

ÖREBRO WELL-BEING CENTRE



CHALMERS

DESCHEPPER MAXIME - HALLQUIST JAKOB - SANDBERG ELIAS

WHAT IS WELL-BEING ?

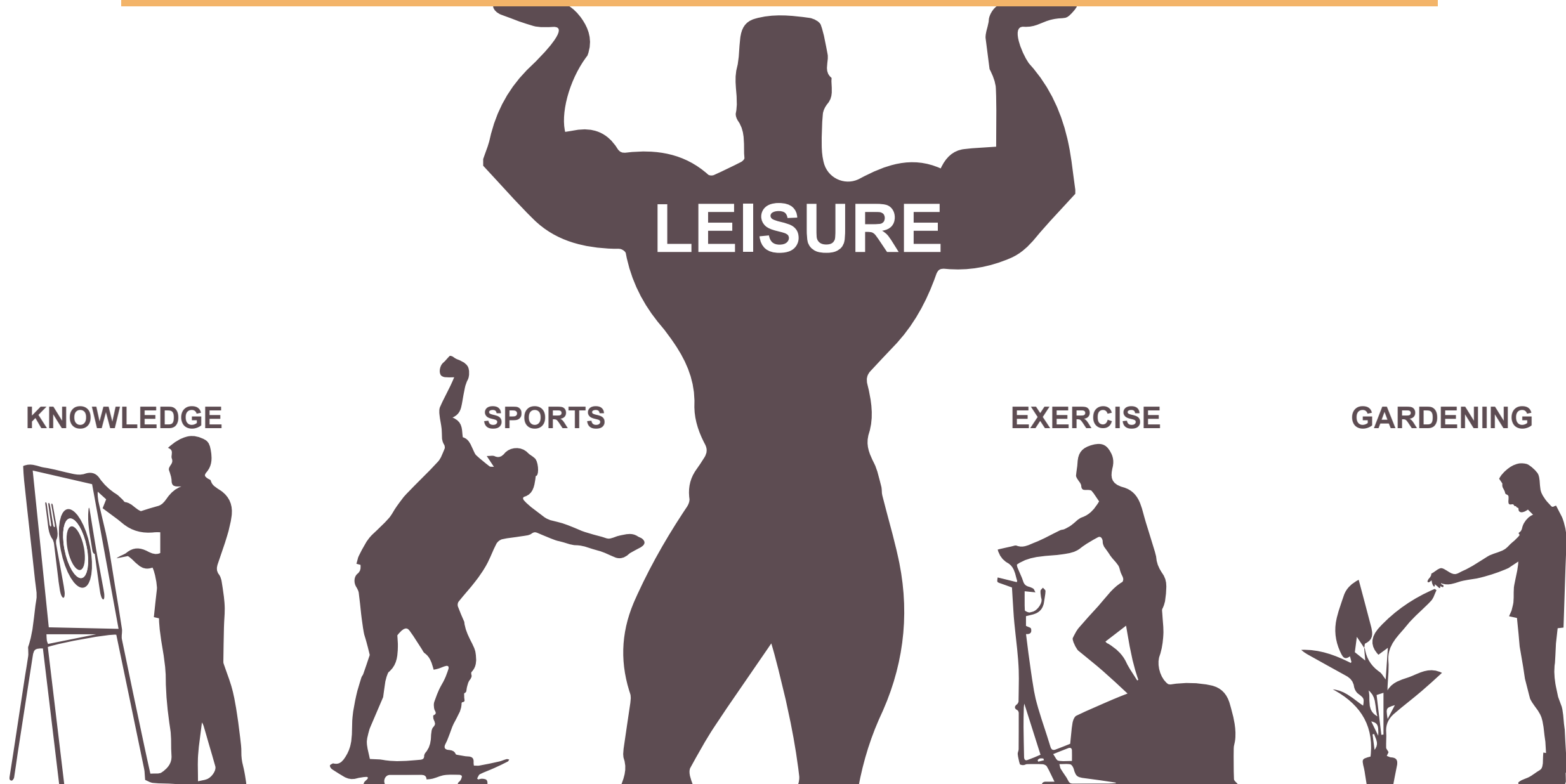
INTRODUCTION

The commission of the healthcare project is to design a new big primary care centre in Örebro. Four existing ones will be merged together into a new healthcare centre just north of the city centre. Today we have a challenge of an increasing older population, lifestyle diseases because of more office jobs and less exercising. The people today are also very curious and fast of finding information by themselves on internet and mobile applications. The trend is also that the healthcare can be moved away from hospitals and more to primary care centres and to people's homes.

VISION

Our interpretation of the commission is to not only create a primary care centre for sick people but rather a well-being centre which can promote an active and healthy lifestyle. We believe in the idea of preventive care, to take care of your body to reduce the risk of getting sick.

Therefore, we introduce the leisure spaces. These public buildings can contain sport facilities, gardens, restaurant and cafe. These can be used by all citizens but also by patients who need to do their rehabilitation. The way of combining the leisure spaces with the healthcare building makes the healthcare centre serve the whole society. Our idea of the leisure spaces as the foundation which are supporting people's health is also visible in our project in a figurative way.



ÖREBRO LEISURE SPACES



- Future new healthcare centre
- Existing sport facilities
- Existing parks
- Existing swimming pools

500m



CENTRALITY OF THE BRICK HOUSE

VALUES

CENTRAL LOCATION AT SITE

FAMILIAR SHAPE

WELL-PRESERVED

HISTORY IN HEALTHCARE

VISIONS

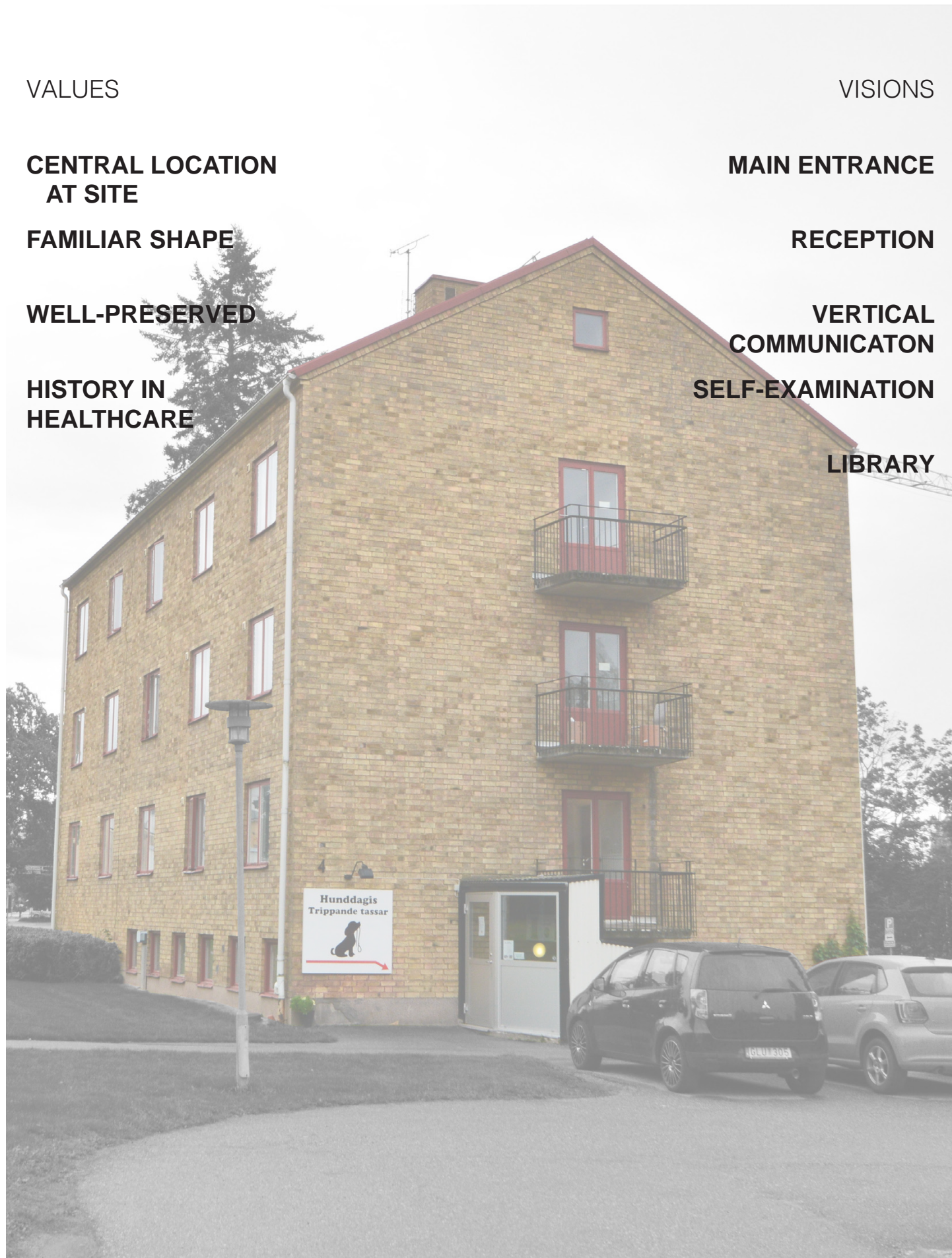
MAIN ENTRANCE

RECEPTION

VERTICAL COMMUNICATON

SELF-EXAMINATION

LIBRARY



HISTORY IN HEALTHCARE

The site is located just north of Örebro city centre just along the entrance road into the city. The area around the new primary care centre is developing right now with some new higher buildings on the other side of the entrance road. The site contains buildings well-preserved from the late 19th century. The brick house away from the built environment has a central location in the site, it occupies a central place too in the history in healthcare. We chose to keep this building because of its familiar shape and global popularity among Örebro citizens. This is the reason why the building will be the point of departure of our design.



DESIGN CONCEPT

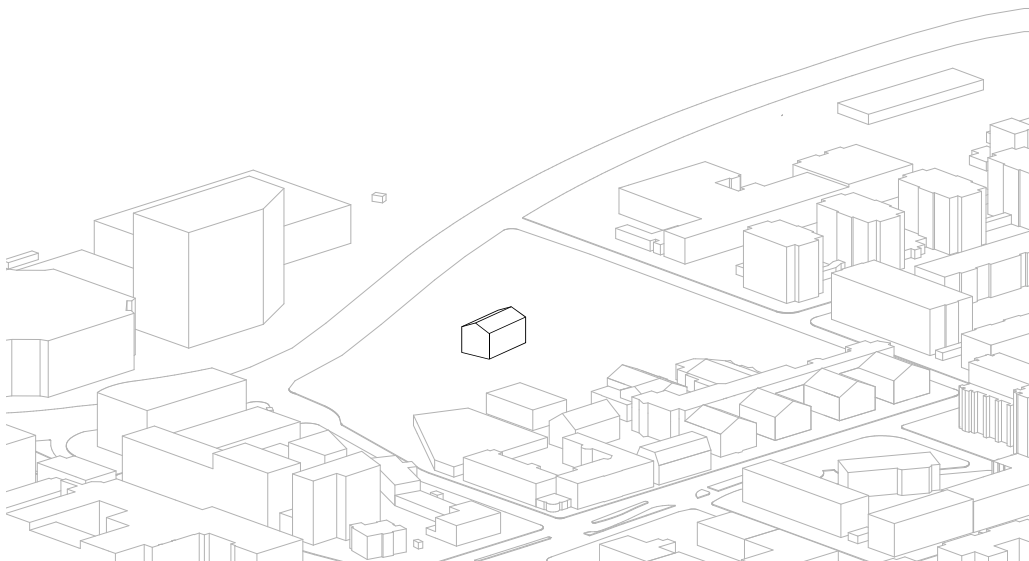


Fig. 1 The existing brick building on the site is defined as the central point of the project.

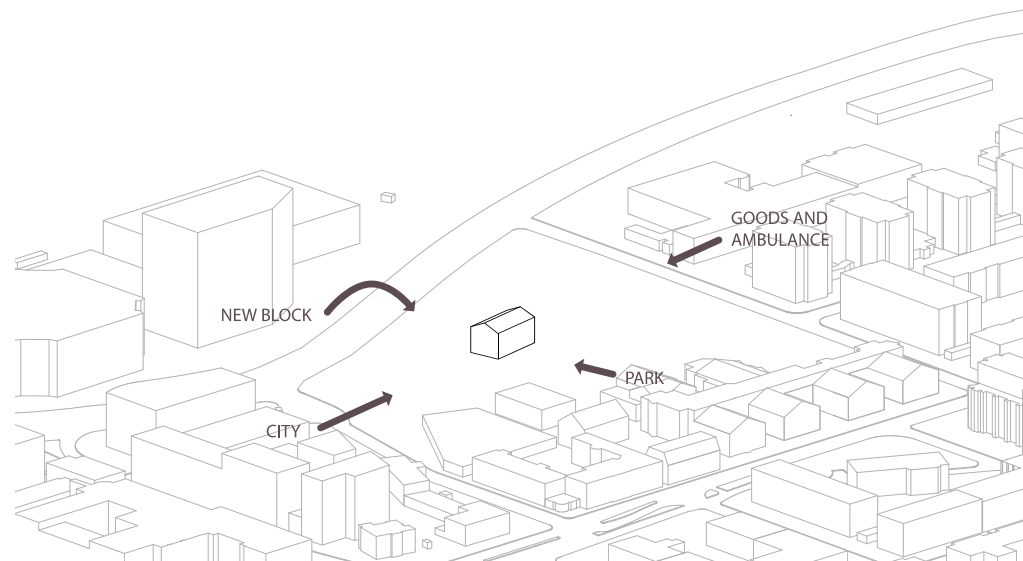


Fig. 2 Four paths are defined as the best entrance points to the site.

