

# Apart but together

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# Introduction

The task in this studio was to design the new Community Hospital at Wieselgrensplatsen in Lundby, Gothenburg.

The hospital will include a combination of specialist clinics, primary care and other healthcare facilities. Västra Götaland Region through Västfastigheter is the client and the size of the hospital is estimated to be around 20 000 square meters. The task also includes designing a new mobility hub with bike and car parking for the area.

## Our proposal

Two years into an ongoing pandemic, in which healthcare has been under pressure and staff have been through long periods of hard work, has really affected the way we think. Resilience and future proofing is of great importance.

We want with our proposal "Apart but together" to design a hospital where both patients and staff can meet in a healing and safe environment but also be separated when necessary to reduce the risk of infections spreading and help staff to work efficiently.

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# The site

The site for the new community hospital is located in Lundby, Gothenburg between Hjalmar Brantingsgatan to the north and Inlandsgatan to the south. To the west of our plot there is an arena, a swimming pool and an ice rink. In the plot we have a fast food restaurant and a gas station that will be removed, which will lead to less restaurants in the area.

The nearest tram and bus stations are Wieselgrensplatsen and Rambergsvallen.

## SWOT analysis

### Strengths

- Close to public transport stations
- Lively area during sport events

### Weaknesses

- High noise levels from Hj. Brantingsgatan
- Lack of greenery

### Opportunities

- To build on the height without shading other buildings
- Make a landmark that will be very visible

### Threats

- Risk of flooding

## Public transport and roads



Hjalmar Brantingsgatan is the main road with a lot of traffic and noise. We found that coming from Rambergsvallen to our plot is the easiest way where you don't have to cross any streets or go uphill.

## Bike lanes



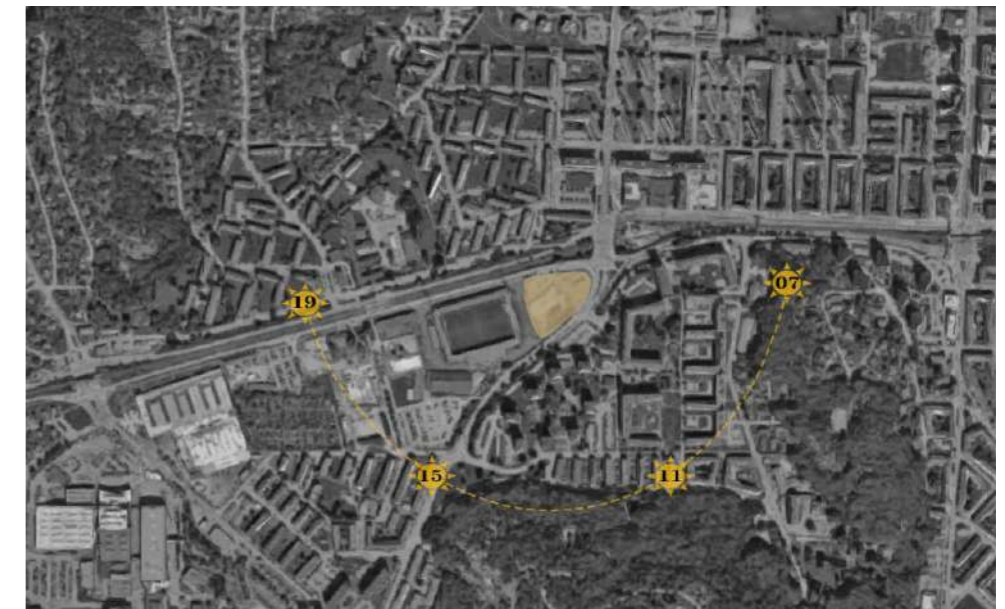
The plot is accessible for both cyclists and pedestrians from both Hjalmar Brantingsgatan and Inlandsgatan.

## Greenery and nature



The plot is close to green areas where we have Ramberget to the south.

## Sun study, september



This sun study was made in September and we found that the plot is located in a good position to the sun since we also don't have many surrounding buildings.

# Design strategies

Designing a community hospital with many different departments comes with a lot of challenges.

We want to create a healing and welcoming environment for both patients and staff. We also want to design for sustainability and future proofing to meet future changes. Therefore we have divided the departments in two parts of the building. The high- medium tech departments will be placed in the concrete part of the building and the low- medium tech departments will be in the wooden part of the building.

To prepare the hospital for future changes we have chosen to present a solution of a flexible grid in the wooden part where the hallways can be either separated or shared between patients and staff.

## Health promotion

Healing environment for patients and staff



Views to the outdoor  
Daylight  
Outdoor areas  
Warm interior design

Raise knowledge about body and mind



Knowledge hub for the community  
- workshops  
- library  
- games for learning

Encourage daily exercise



Gym accessible for staff before and after opening hours  
Mobility hub with bike parking and rental

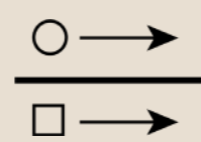
## Brief & Logistics

Clear directions



Two main staircases  
Signs for each department  
Staff guidance in the reception

Separated flows when necessary



Internal staff flows  
Primary care and receptions have separated flows for staff and patients

Optimise areas and offer gathering points



One lunch room for staff  
Shared administration areas  
Internal staff flows

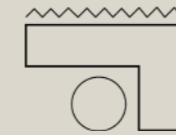
## Site & Context

Prevent rain water issues



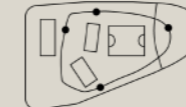
Green roofs  
Vegetation on the terraces and outdoor square

Safe and welcoming environment



The building as a noise barrier  
Drop off right next to the entrance

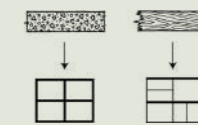
Connect to the area



Public functions  
Bike repair

## Sustainability & Future proofing

Prepare for future reorganisation



Generality in the concrete structure/grid  
Flexibility in the wooden structure/grid

Reduce carbon footprint



Timber construction  
Solar panels on the roof

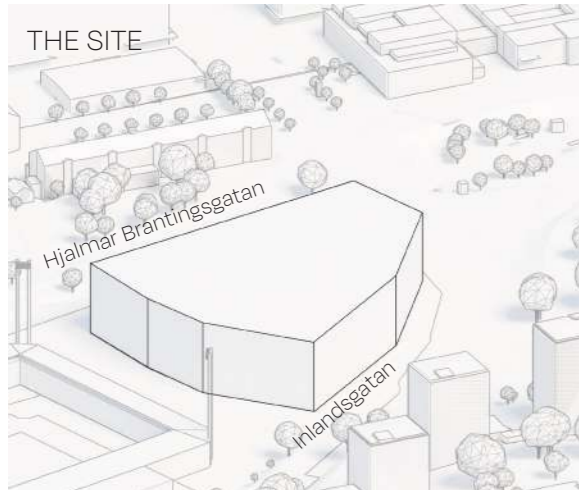
Digital technology and e-health



Rooms for digital meetings  
Self check-in  
Mobile team

# Concept design

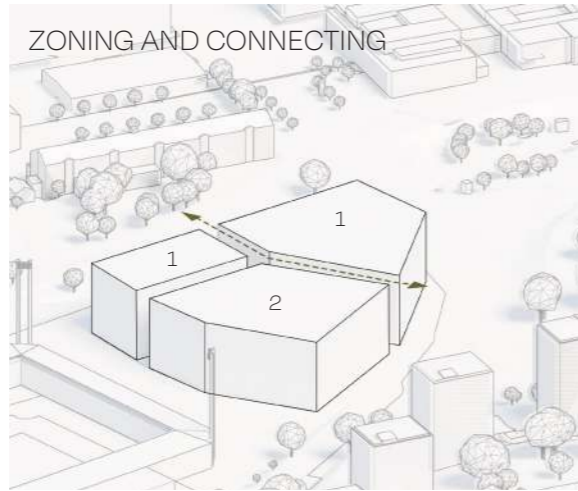
## Step by step



The area on the site 8974 sqm  
we need 18 000-20 000 sqm for community hospital and 12 000 sqm Mobility hub.

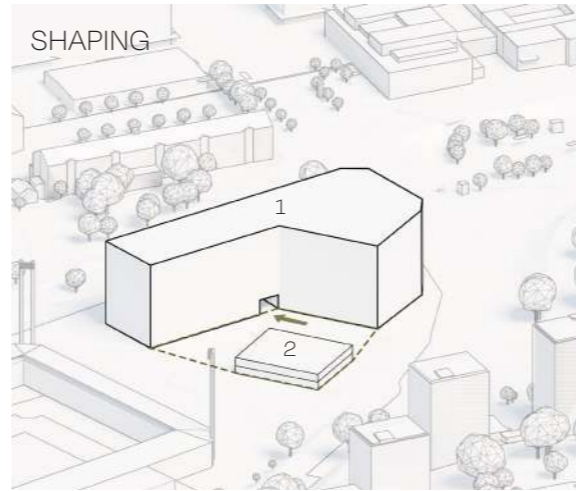
No entrance for cars or deliveries from Hj. Brantingsgatan

Mobility Hub should not be placed under the hospital for safety reasons



1 Space for the hospital  
Facing the intersection  
Barrier for the high noise levels  
Public facility towards Hjalmar Brantingsgatan

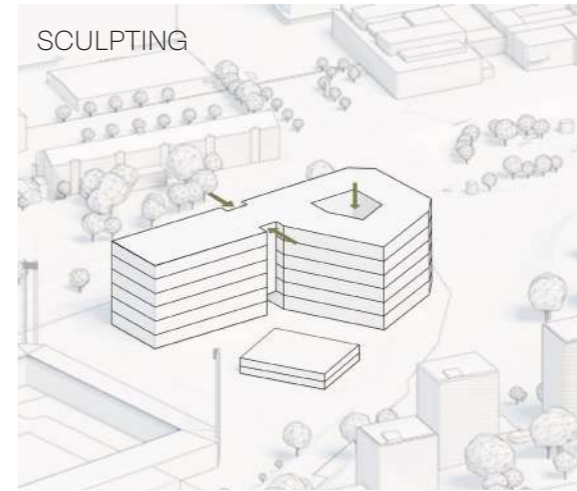
2 Space for Mobility Hub and Outdoor Area  
MH: Entrance from Inlandsgatan  
OA: Safe and separated from the traffic



