WOOD YOU CARE

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WOOD YOU CARE

INTRODUCTION

Skåne University Hospital in Lund is one of the oldest hospitals in Sweden. It has developed and grown since 1768. The central healthcare building "Blocket" was built in 1964 and is not able to adapt to future technical requirements. Region Skåne, the client behind this project, aims to develop a new high-tech healthcare building to replace outdated functions in Blocket. Region Skåne and Lund Municipality aim to develop Lund into a center of knowledge and research, connected by 'The Link of Knowledge'. The goal for the hospital area is to evolve into a high-tech healthcare center with high quality architecture and strong connections to the city of Lund and Lund's University.

The project 'WOOD YOU CARE' has been developed in five stages: site analysis, design strategies, masterplan design, building design concept and final project proposal. In this booklet the final project proposal is presented. In the past twelve weeks a given brief has developed into an architectural design of the new hospital in Lund. In the design strategies phase, twelve strategies have been developed that represent the core values of this project. These strategies have guided the entire process and can be followed throughout the booklet.

WOOD YOU CARE is a complex healthcare project with focus on sustainability and human centred design. The brief is divided into a low- and high-tech building, connected by a bridge, 'The Stitch'. Located near the Universitetssjukhuset tram stop, the new facilities form the new entrance to the hospital area and open up to a new vibrant boulevard that connects the hospital to The Link of Knowledge.

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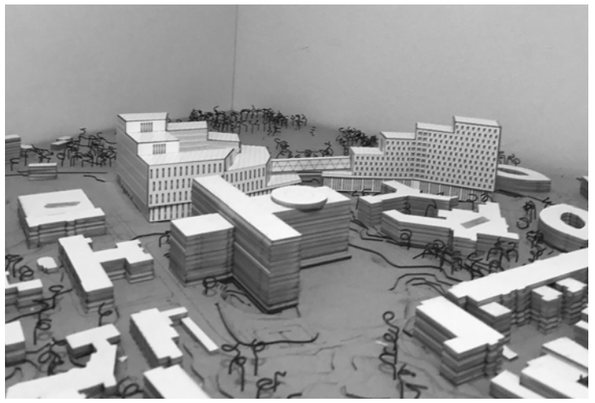
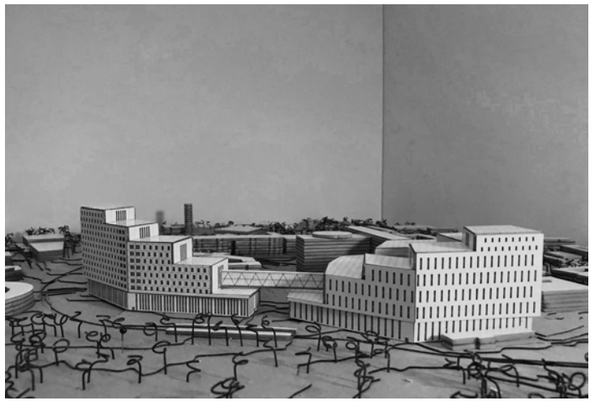
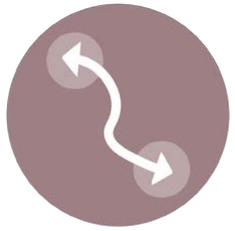




DESIGN STRATEGIES

SITE & CONTEXT

CONTEMPORARY DESIGN



CREATE BOULEVARD

BREAK DOWN VOLUMES

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USE HOMELIKE MATERIALS

FROM CHALLENGE TO DESIGN STRATEGY

SITE & CONTEXT

CONTEMPORARY DESIGN

The hospital has developed during many years which shows in the different styles and materials of the buildings. By adding a building from our time, a contemporary building design, the trend continues. The new buildings introduce a new material, original shape and modern approach to healthcare architecture.

CREATE BOULEVARD

Lund Municipality propose a 'Hospital Link' to connect the hospital area to The Link of Knowledge. By creating a public boulevard across the site the hospital becomes more welcoming to patients and visitors. The boulevard is further activated by new commercial functions and improved outdoor public functions.