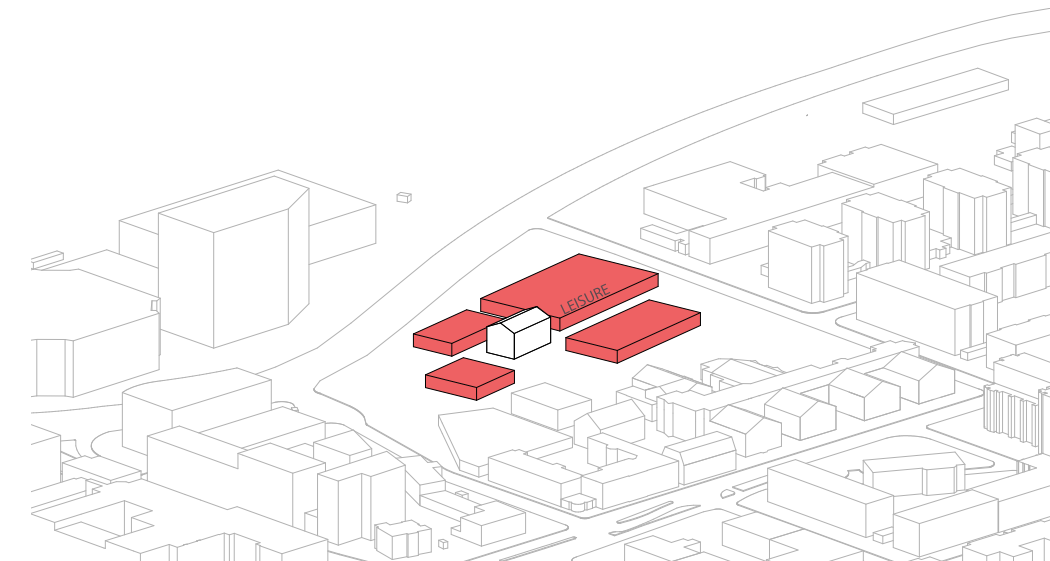


Fig. 3 The ground level volumes are defined to follow the orientation of the existing brick house.



Fig. 4 The second floor is added and designated to become the patient floor; its geometry takes into account the built environment.

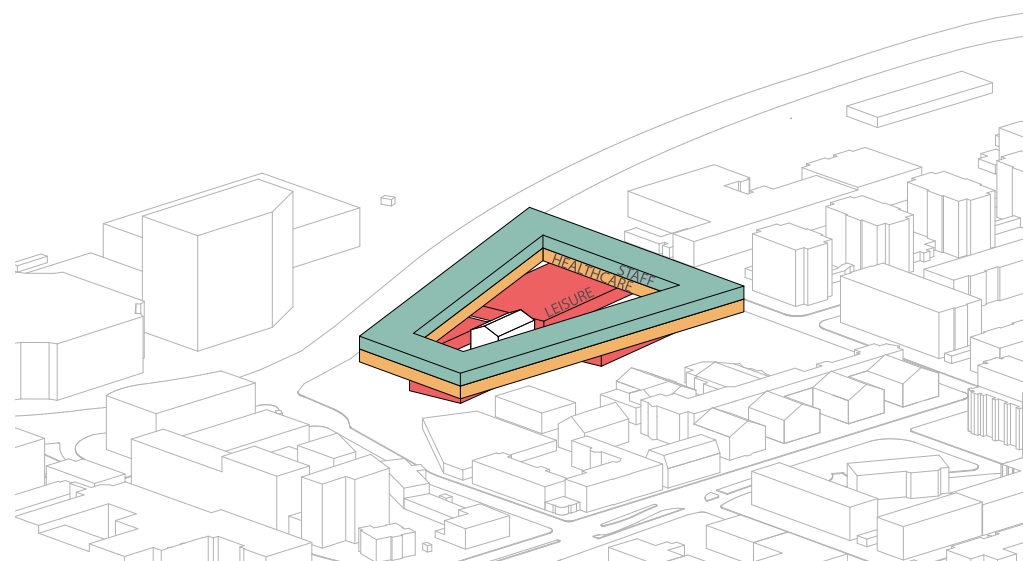


Fig. 5 Another level is added above the patient floor to accommodate the staff: it's the staff floor.

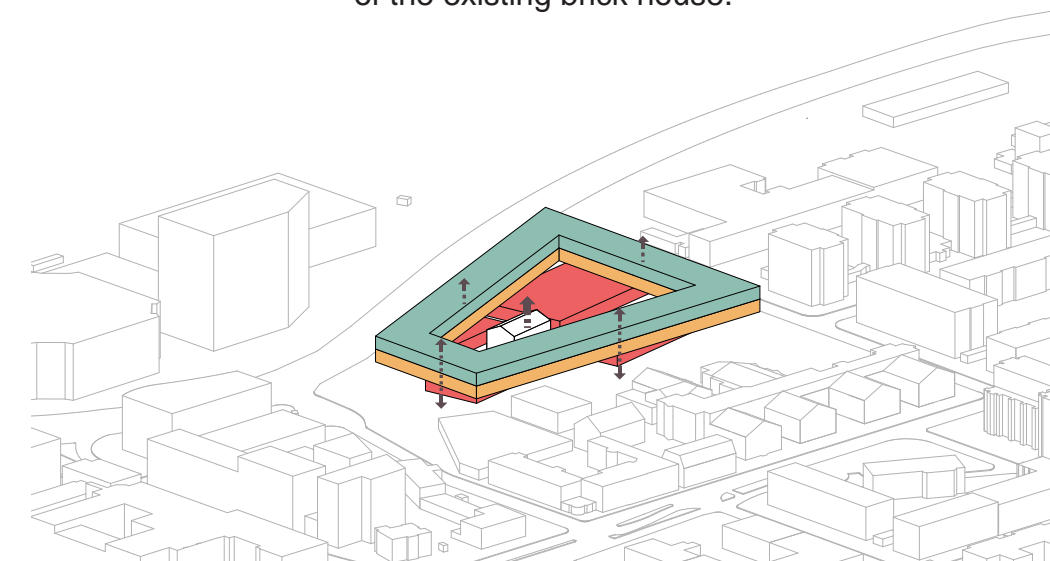


Fig. 6 One primary and four secondary vertical communication points are added in the most efficient parts of the building.

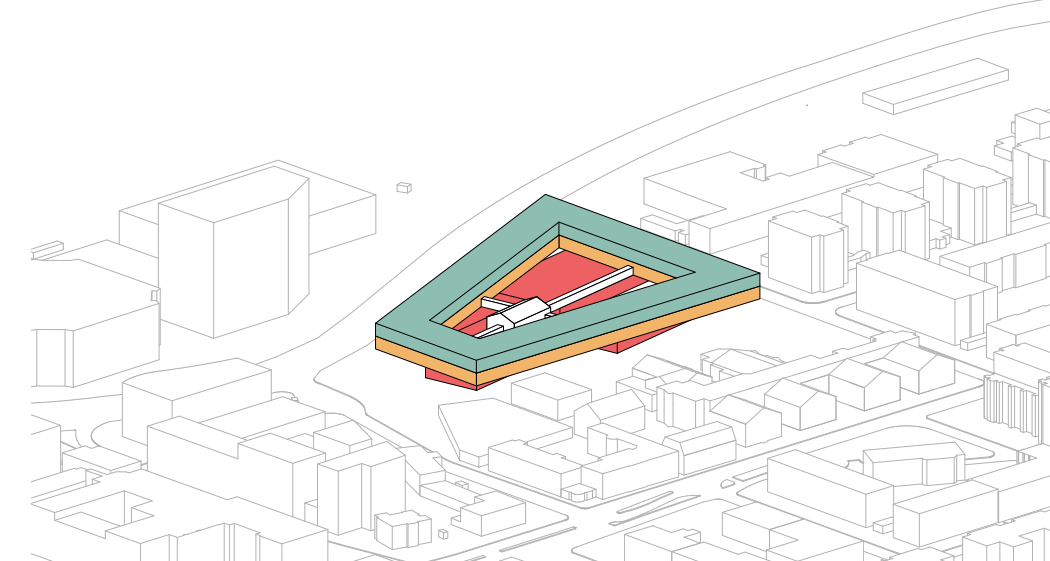
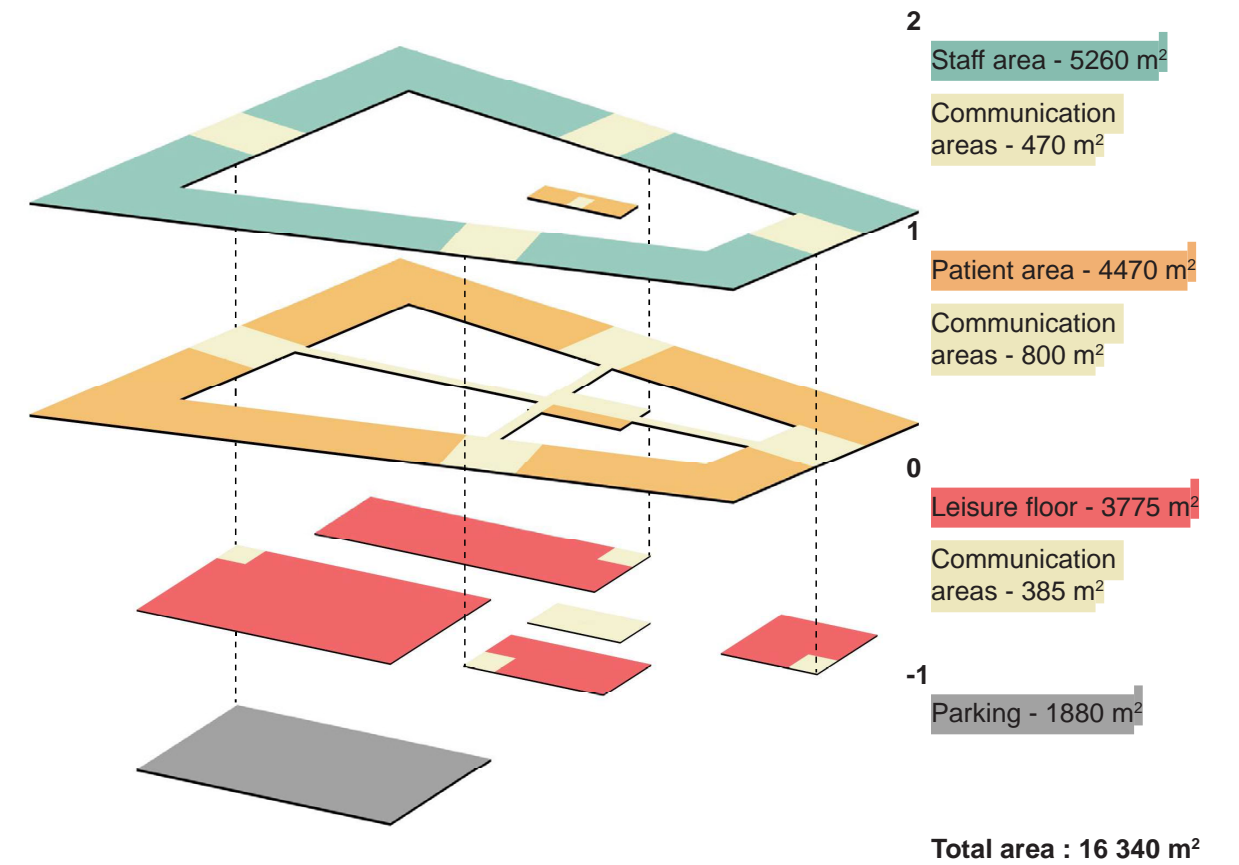
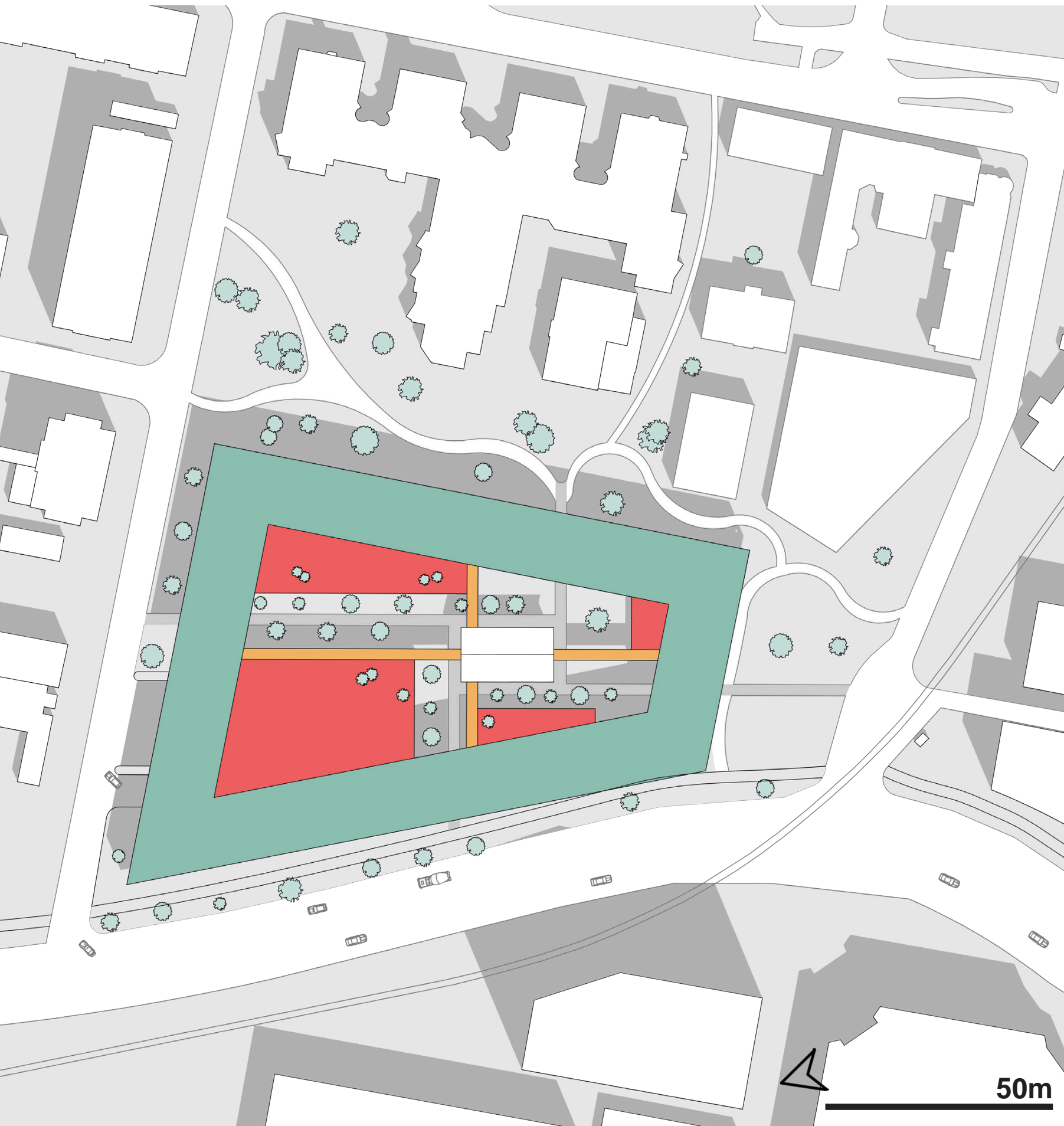