Tunnel for pedestrians and cyclists

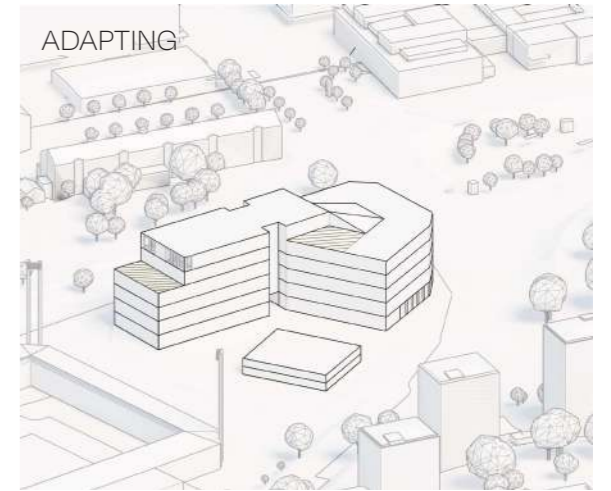
1 Understanding the departments  
- connections  
- needs  
- areas

2 Bicycle parking above ground  
Car parking under the outdoor area



Highlighting the meeting point and the tunnel and breaking down the massive facade towards Hj. Brantingsgatan

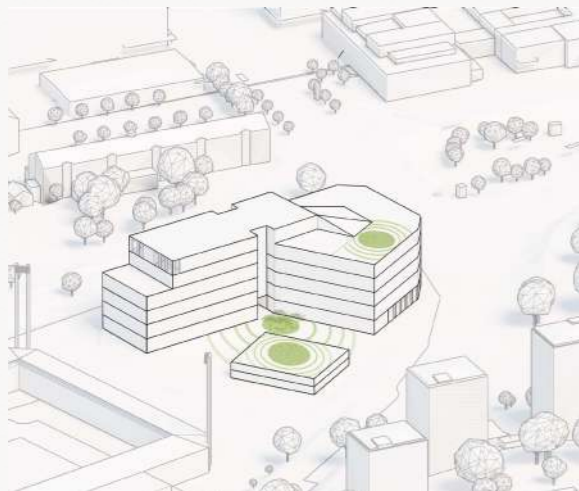
Increasing daylight intake by adding an atrium



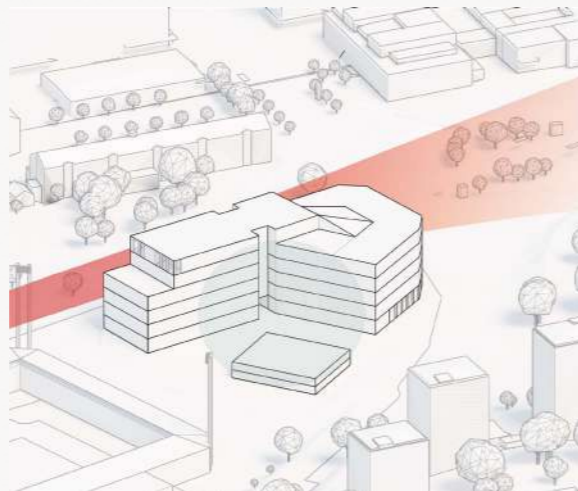
Creating space for terraces

Increasing daylight intake by placing the highest floor towards north

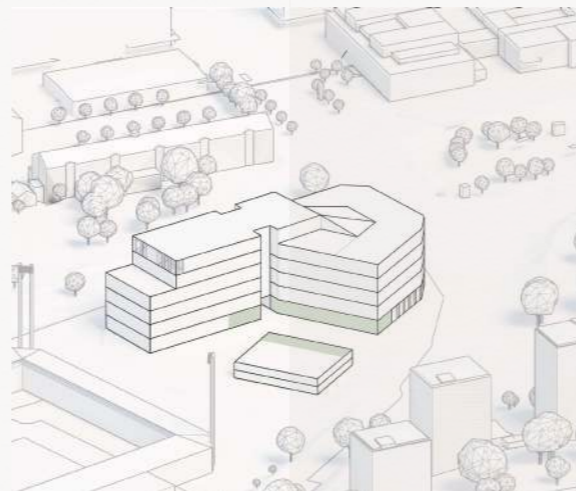
## Implemented strategies



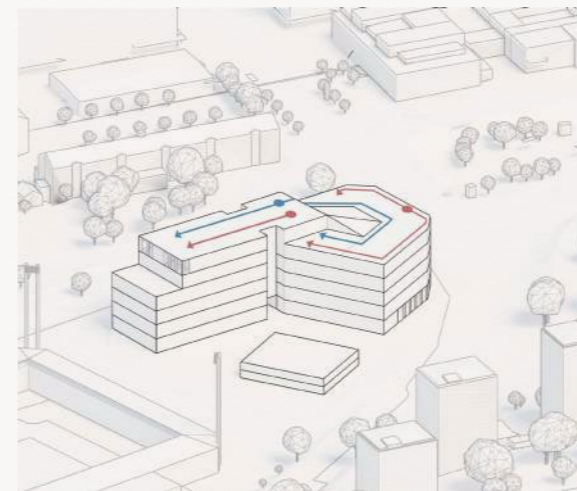
Outdoor areas  
Green roofs  
Views to the outdoors



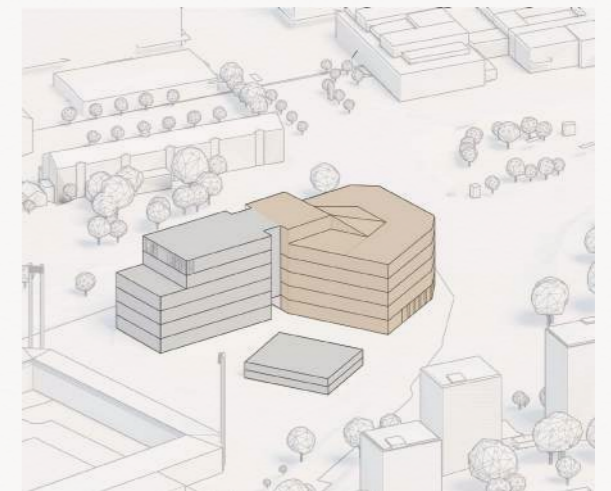
The building as a barrier



Public functions  
Bike repair



Internal staff flows  
Separated flows when necessary



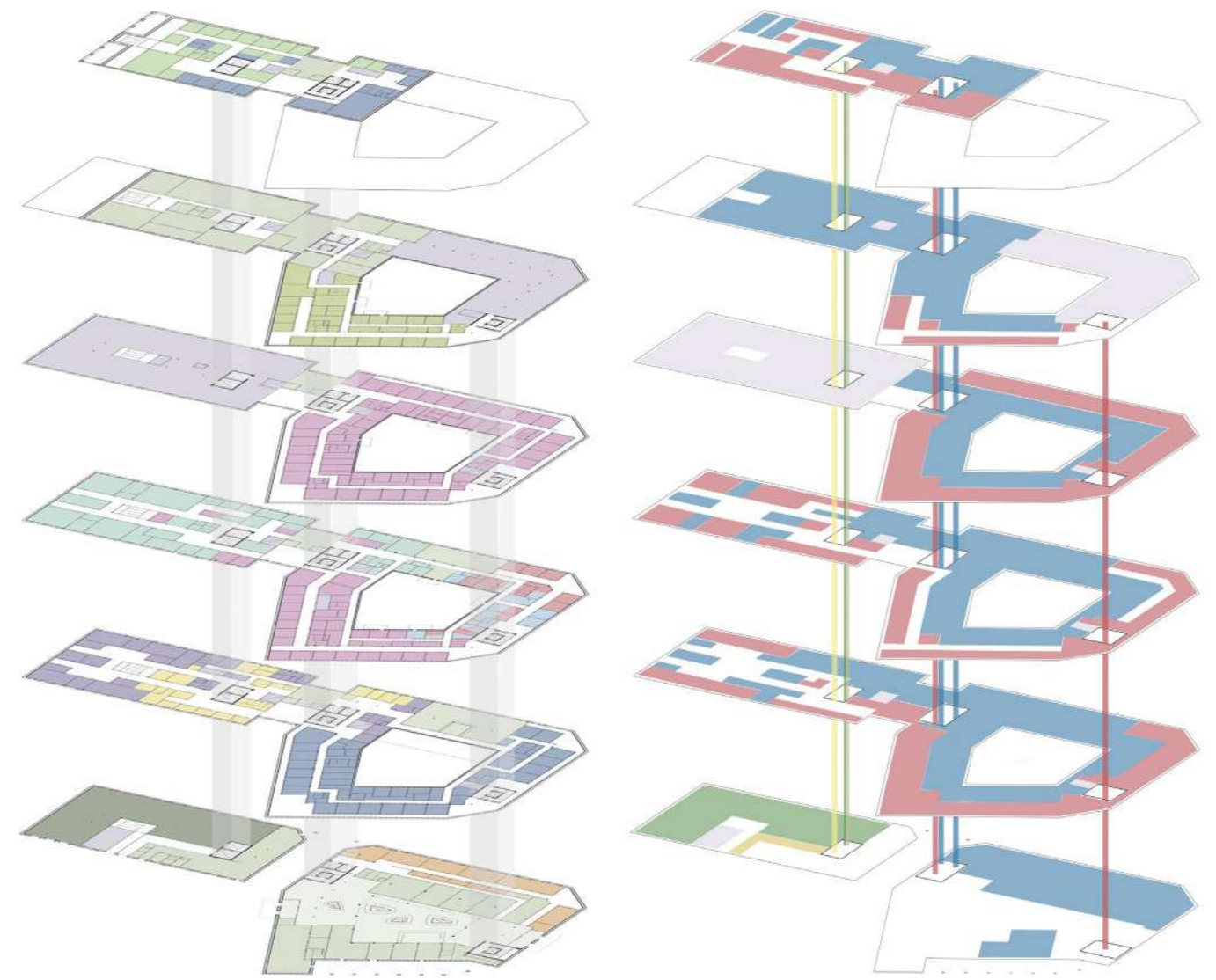
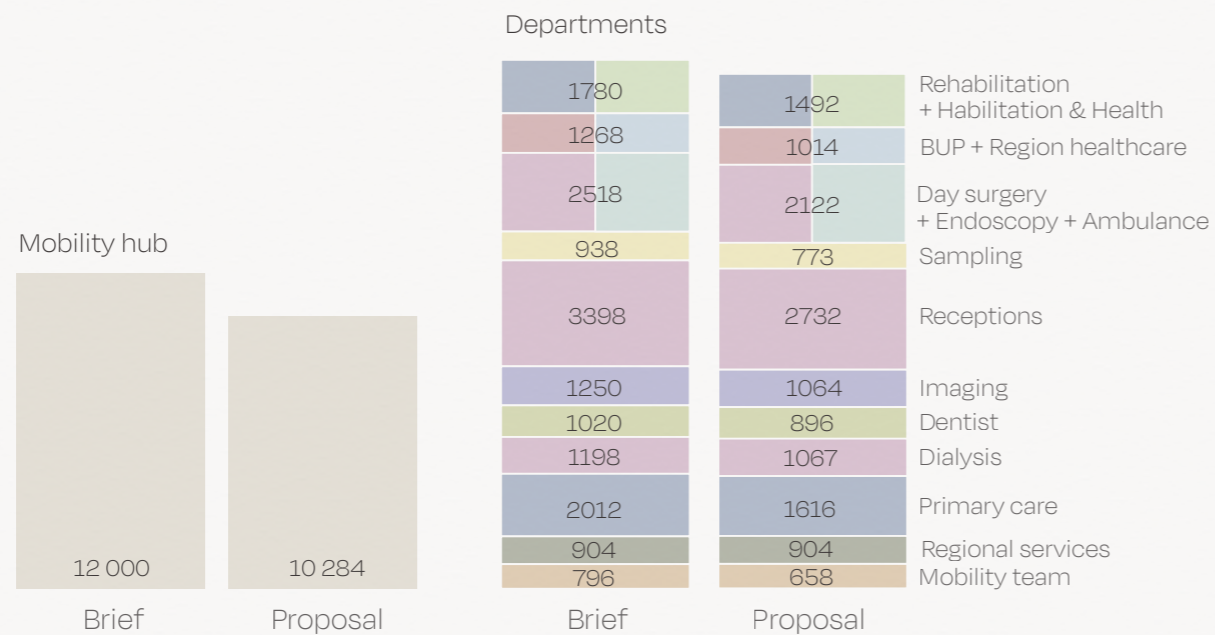
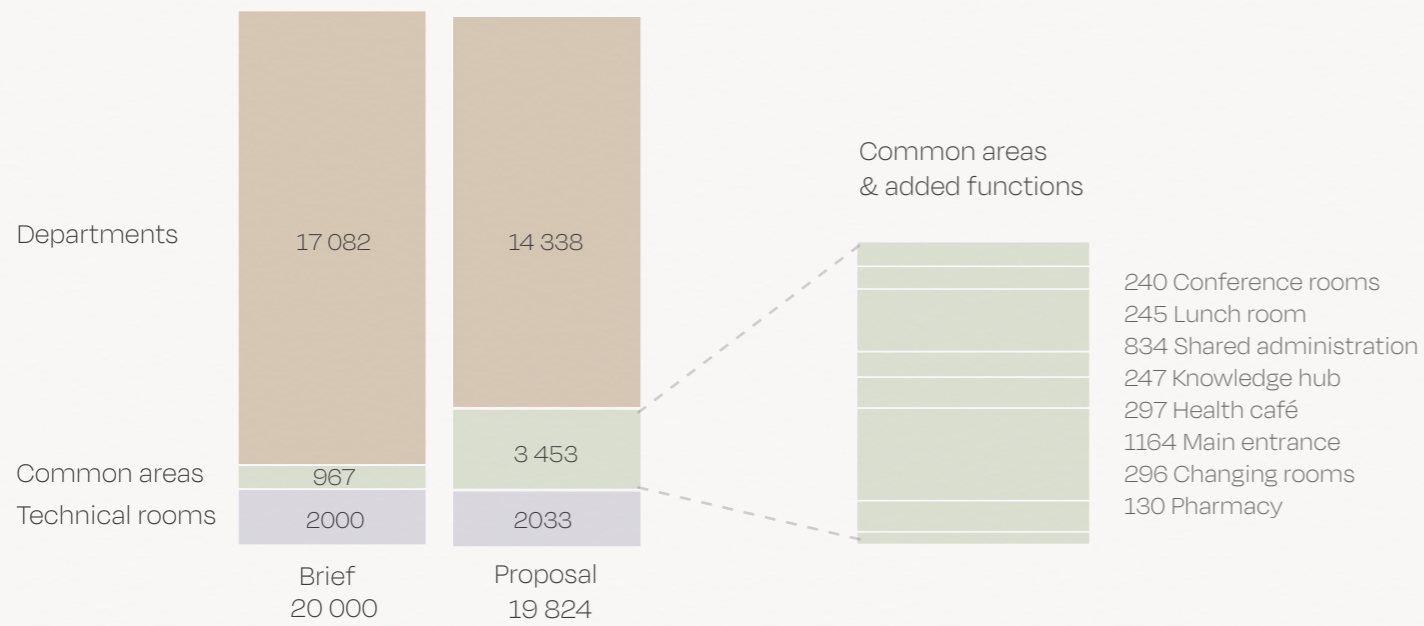
Generality and flexibility in two grids  
Partly timber construction