BREAK DOWN VOLUMES

The given brief contains about 110.000 sqm, which will inevitably result in a huge building on the 14.000 sqm site. The challenge is to keep a human scale in significant public areas, and create a welcoming entrance to the area. This is achieved by "breaking down" the volume toward the boulevard.

BRIEF & LOGISTICS

SHORT FLOWS IN HOT FLOOR

Because of the size of the brief, some departments will be far apart. Creating short flows in the hot floor, where the most urgent care takes place, is a priority. The aim is to limit distances within the hot floor by creating strong vertical and horizontal connections.

DIVISION OF FUNCTIONS

Hospital buildings ages fast because of the developing healthcare. It is hard to imagine how the future facilities will work. A strategy to future proof the buildings is to divide the structures into two. The high tech is more robust and stay the same over time while the low tech construction is more flexible and able to change in the future.

OVERVIEW OF FLOWS

To strengthen the feeling of security and avoid confusion, the strategy is to create an easy orientation and good understanding of the building for visitors. A clear overview of patients and flows give staff a better working environment.

SUSTAINABILITY & FUTURE PROOFING

WOOD CONSTRUCTION

The climate crisis is urgent. The building sector contributes to a big part (40%) of Sweden's CO_2 emissions. By challenging building conventions, architects can make a change. The design strategy is to use timber in construction, facade, details and interior design.

GREEN SOFT MATERIALS

Greenery improves the biodiversity and microclimate on site. New vegetation, green roofs and soft ground materials infiltrate water and lower air pollution. Trees and bushes surve as a buffert zone and reduce the noise from the tram line.

DIVIDE STRUCTURE

The high tech building requires a traditional construction because of heavy technology. By separating the functions, the low tech building can have a more sustainable timber construction, with CLT (cross laminated timber) massive walls and glulam beams.

HEALTH PROMOTING DESIGN

NATURE IN WAITING AREAS

In order to reduce the stressful environment in waiting areas, patients are provided with views and access to nature. A courtyard near the emergency waiting area allows patients to go ourdoors without leaving the facility.