Fig. 7 Horizontal communication between the primary vertical communication and the patient floor is added.

SITE PLAN



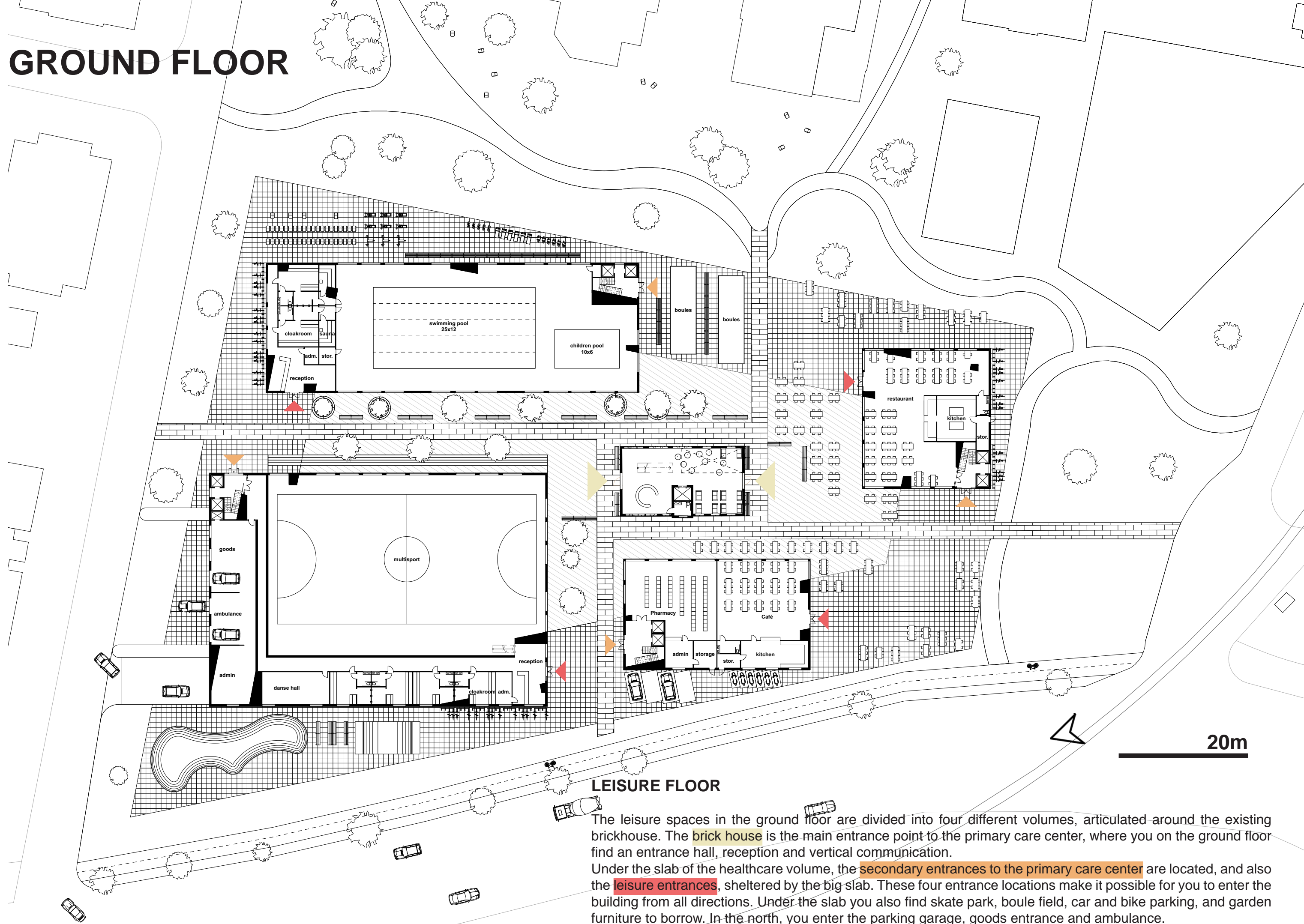
FACING THE CITY

The new Örebro Well-Being Centre is located along the main spine of the north, developing part of the city, and has the possibility to become a healthy landmark. Along the new city street there will be bicycle and pedestrian paths and also greenery. The shape of the **upper level** of the proposed building will respect both the new street and the built surroundings. On the **ground floor** a new geometry with its centre in the brick house is introduced. By defining a new grid within the city, this project prevails to be one of the new and main attractive point of Örebro.

MULTIFUNCTIONAL BUILDING

With three levels, each one containing different functions (**leisure**, **patients** and **staff floor**), this new building offers a place for a big amount of actors who can help each other within the same building. We can therefore qualify this building as a place for a melting pot society.

GROUND FLOOR



LEISURE FLOOR

The leisure spaces in the ground floor are divided into four different volumes, articulated around the existing brickhouse. The brick house is the main entrance point to the primary care center, where you on the ground floor find an entrance hall, reception and vertical communication. Under the slab of the healthcare volume, the secondary entrances to the primary care center are located, and also the leisure entrances, sheltered by the big slab. These four entrance locations make it possible for you to enter the building from all directions. Under the slab you also find skate park, boules field, car and bike parking, and garden furniture to borrow. In the north, you enter the parking garage, goods entrance and ambulance.