# Brief and flows

The brief was challenged by combining departments and optimizing shared spaces. For example, the endoscopy is placed next to the day surgery to optimize the anaesthetist's movements and to combine support functions. Some staff areas such as administrative rooms have been combined to create shared spaces

for different departments where staff can meet. Having one big lunch room and gathered conference rooms also makes it possible to reduce the square meters of the departments that can be used for added functions in our proposal.

Grossarea, BTA in square metres



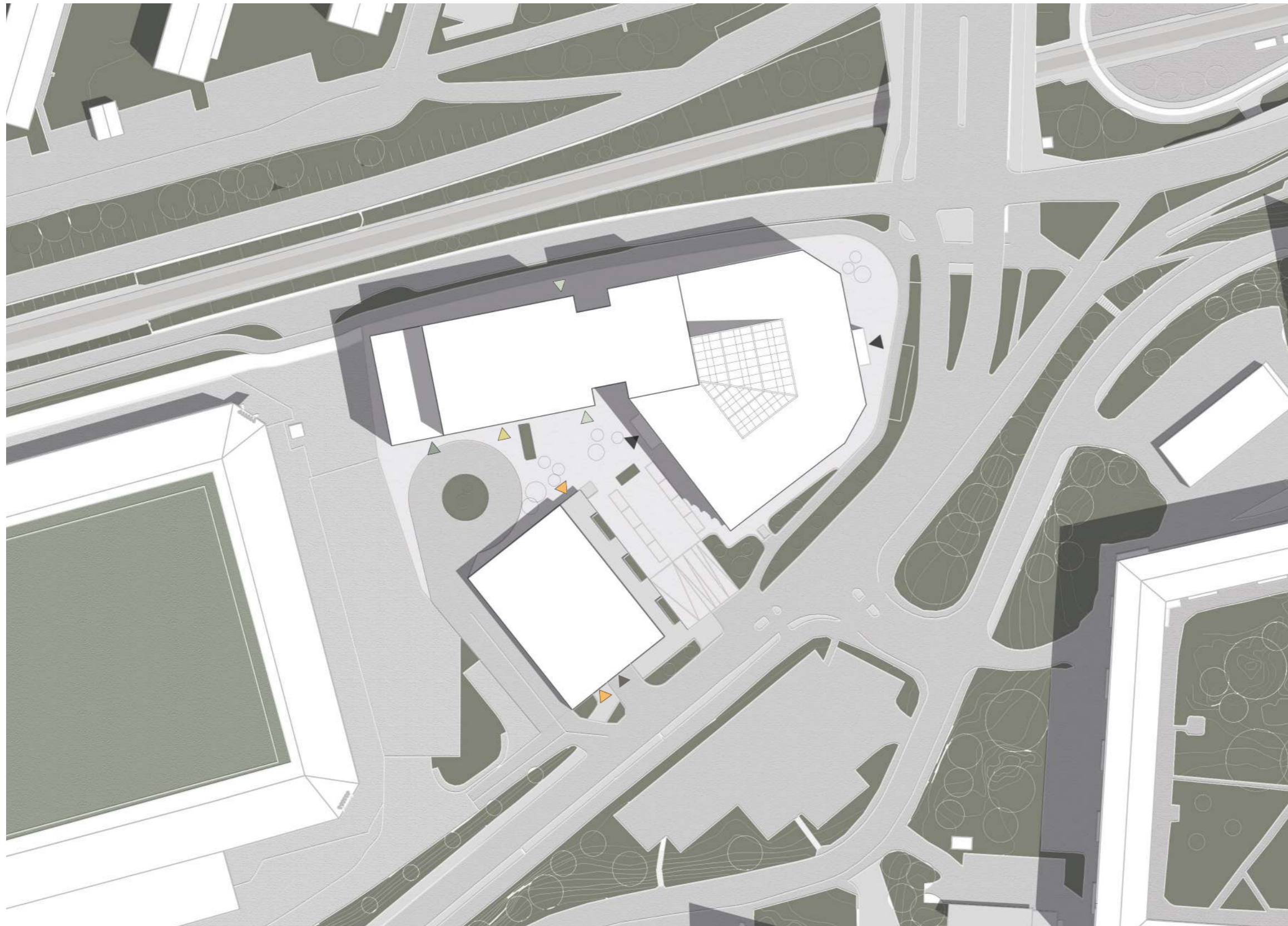
## DEPARTMENTS

- 5<sup>th</sup> ■ Rehabilitation ■ Habilitation & Health
- 4<sup>th</sup> ■ Administration and conference rooms ■ Dentist
- Technical rooms
- 3<sup>rd</sup> ■ Technical rooms ■ Receptions
- 2<sup>nd</sup> ■ Day surgery ■ Dialysis ■ Region Healthcare
- Endoscopy ■ Shared Admin. ■ BUP
- 1<sup>st</sup> ■ Imaging ■ Primary care
- Sampling ■ Lunch room
- GF ■ Goods reception ■ Main entrance ■ Mobile team
- Changing rooms, pharmacy, knowledge hub and health café

## FLows

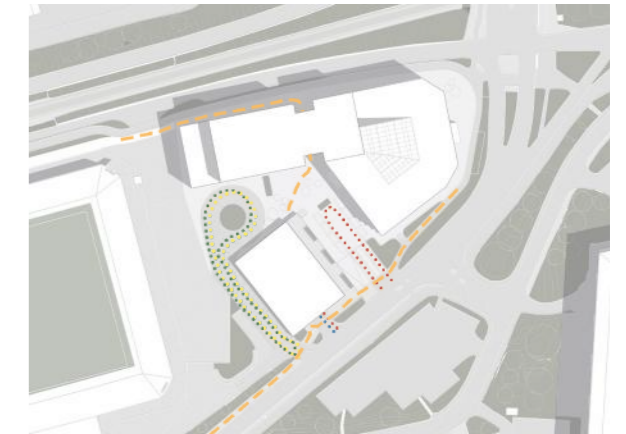
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance

