

HEALING GARDEN

HEALTH CENTER IN ÖREBRO

KRISTINA MOSOR | YU WANG | MALIN SAXBORN
ARK263 | HEALTHCARE ARCHITECTURE | 2017



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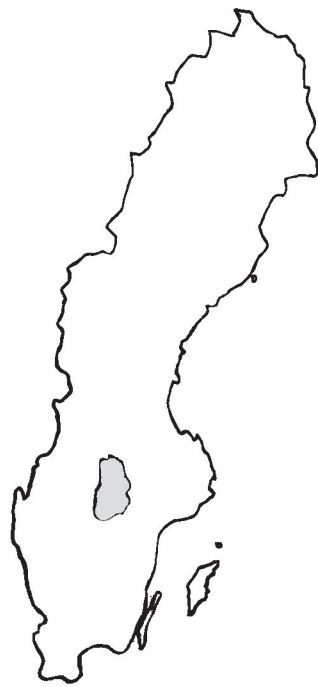
Background

The city of Örebro is growing and with the increased population the role of healthcare services must be re- thought. Four existing health-care centres (Olaus Petri, Karla, Mikaeli and Varberga) should be combined to a larger one.

In the future, more of today's care will be done in the home of the people. At the same time, preventive care will become more important.

Person- centredness means, that specialist physicians should work more in teams and focus on the whole persons, not only seeing them as patients. The future healthcare center will not only treat sick people, but also helps them to live a more healthy life.

Today in Örebro there are 168 798 people listed at the four health centres. At Karla there are 49 867, Mikaeli 21 477, Varberga 32 450 and 65 004 peolpe at Olus petri. The number will increase in the future.



County Örebro



Municipality Örebro



City Örebro

Vision

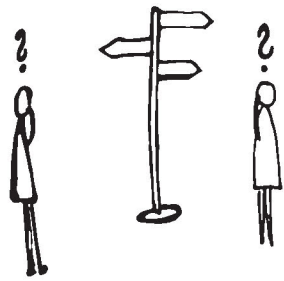


Healing environment

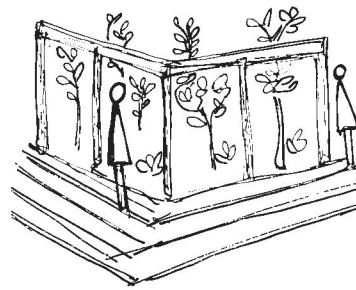
Our vision is to create a healing and stress-free environment for patients, those who visit the site and those who work there. For the project we determined three design goals, qualities important for healthcare buildings.

In a second step, we looked at examples from the past, starting from the ancient Greece until present. The most obvious similarity is the use of courtyards and natural surroundings. They help to give the buildings a logical inner structure. Studies also show, that nature has a calming and healing effect on people.

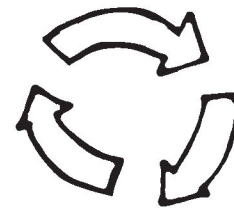
In our proposal we would like to investigate how the vision of a healing environment can be achieved by using courtyards and gardens.



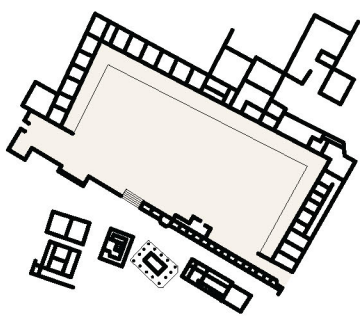
Easy wayfinding



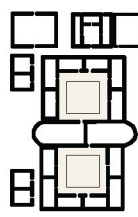
Recognisable structure



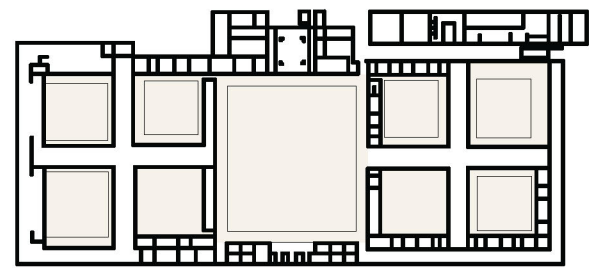
Good Flows



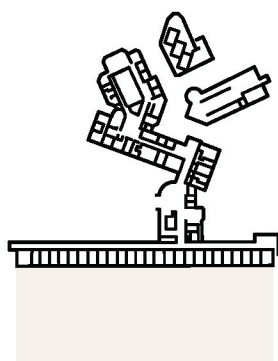
Asclepion, Greece
420 BC



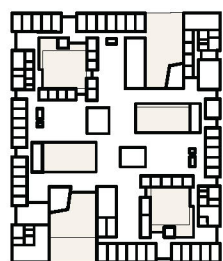
Monastery St. Gallen,
Switzerland, 720 AD



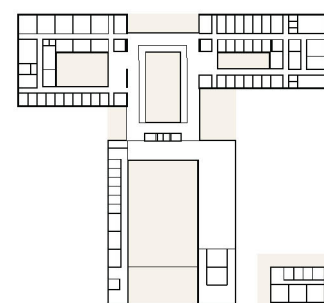
Ospedale Maggiore, Italy
1456 AD



Paimo Sanatorium,
Finland, 1933



Diabetes Centre,
Copenhagen, 2016

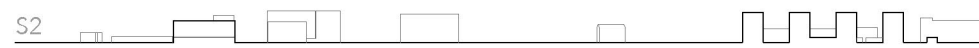
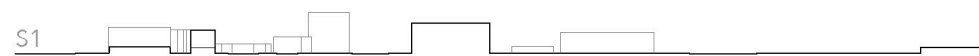


Healing Garden
Örebro

Site

The city of Örebro developed around a medieval castle along the river Svartån. This building from the 14th century is the natural centre of the settlement, the city quarter in close vicinity has a very urban character today. The main train path acts as a barrier within the city pattern. Properties along the track are of high value due to necessary urban development and expansion.

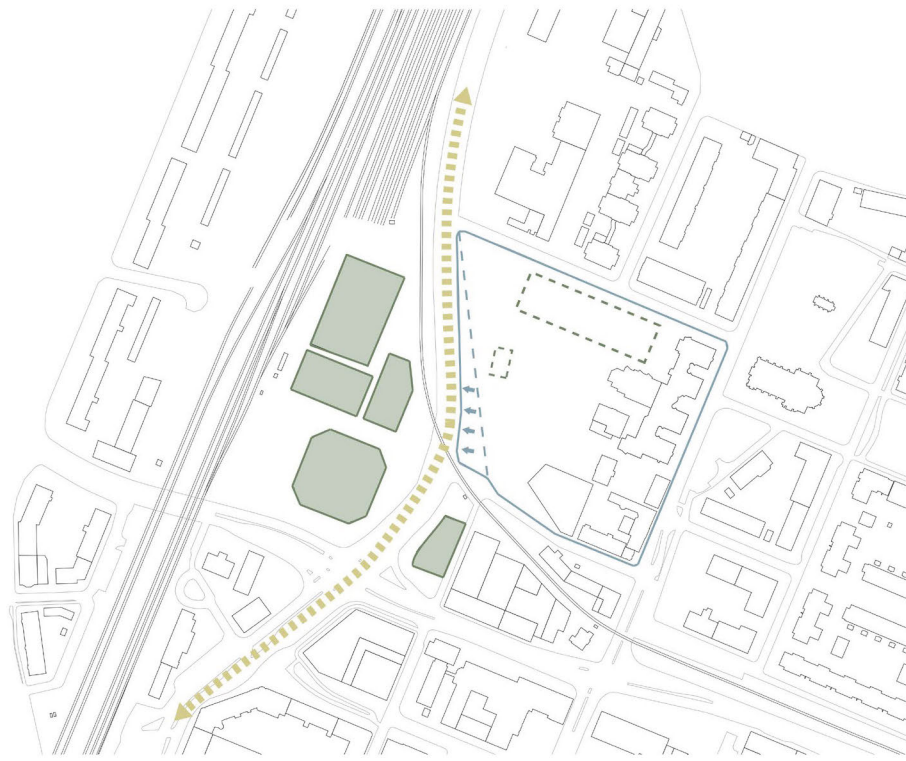
The site for the new healthcare facility is located close to the central station and between city centre and residential / industrial areas. For us, it was important to investigate the city structure of that transition space. The sections show the discontinuity: With distance to the centre, the structure becomes less dense, urban and diverse.



CITY CENTRE
Mixed use
Diversity
Density

RESIDENTIAL AREA
Apartment blocks
Greenery
Motorised private transport

Site



The neighborhood will undergo distinct changes in the upcoming years. According to the municipality's development plan, the area along the train track should become a new business district. Several new buildings are under construction now. With a maximum height of 45m, they will bring a totally new scale into the city structure. The road next to the train path is an important arterial road and is highly frequented. Nevertheless, it will be transformed into a boulevard with slow traffic, a bicycle lane and greenery.