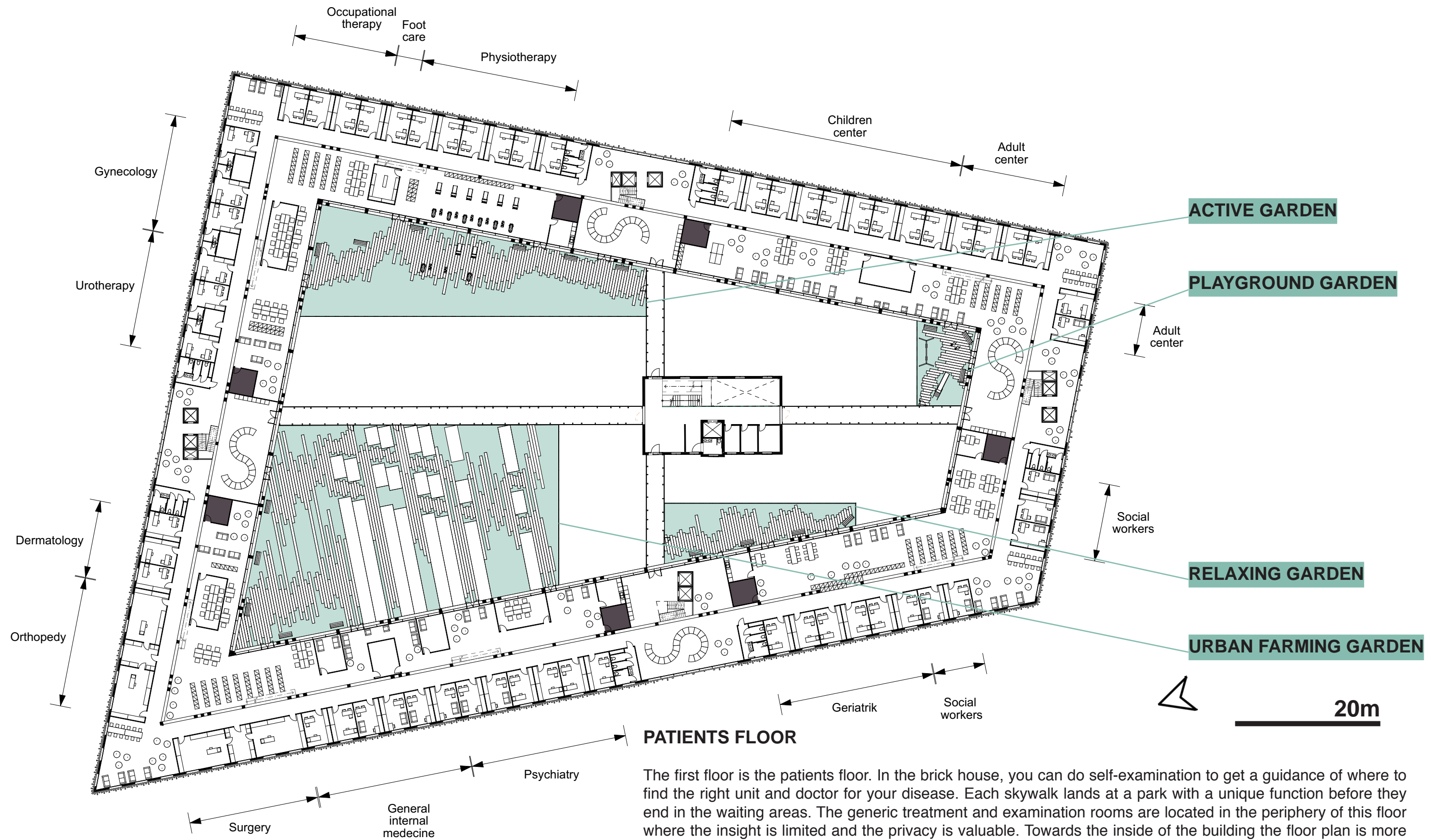
C
A
F
É

Klosterbackens
Vårdcentral

Entre

entrance in the courtyard

FIRST FLOOR



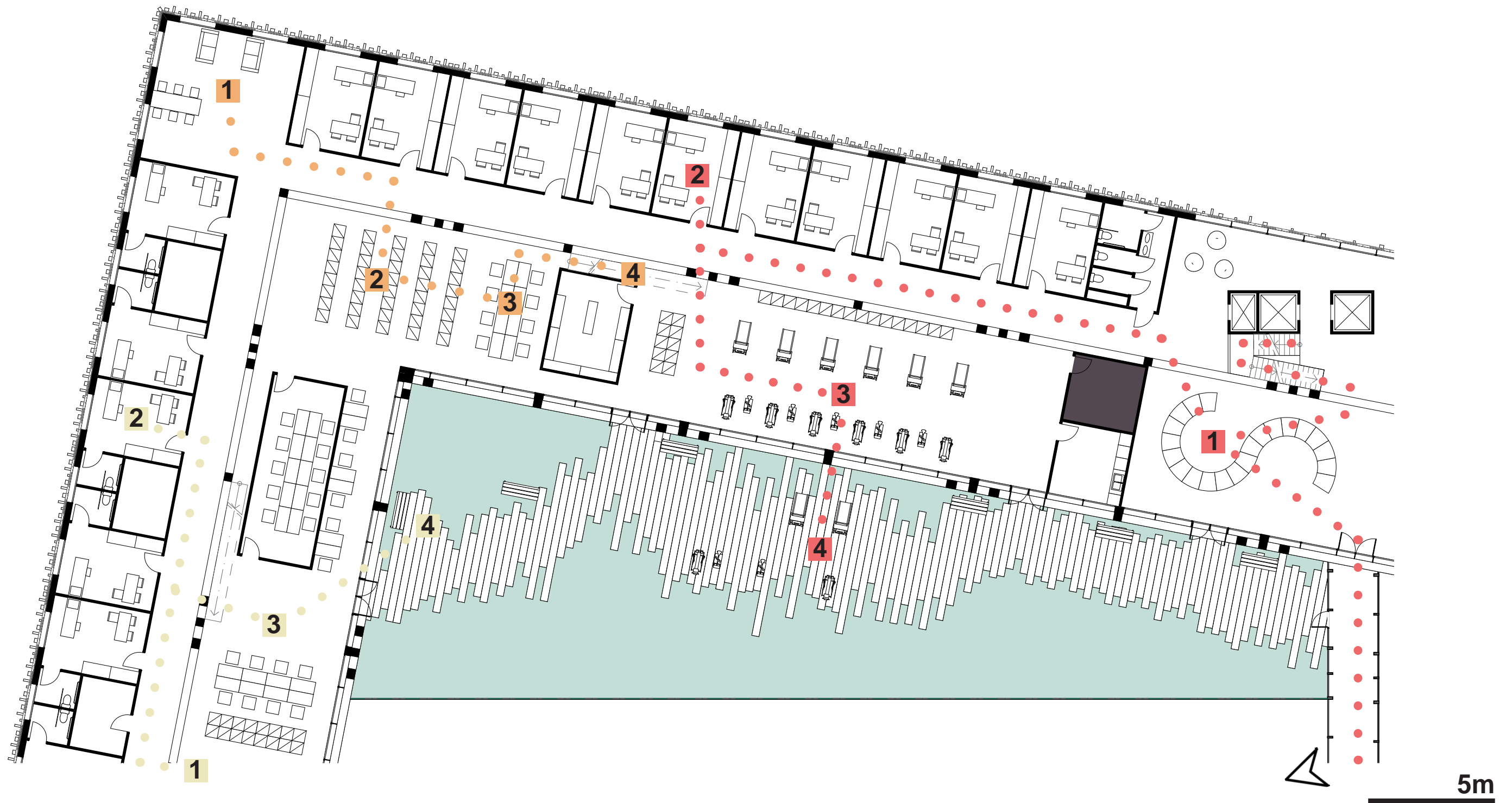
PATIENTS FLOOR

The first floor is the patients floor. In the brick house, you can do self-examination to get a guidance of where to find the right unit and doctor for your disease. Each skywalk lands at a park with a unique function before they end in the waiting areas. The generic treatment and examination rooms are located in the periphery of this floor where the insight is limited and the privacy is valuable. Towards the inside of the building the floor plan is more open space with functions as senior center, day care for children and exercise lab, with views over the terraces and the brick house. The different healthcare units are located in next to each other in the continuous floor plan which allow flexibility. There are no solid borders between the units which makes it possible to let the busiest unit use the most space.



interaction between patient and staff

FIRST FLOOR - ZOOM IN



UROTHERAPY UNIT

1. Waiting area for the patient
2. Treatment room for the patient
3. Discussion area indoor
4. Discussion area outdoor

« INTER-STAFF »

1. Rest area
2. Documentation area (library,...)
3. Discussion area
4. Upper floor communication

PHYSIOTHERAPY UNIT

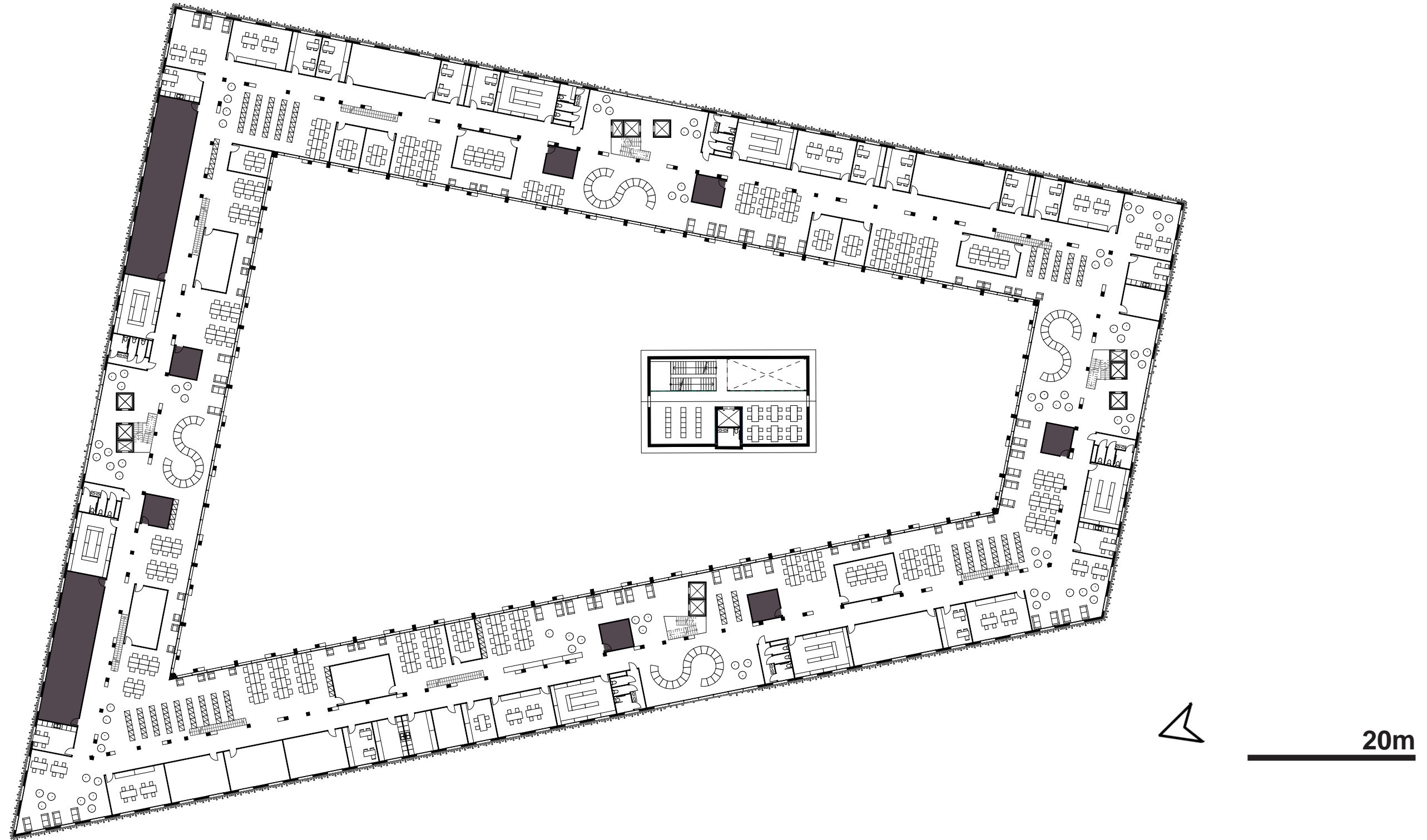
1. Waiting area for the patient
2. Treatment room for the patient
3. Exercise lab indoor
4. Exercise lab outdoor



Orpeckens
Central

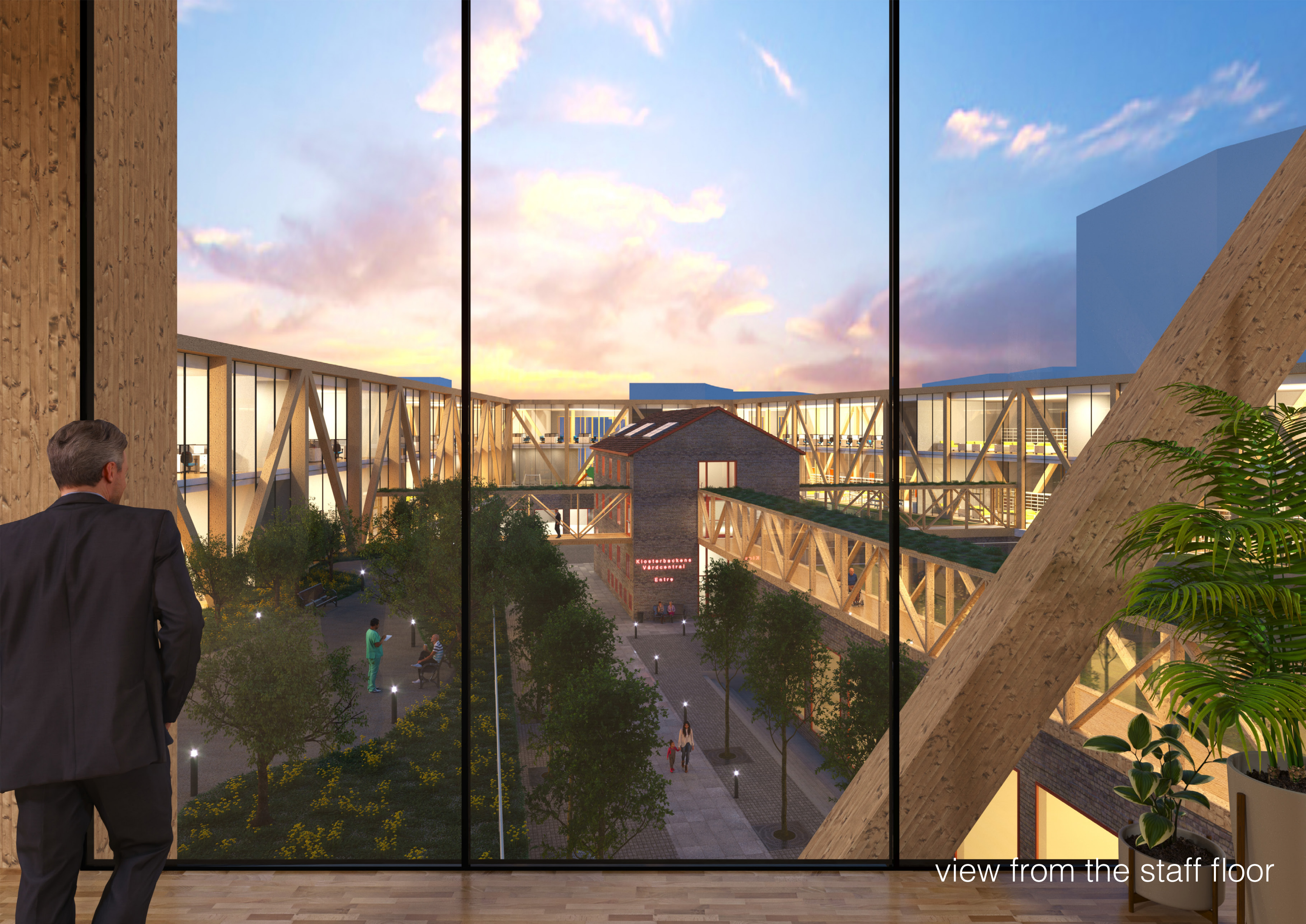
outdoor treatment

UPPER FLOOR



STAFF FLOOR

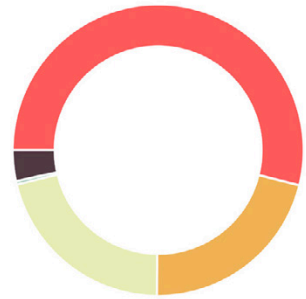
On top of the patient floor the staff has their office spaces. The floorplan is similar to the one below with more private office and lab spaces in the periphery and open office space towards the inside. Along the continuous truss, there are plenty of stairs down to the patients floor to make it easy for the staff to move between patient and office. To the north of this floor is situated the technical parts with shafts and storage for arriving goods.