# Site plan



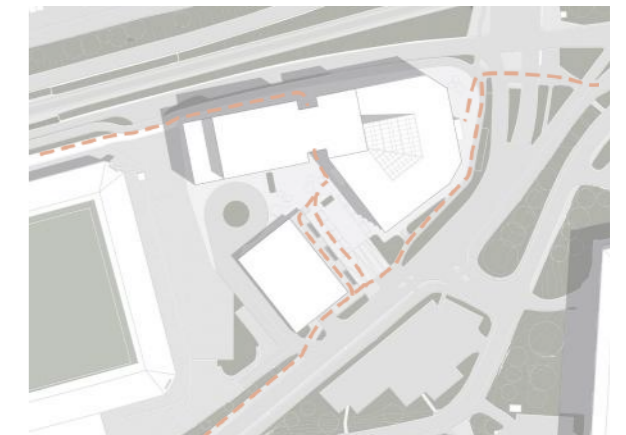
▶ Main entrance 
 ▶ Bike parking 
 ▶ Deliveries 
 ▶ Ambulance 
 ▶ Health café 
 ▶ Car parking

## LOGISTICS

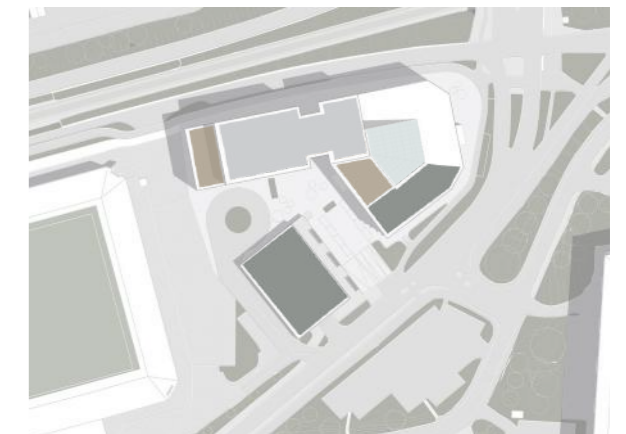


--- Cyclists 
 ... Ambulance 
 ... Deliveries 
 ... Staff by car 
 ... Patients and relatives by car

## PEDESTRIANS



## ROOFS



■ Sedum 
 ■ Terrace 
 ■ Atrium 
 ■ Solar panels

Scale 1:1000



# Ground floor



On the ground floor, staff and patients can meet entering the same entrance hall. Staff changing rooms are located in the middle of the floor and they have indirect daylight from the atrium. As a patient, you have two main staircases to choose depending on which department you are going to. In the middle, the reception is visible from both entrances and highlighted by the atrium. From the ground floor, patients can have a view to the staff areas and daylight from the atrium.

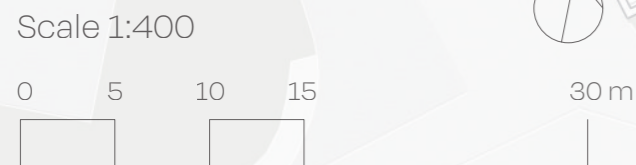
The knowledge hub is located in the south corner. In the knowledge hub patients can find books for reading and games for learning, also events and workshops can take place here. On the ground floor there is also a health café connected to Hjalmar Brantingsgatan and to the entrance square in the south.

The Knowledge hub and the health café can be used by the whole community and can be open when the hospital is closed.



- DEPARTMENTS
- Goods reception
  - Mobile team
  - Main entrance
  - Added functions

- FLOWS
- Patients
  - Staff
  - Goods
  - Returns and waste
  - Ambulance
  - Public





Ground floor



Scale 1:200

0 2 4 10



20 m

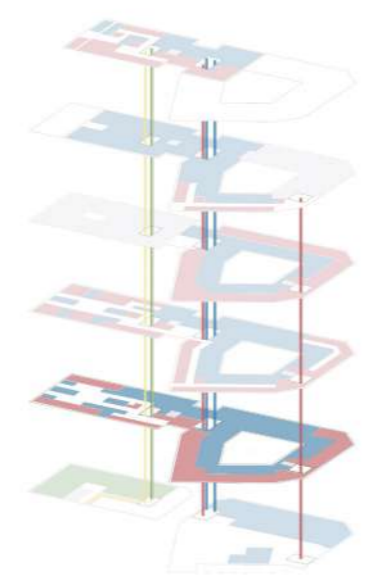
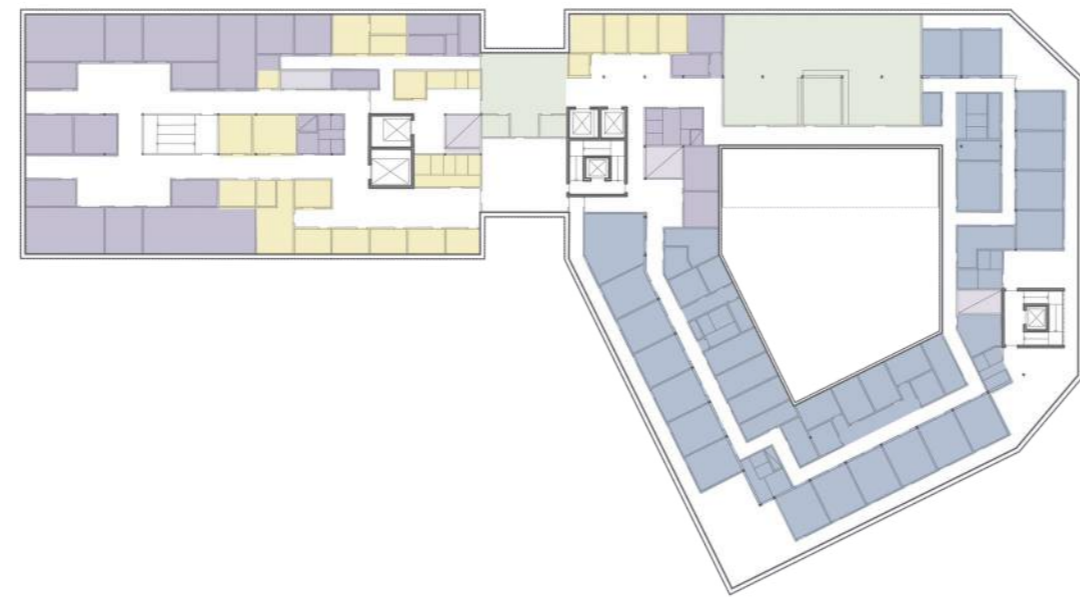
# First floor

- PATIENT AREAS**
- 1 Reception
- 2 Waiting room
- 3 Patient meeting room
- 4 Patient meeting room, large
- 5 Patient toilets
- 6 Sampling room
- 7 Ultrasound
- 8 X-ray
- 9 CT
- 10 MR
- STAFF AREAS**
- 12 Care related administration
- 13 Quiet rooms
- 14 Staff resting room
- 15 Group room
- 16 Cleaning storage
- 17 Waste room
- 18 Storage
- 19 Copy space
- 20 Archive room
- 21 Medicine room
- 22 Disinfection, clean/unclean
- 23 Laboratory
- 24 Team station
- 25 Staff toilets
- 26 TDK, Tele and IT communication
- 27 Control room
- 28 Lunch room
- 29 Outdoor area for staff

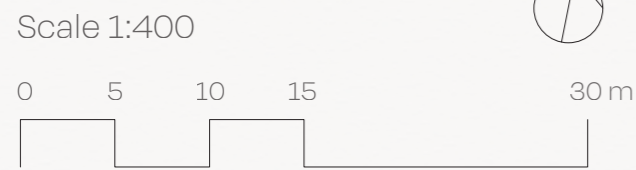


Primary care is one of the departments with massive flow therefore it is placed on the first floor with a possibility to be accessible from the ground floor after opening hours. Sampling and imaging are connected to the primary care therefore they are placed on the same floor.

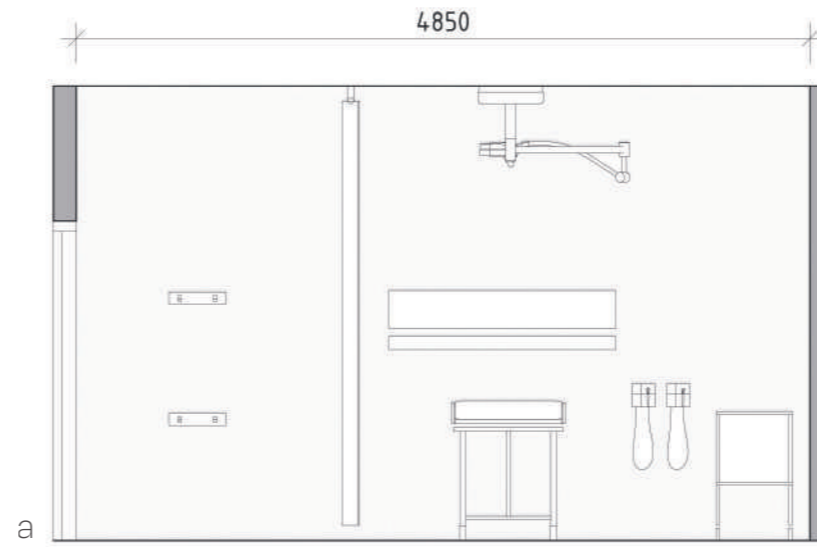
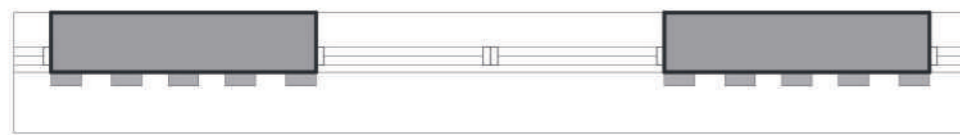
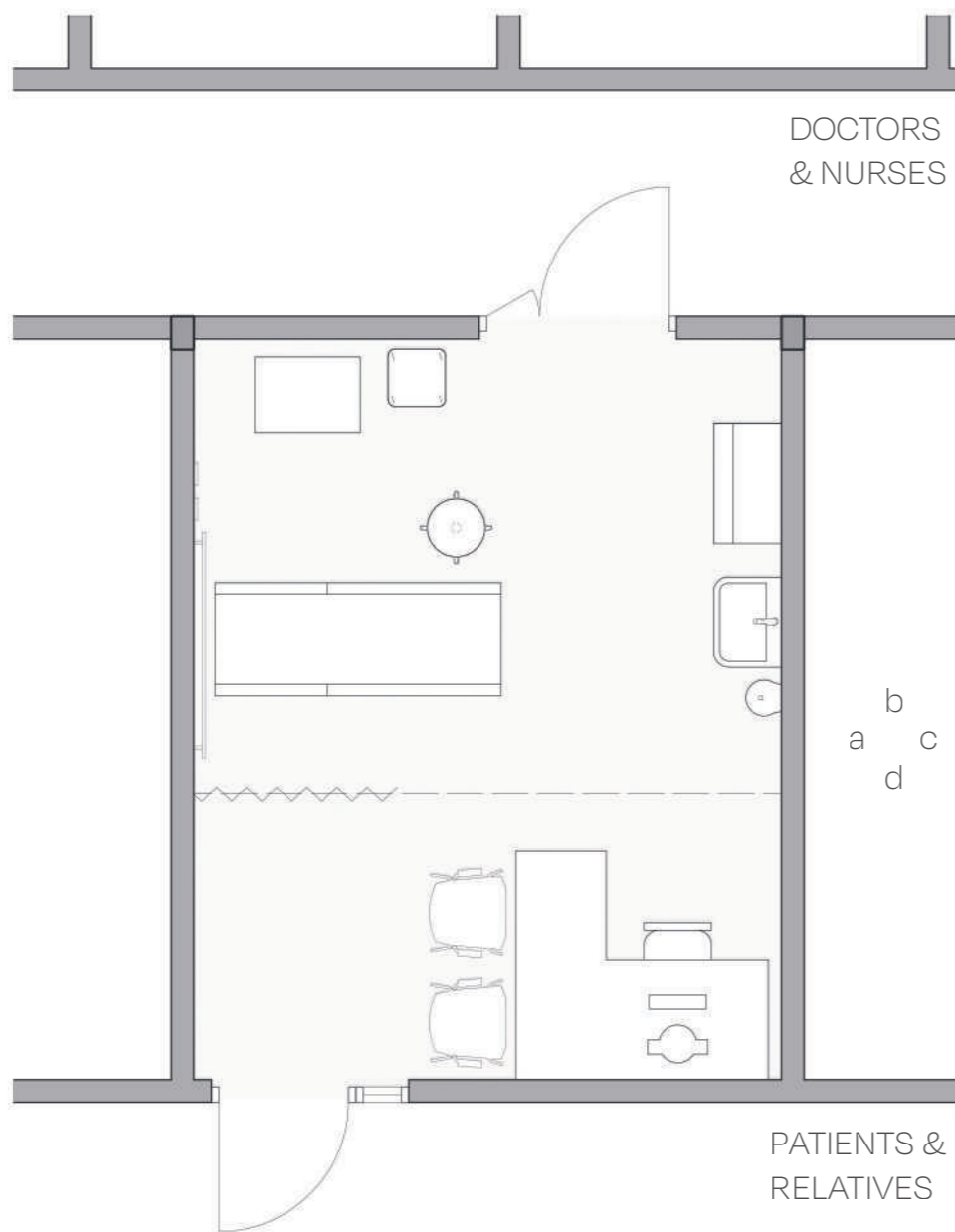
In the primary care department the flows are separated to minimize the risk of infections spreading.