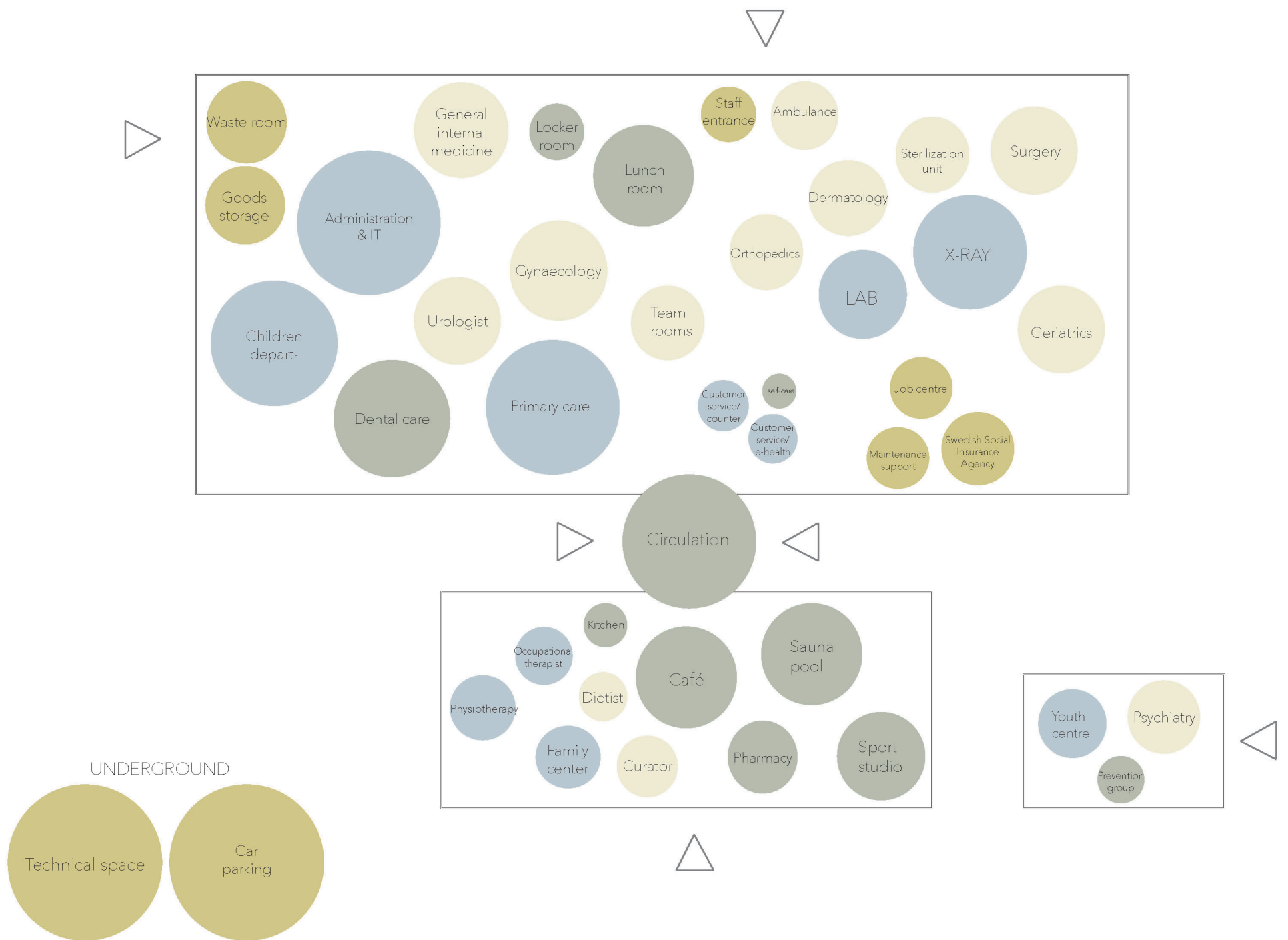
The existing buildings on the site are residential healthcare facilities. They are being remained and should contribute to a mixed use in the area. In order to create space, it is necessary to remove the existing healthcare centre and an apartment building.



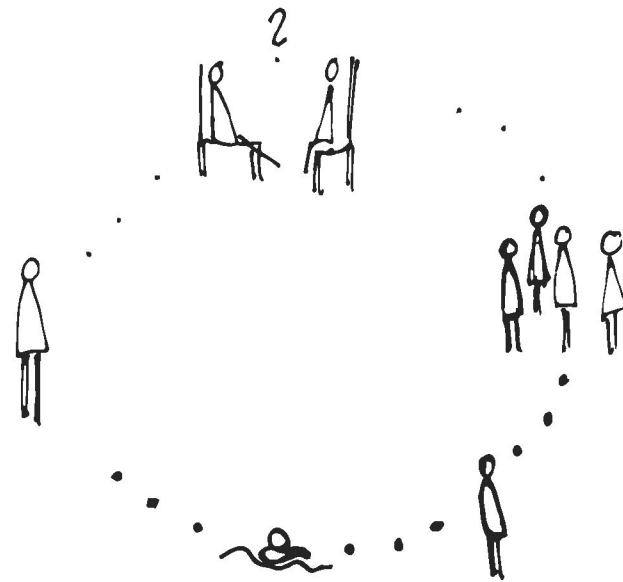
The site can be accessed from various directions. The most important connection for pedestrians is the one towards the city centre. The visibility of the entrance from the urban street is essential. Visitors can reach the new healthcare centre also by public transport.

Program

The design of a healthcare building is a complex process with a lot of different stakeholders and facilities involved. In order to get an idea about the program and necessary functions, we looked into the design dialog, which was carried out in Örebro. We are convinced that nowadays the focus should lie on the challenge, how to involve the community into their own healthcare. This also means a shift from treating illnesses to preventing them. Therefore, public facilities, social services and health promoting activities play an important role in the new organisational structure.



Program

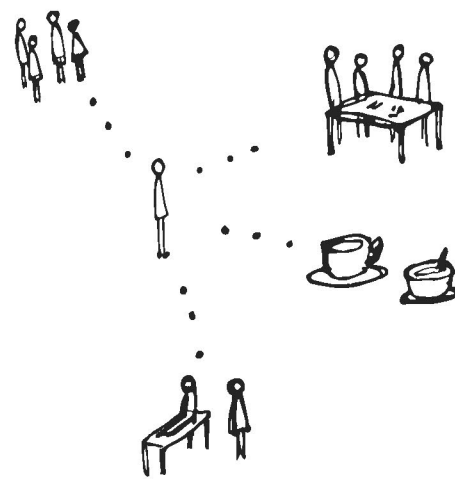


Person-centredness

People who come to the healthcare centre should get an individual care through the whole process of diagnosing, treating and rehabilitation. After the first examination a team meeting will be set up. The participants could be doctors, nurses, therapists and social service employees. Together with the patient an individual treatment strategy can be found.

Team example:

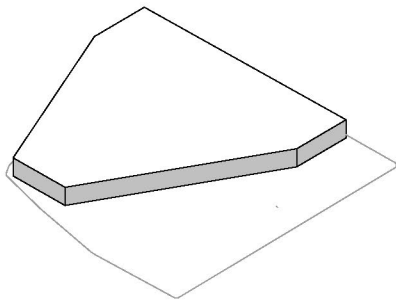
Expectant mother: Gynecologist, Nurse, Midwife, Family centre employee



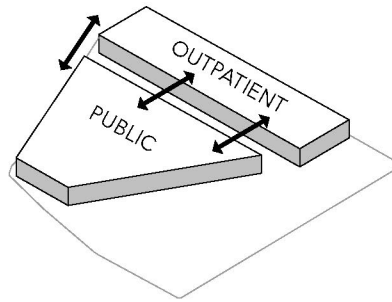
Interdisciplinary units

With the layout of the units, an interdisciplinary work should be promoted. Two or three departments share the same administration space and fika station. The lunch room is being shared by all the staff.

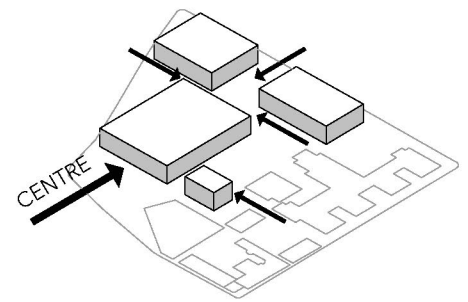
Concept



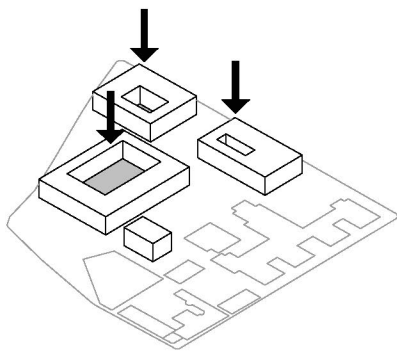
1. Site



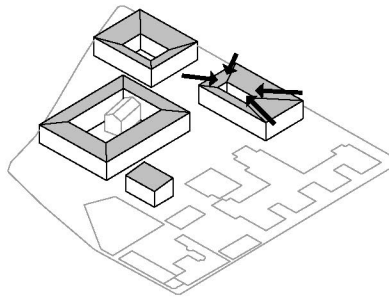
2. Separation between outpatient units and public facilities



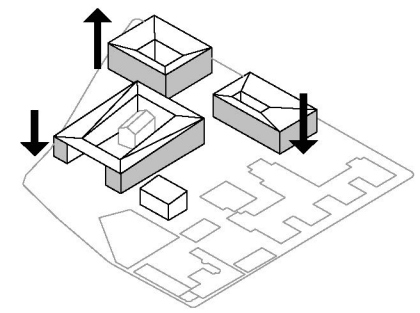
3. Creating entrances



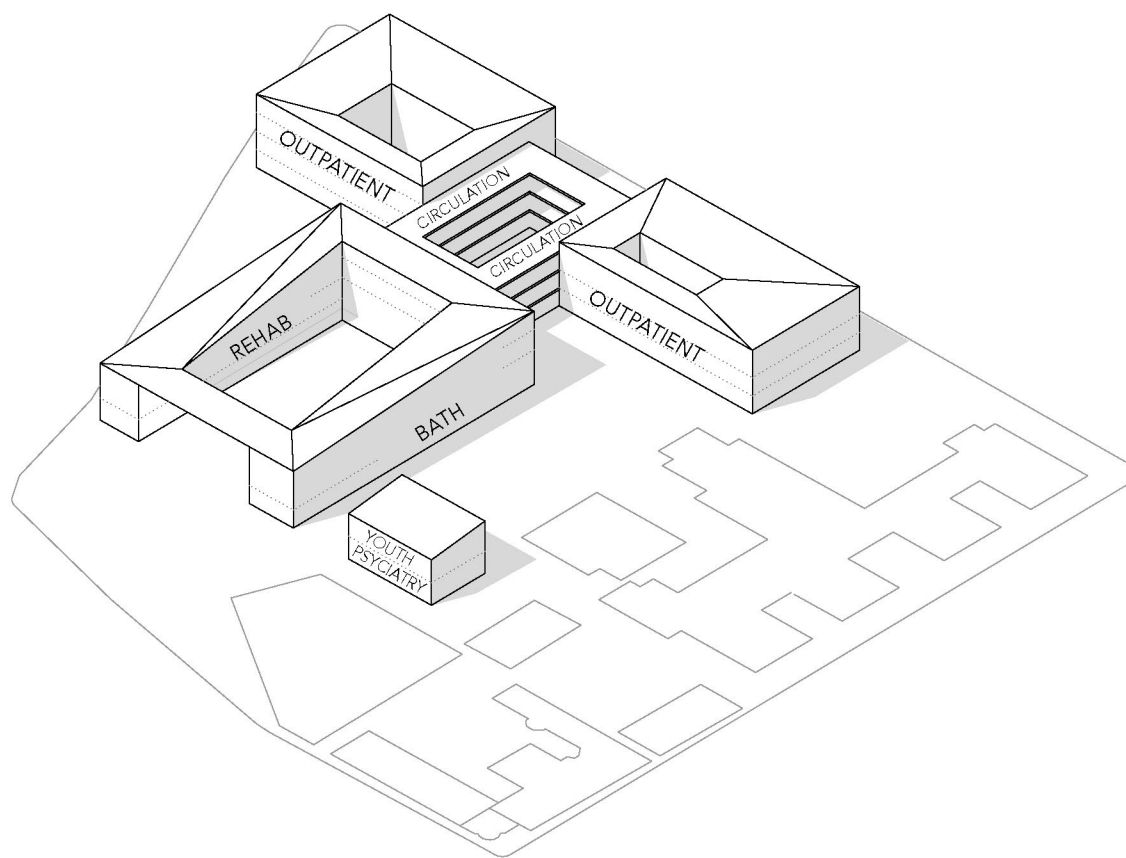
4. Creating courtyards and gardens



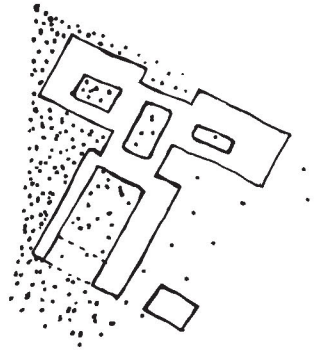
5. Introverted courtyards through pitched roofs



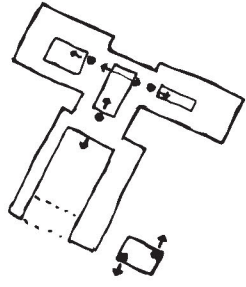
6. Different building heights



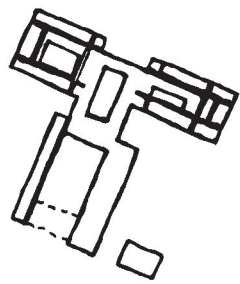
Gardens



The aim is to create a serie of different gardens. The gardens close to the main road and towards the city centre are very accessible. Through design, visitors should be invited to be active, play and engage in the community. The gardens towards the outpatient units are more introverted and should provide silence and beauty through nature.