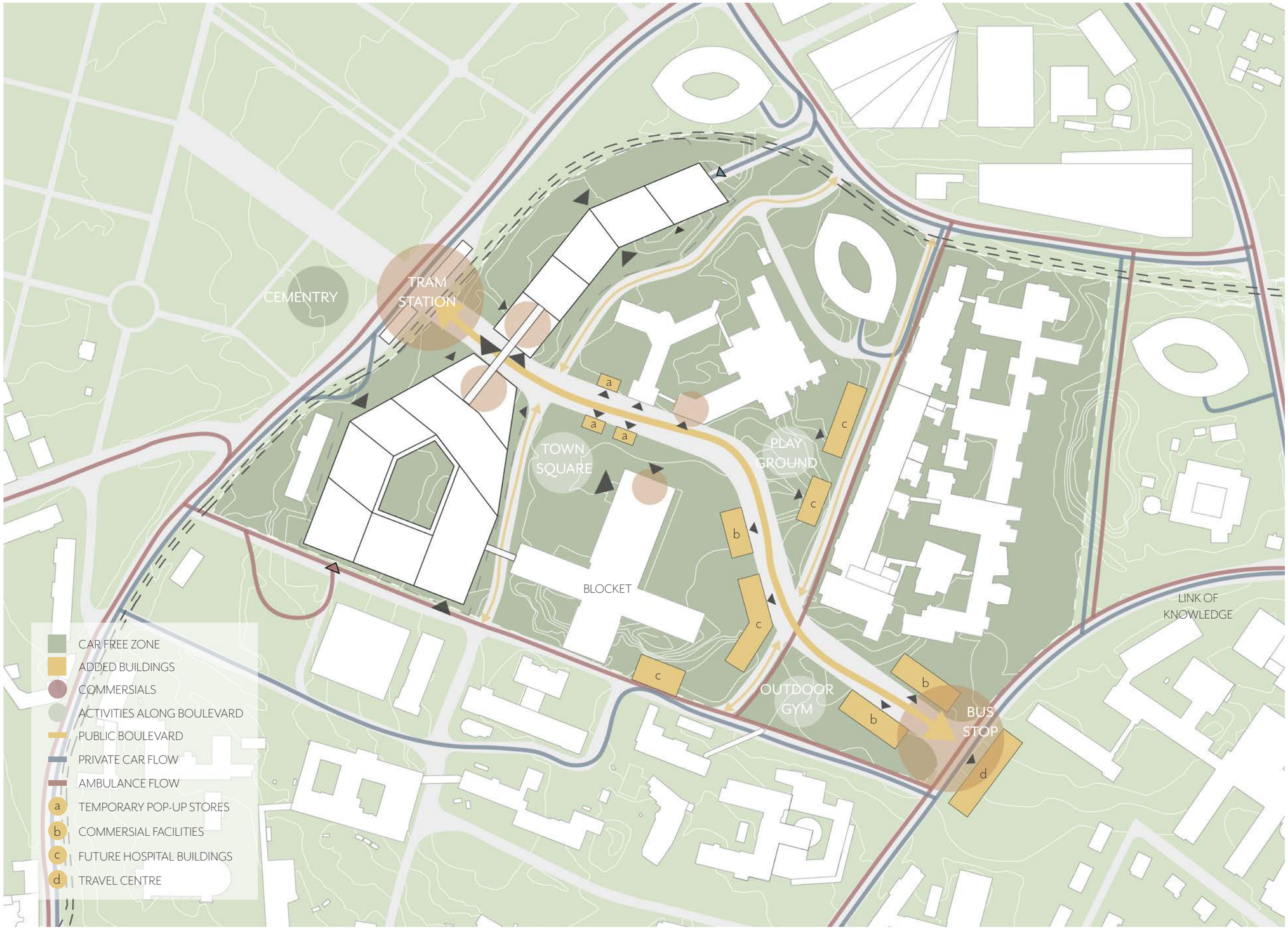
PATIENT ROOMS FACING NATURE

Evidence based design research shows that a view towards nature from a ward room can shorten and imrove the patients stay (Roger S. Ulrich, 1984). Architecture plays a significant role in the healing process. The strategy is for all patient rooms to have good daylight conditions and a view of nature.

USE HOMELIKE MATERIALS

A clinical environment in hospitals is not always nessesary. Because of the division of functions the buildings can be treated in different ways. The strategy is to work with homelike materials and colors in ward units and other low tech facilities.

SITE ANALYSIS



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SITE PLAN

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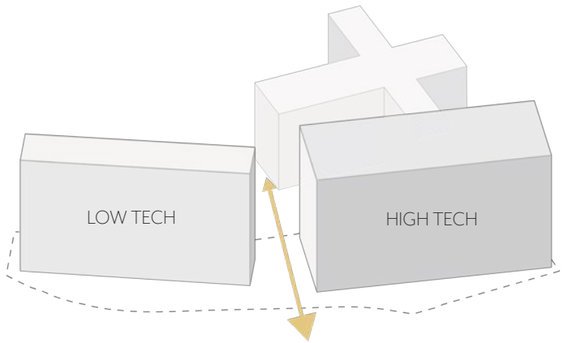
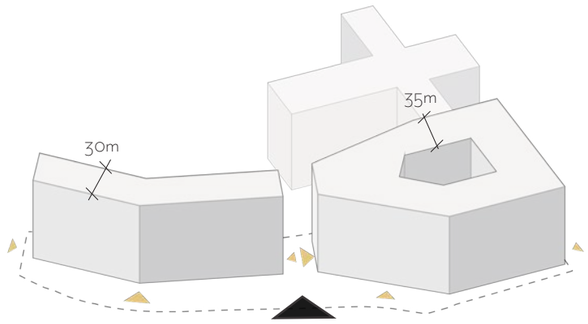
CONCEPT



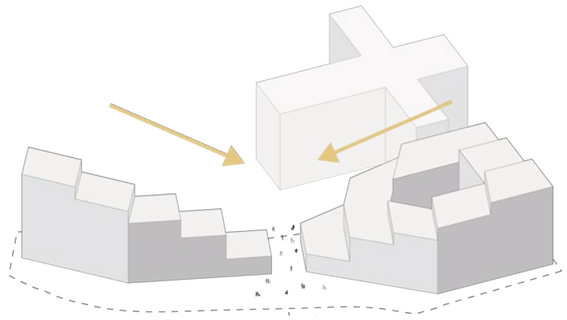
1. DIVIDE BRIEF

The brief is divided in low- and high-tech healthcare facilities. High tech is placed in close connection to the existing hospital Blocket. The boulevard crosses through the site and creates the new hospital entrance, connecting the tram stop and The Link of Knowledge.



