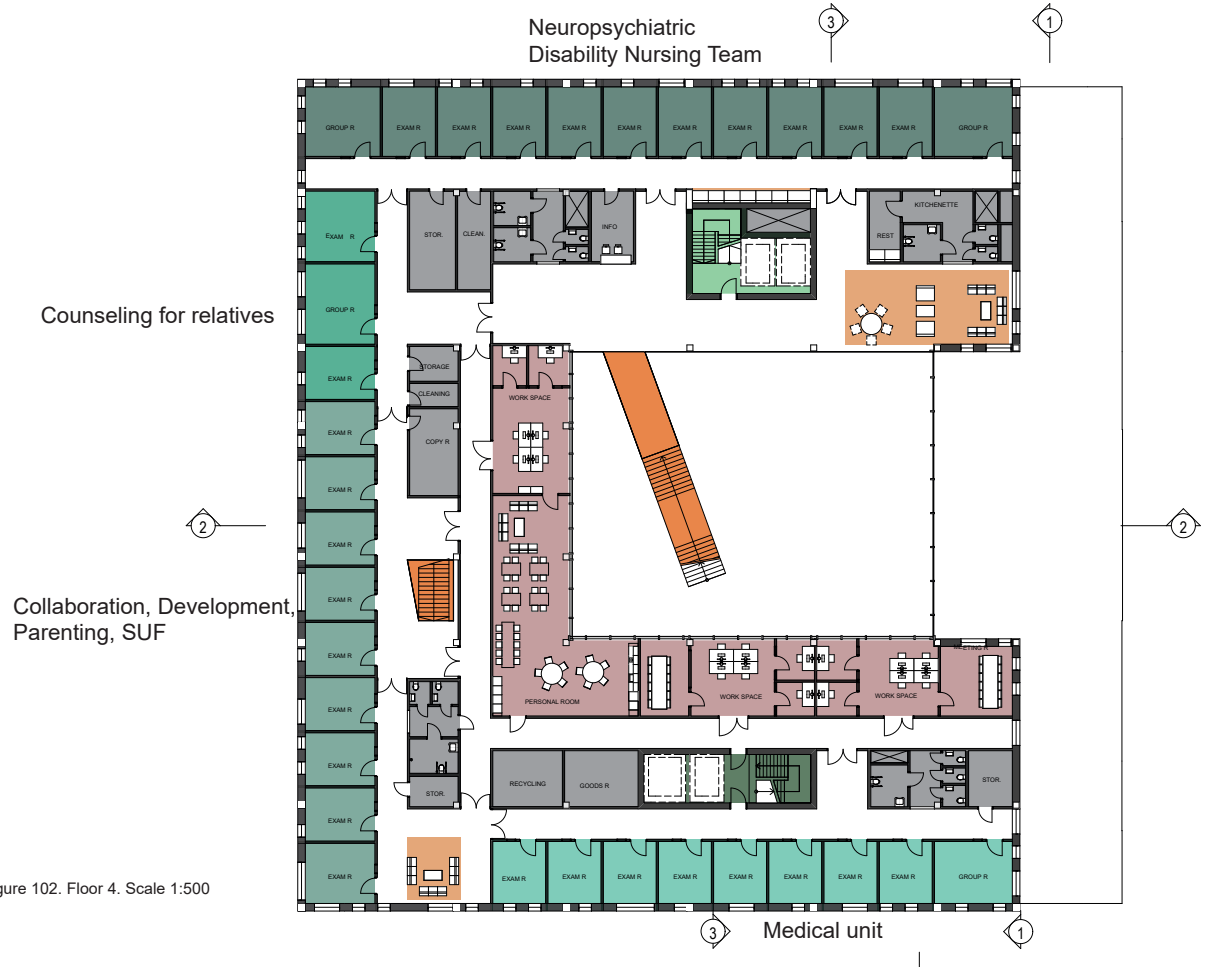


Figure 102. Floor 4. Scale 1:500

Proposed Floor 5

Administration and technical floor

Floor 5 is not a department floor. It is designed as an administration floor with a flex office area in the core and private offices on the outer sides. If the Center will need to extend the department areas this floor can easily be adapted and transformed into a department floor because the offices follow the 3.5 x 4.6 m grid