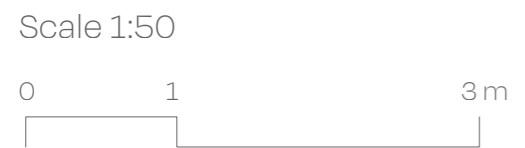
- DEPARTMENTS**
- Imaging
- Sampling
- Primary care
- Added function
- FLOWS**
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance



# Treatment and consultation room

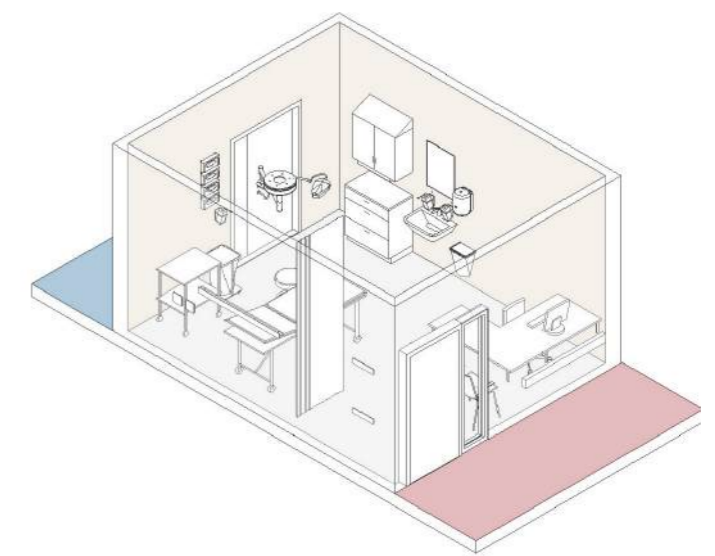


Elevations a-d



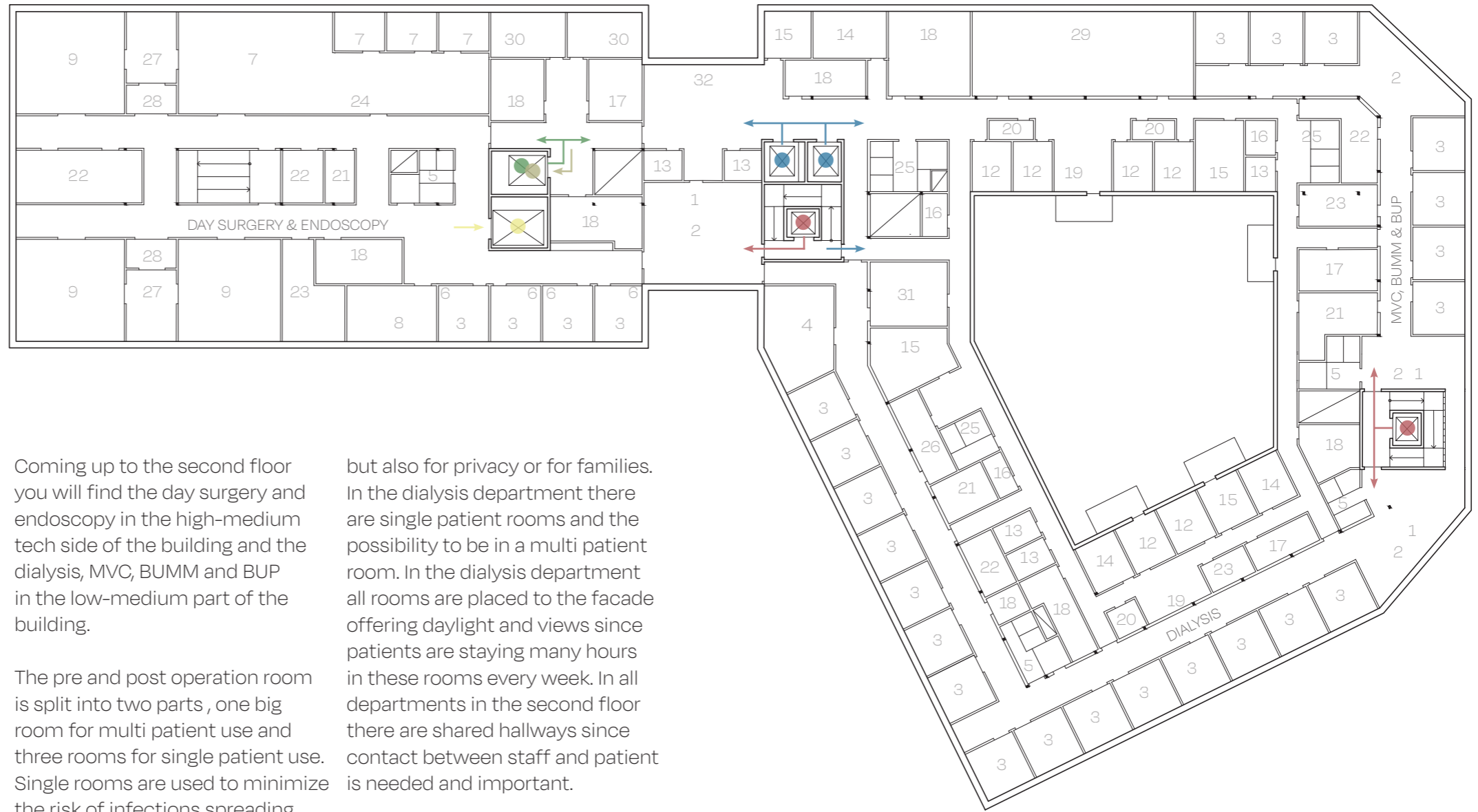
In the treatment and consultation room we have two zones. The consultation zone is located directly after the patient entering the room and here is where the patient and doctor can sit and talk. While the treatment zone is where the examination and treatment can take place. The consultation zone can also work as a waiting area for those who are coming with the patient.

This unit is used in both the primary care and the reception clinics.



# Second floor

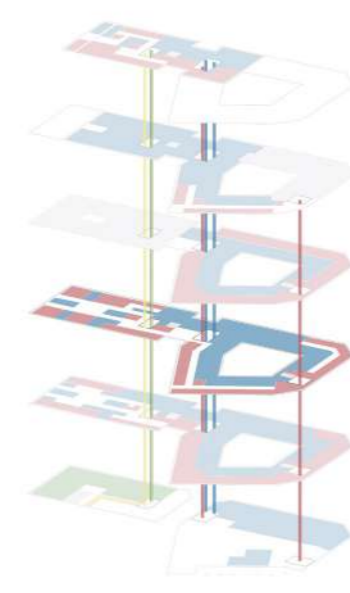
- PATIENT AREAS**
- 1 Reception
- 2 Waiting room
- 3 Patient meeting room
- 4 Patient meeting room, large
- 5 Patient toilets
- 6 Changing room
- 7 Pre- and post operation
- 8 Procedure room
- 9 Operation theatre
- STAFF AREAS**
- 12 Care related administration
- 13 Quiet rooms
- 14 Staff resting room
- 15 Group room
- 16 Cleaning storage
- 17 Waste room
- 18 Storage
- 19 Copy space
- 20 Archive room
- 21 Medicine room
- 22 Disinfection, clean/unclean
- 23 Laboratory
- 24 Team station
- 25 Staff toilets
- 26 TDK, Tele and IT communication
- 27 Tool preparation room
- 28 Handwash
- 29 Shared administration
- 30 Staff changing room
- 31 Water cleaning system
- 32 Expedition



Coming up to the second floor you will find the day surgery and endoscopy in the high-medium tech side of the building and the dialysis, MVC, BUMM and BUP in the low-medium part of the building.

The pre and post operation room is split into two parts, one big room for multi patient use and three rooms for single patient use. Single rooms are used to minimize the risk of infections spreading

but also for privacy or for families. In the dialysis department there are single patient rooms and the possibility to be in a multi patient room. In the dialysis department all rooms are placed to the facade offering daylight and views since patients are staying many hours in these rooms every week. In all departments in the second floor there are shared hallways since contact between staff and patient is needed and important.