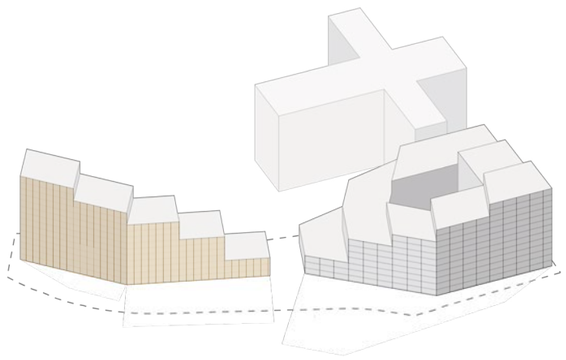
2. ENTRANCES

The volumes are shaped by their surroundings and their function. A courtyard is placed in the high tech building to create a functional building body and let in daylight The entrances are placed in different parts of the building to separate flows. Public entrances are placed towards the boulevard.



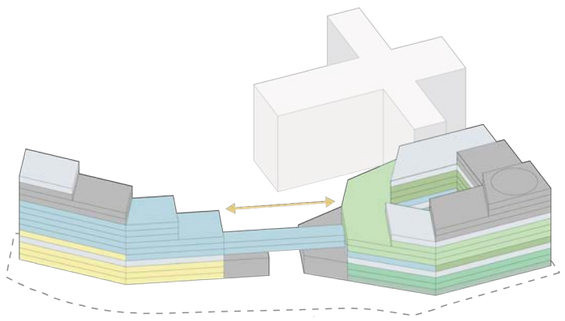
3. HUMAN SCALE

In order to create human scale with a big brief the shape decreases towards the boulevard. The shape acts as a sculpture in the landscape and clarifies wayfinding to the main entrance and public areas.



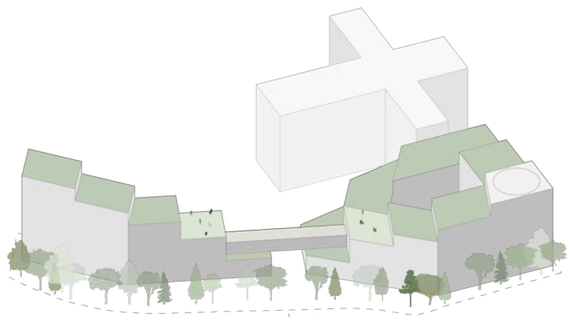
4. CONSTRUCTION GRID

The two buildings consists of different constructions because of their different function. The low tech timber construction has a grid of 4,8 x 6 m in CLT pillars. The high tech construction consists of a grid of 9,6 x 9 m in concrete pillars.