There is prove, that the view and experience of nature reduces stress and pain in healthcare settings. Therefore, all waiting areas are located towards the gardens.



The gardens should give the building its inner structure and make wayfinding easy. Patients, staff and visitors move around the courtyards and have visible connections to the surrounding area.



1:1500

Gardens



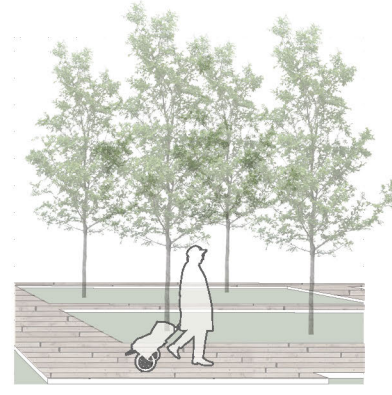
City garden

Urban feeling with a playful paving.



Water garden

Different water basins, collecting rainwater flowing down the inclined roof.



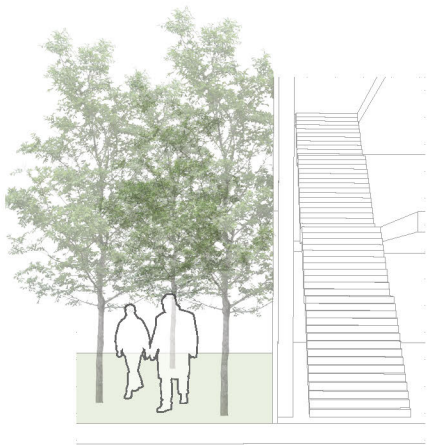
Community garden

Wooden paths and platforms floating over the surrounding nature.



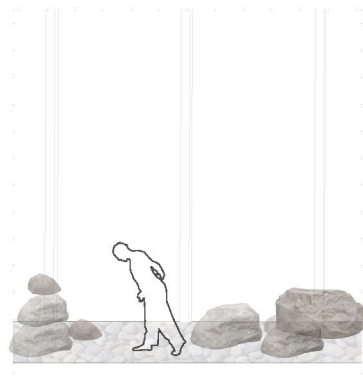
Light garden

A garden full of beautiful art sculptures, which will also shine up in the dark.



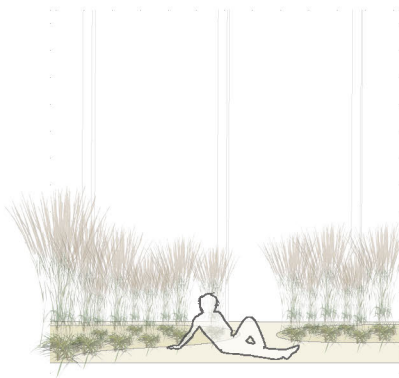
Swedish garden

A typical swedish birch forest inside a building. Intense greenery.



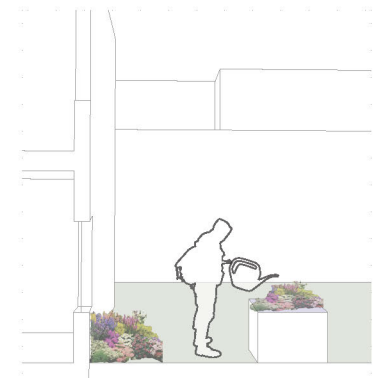
Stone garden

Rough stone landscape to explore. No shoes needed.



Silent garden

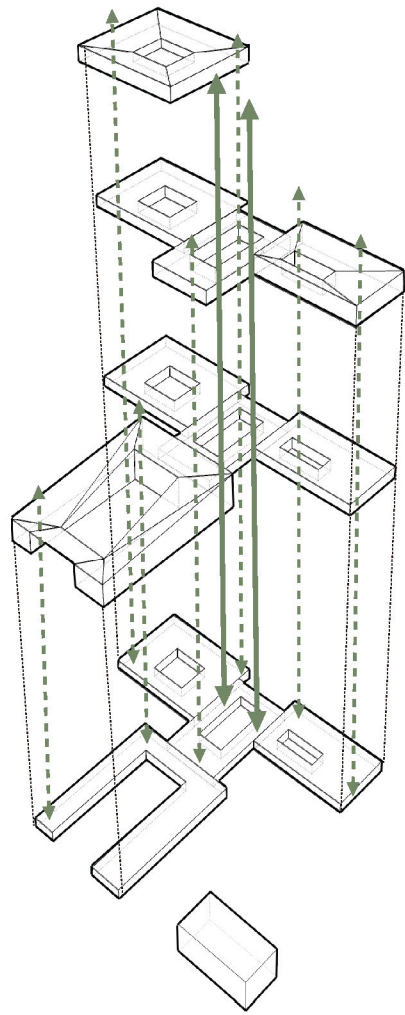
The time stops when observing the colour changes of the meadow throughout the year.



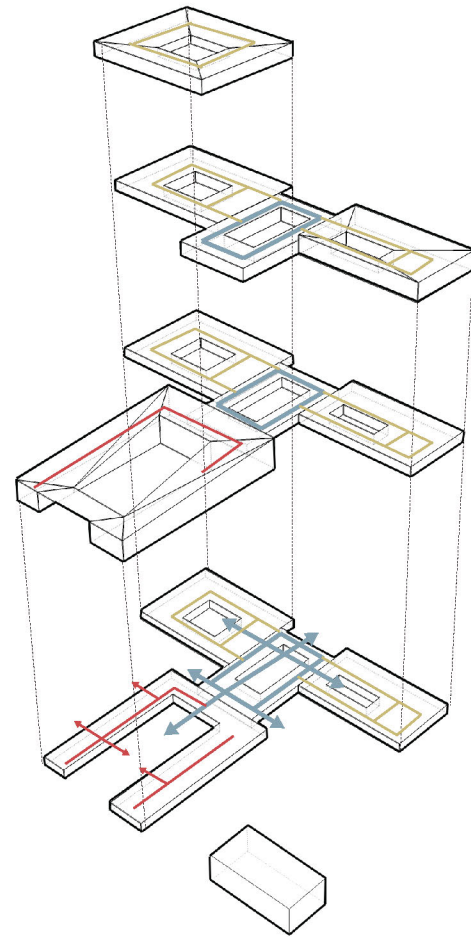
Healing garden

Urban Gardening as a fulfilling activity.