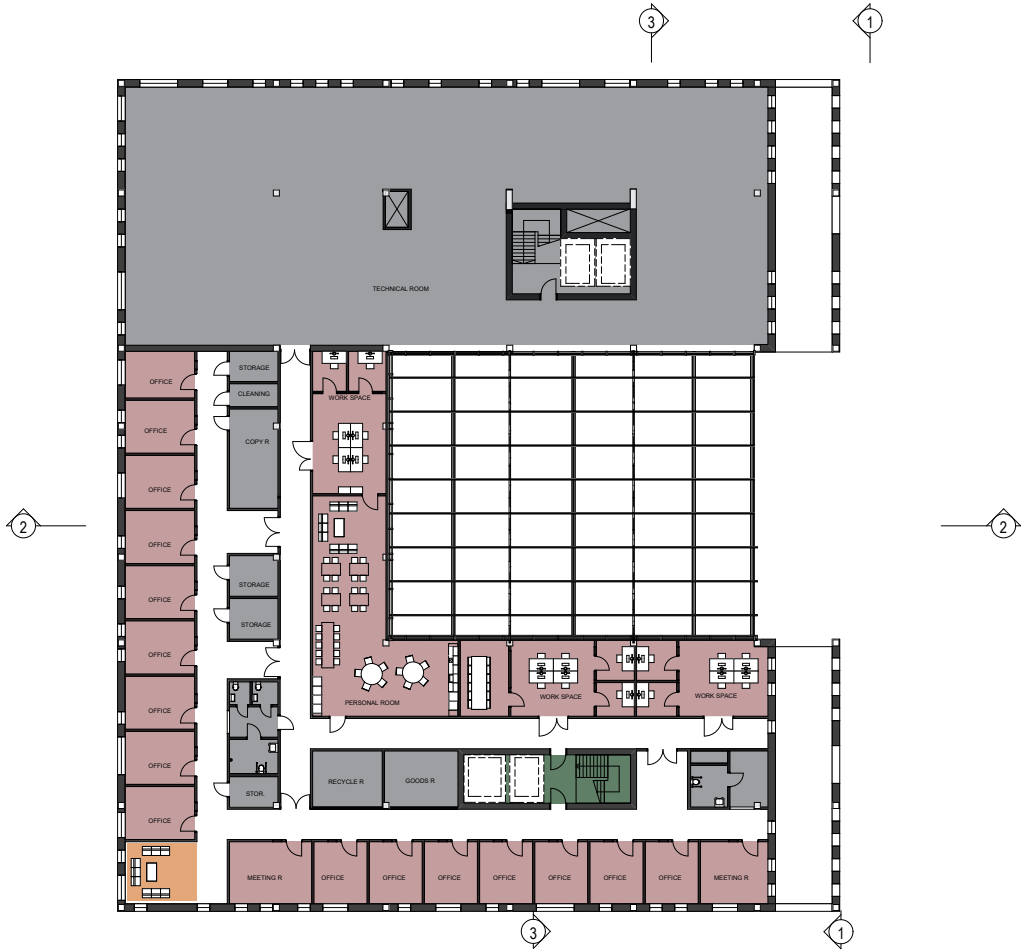


Figure 103. Floor 5. Scale 1:500

Facades

The facades are made with ‘made from waste’ brick. This encourages conscious demolition of existing buildings. The materials are later used to make new bricks which can have different colors and textures.

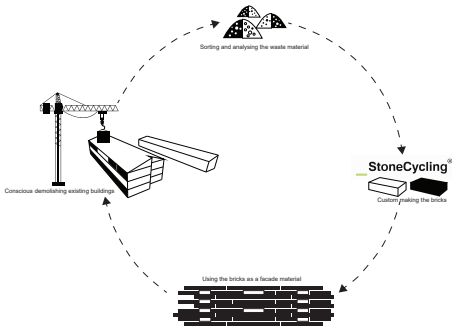


Figure 104. Illustration of the recycling process

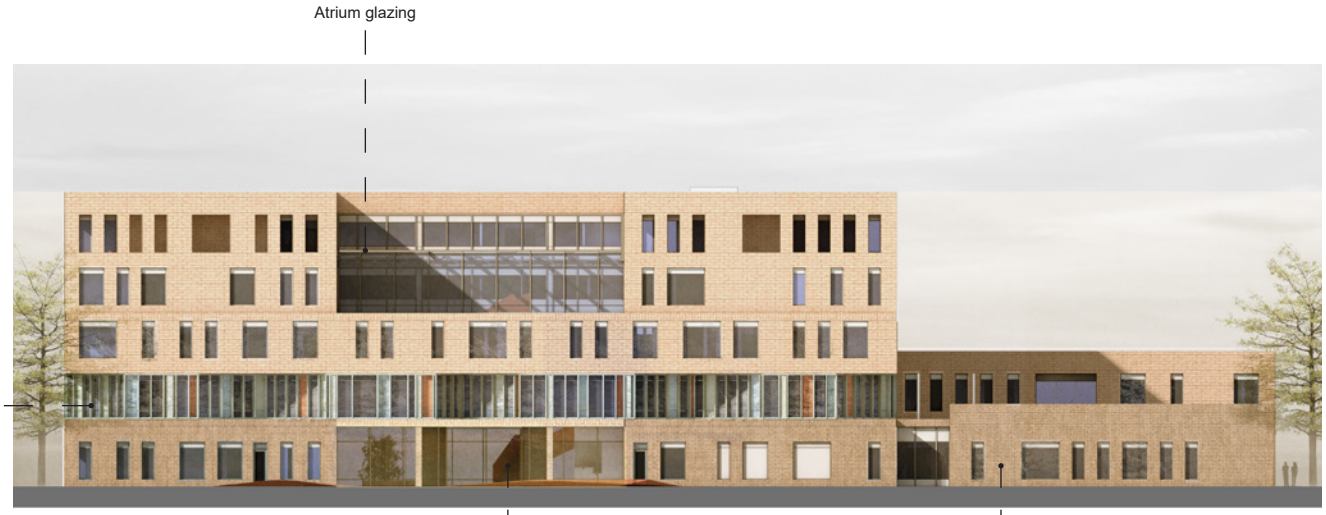


Figure 105. East facade. Scale 1:500

Figure 106. West facade. Scale 1:500

Facades

The new bricks can be custom made, they can be machine-made or hand-made. The ground floor is designed with bricks that have a more texture looked and feel, they are more detailed and reflect the human scale.

Figure 107. Photos of materials, process and results of 'made from waste' bricks
Source: StoneCycling homepage.

Figure 108. Photos of a custom brick. Photo by author.

Some hand-made bricks can have symbols which reflect users stories.

Figure 109. South facade. Scale 1:500

Figure 110. North facade. Scale 1:500

Sections

The grand stairs dominated the atrium and are visible throughout the building, becoming the characteristic element of the building, a recognizable features that can help people create a sense of coherence.

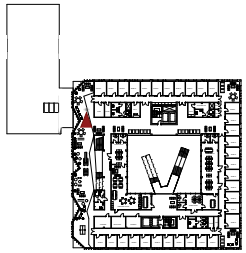
Figure 111. Section 2-2. Scale 1:500

Figure 112. Section 1-1. Scale 1:500

Figure 113. Section 3-3. Scale 1:500

Interior render

Play area - Floor 3



The interaction and play area on floor 3 is a good place for children to engage in fun activities, these can be planed, as part of treatment, or spontaneous. It also offers places for patients to rest and talk.