5. BRIEF LAYOUT

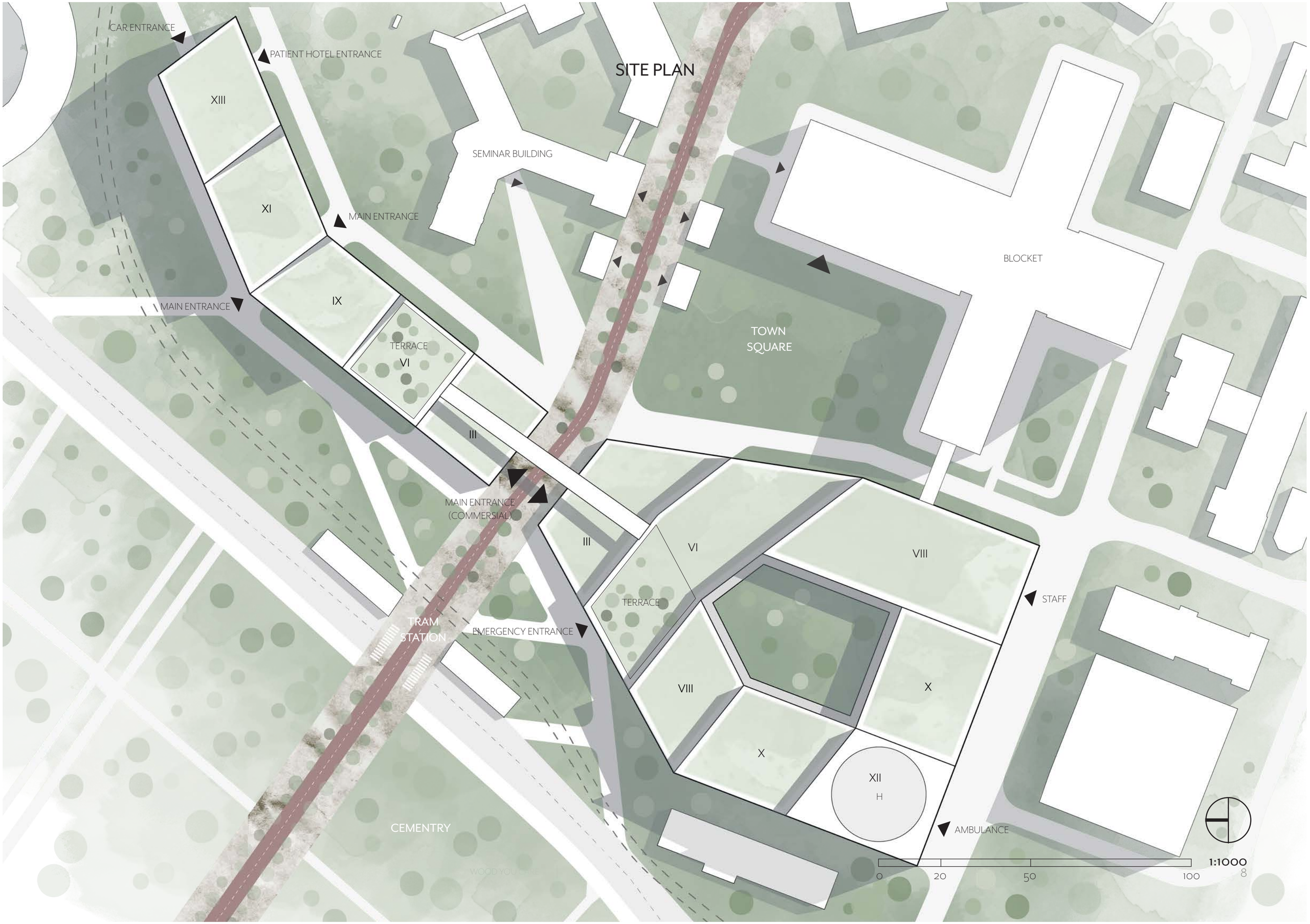
The brief is divided in a low- and high-tech functions. The two buildings are connected by a two storey bridge.



6. GREENERY

Two roofs are used as terraces, while the rest are provided with green roofs to infiltrate water. Between the building and tramline a buffet zone with greenery is created to reduce noise and bring more nature into the site.