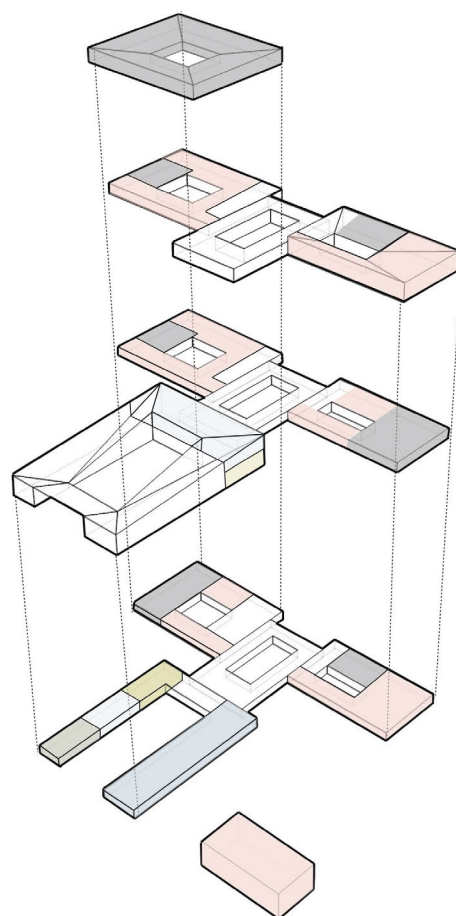
Communication



Vertical flows



Horizontal flows

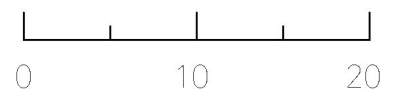


- Outpatient department
- Administration
- Café
- Pharmacy
- Bath

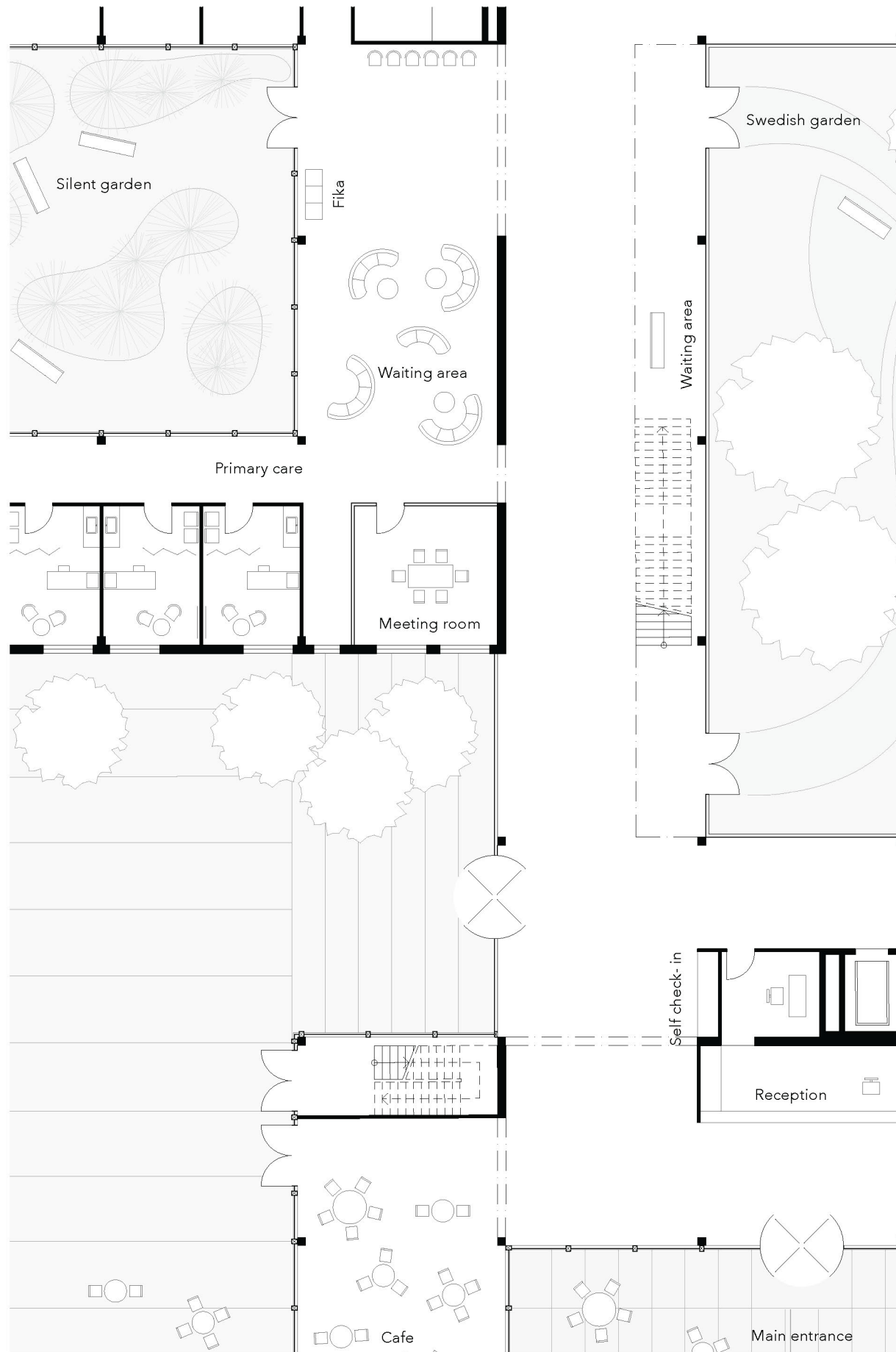
Program



Ground floor



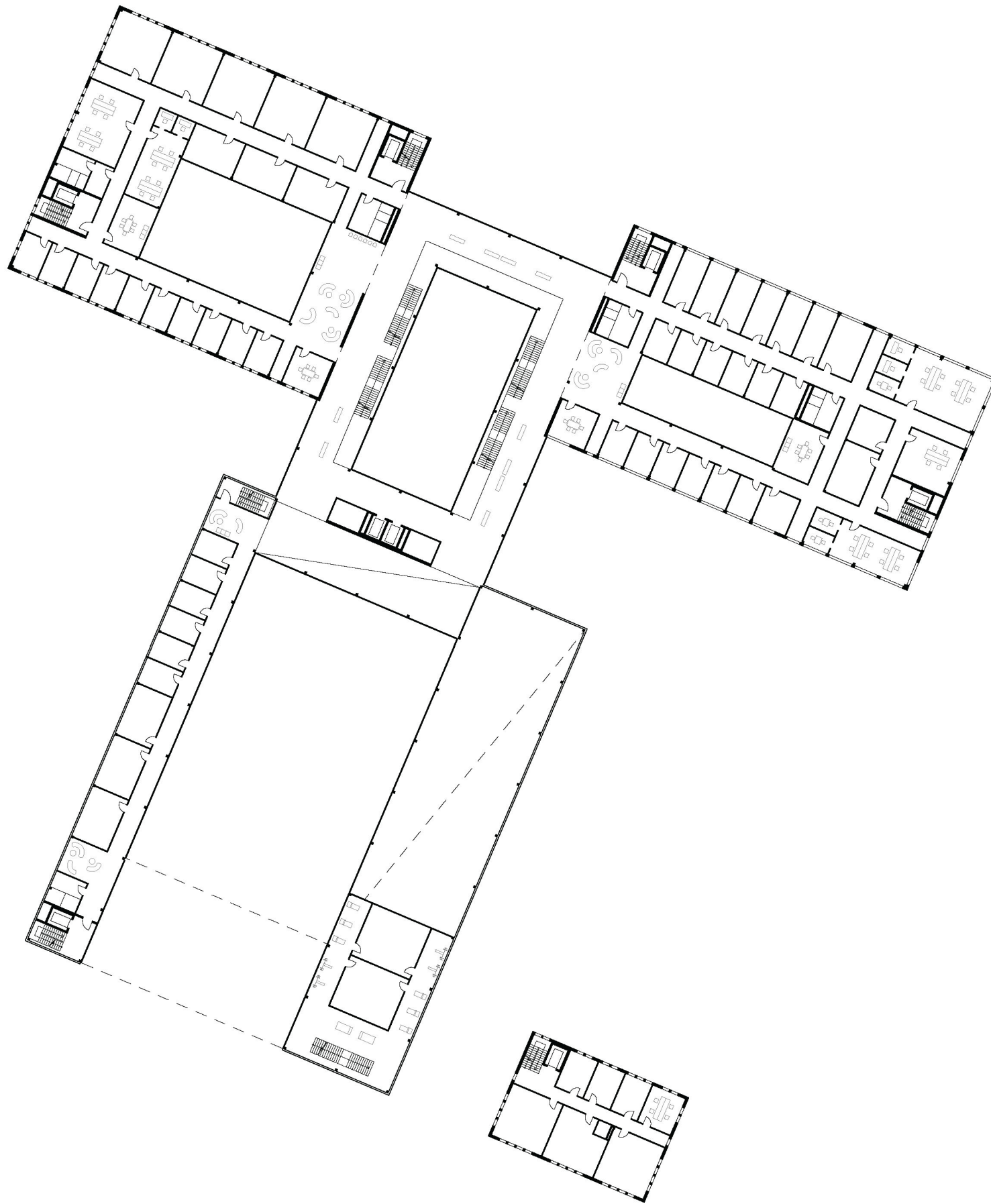
Café	150	m ²	Psychiatry	170	m ²
Family Centre	148	m ²	Waiting areas	218	m ²
Pharmacy	120	m ²	Administration	458	m ²
Bath and Sauna	942	m ²	Delivery and waste	195	m ²
Primary care	384	m ²	Circulation space	1 744	m ²
Imaging	316	m ²			
LAB	226	m ²	Total:	5071	m ²



Zooming in entrance
1:200

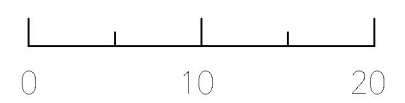


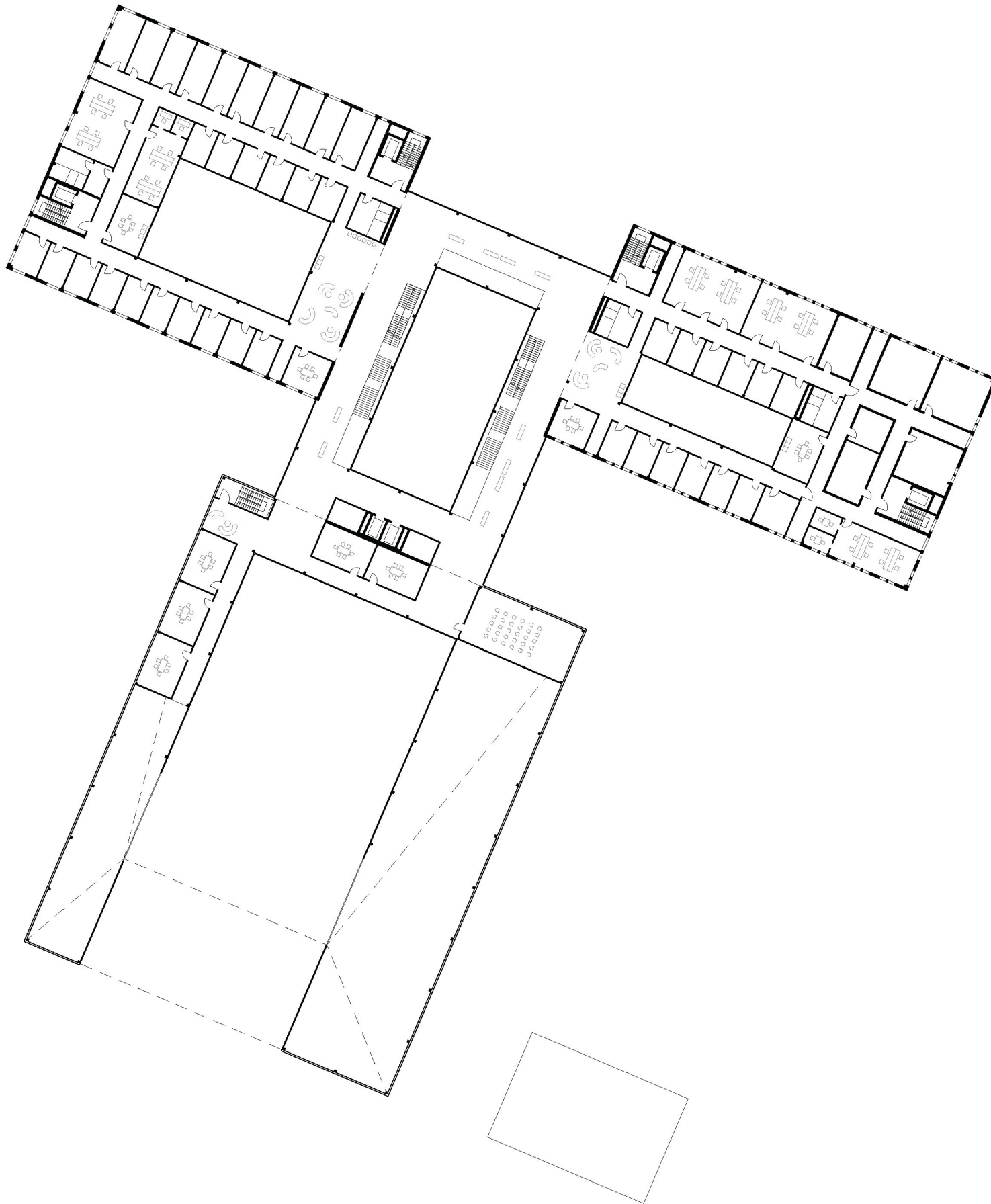
Swedish garden



Floor plan 1

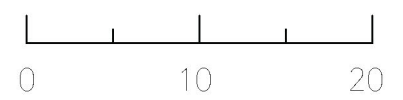
Rehabilitation	229	m ²	Youth centre	232	m ²
Sport	300	m ²	Waiting areas	203	m ²
Children's department	200	m ²	Administration	560	m ²
Gynecology	390	m ²	Circulation space	1552	m ²
Dermatology	124	m ²			
Geriatrics	154	m ²	Total:	4134	m ²
Orthopaedics	190	m ²			