- DEPARTMENTS**
- Day surgery
- Endoscopy
- Added function
- Region Healthcare (MVC & BUMM)
- BUP
- Dialysis
- FLows**
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance



# Day surgery department



Scale 1:200



0 2 4 10 20 m

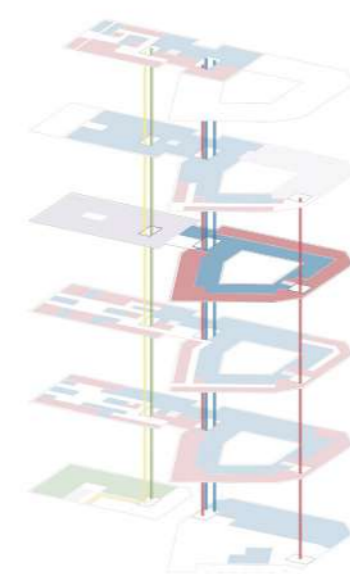
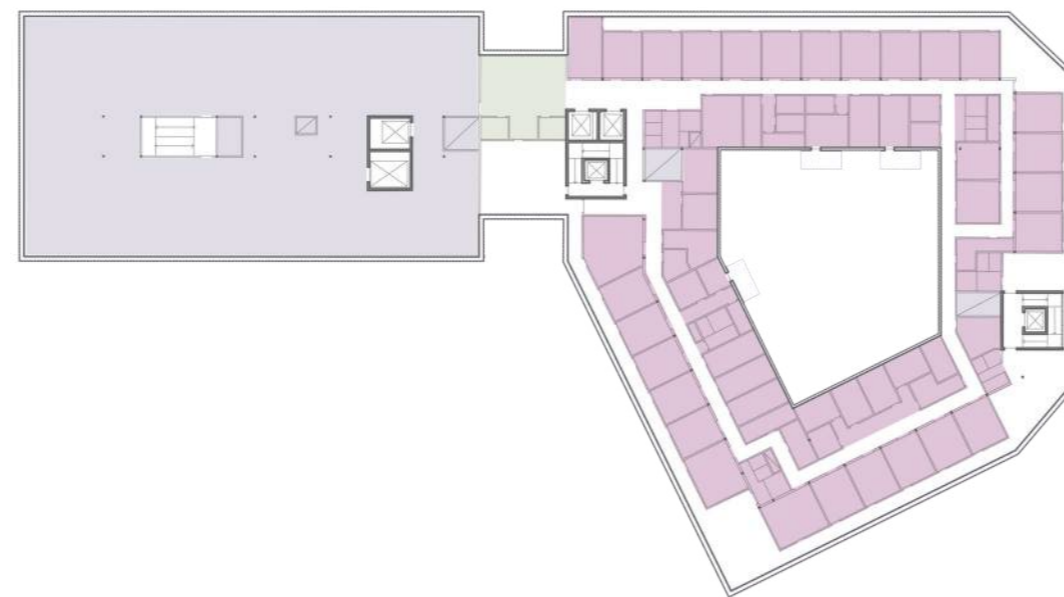
# Third floor

- PATIENT AREAS**
- 1 Reception
- 2 Waiting room
- 3 Patient meeting room
- 4 Patient meeting room, large
- 5 Patient Toilets
- STAFF AREAS**
- 12 Care related administration
- 13 Quiet rooms
- 14 Staff resting room
- 15 Group room
- 16 Cleaning storage
- 17 Waste room
- 18 Storage
- 19 Copy space
- 20 Archive room
- 21 Medicine room
- 22 Disinfection, clean/unclean
- 23 Laboratory
- 24 Team station
- 25 Staff toilets
- 26 TDK, Tele and IT communication

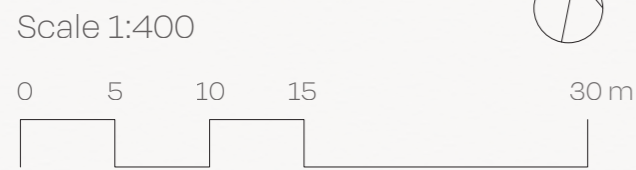


The receptions for the specialist clinics are located on the third floor on the wooden part of the building and can be reached easily from staircare B. As in the primary care, the receptions have a separated flow.

On this floor the technical rooms that needs to be above the day surgery department is placed.



- DEPARTMENTS**
- Technical rooms
- Receptions
- FLows**
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance

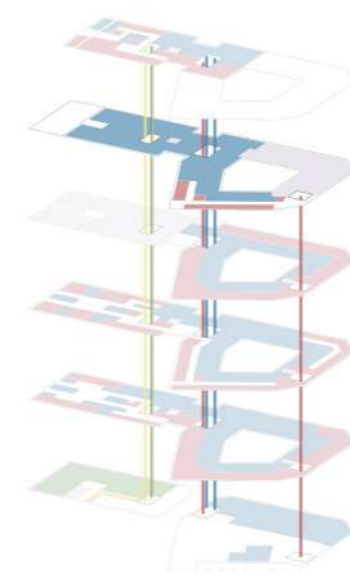


# Fourth floor

- PATIENT AREAS**
- 1 Reception
- 2 Waiting room
- 3 Patient meeting room
- 5 Patient Toilets
- STAFF AREAS**
- 12 Care related administration
- 13 Quiet rooms
- 14 Staff resting room
- 15 Group room
- 16 Cleaning storage
- 17 Waste room
- 18 Storage
- 19 Copy space
- 20 Archive room
- 21 Medicine room
- 22 Disinfection, clean/unclean
- 24 Team station
- 25 Staff toilets
- 26 TDK, Tele and IT communication
- 27 Shared administration
- 28 Conference room



On this floor there is the other technical room, shared administration, conference rooms and the dentist. The conference rooms and the shared administration area is easily accessible for guests coming from staircase A. The dentist is reached from staircase B. This floor is the last floor of the wooden part of the building.



- DEPARTMENTS**
- Added function
- Technical rooms
- Dentist

- FLOWS**
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance

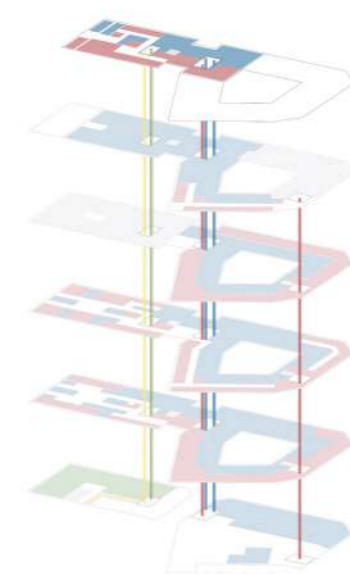


# Fifth floor

- PATIENT AREAS**
- 1 Reception
- 2 Waiting room
- 3 Patient meeting room
- 5 Patient toilets
- 6 Sampling room
- 7 Changing room
- 8 Gym
- 9 Outdoor gym
- 10 Terrace
- STAFF AREAS**
- 12 Care related administration
- 13 Quiet rooms
- 14 Staff resting room
- 15 Group room
- 16 Cleaning storage
- 17 Waste room
- 18 Storage
- 19 Copy space
- 20 Archive room
- 21 Medicine room
- 22 Disinfection, clean/unclean
- 23 Laboratory
- 25 Staff toilets
- 26 TDK, Tele and IT communication
- 27 Terrace



The last floor is dedicated to the rehabilitation and habilitation departments. In that way, both departments can benefit from an outdoor connection to terraces. The east gym can also be used by staff after opening hours.



- DEPARTMENTS**
- Rehabilitaion
- Habilitation & Health
- FLOWS**
- Patients
- Staff
- Goods
- Returns and waste
- Ambulance