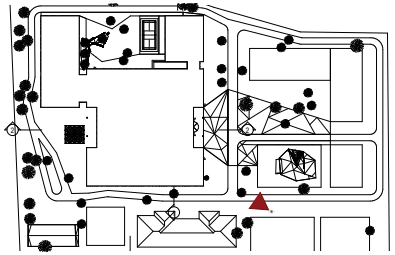
Remember Alex, the 8 year old with autism? He comes at the center weekly and he likes playing here. At first he was introduced slowly to the area, by the medical staff, but now he got used to the place and can play at free will. He loves when students come here and volunteer to play with him and other children, they make tricks and funny poses, bringing smiles on everyone faces.

His sister and parents likes coming here also. The sister can play while waiting for her brother and the parents don’t feel worried leaving her alone while they speak with the medical staff.

Exterior render

View towards main entrance

The courtyard is a place where patients and people from the neighborhood can have fun. They can meet, participate in sport activities or enjoy time with their families.



Active design -building

Building Active Design Strategies

The landscape of the plot has two main features, a challenging ‘Activity Lane’ and a restorative ‘Green Path' a walking/running path. This main features are in connection to other spaces such as an urban farming area and pocket parks.

A health promoting strategy is to use the Prosthetics Workshop as a Bicycle Workshop after working hours. This department of the Habilitation Center is located separately because it needs easier access to cars and parking and since it already has plenty of equipment people from the neighborhood can come here and use it under supervision.

The ‘Activity Lane’ is a continuous leveled terrain that stretches outside and inside. Along it there are different exercise features with different sizes and difficulties. The ramps are designed to allow wheelchair access. The end points are the Lekotek and the playground. The playground area is in connection to the ‘Movement Impaired Department’, patients can go out directly from their rooms into this area and play under medical supervision. This enables both treatment and socializing.

The ‘Green Path’ presents different options for people walking or running, it’s designed with signs indicating distances, landmarks and good lighting so it can be used safely during darkness.

Figure 114. Building Active Design Strategies on site plan. Scale 1:1200

Active design -building

'Activity Lane'

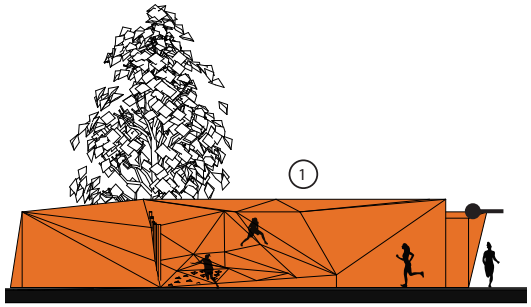


Figure 115. View of area 1 (Lekotek). Scale 1:300

The Lekotek – an activity center accessible for patients of the center but also people from the neighborhood. It can function independently from the Habilitation center and can have different working hours. It's designed as a climbing feature, it can be climbed outside and inside. It can also function as a Hälsoäventyr. School children can come here to learn about healthcare in a fun environment.

Playground – designed as a platform connecting existing trees it has features such as: climbing robes, stairs, nets.

Sport court – it can function as a volleyball, badminton, etc. accessible to everyone at any time.

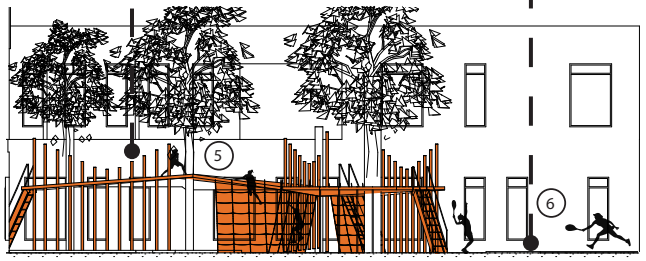


Figure 116. View of area 5 (the play ground). Scale 1:300

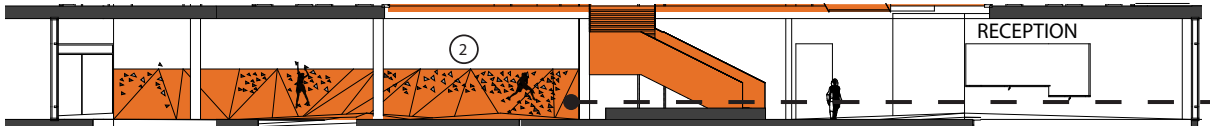


Figure 117. Section through atrium view of area 2 (interior climbing wall). Scale 1:300

Indoor climbing wall – designed as a vertical continuation of the leveled terrain it becomes the main feature of the atrium.

Exercise area in connection to the gym - a more challenging space than the gym area, it provides an alternative for people that don't want to train in an open area it also features a space for group classes and a playful area with platforms, bridges, climbing nets, slides, swings and a trampoline.

'Sitting stairs' - can function as a place to rest and enjoy a projection on the wall or access a small exercise room - an exercise 'cub' - designed with platforms.

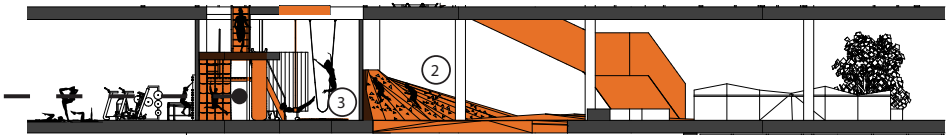


Figure 118. Section through areas 3 (exercise area) and 2 (interior climbing wall). Scale 1:300

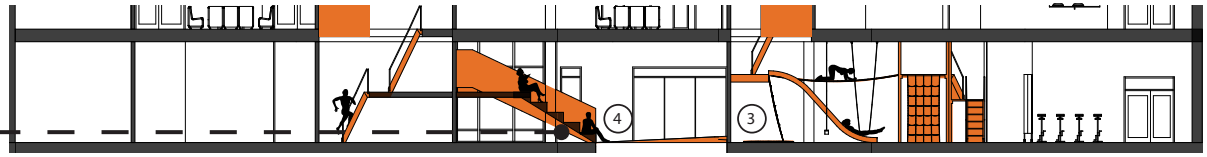
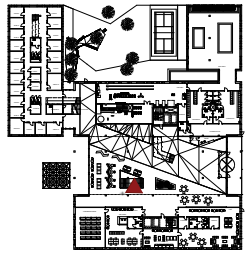