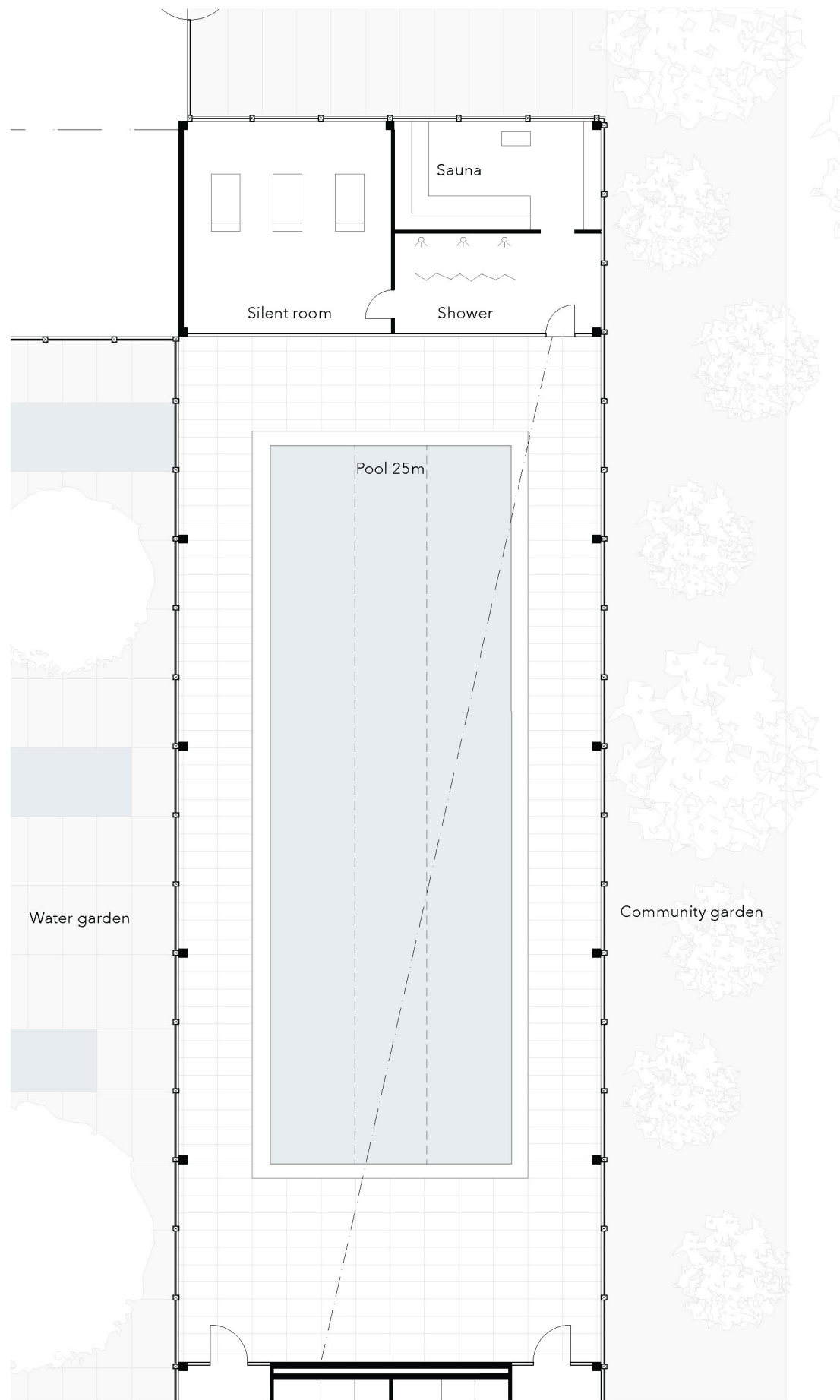




Floor plan 2

Team Meetings	282	m ²	Waiting areas	180	m ²
General internal medicine	200	m ²	Administration	377	m ²
Dentist	385	m ²	Circulation space	1574	m ²
Surgery	645	m ²	Total:	3643	m ²

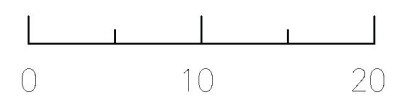
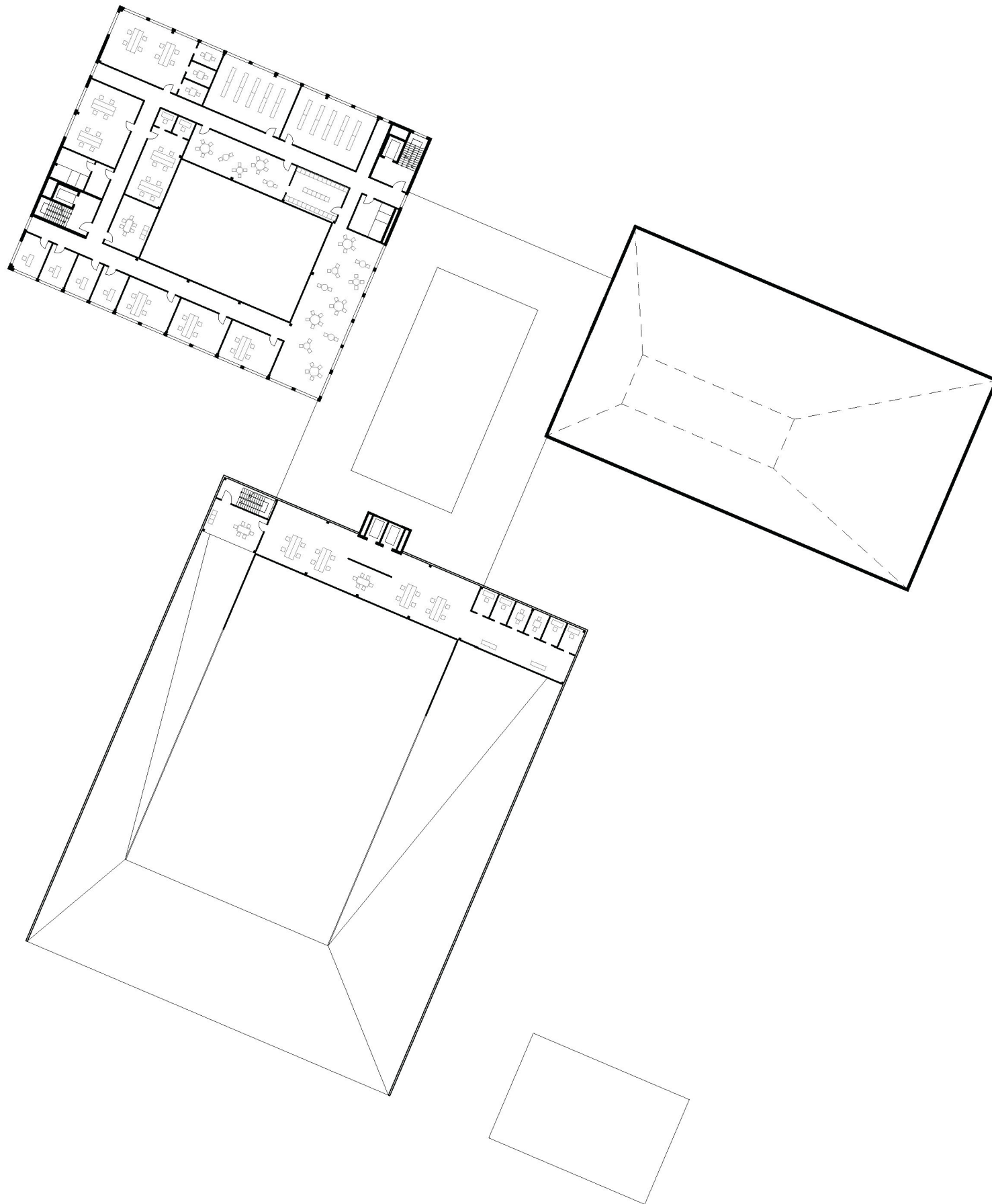