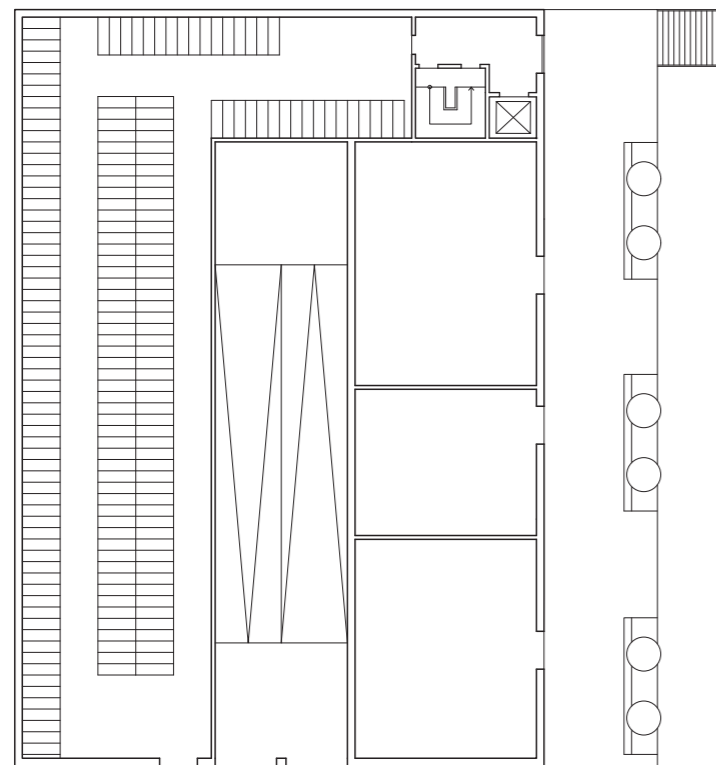
Scale 1:400



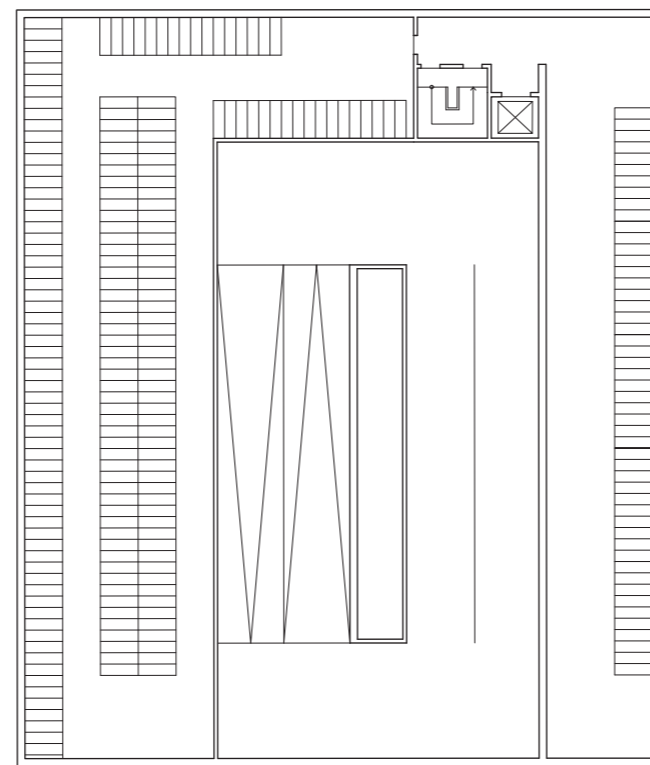


# Mobility hub

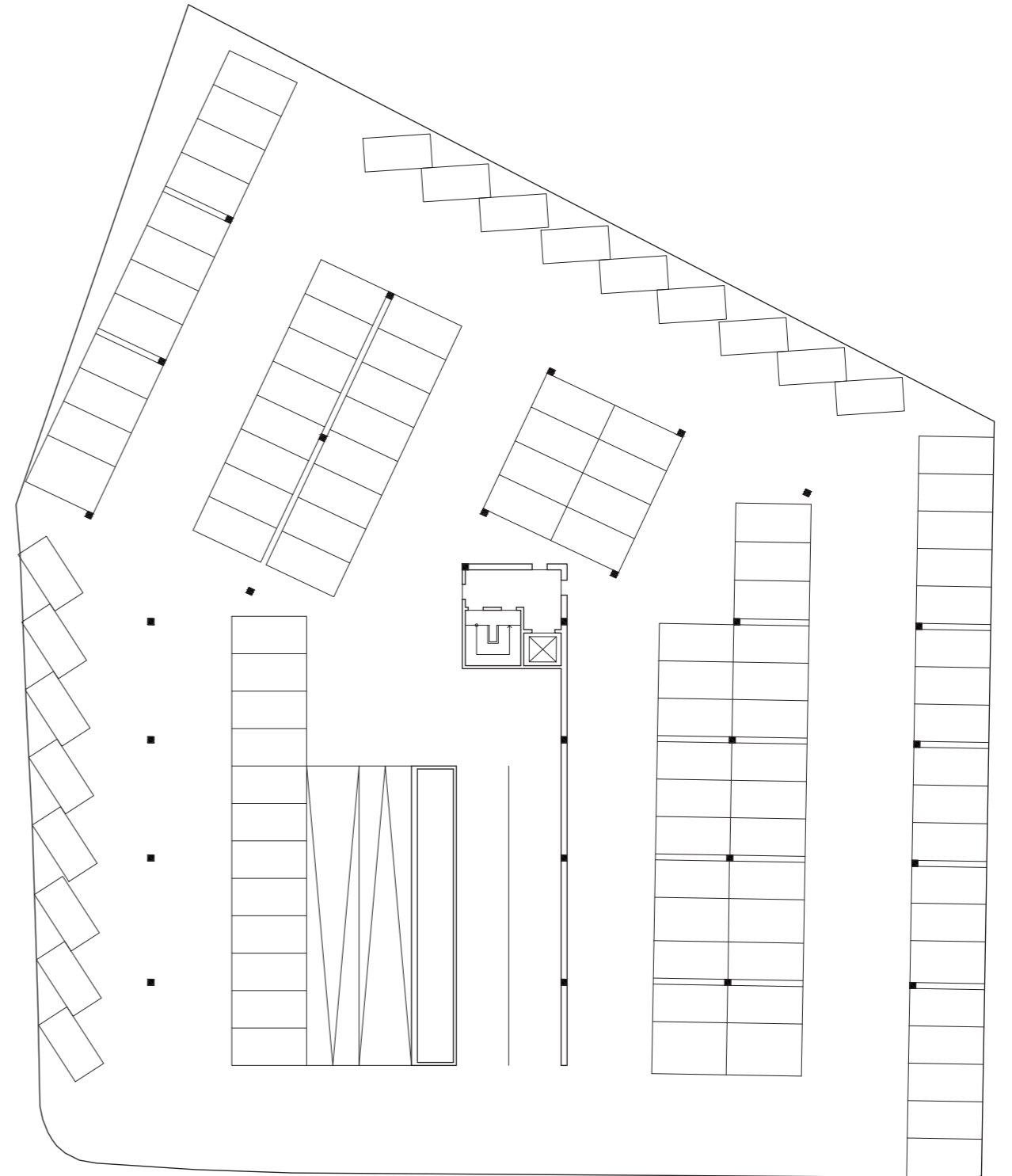
The mobility hub needs to fit 230 car parking lots and 400 bicycle parking lots. To create a calm outdoor area the car parkings are placed in two floors under the entrance square. The bicycle parkings are located above the ground to encourage daily exercise. The mobility hub also includes a bike repair shop and other public facilities.



+19



+16



Under ground x2

Scale 1:400



# Grid system

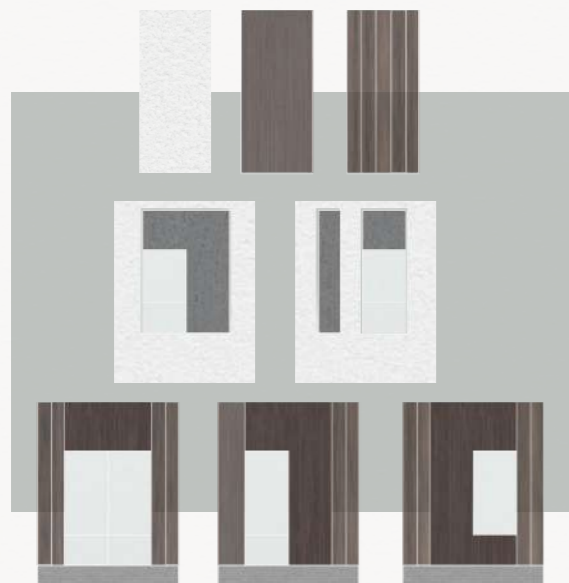
The building has two different grids with two materials. The structure in the low-medium tech part of the building is made of timber and the medium-high tech is in concrete.

The wooden part is built with columns and beams. Between the outer wall and the atrium wall where columns are integrated there is also one row of columns to make the spans shorter which is suitable for the timber structure.

For the concrete part we use a similar structure but with wider spans to fit the operation theaters. All the cores are in concrete to help stabilizing the building.

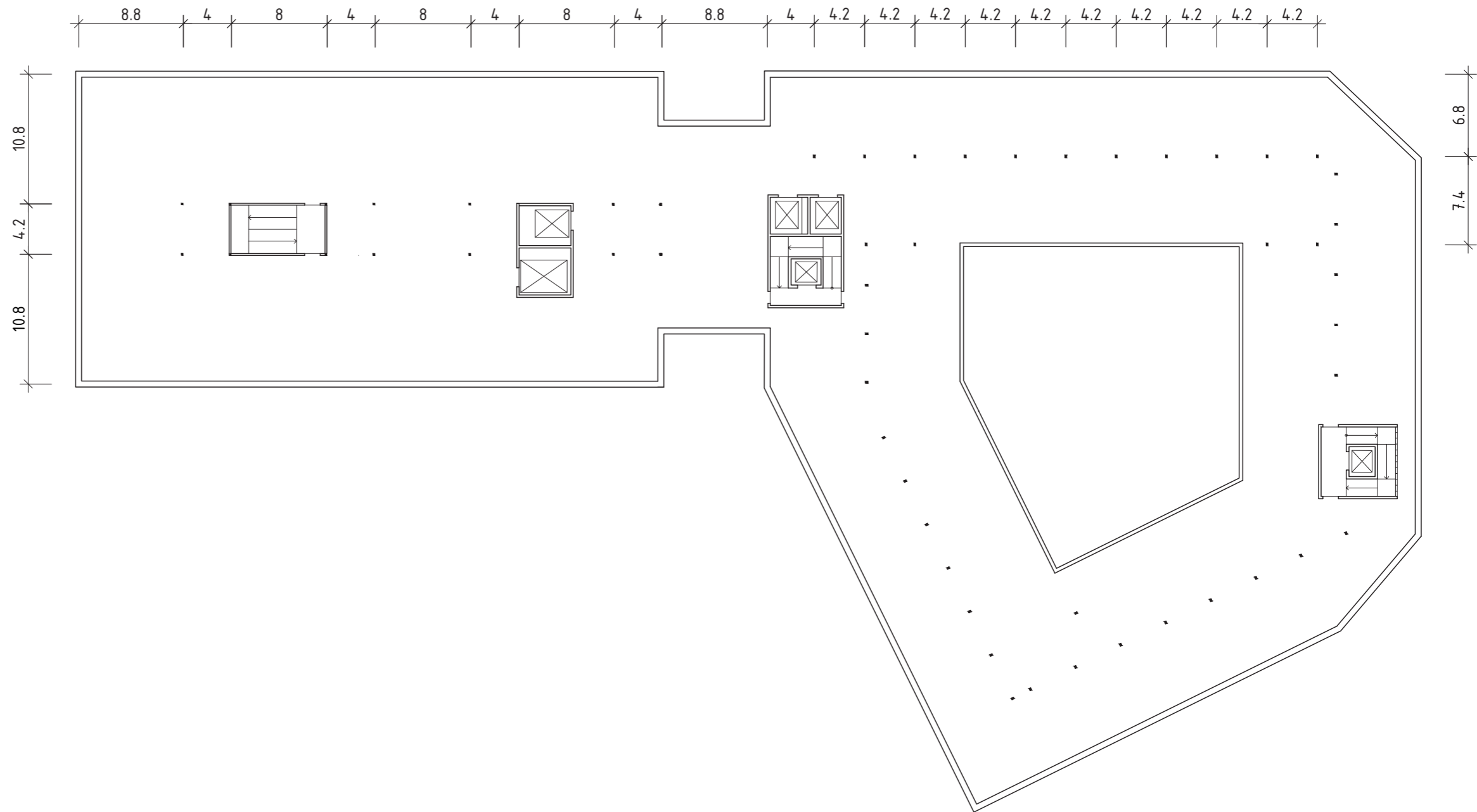
The wooden part of the building has a wooden facade and the concrete part of the building has a light brick facade.

The window position is changing depending on the function inside.