Figure 119. Section through areas 3 (exercise area) and 4 (sitting stairs and exercise 'cube'). Scale 1:300

Interior render

Atrium - Ground floor



Maria, the former nurse with hip problems came to the center for treatment for two months. During this time he befriended some of the staff and other patients. After each treatment session she had a coffee and watched people moving in the atrium. She liked to sit at one of the tables here and just relax. After her treatment ended she continued coming at the center's café once a week. Sometimes she comes on Saturdays with her family, even if she can sit in the atrium she still likes to be in the café. Her nephews like coming with her here, while she sits in the café they can play in the Lekotek across the building. Now Maria is looking into renting an apartment in the Elderly Housing Building on the plot, this way she can be closer to the center which can be convenient if she will need treatment again.

Active design - urban

Urban Active Design Strategies

Community and Social Active Design Strategies

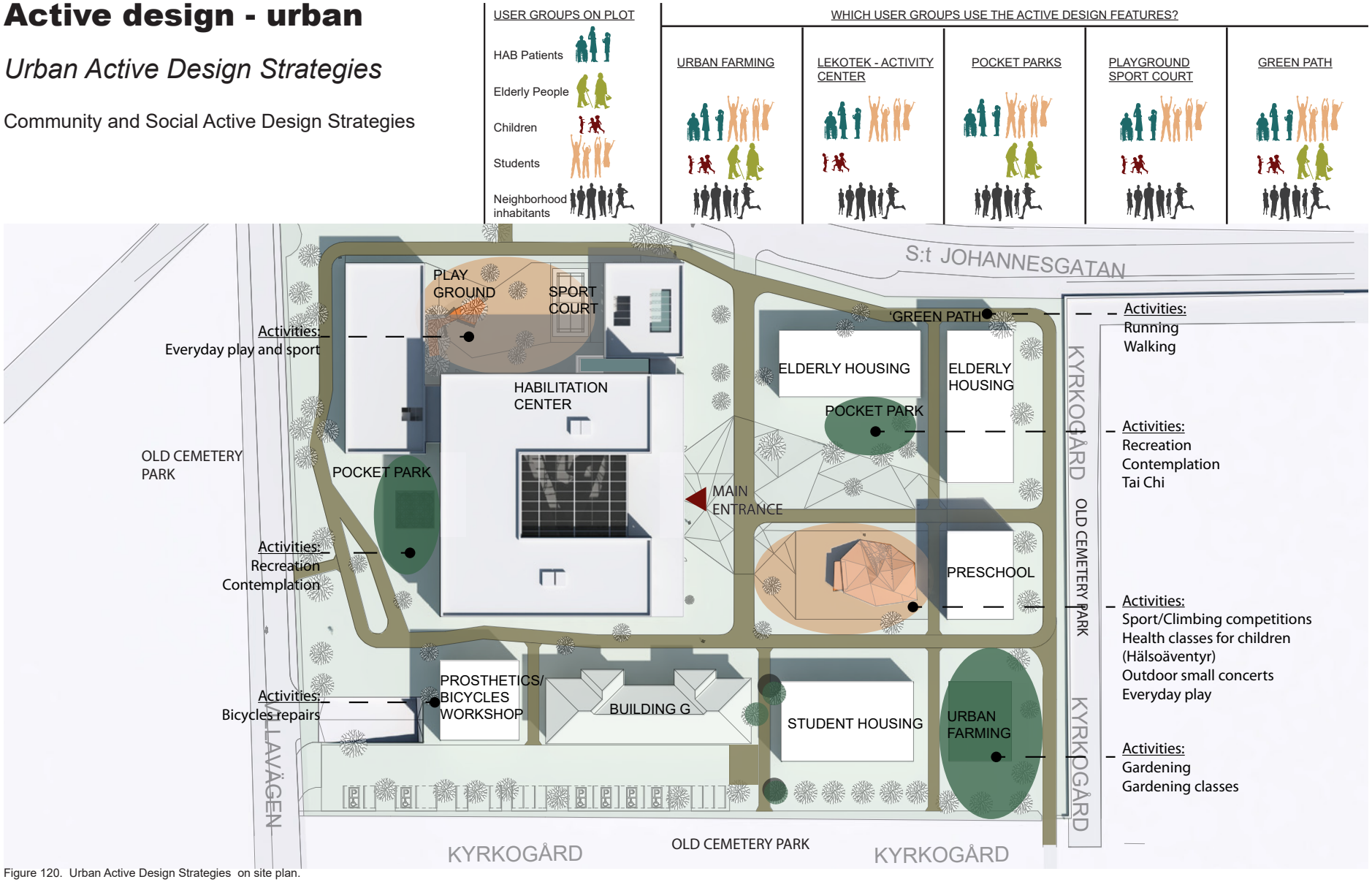
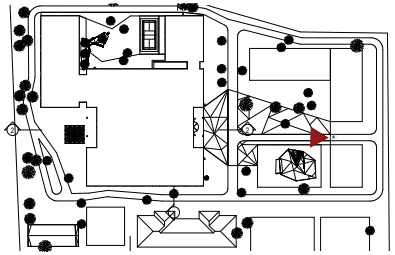


Figure 120. Urban Active Design Strategies on site plan.

Exterior render

View towards main entrance and Lekotek



Reflections

This Master Thesis addressed the needs and requirements of an existing Habilitation Center from the perspective of health promotion and active design, answering the question: *In what way can building design promote active behavior for all types of building users?*

This meant understanding the issue of habilitation and addressing the needs of patients using design guidelines which promote an active behavior. As presented in the Background patient needs are complex and this lead to a design solution that not only answers these needs but also encourages movement, integration and socializing, in a democratic design accessible to everyone in the community.