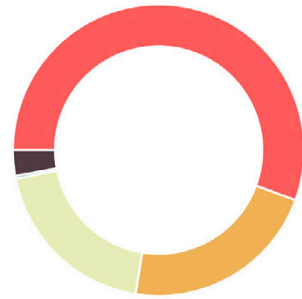
view from the staff floor

FLEXIBILITY

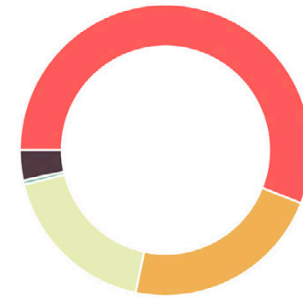
Wednesday



Thursday



Friday



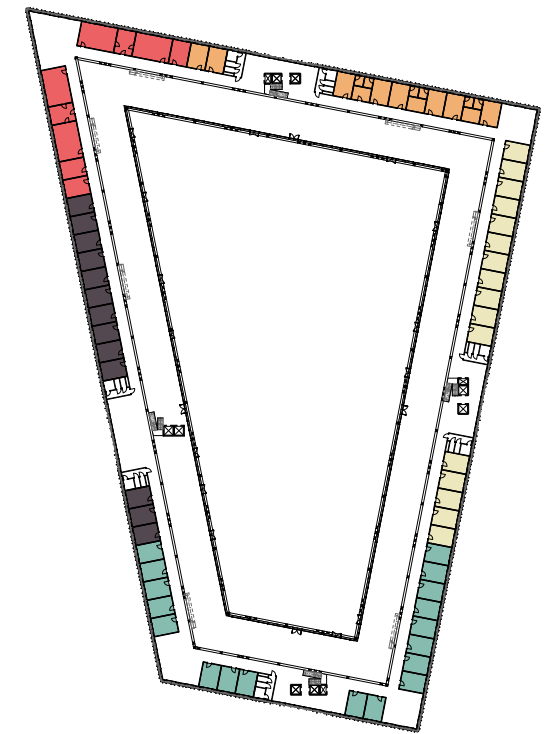
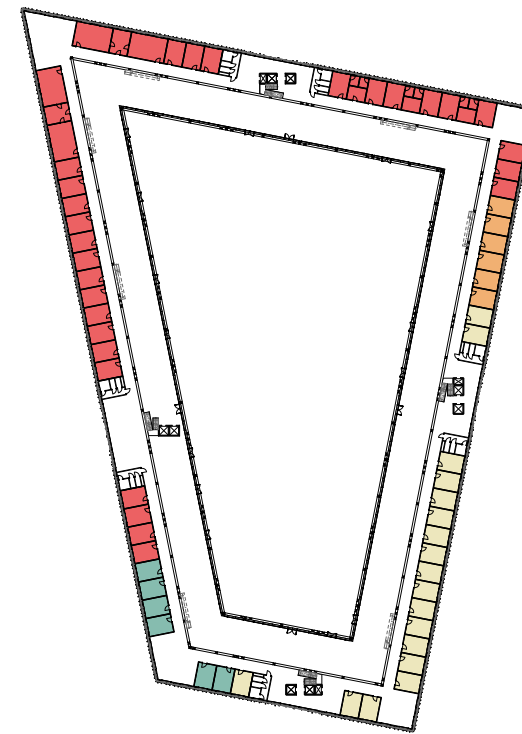
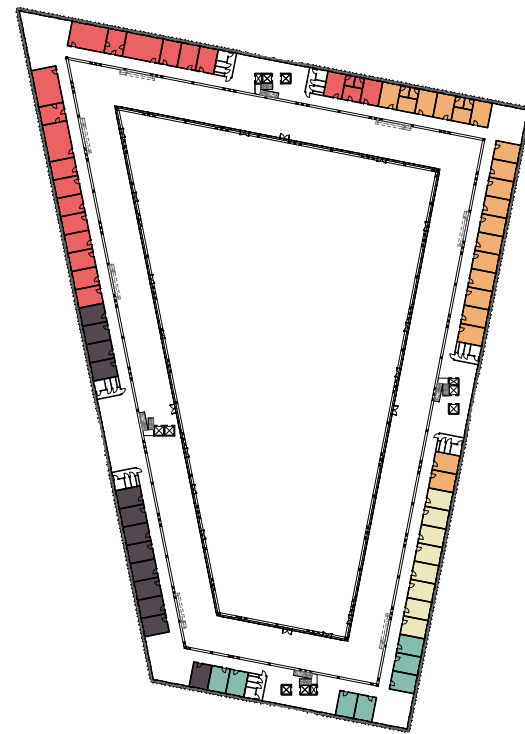
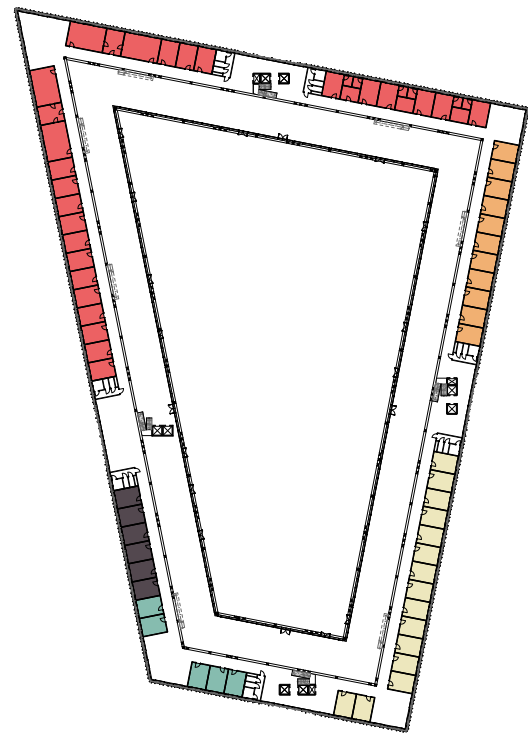
■ General doctors / nurses
 ■ Physiotherapists
 ■ Family Center (MVC, BVC)
 ■ Dietist
 ■ Psychiatry

Statistics from Örebro primary care, patients need per day

INTERCHANGEABLE UNITS

The design of the new Örebro Well-Being Centre allows some flexibility through its units because of the realization of standardized rooms outward in the first floor of the health ring. These rooms (3,6m of wide x 4,8m of depth) contain similar furnitures which make it possible to change the function depending on the need of the new Well-Being Centre.

Instead of thinking the possibility to add an extension to the building in the future, we are sure that the way of thinking the interchangeability of rooms between each other allows a better efficiency of the building on the long term.



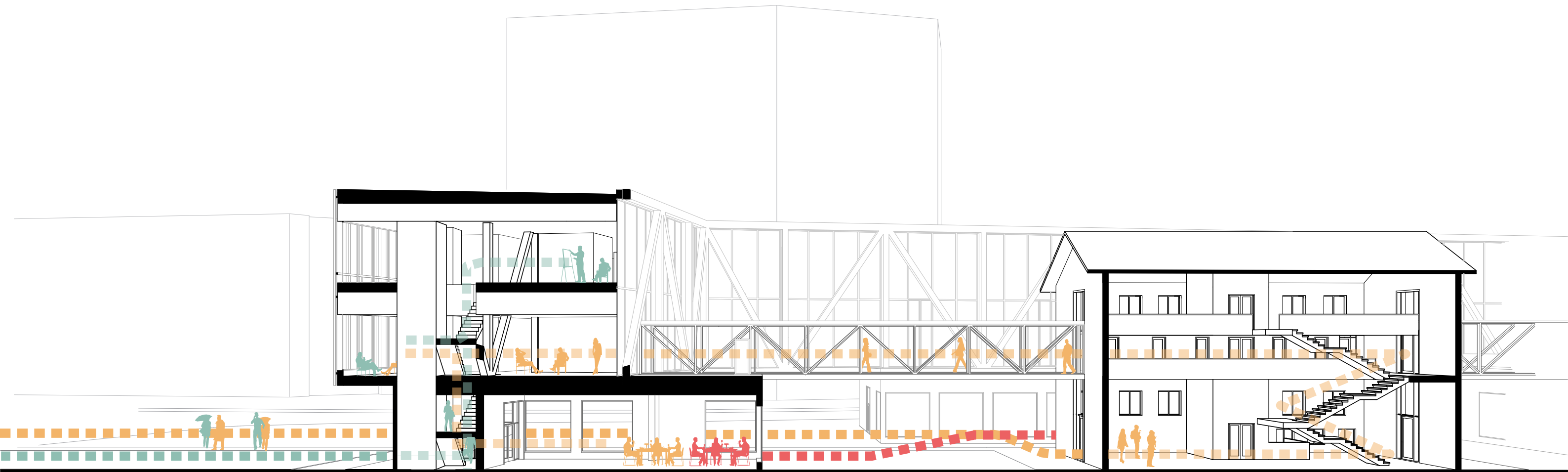
Case 1 - All units correspond to their original places including the exact requirement of treatment rooms per unit.

Case 2 - The **physiotherapists**, **social worker** and **geriatrik** units welcome more patients and then, require more place into the ring. The **family centre** and **general internal medicine** units decrease.

Case 3 - The **family centre** and **general internal medicine** units welcome more patients and then, require more place into the ring. The **physiotherapists** and **social worker** units decrease. The **geriatrik** unit disappears.

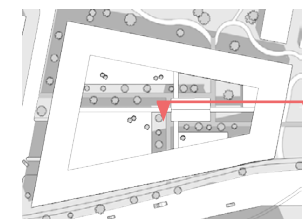
Case 4 - The **social worker**, **family centre** and **geriatrik** units welcome more patients and then, require more place into the ring. The **general internal medicine** unit decrease. The **physiotherapists** unit stagnates.

PUBLIC, PATIENT AND STAFF FLOWS

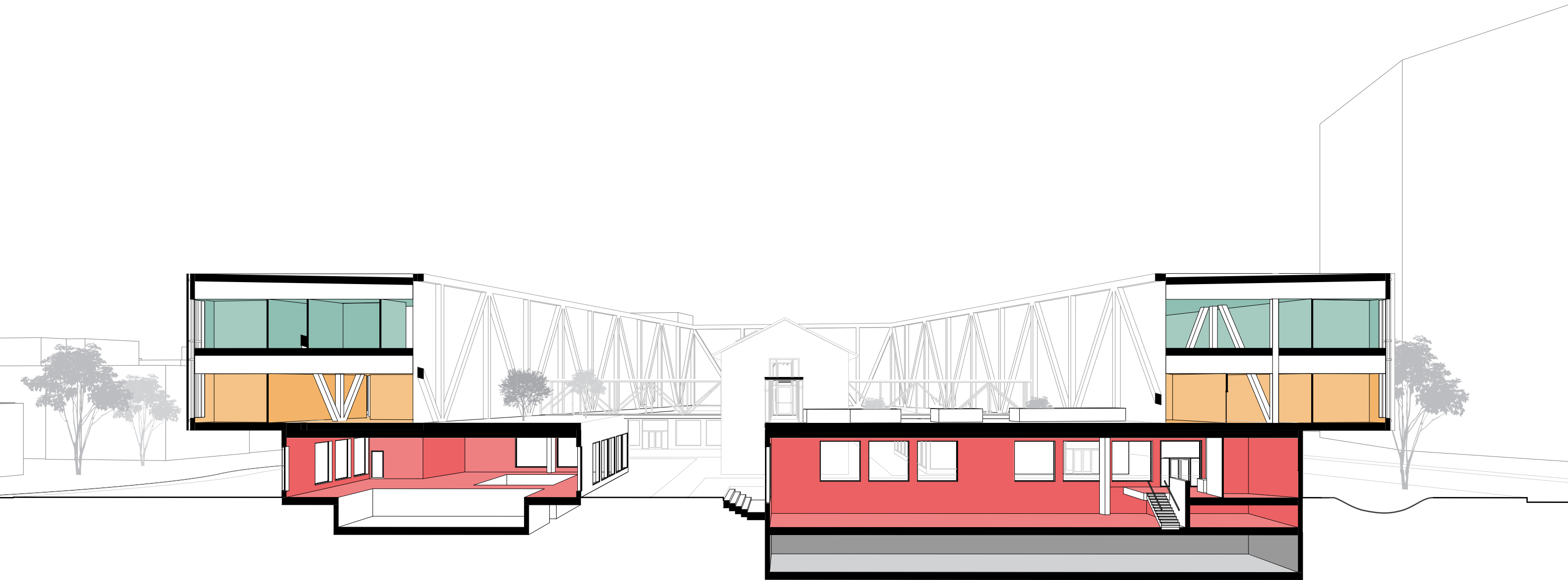





- STAFF FLOW
- PATIENT FLOW
- LEISURE FLOW

5m



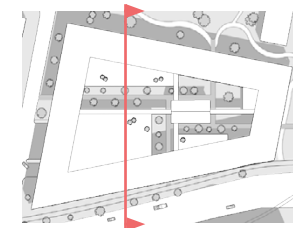
DISTRIBUTION OF FUNCTIONS INTO THE BUILDING



-  STAFF FLOOR
-  PATIENT FLOOR
-  LEISURE FLOOR



10m



RELATIONSHIP BETWEEN USERS

The new Örebro Well-Being Centre is the addition of two different geometries : a floating volume on a block anchored to the ground. It allows, or not, some visual, physical or auditory contacts throught the building.

VISUAL COMMUNICATION

Allowed : courtyard - leisure facilities ; skywalk - garden ; garden - patients floor ...

Not allowed : neighborhood - leisure facilities ; ground floor - treatment room ...