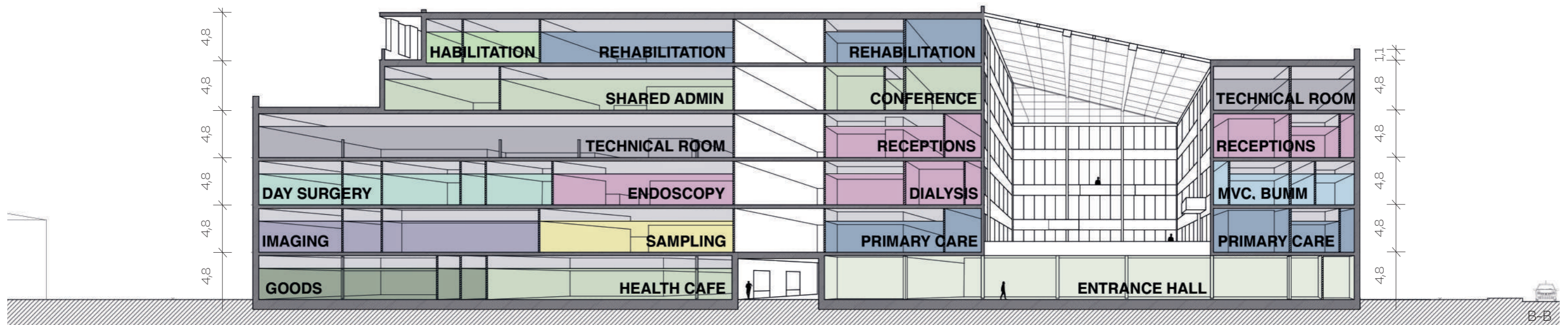
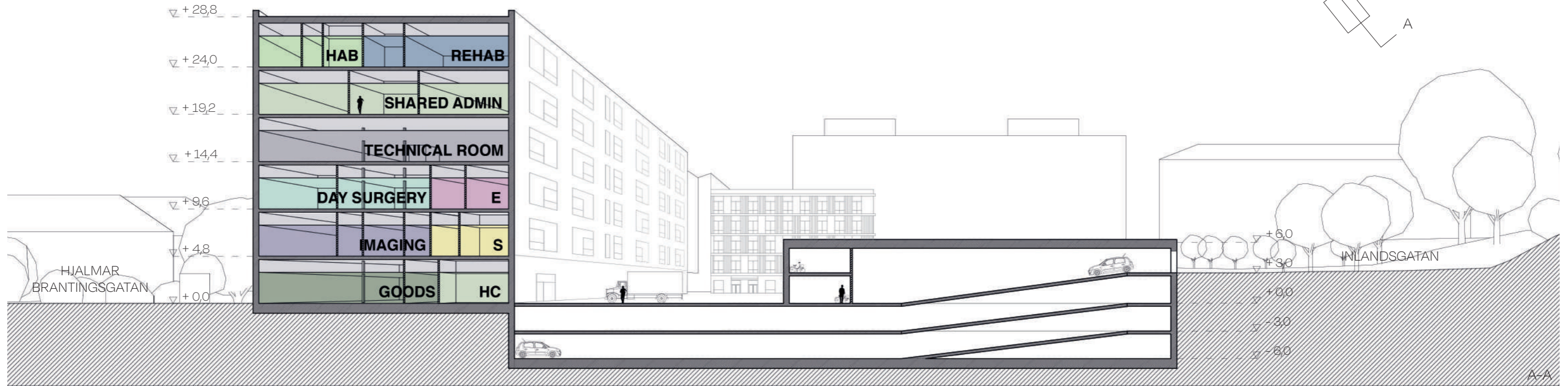
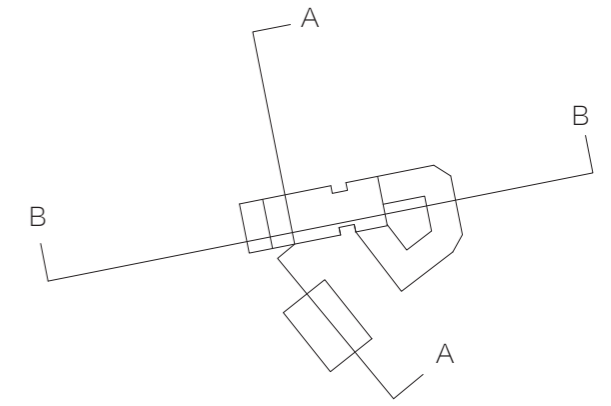
WINDOW PATTERNS

Scale 1:400



# Sections

From Inlandsgatan where the height differs with 3 metres, car drivers go into the mobility hub and find their way down under the ground. Cyclists have entrances on both floors above ground.



Scale 1:400



# Detail section and elevation

A

90 SEDUM  
22 DRAINAGE MEMBRANE  
220 INSULATION  
120 CLT  
240 GLUE LAM BEAM S800

B

2 PLASTERBOARD  
45 INSULATION  
220 INSULATION  
8 AIR GAP  
50 INSULATION  
95X200 WOOD SLATS/ELEMENT

C

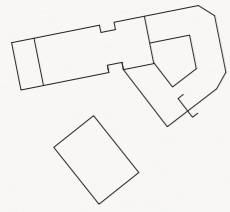
4 LINOLEUM FLOOR  
3 CORKMENT UNDERLAY  
120 CLT  
240 GLUE LAM BEAM S800

D

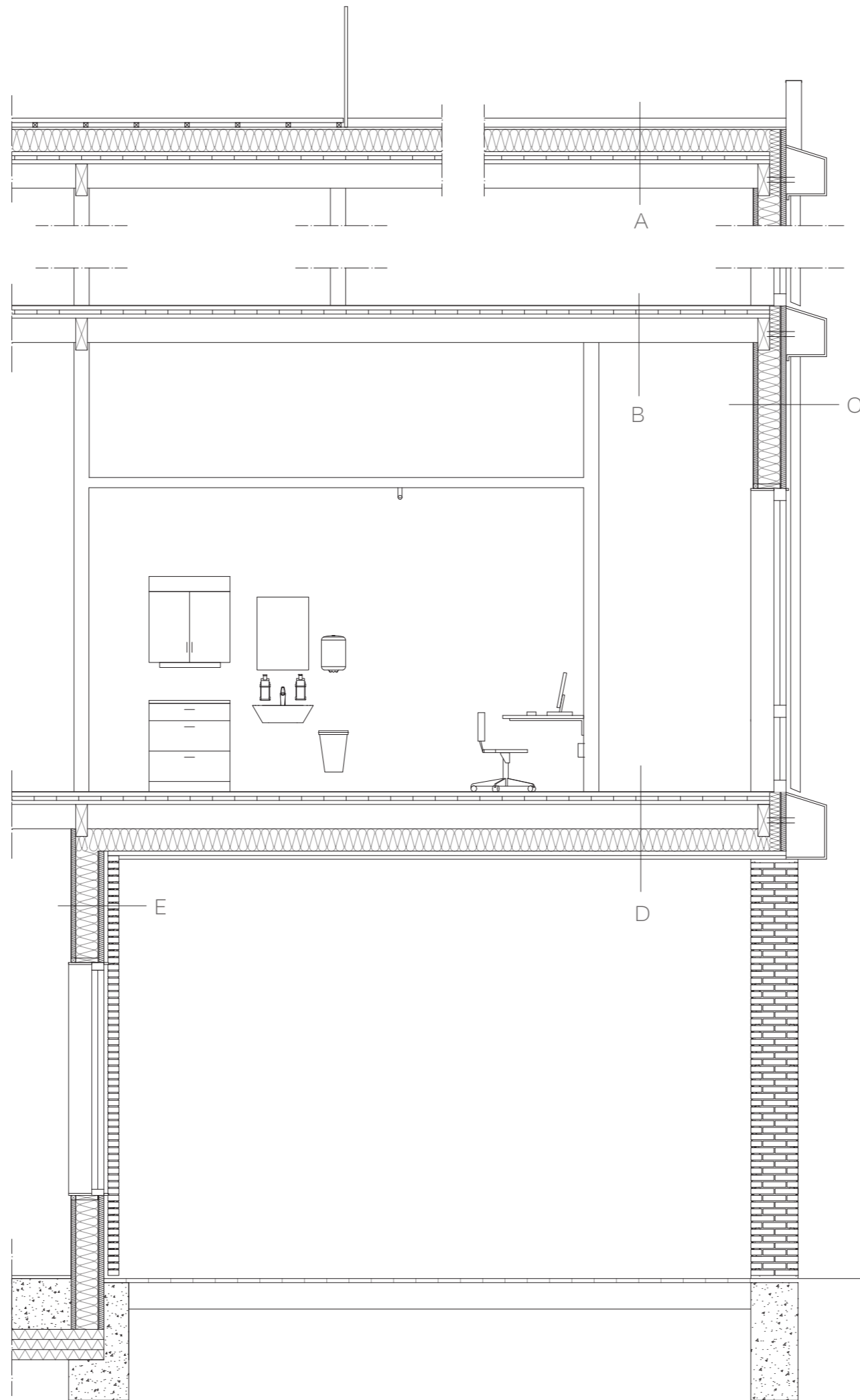
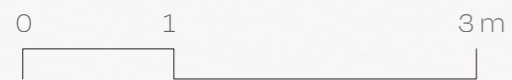
4 LINOLEUM FLOOR  
3 CORKMENT UNDERLAY  
120 CLT  
240 GLUE LAM BEAM S800  
220 INSULATION  
80 WOODEN SLATS

E

2 PLASTERBOARD  
45 INSULATION  
220 INSULATION  
8 WIND BOARD  
50 INSULATION  
40 AIR GAP  
107 BRICK



Scale 1:50



# North elevation

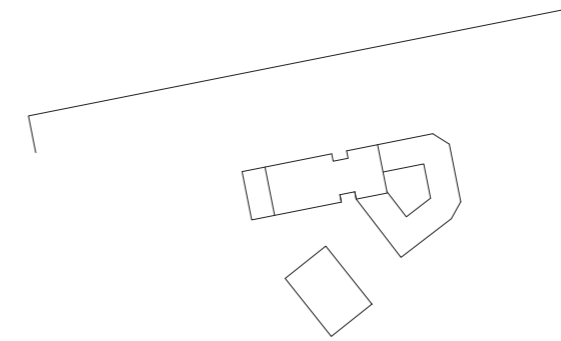


The north elevation towards Hjalmar Brantingsgatan shows where the two volumes of high and low tech functions meet. The glass facade highlights where the tunnel towards the entrance square is.

The wood facade has a horizontal expression with the floors going out and the brick facade

has a vertical expression due to the height of the windows.

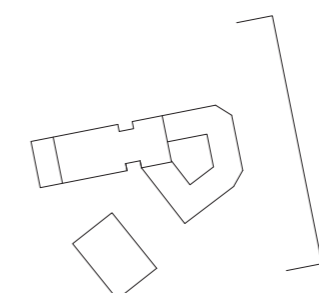
These two different facades rest on one massive ground floor that shows the unity of the hospital.



Scale 1:400



# East elevation



Scale 1:400





APART BUT TOGETHER

Lama Abbas  
Aliette de Briançon  
Isabell Johansson Cimen