Having a theoretical scope allowed for a greater freedom of design. Being able to work on a proposal without financial concerns meant that more daring solutions could be explored. This thesis proposes an alternative for Habilitation Centers in the context of Uppsala, with a focus on common spaces and training facilities. The primary readers are the county council and the management team of the existing center but the research and solution can inform professionals working in healthcare architecture and anyone interested in the subject.

Healthcare architecture is a subject that enabled the implementation of design solutions which improved people lives and health, helping the medical process. The next step is to move towards solutions that promote a healthy life style and daily active behavior. This thesis shows that design guidelines can be implemented to promote these ideas while helping the process of habilitation.

Figure 121. Illustration of east facade in winter

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Reference list - Images

All figures not listed here are owned and produced by the author.

Photos taken in Kungsgärdets center have been taken with permission.

Figure 8 - Birds-eye view of existing Kungsgärdets center. Source: Bing Maps- https://www.bing.com/maps

Figure 25 - Photo of facade. Source: www.archdaily.com - https://www.archdaily.com/126290/rehabilitation-centre-groot-klimmendaal-koen-van-velsen © Rob ‘t Hart

Figure 30 - Birds eye-view photo. Source: www.herzogdemeuron.com - https://www.herzogdemeuron.com/index/projects/complete-works/151-175/165-rehab-centre-for-spinal-cord-and-brain-injuries/image.html

Figure 35 - Photo of interior. Source: www.archdaily.com - https://www.archdaily.com/799521/frederiksbjerg-school-henning-larsen-architects-plus-gpp-architects/582bf874e58ecee4050000d6-frederiksbjerg-school-henning-larsen-architects-plus-gpp-architects-photo © Hufton + Crow

Appendix

Social analysis

Social media study - semi-structured scoping of photos on Instagram

In order to get an overview of how people perceive the urban context, the existing center and to see what type of therapies they find inspiring, a semi-structure scoping of photos was made on Instagram. Users of this social platform generally post images that are positive and reflect things that they find interesting and uplifting. This meant that even before visiting the site a general idea could be established about the underlying particularities of the city but also of habilitation treatment.

The analysis started from a macro size- the city, keywords used where: #uppsala, #uppsalacity and #uppsalastad. Of course plenty of images were irrelevant but a great number presented landmarks of the city and collectively advised on the urban character of Uppsala.

The next step was investigating the existing Health and Habilitation Center using keywords such as: #kungsgärdet_center, #kungsgärdetcenter and #kungsgärdet. The searched reveled only four relevant images, however their importance comes from the fact they were posted by an employee from Kungsgärdets center and show the interest staff places on views towards nature and their fascination with the changing seasons.

Lastly, an investigation was made on habilitation in Sweden as a general concept. Therefore the keywords used were: #habilitering, as a broad subject, but also more specific medical conditions: #autism #downsyndrom and #motorisknedsättning. The images reflected upon were those related to habilitation therapies in particular for children.

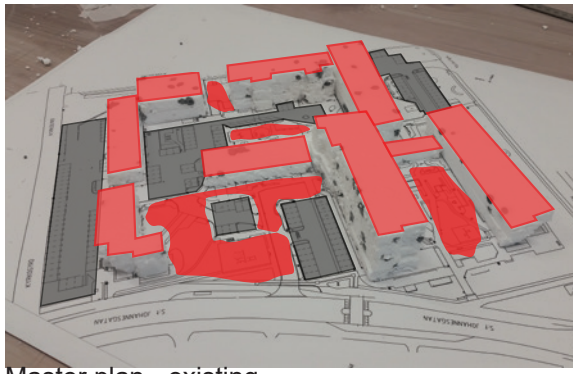
The study helped identify therapies that people find interesting such as:

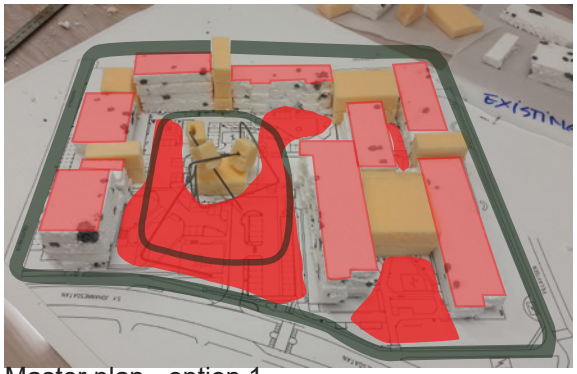
- Play therapy
- Music therapy
- Image workshop (art) therapy
- IT therapy
- Sensory therapy
- Contact with animals
- Dance classes (dance therapy) – can be used also by community
- Training room – can be used also by community
- Gardening therapy – can be used also by community
- Walking therapy, walking track around the site – can be used also by community