PHYSICAL COMMUNICATION

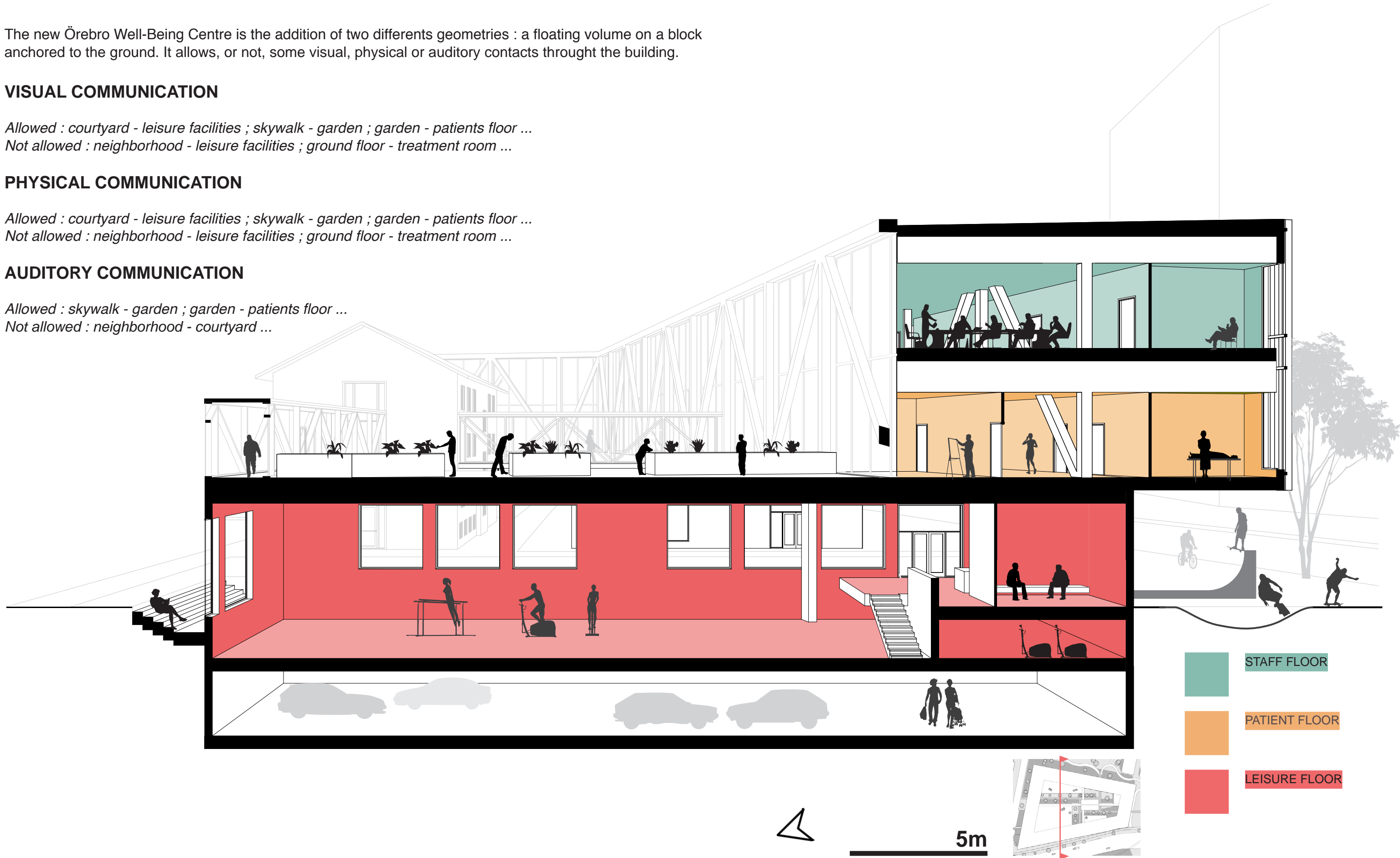
Allowed : courtyard - leisure facilities ; skywalk - garden ; garden - patients floor ...

Not allowed : neighborhood - leisure facilities ; ground floor - treatment room ...

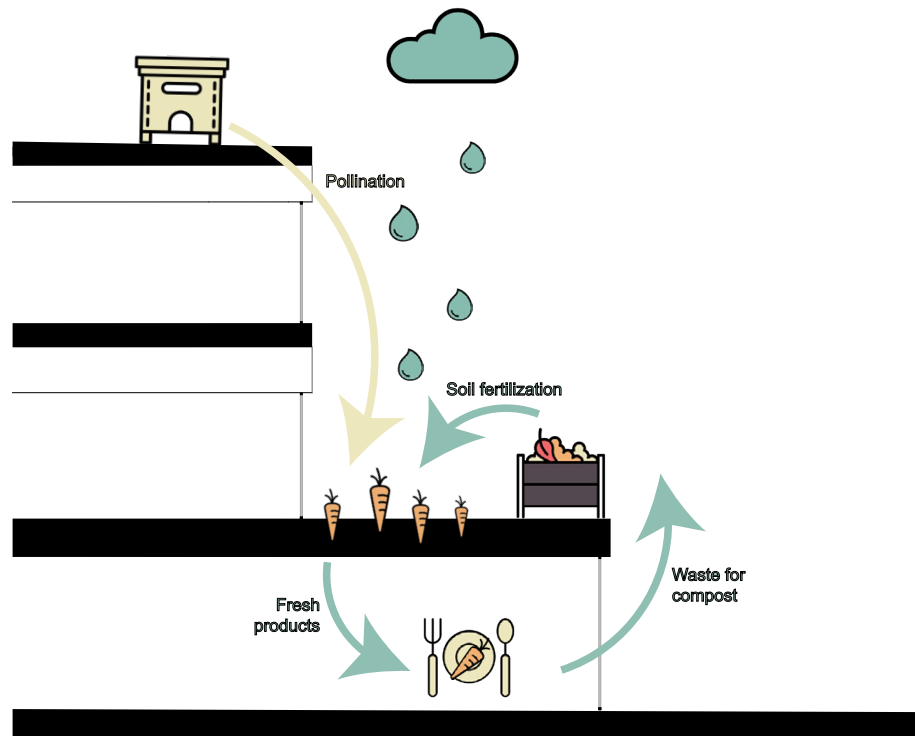
AUDITORY COMMUNICATION

Allowed : skywalk - garden ; garden - patients floor ...

Not allowed : neighborhood - courtyard ...



SUSTAINABILITY & CONSTRUCTION

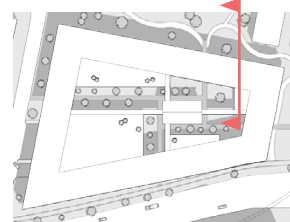
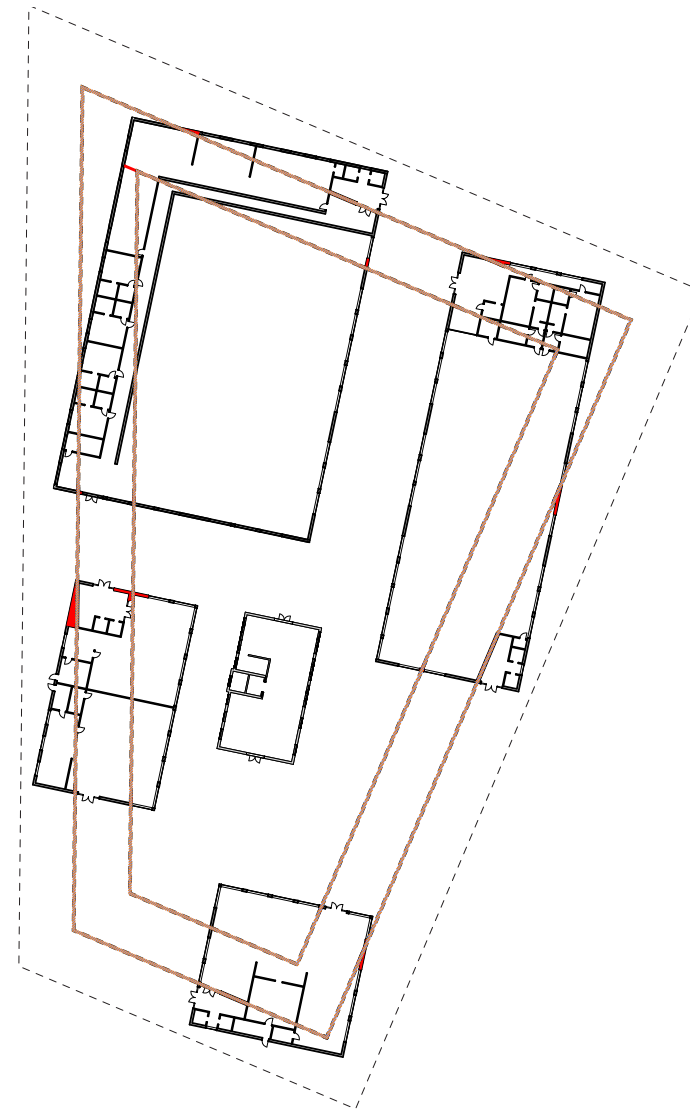


SUSTAINABILITY

The main ideas about sustainability are about using wood as the structural material because it is a renewable material and uses less energy for the production, and emits less carbon dioxide than producing steel and concrete.

The roof of the building is slightly angled towards the inside of the ring, where the rain water is collected and used as watering for the green terraces. The vegetables grown in the gardens can be used in the restaurant and the organic waste can go back to the terraces to be used for making the soil more fertile.

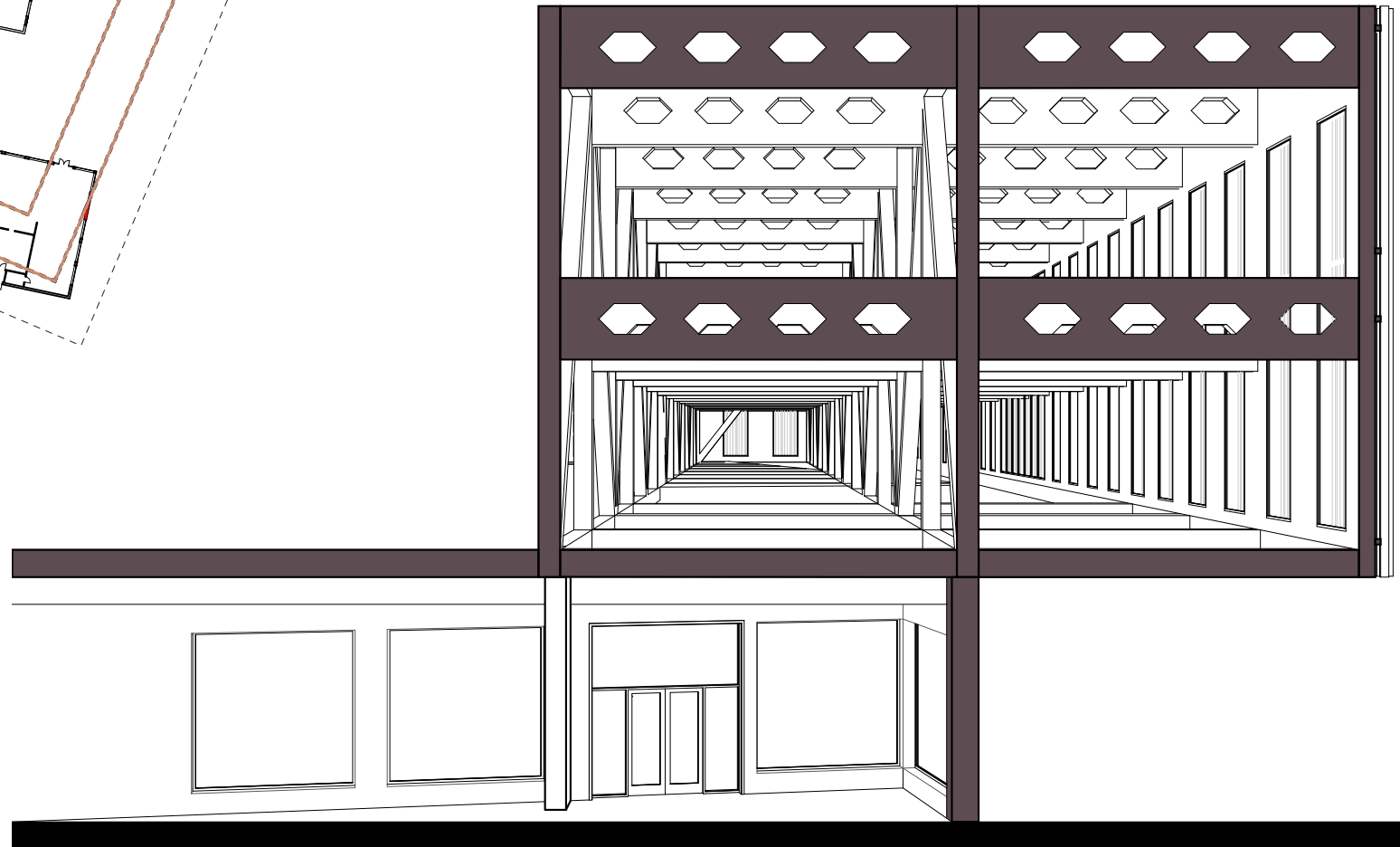
The bee hives can support the restaurant with locally produces honey and the bees pollinate the flowers in the park surrounding the healthcare center.



5m

STRUCTURE

The concept for the structure is that the ground floor volumes in brick are carrying the wooden structure above. These two stories have their own geometries, and in the intersection between those we have put heavy supports on the ground floor. These ones are carrying the two wooden trusses which are the primary structural order. The secondary order are the horizontal beams cantilevering towards the exterior façade of the building. The façade, as the third structural order are hanging from the cantilevering beams.





THEME 1 - EVIDENCE BASED DESIGN

INTRO

Evidence based design (EBD) is the explicit use of the current best evidence and experience. By evaluating peoples health depending on the design of the space you can learn what apparently is the best design.

In the field of healthcare a lot of data is measurable, for example; treatment time and amount of medication. Therefore, EBD are used a lot in this field.

We have made some sketches of what parts of the evidence based design we have found the most important for our project.

WORKSHOP - SEARCH, READ, VISUALISE

The workshop was about finding articles from different combination of search words, and to practise how to narrow down your search to find relevant articles.

The next step was to choose an article and read it and visualise the most important values of the text.

"The daylight imperative"

The article was found by following search words: daylight AND natural AND health

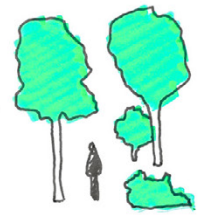
This article deals with the difficulties to bring light into thick building volumes, like hospitals. It shows the important benefits of natural daylight and the positive effects it has on your body.