Zooming in Bath
1:200

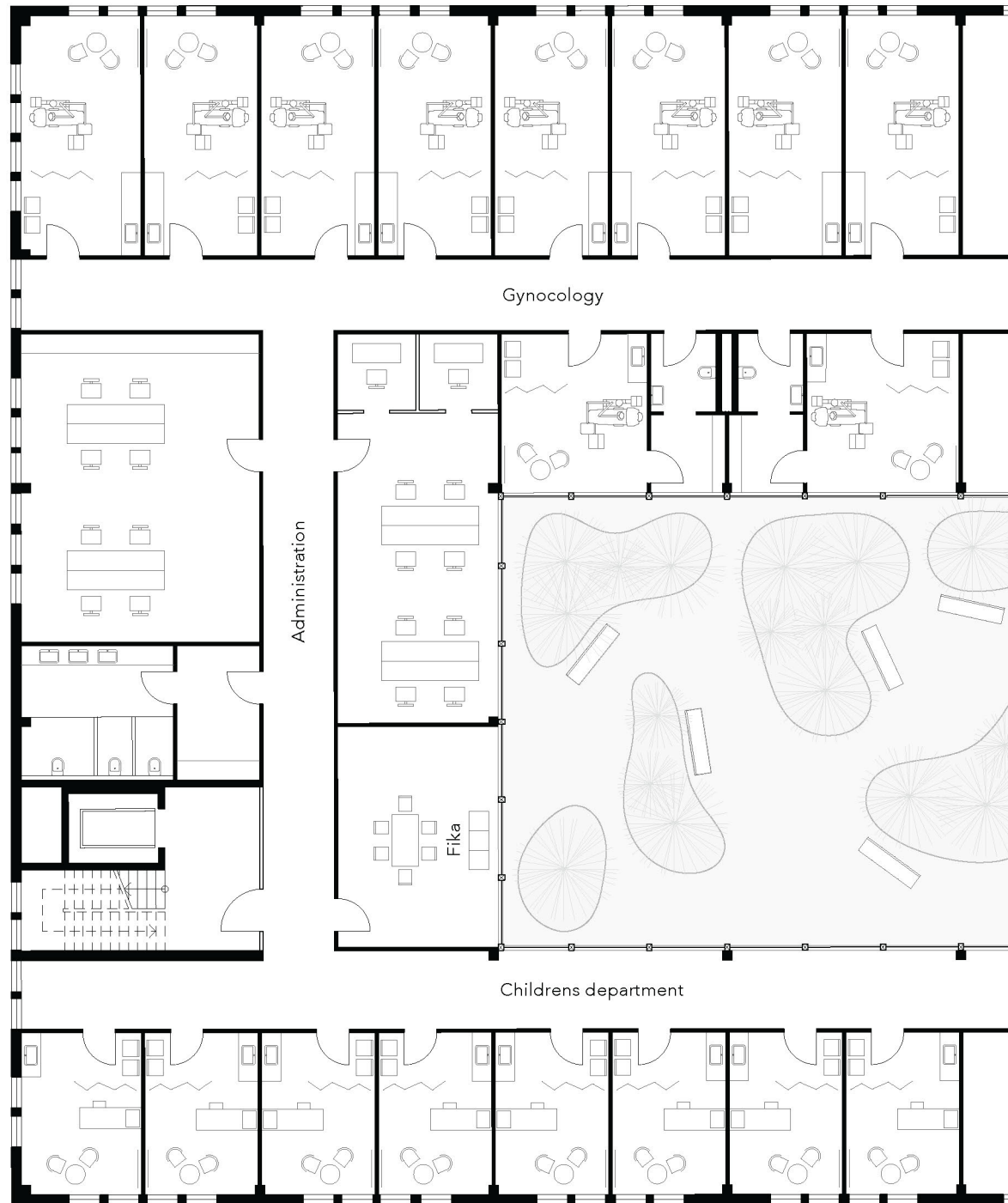


Bath

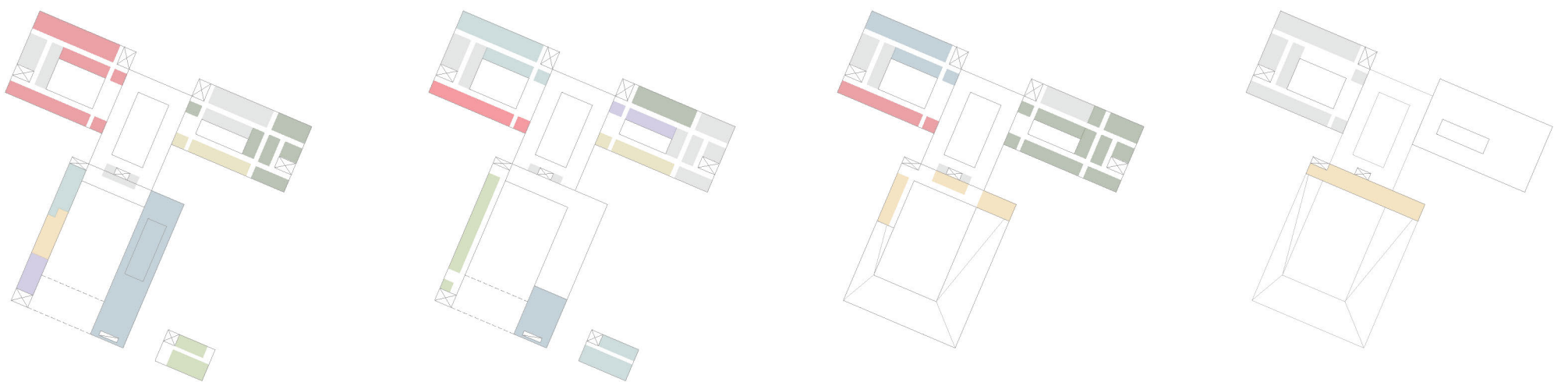


Floor plan 3

Social services	352	m ²	TOTAL	14 434 m ²
Administration	918	m ²	Circulation space	5186 m ²
Circulation space	316	m ²		
Total:	1586	m ²		



1:200



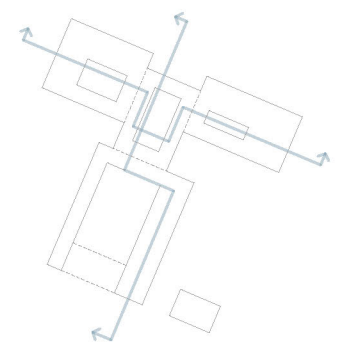
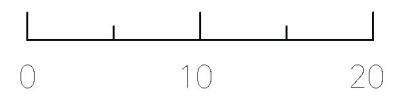
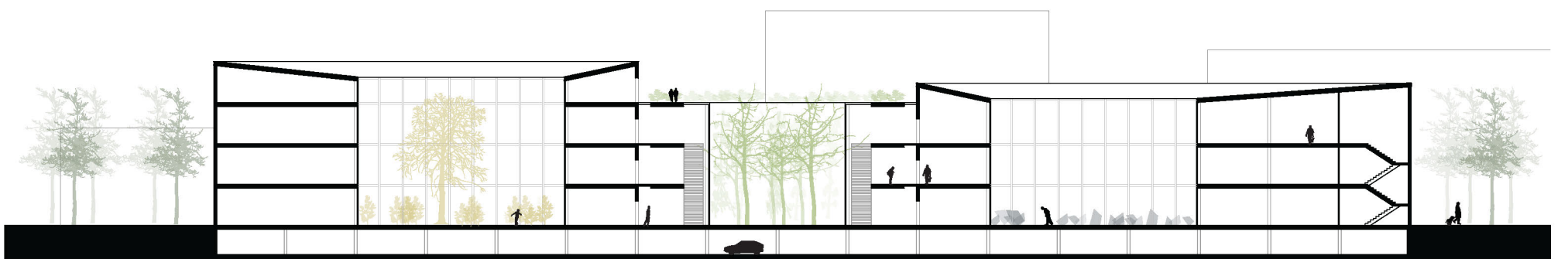
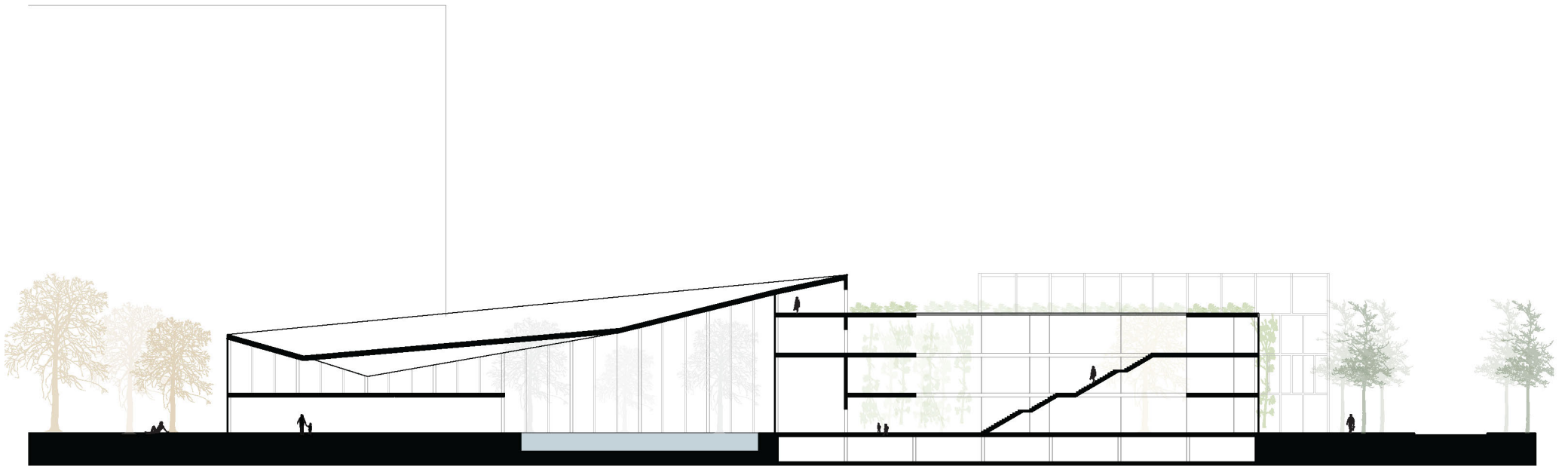
- Bath
- Psyciatry
- Family center
- Café
- Primary care
- Administration
- LAB
- Imaging
- Pharmacy

- Gym
- Rehabilitation
- Gynocology
- Childrens department
- Administration
- Dermatology
- Orthopaedics
- Geriatrics