Sketching process

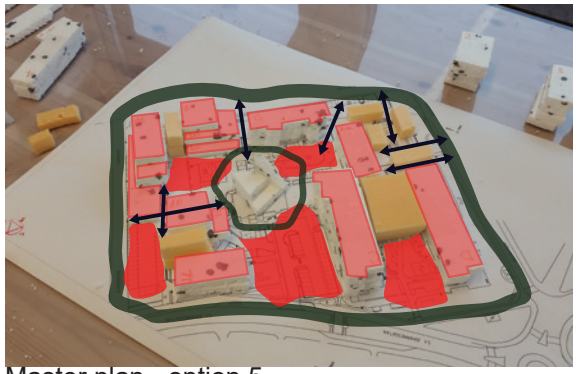
Scale models

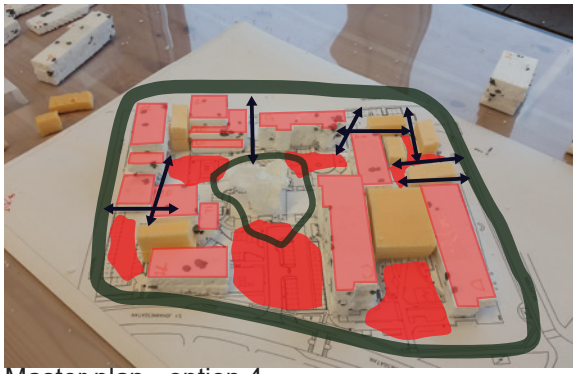
	Master plan existing	Master plan Option 1	Master plan Option 2	Master plan Option 3	Master plan Option 4	Master plan Option 5	Master plan Option 6	Master plan Option 7
PRO	Space/walking space between buildings - good for different walking/access options	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy	Different types of courtyards - gradient of privacy
		Access/walking paths around the building in the middle	Access/walking paths around the building in the middle	Access/walking paths around the building in the middle	Access/walking path around the building in the middle	Access/walking path around the building in the middle	Access/walking path around the building in the middle	Access/walking path around the building in the middle
				Both visual and physical access to the area outside the center	Both visual and physical access to the area outside the center	Both visual and physical access to the area outside the center	Both visual and physical access to the area outside the center	Both visual and physical access to the area outside the center
				It's good that there are more courtyards with different shapes and sizes and that all buildings have this courtyards at least on 2 sides	Good with terraces and porticos	Good with terraces and porticos	Good with terraces and porticos	Good with terraces and porticos
					The area on the west is good that is low rise and has many connections to the outside area of the center	The area on the west is good that is low rise and has many connections to the outside area of the center	The area on the west is good that is low rise and has many connections to the outside area of the center	The area on the west is good that is low rise and has many connections to the outside area of the center
						Good that the hälsoaventyr is rotated, it makes the layout more dynamic	Good that the hälsoaventyr is rotated, it makes the layout more dynamic	Good that the hälsoaventyr is rotated, it makes the layout more dynamic
							Good with extra physical connection - I can still build a connection between the buildings but it can be on the upper floors and leave the ground floor accessible (not build)	Good with extra physical connection - I can still build a connection between the buildings but it can be on the upper floors and leave the ground floor accessible (not build)
CON	Too much parking everywhere on the site	Only visual connections with the outside of the site maybe it would be good to have a physical connections as well.	Too much mass of buildings on the west and east side	No portico and no terraces	Too much mass on the east side - although is just the upper floor that canopies and there is still a connection on the ground floor	Too much mass on the east side - although is just the upper floor that canopies and there is still a connection on the ground floor	Too much mass on the east side - although is just the upper floor that canopies and there is still a connection on the ground floor	Too much mass on the east side - although is just the upper floor that canopies and there is still a connection on the ground floor
	H building' divides the site in two parts which are not well connected - I think it would be best to have a walking path around the building	The proposed buildings on the west side are to high and might take too much light	The buildings are too close to each other				Not sure that I should build too high on the west side - I should have it low scale and low rise	Not sure that I should build too high on the west side - I should have it low scale and low rise
	The buildings on the east side are to far back pushed into the site	The courtyards are not connected to each other and don't have a coherence as a type of space	Only visual access with the area outside the center					
			The master plan seems 'heavy' - too much built area and not enough coherent outside area					