SITE PLAN


CAR ENTRANCE
PATIENT HOTEL ENTRANCE
XIII
XI
MAIN ENTRANCE
SEMINAR BUILDING
MAIN ENTRANCE
IX
TERRACE
VI
III
BLOCKET
TOWN
SQUARE
MAIN ENTRANCE
(COMMERSIAL)
III
VI
VIII
TERRACE
STAFF
TRAM
STATION
EMERGENCY ENTRANCE
VIII
X
X
XII
H
AMBULANCE
CEMENTRY
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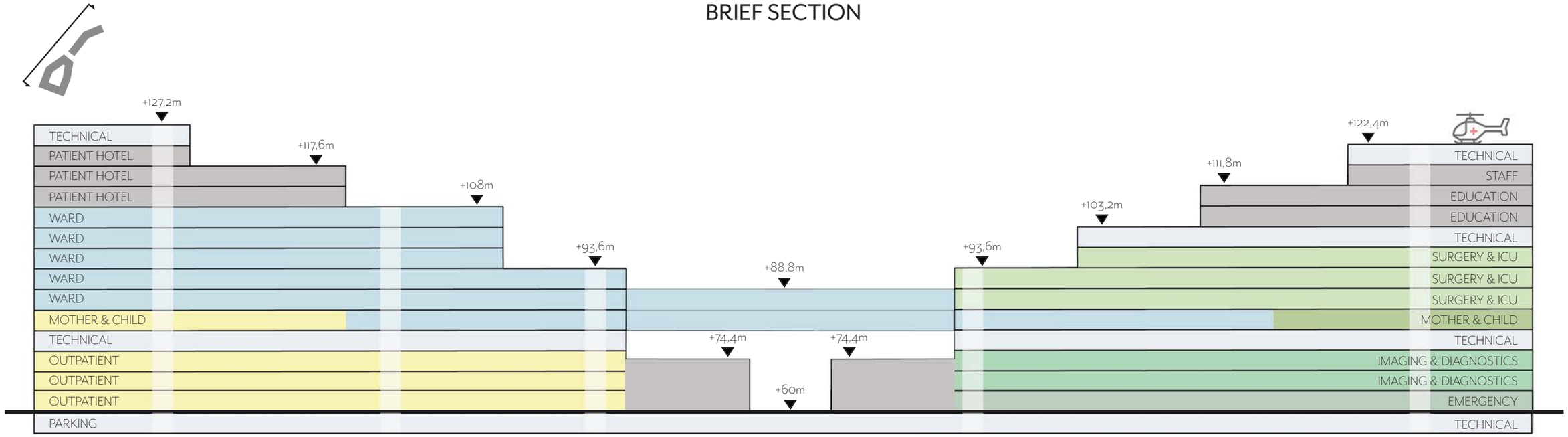
0
20
50
100