- Dentist
- Team rooms
- General internal medicine
- Administration
- Surgery

- Social services
- Administration

Section



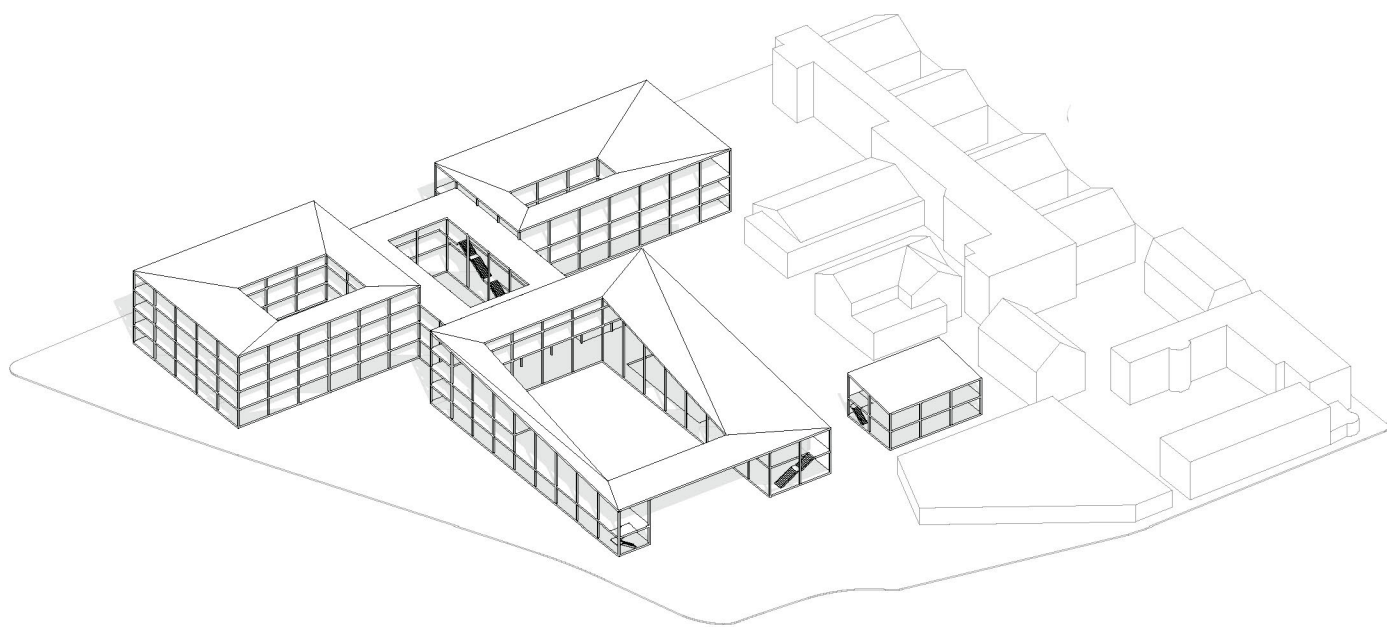
Facade



Sustainability, Health promotion and Future proofing

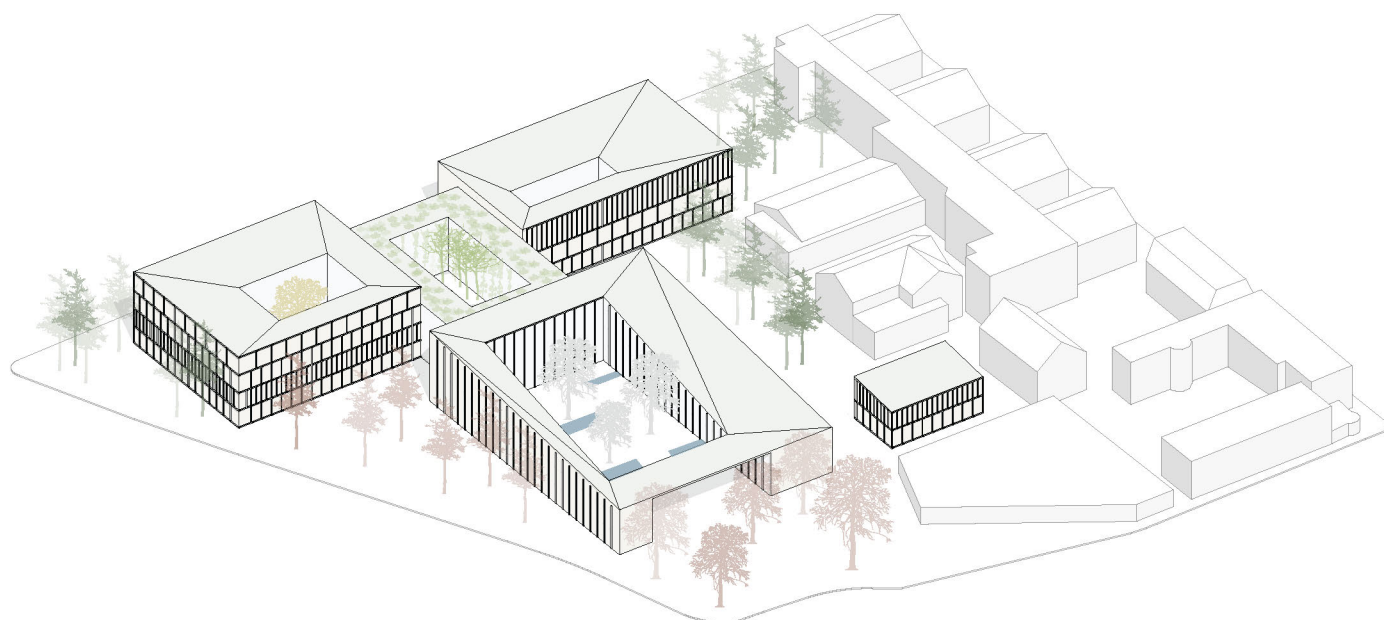
The problems we will be facing in several years are currently unknown. Considering future proofing when planning a new construction is unavoidable. Load-bearing structures, facades and interiors have different lifespans. When separating these layers, cost-efficient future adaptation will be possible. The structural grid system of 7,2 x 7,2 m helps to reach a high amount of flexibility and generality.

For us, future-proofing also includes the aspiration of designing a building that is being accepted in the neighborhood and contributes to the society.



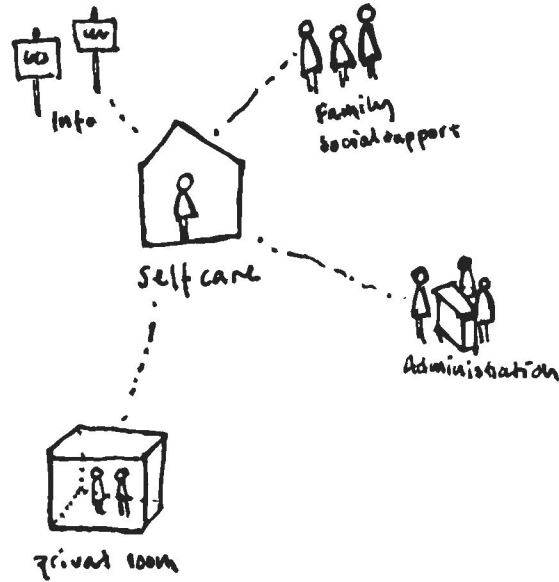
With the project, different scales of sustainable thinking are being addressed. Through different facilities and mixed uses, interesting meeting places for social interaction should be established. As a building material, recycled concrete is used. Industrial sites close to the city centre are being demolished in the upcoming years. Crushed material will be used as an ingredient for the new construction. For the facades, locally produced timber is used.

The different gardens contribute to the biodiversity in the city. There is a variety of plant species to generate a habitat for bees, birds and insects. The pitched roofs collect the rainwater, which is being filtered. It can be stored and used for watering the gardens and flushing the toilets.



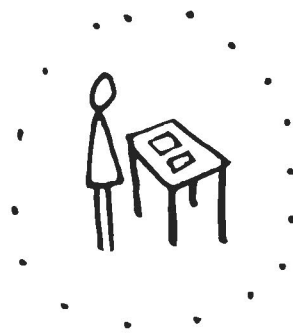
Healing architecture

Healing architecture takes place on various levels and often in an unconscious part of a person. This is something to pay attention to when planning the functions, areas and architectural solutions.



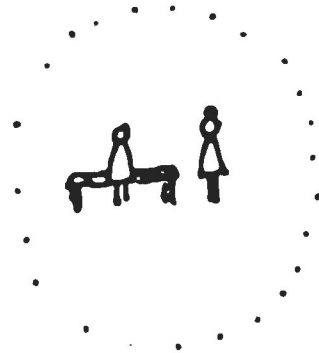
Communication space

To improve patients self-care and reduce time for treatment the communication space is really important to think of when planning. The patient needs available information, family support or other social support like social services (Formveileded, 2003). What is required are private discussion rooms near waiting areas, administration and reception. In our project meeting rooms are found in every unit.



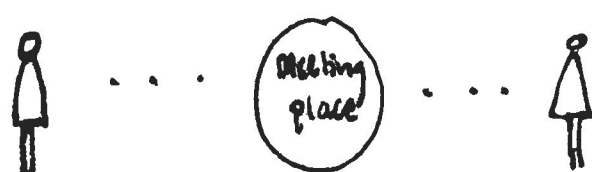
Individual space

Individual space for staff is needed for a good working environment and less stress. To design this, the space has to have clearly defined rooms and workstations with appropriate levels of visual and auditory privacy (Formveileded, 2003). In every administrations area silent working rooms are provided.



Territorial space

The architectural approach to create territorial space will include creating pleasant, recognizable spaces with marked physical barriers, effective labelling, and communication systems which clearly indicate which areas are meant for common use and which are "dedicated" areas. (Formveileded, 2003) In our proposal we have clearly articulated circulation and waiting areas.



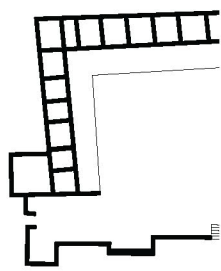
Healthcare architecture

The first buildings especially designed for healthcare appeared in ancient Greece. The concept of healing was closely linked to religious rites and ritual (Wagenaar, 2006). The structure with its colonnades and enclosed spaces behind them was similar to the one of ancient temples. Through architecture the building was linked to the outdoor environment.

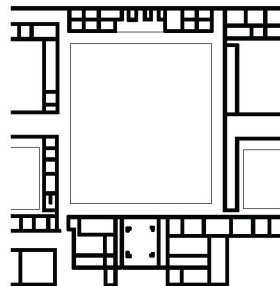
The hospitals constructed by the bourgeoisie in Europe's rapidly growing medieval cities stand apart of spiritual institutions. They were usually constructed as symmetrical courtyard composition with spacious halls and high ceilings.

As medical science progressed, the architectural environment that was seen as the hospitals most important healing feature gradually lost importance (Wagenaar, 2006). The many requirements of efficiency, technology, flexibility, structure and flows were given priority. The result were big-scale, inhuman environments with bad light conditions.

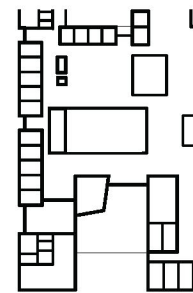
In contemporary hospital architecture, both mindsets are being thought of. This is necessary to ensure effective participation of patients in healthcare: patient centeredness, patient engagement, patient experience (Batalden, 2015).