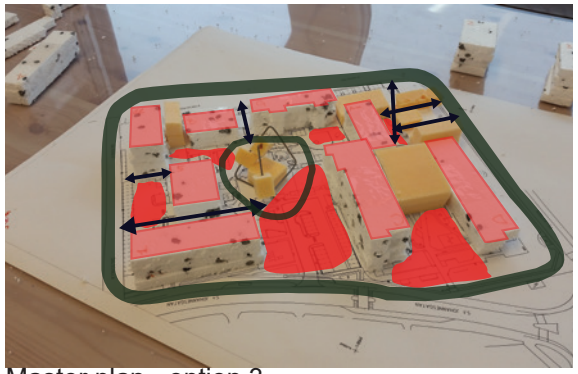

Master plan - existing

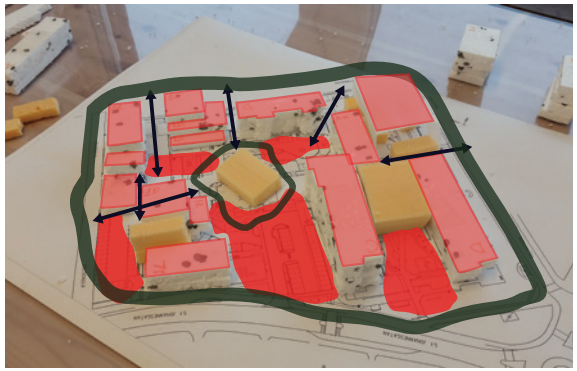

Master plan - option 1

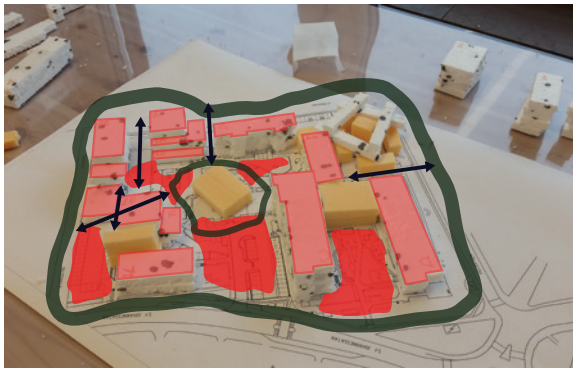

Master plan - option 2

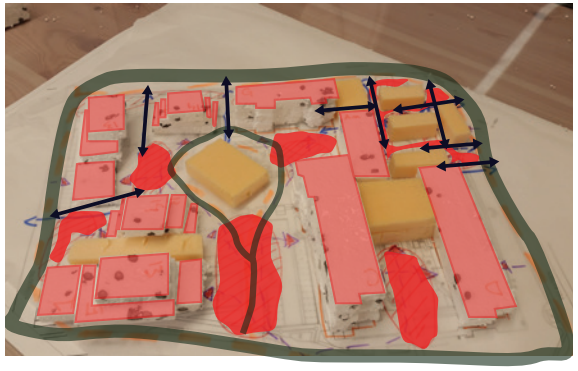

Master plan - option 5


Master plan - option 4


Master plan - option 3

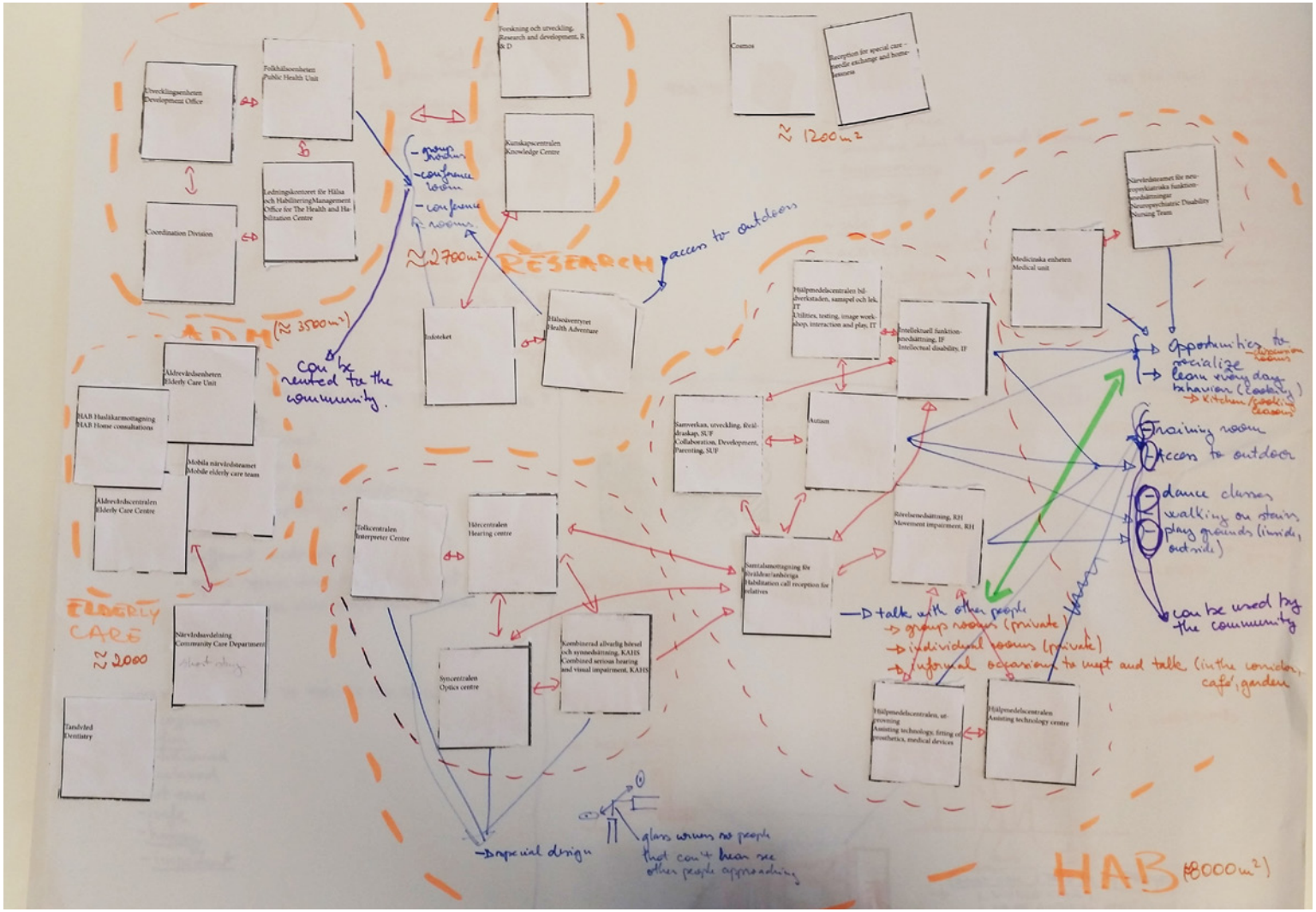

Master plan - option 6