VIEW FROM CEMENTERY

BRIEF SECTION



LOW TECH

HIGH TECH

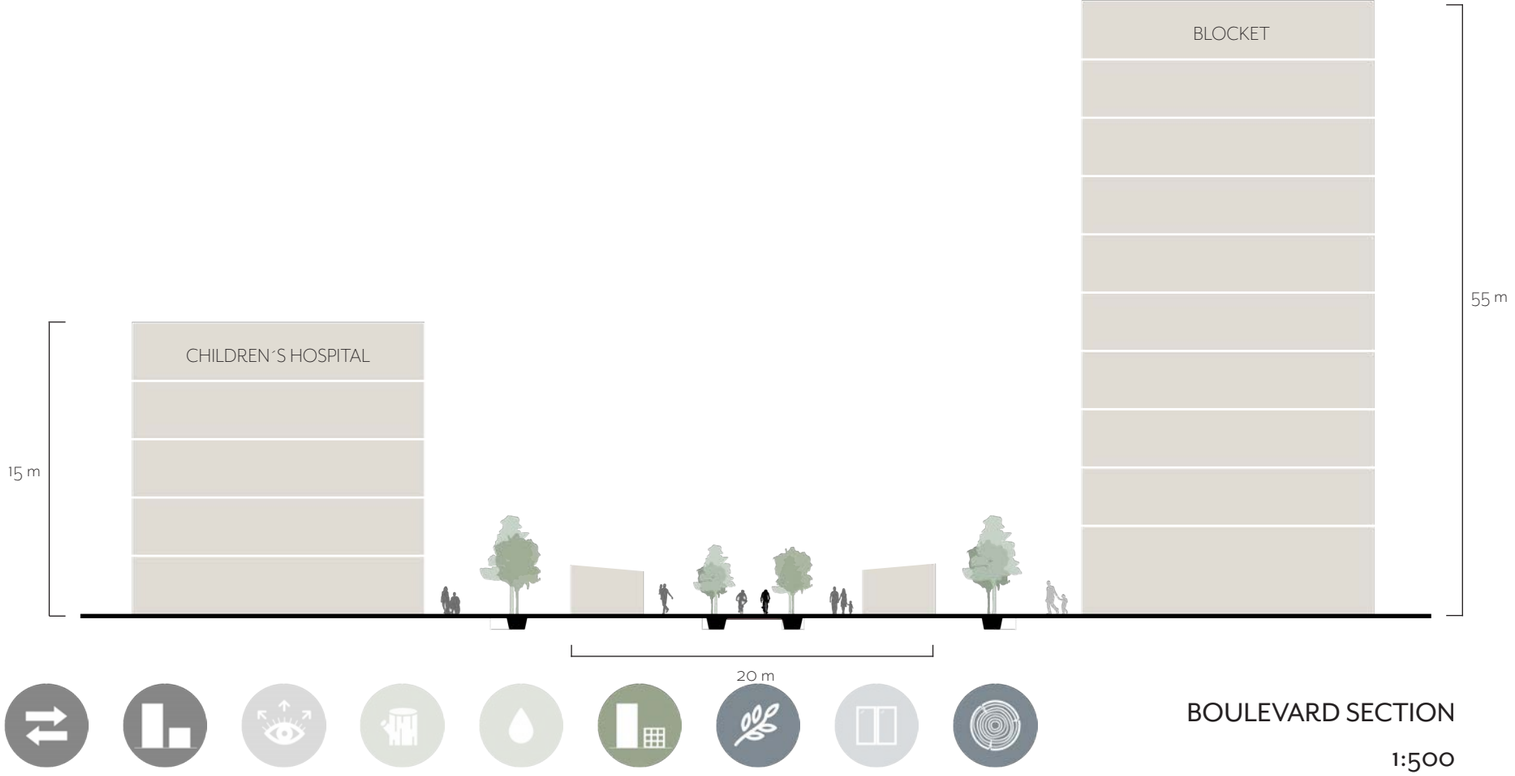
1:1000

BRIEF SECTION

By dividing functions into a high tech and a low tech building, we provide good logistics and short flows, as most of the movement happens within each building. The most essential vertical communication between the buildings is between the mother and child functions and between the ward and ICU and Surgery, so they are linked by a bridge. The bridge is in close connection to elevators, making walking distances shorter for the staff. Within the buildings, outpatient functions are placed closest to the ground. Inpatient functions are located in the middle, providing both privacy and good connections. In the top of the building, the independent patient hotel is placed. In addition to the brief, we have added education and staff facilities on top of the high tech building, as a way to invite Lund University into the hospital.

BOULEVARD SECTION

The excising buildings along the future boulevard lack a human scale. Therefore small pop-up functions are added in order to lower the scale. The boulevard will be a car free area. In the middle of the boulevard a bike lane is placed for easy access. To prevent the path to be flooded in the future, due to prediction of increased rain falls, the bike lane is lower to keep the walking paths free from water during the 100 year-rains.