"Therapeutic effect of an indoor gardening programme for older people living in nursing homes"

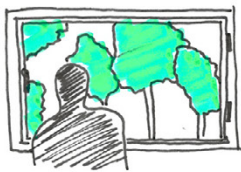
The article was found by following search words: garden AND corridor AND elderly

By reading the article we identified the most important positive effect of gardening workshops for elderly, which also has been an important part of our project.

EBD FOR HEALTHCARE ARCHITECTURE



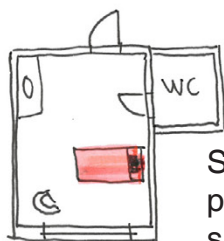
Nature has a positive health effect and can lower your blood pressure



Even just the view of nature has been proven a positive effect.

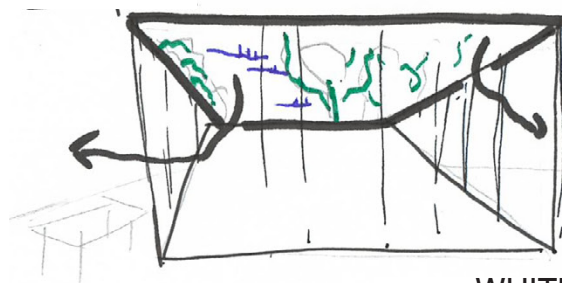


Skin-to-skin contact between mother and baby reduces treatment time of early births.



Single patient rooms with private toilet, and two sinks reduce the risk of infections.

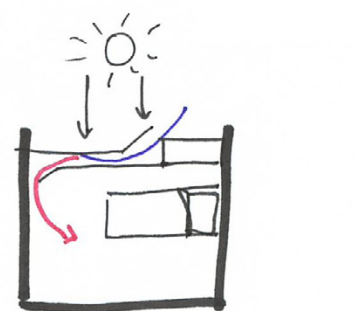
EXAMPLES



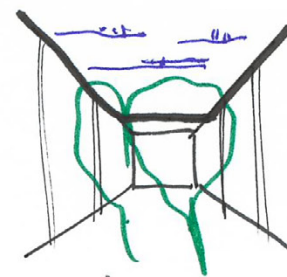
WHITE ARCHITECTS



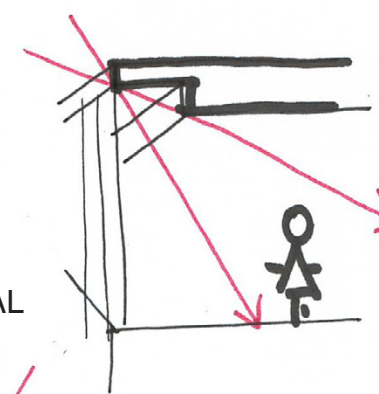
ALVAR AALTO, PAIMIO



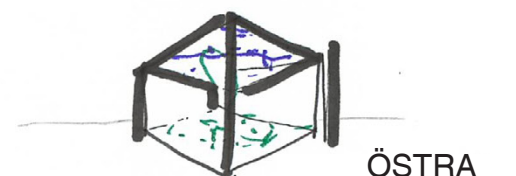
OPERABLE WINDOW



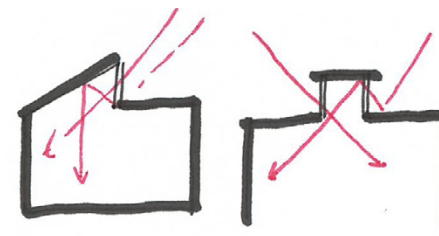
DATA, KATTA HOSPITAL



LIFE SATISFACTION



ÖSTRA SJUKHUSET



TOPIC



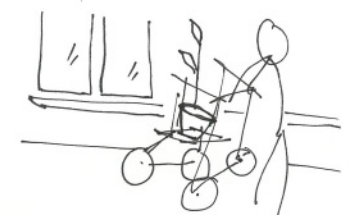
SOCIAL



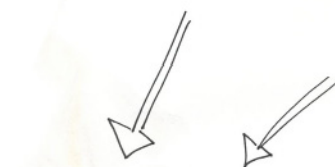
RESPONSIBILITY



PHYSICAL



LIFE SATISFACTION



THEME 2 - HEALTHCARE + ARCHITECTURE

INTRO

This theme gave us more knowledge about the history of healthcare architecture and we got more aware of how much that have happened within the field over time.

The complexity of the healthcare has really increased from being very primitive with more or less only general doctors till being a field with advanced technology, plenty of different specialists and treatment methods.

In the late 19th century the hospitals were located far away from the cities, because of the infection risk, while today the hospitals are situated to be close to the inhabitants to be able to give as fast care as possible.

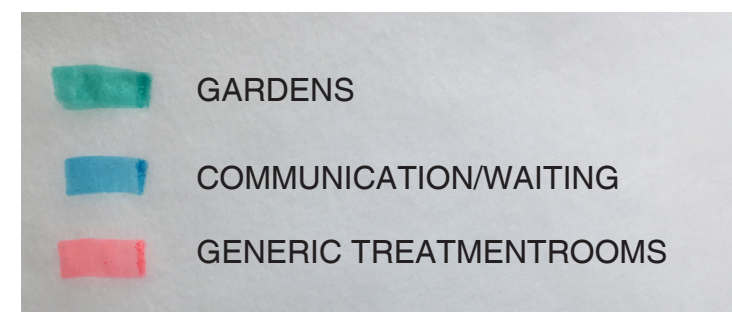
In our project we have put effort to make the healthcare centre accessible and used by a lot of people who want to practise a healthy lifestyle. This is made by combining leisure functions close to the pure healthcare functions.

Architecturally we have been inspired by the ideas from 1960 and 1970 with a clear and simple structure in the building and with flexible generic treatment rooms.

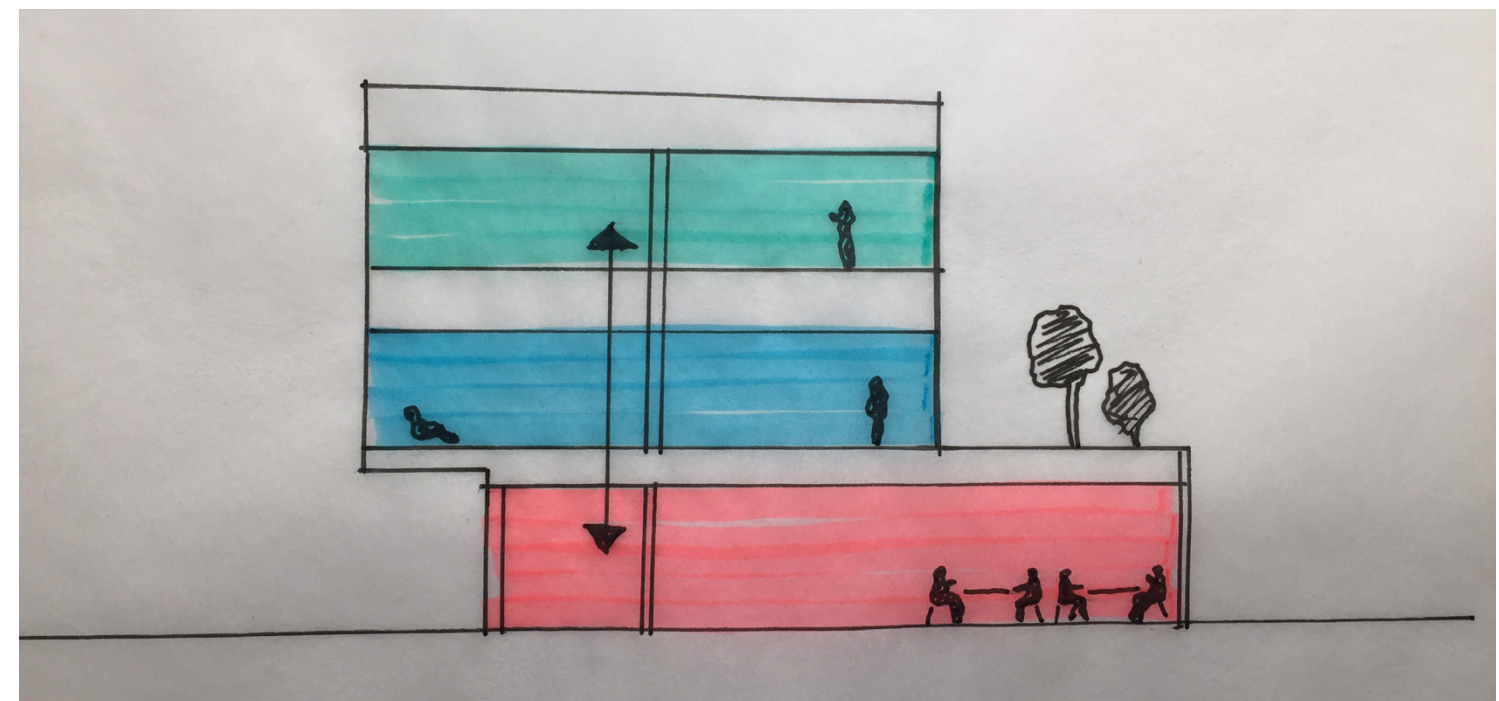
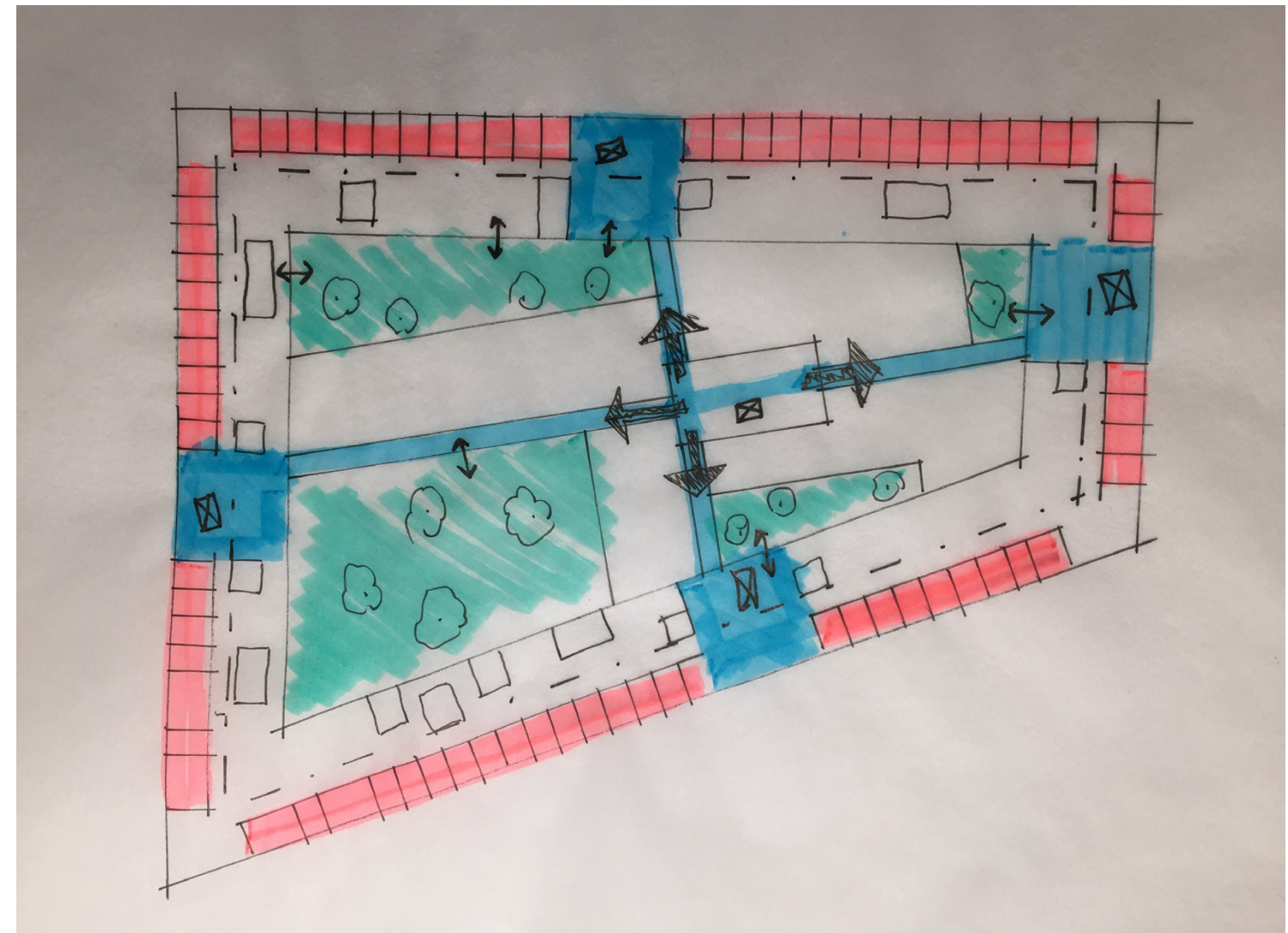
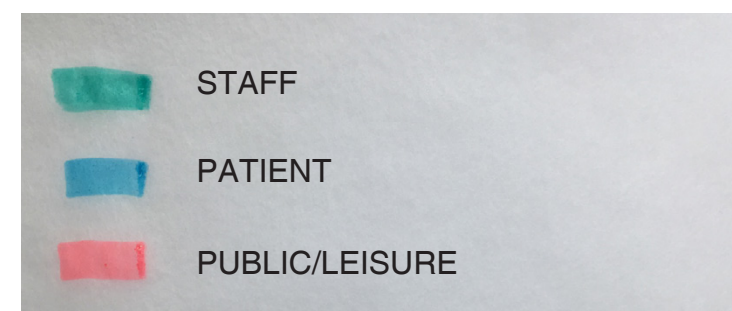
We have also been inspired by "Green rehab" in Botaniska trädgården and the way of combining gardening and use of nature to make the healing process less stressful.