Master plan - option 7


Master plan - option 8 - Conclusion

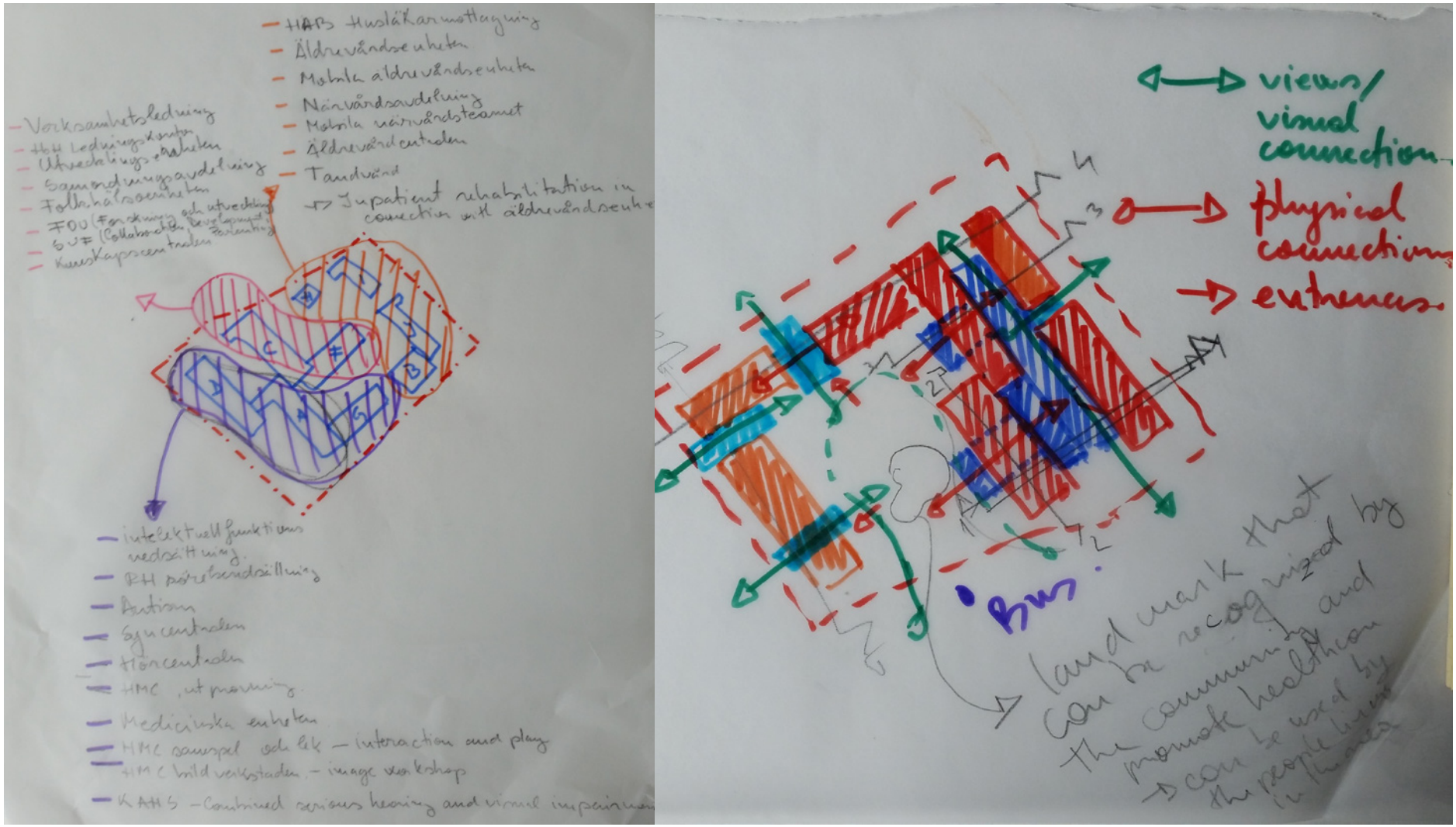
Sketching process

Department organization



Sketching process

Master plan development



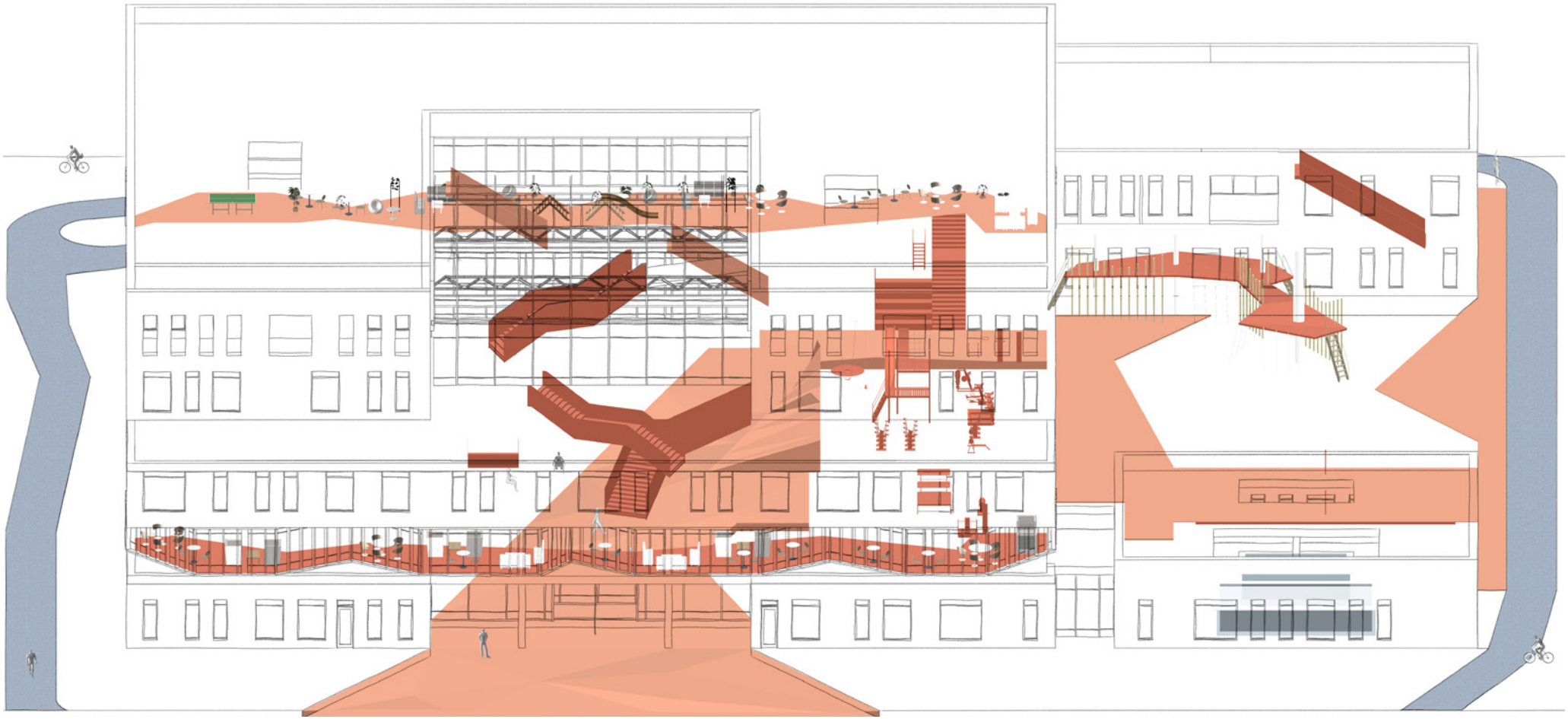


Illustration of active care spaces throughout the building

Active care

Health promoting spaces in habilitation facilities