Asclepion, Greece
420 BC



Ospedale Maggiore, Italy
1456 AD

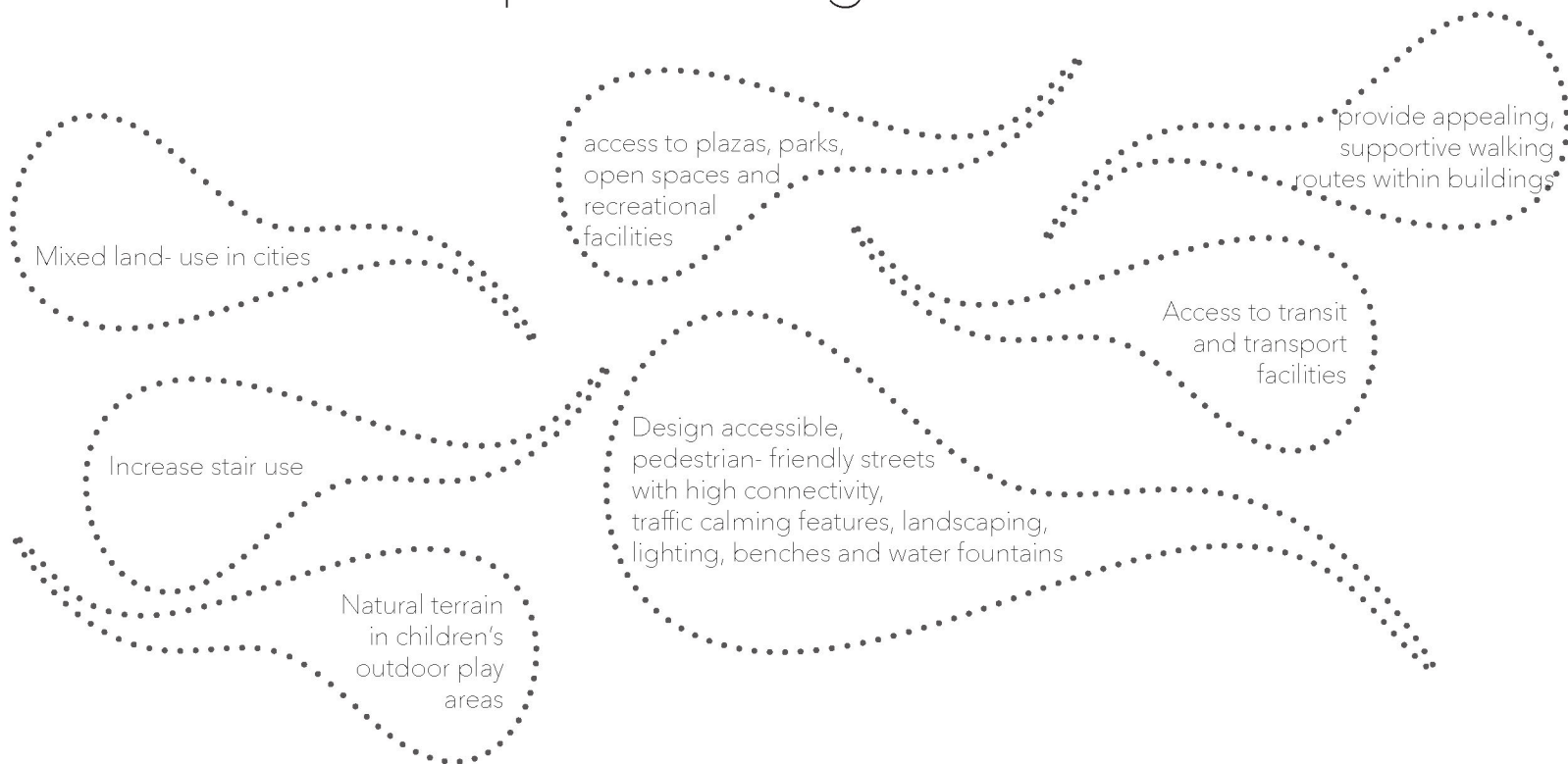


Diabetes Centre,
Copenhagen, 2016

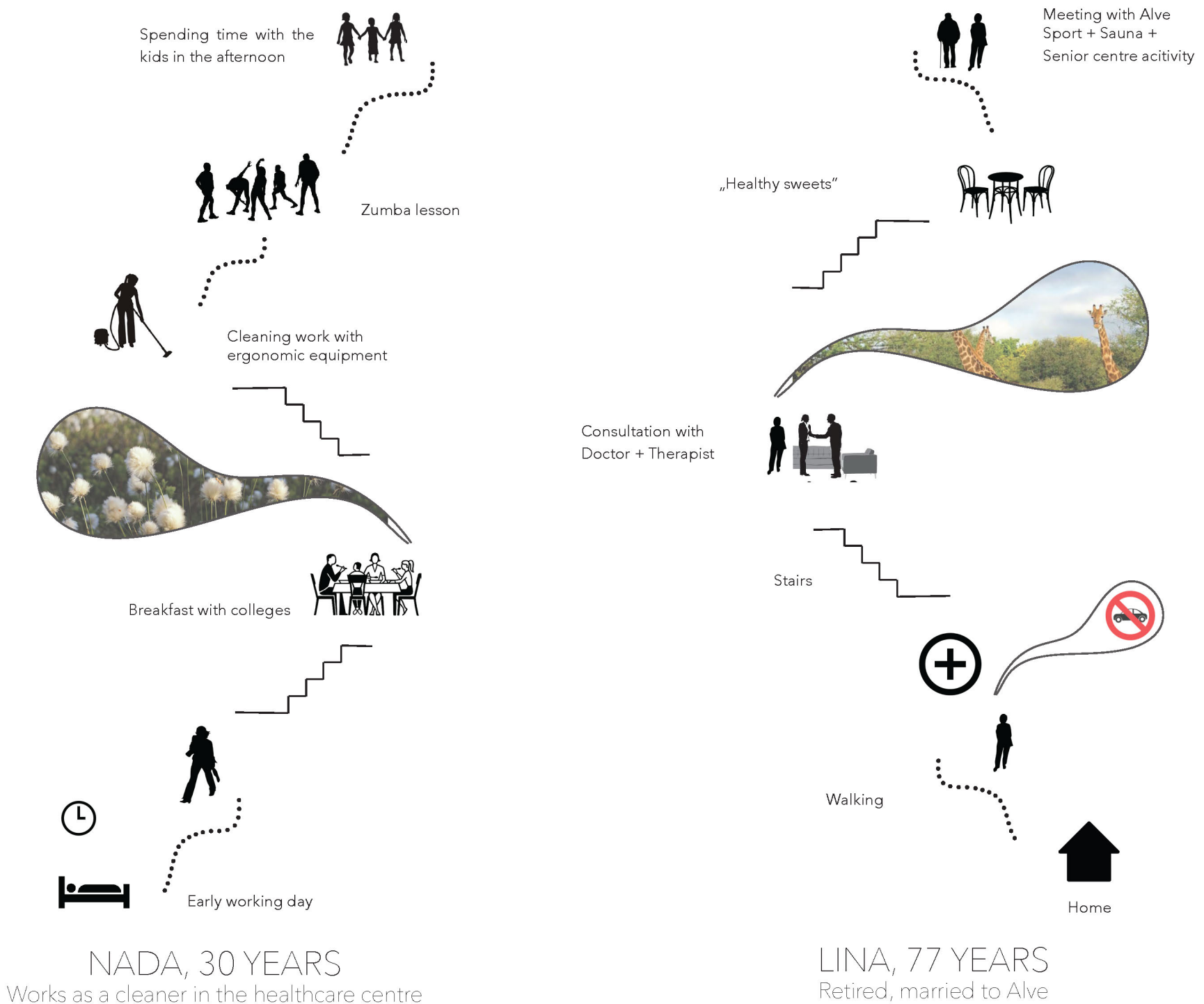


In our proposal, we defined the spacial and atmospheric qualities we wanted to achieve at first. To visualize them we used inspiration boards. In a second step we defined a module and grid system to face the requirements of efficiency, flexibility and standardisation.

Health promoting architecture



Being physical healthy and feeling healthy is not always the same. It is not enough just to treat illnesses, preventing them in the first place is the better option. That also means to re- think the design and program of healthcare facilities. In the publication "Active design guidelines" by the City of New York, different strategies for health promoting design are being summarized (Burney, 2010). To get a better understanding of the people's perspective, we created two characters, which we follow on their way through the healthcare centre.



NADA, 30 YEARS
Works as a cleaner in the healthcare centre

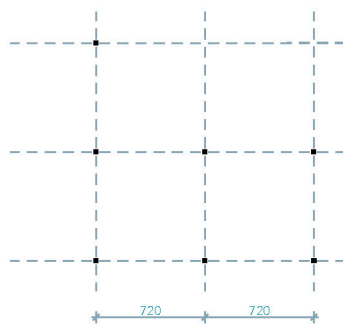
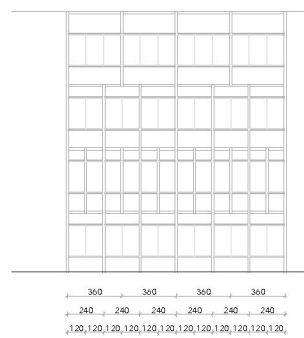
LINA, 77 YEARS
Retired, married to Alve

Flexibility and future proofing

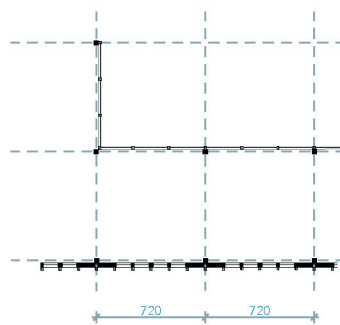
Healthcare facilities play an important role in society. Medical research makes achievements every day, but at the same time healthcare costs are rising and are becoming a problem for the financing systems (Olsson, 2011). Therefore, it is necessary to reach a high amount of efficiency both in the system (shift from treating to preventing) and in the work flows. For designers, a main challenge is how healthcare buildings can support this and adapt to changes in its internal and external environment in the future (Carthey, 2011).

Ahmad (2014) states that space flexibility and standardisation are important when it comes to future-proofing. Due to the rapid changes in healthcare facilities, space flexibility can improve facility adaptability. Space standardisation can improve the quality of healthcare facilities and is more effective when applied to healthcare rooms.

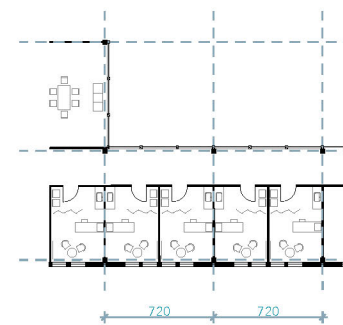
SPACE FLEXIBILITY



Separation of construction, room structure and furniture:
Grid system 7,20 x 7,20 m.

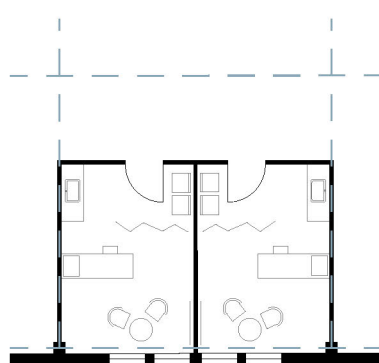


Flexibility within the building:
Ability of units/ departments to exchange functions.

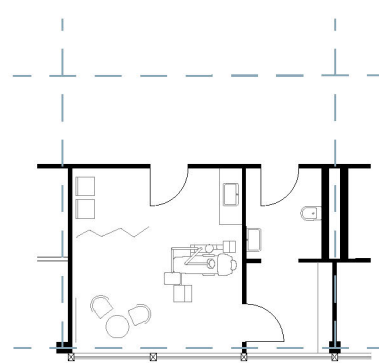


Categorising of space:
Zoning and accessibility of functional units (Circulation, Waiting, Treatment, Administration)

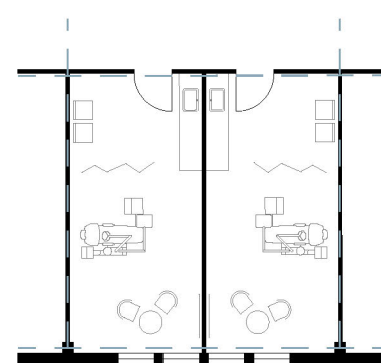
Standardisation aims to reduce errors with a high amount of specification, definition and repeatability. For us, this means to establish schemes, principles and room patterns. For example: The waiting areas are always located close to the gardens, there are toilets next to the elevator in every floor and two units share one administration area. There are three room types; the size, shape, layout, location of doors, direction of openings and amount of treatment spaces are specified.



Treatment room A
all units



Treatment room B
gynecological department



Treatment room C
all units

Sources

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