PLAN AND SECTION

When designing the plan we tried to stay as systematic and structural as possible, to make it easy to get orientated in the building, but also to make it easy to construct. From the brick house there are four bridges, each one passing by a green terrace before ending in the waiting room. The generic treatment rooms are along the exterior of the building, and a more flexible space along the interior of the ring.



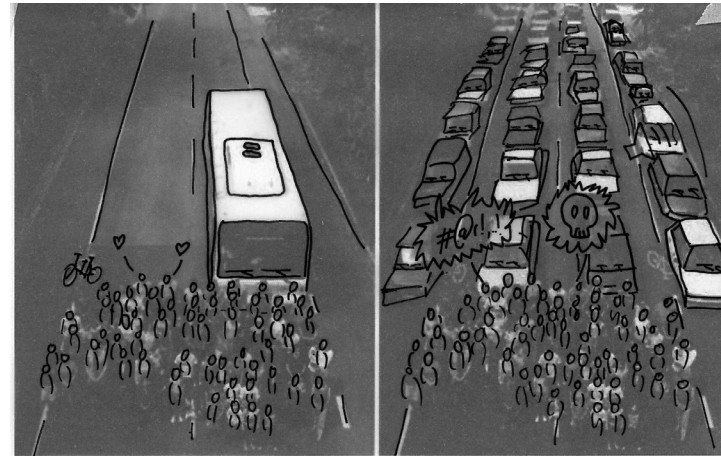
The people flow are divided into the different levels of the building, staff, patient and public. Between each story we have left a generous space for technical installations. The way of having a staff flow on the story above the patient floor we have seen in Deventer hospital, Netherlands.



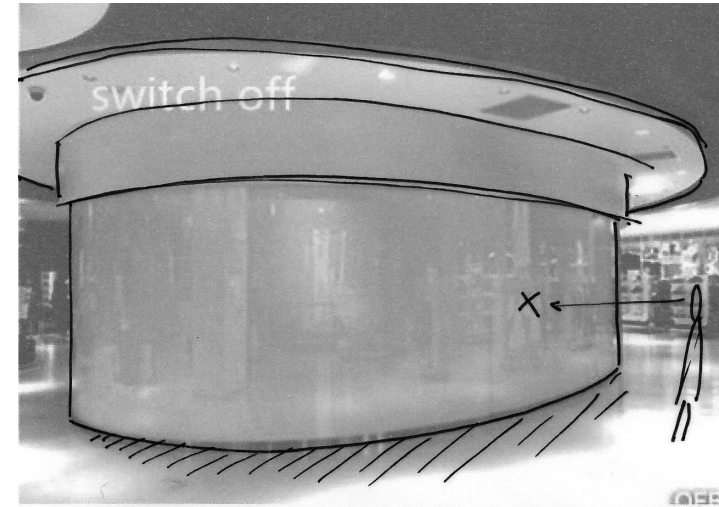
THEME 3 - HEALTH PROMOTION

INTRO

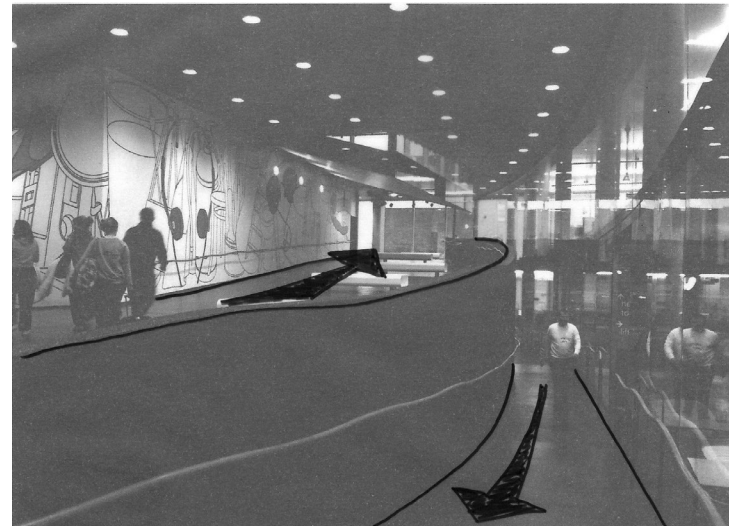
The health promotion theme might be the most visible in our project thanks to the complement of sport and leisure facilities next to the healthcare centre. That part is very obvious in our project and therefore we want to highlight some of the other aspects of health promotion that we visualised during the workshop. We also reflected about the possible stakeholders for our project, which is an important part because of the wide range of people that will use our building.



PROMOTE PUBLIC TRANSPORT



PROMOTE BOTH PRIVACY AND DAYLIGHT BY CHANGING TRANSPARENCY OF GLASS

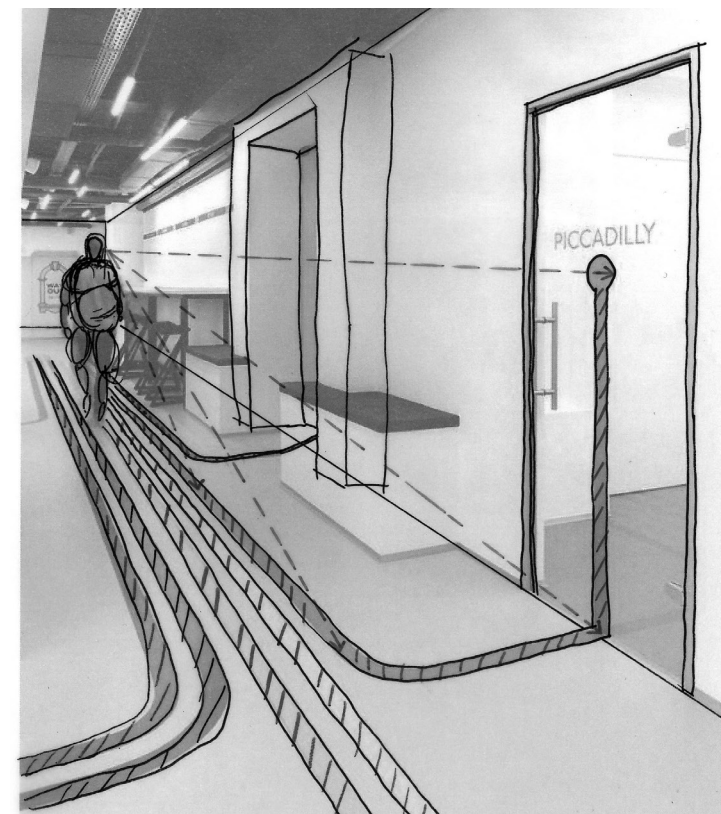


USE OF RAMPS

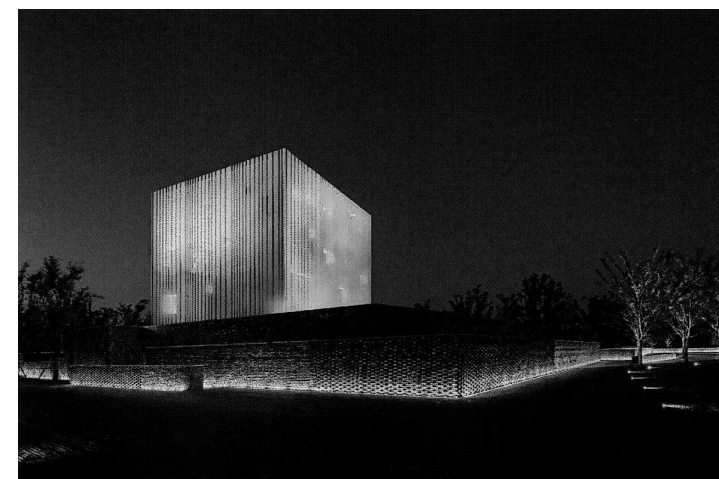
Ref. Laban dance institute, Herzog de Meuron



PERSONAL PICK-UP IN THE WAITING ROOM



WAYFINDING SOLUTION



GLOWING LIGHT TO MAKE THE PARK SAFER AND MORE UTILIZED DURING NIGHTS



COMBINED RAMP AND STAIRS

WORKSHOP - STAKEHOLDERS

Patients:

- Children
- Adults
- Old people
- Disabled
(wheelchair, crutches, blind, deaf etc.)
- Emergency
- Appointment

Non patients:

- Family
- Friends
- Animals
- Sportsmen

Staff:

- Doctors
- Nurses
- Shop workers
(pharmacy, cafe, restaurant)
- Office workers
- Personal trainers
- Gardeners
- Janitors

Neighbours:

- Elderly home
- Residential buildings
- Offices

THEME 4 - FUTURE PROOFING

INTRO

In the fourth theme we were discussing future proofing and different ways of making architecture resistant for time changes in order of climate changes, new lifestyles, technologies and an increasing population.

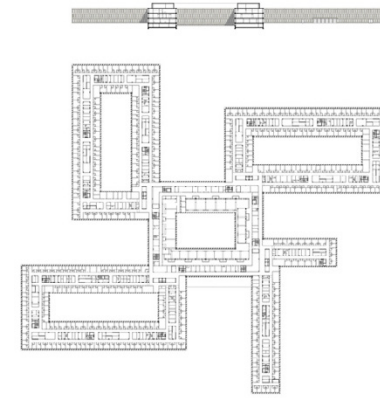
In our project we have focused on the flexibility of the healthcare units so that the units with highest pressure at every moment can use the biggest amount of rooms. The continuous floor plan makes it even more flexible and except for the waiting areas there are no given borders between the units.

WORKSHOP - COLLECTING REFERENCES

During an intense workshop we were challenged to collect as many future proofing references as possible. Below you will see some of the qualities and project we identified.



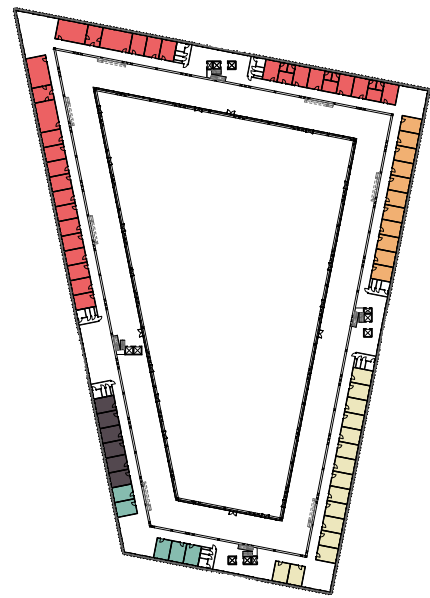
STRUCTURE: Stacked modules
Capsule tower, Kisho Kurokawa



SPACES: Narrow bright building volumes
AZ Hospital, Groningen



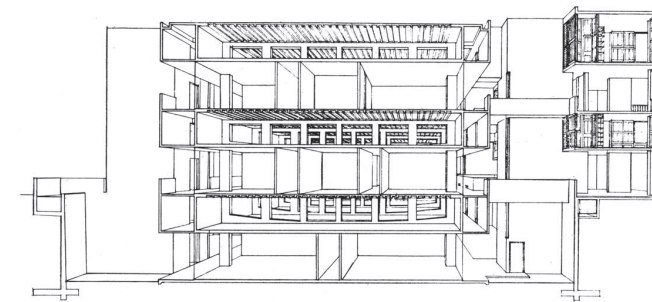
STRUCTURE: Volumes in metal grid
Centre Pompidou, Rogers Piano



EX. A



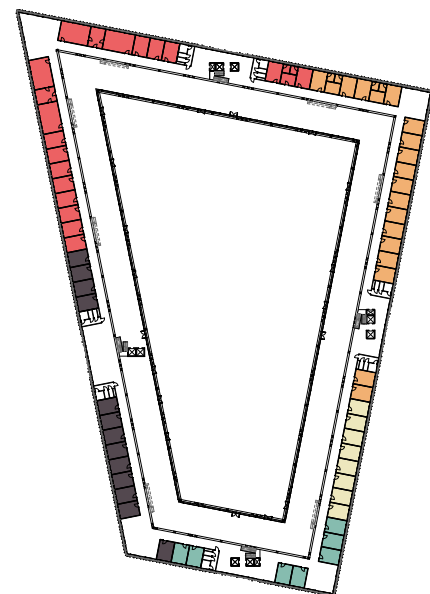
SPACE: Huge, multifunctional space
Friends arena, CF Moller architects



SERVICES: Thick slab for future installation
Salk Institute, Louis Kahn



GREENERY: Twice the footprint compensated
Park Royal hotel, WOHA



EX. B



SPACE: Transformation from education to offices
Pedagogen Park



STRUCTURE: Durable material
Giza Pyramids



SKIN: flooding and wind proof
Medical university South Carolina