BOULEVARD SECTION

1:500

FLOWS

13. TECH

12. PATIENT HOTEL + TECH

11. PATIENT HOTEL + STAFF

10. PATIENT HOTEL + EDUCATION

9. WARD + EDUCATION

8. WARD + TECH

7. WARD + ICU SURGERY

6. WARD + ICU SURGERY

5. WARD + ICU SURGERY

4. MOTHER AND CHILD

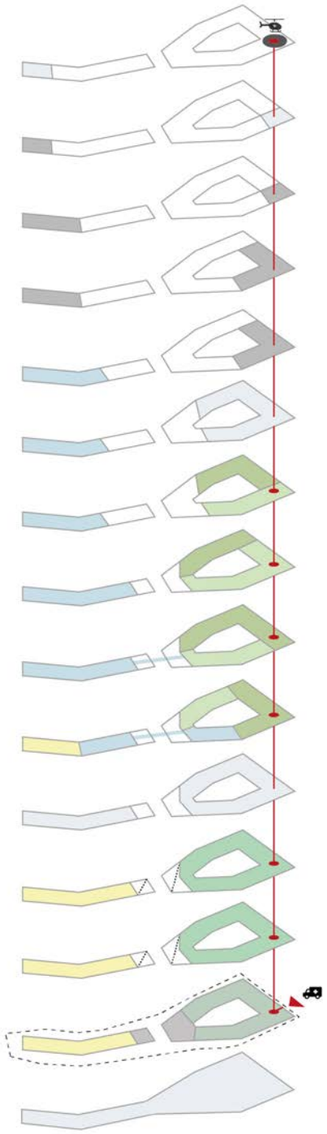
3. TECH

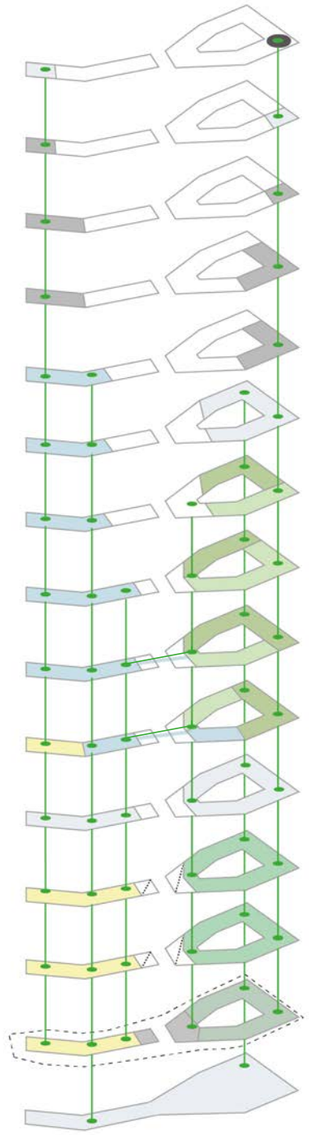
2. OUTPATIENT + IMAGING

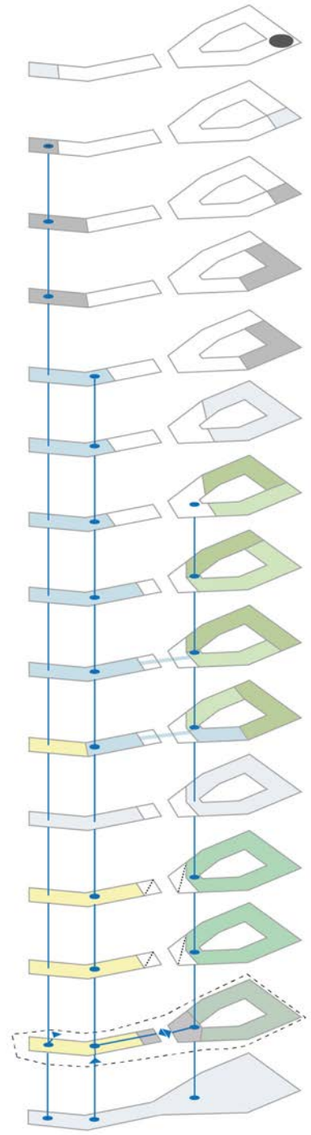
1. OUTPATIENT + IMAGING

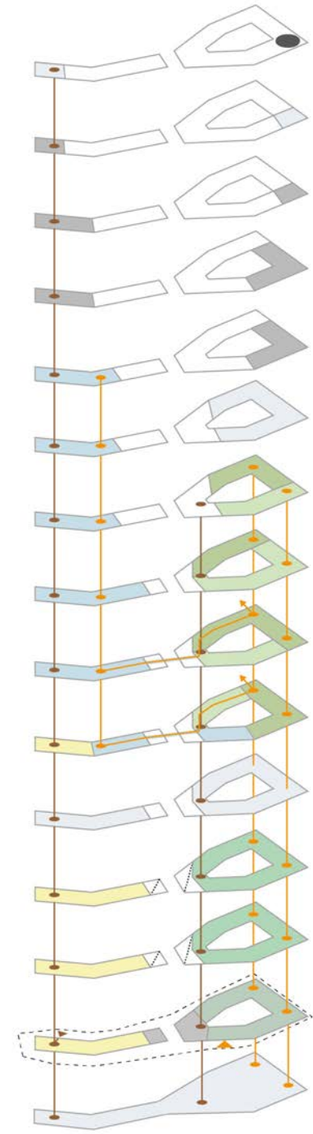
0. OUTPATIENT + EMERGENCY

-1. UNDERGROUND









EMERGENCY FLOW

Two extra large ICU elevators go straight from the helipad to the emergency unit, and trauma room. The trauma room is directly reached from the ambulance hall. These are the most urgent flows.

STAFF FLOW

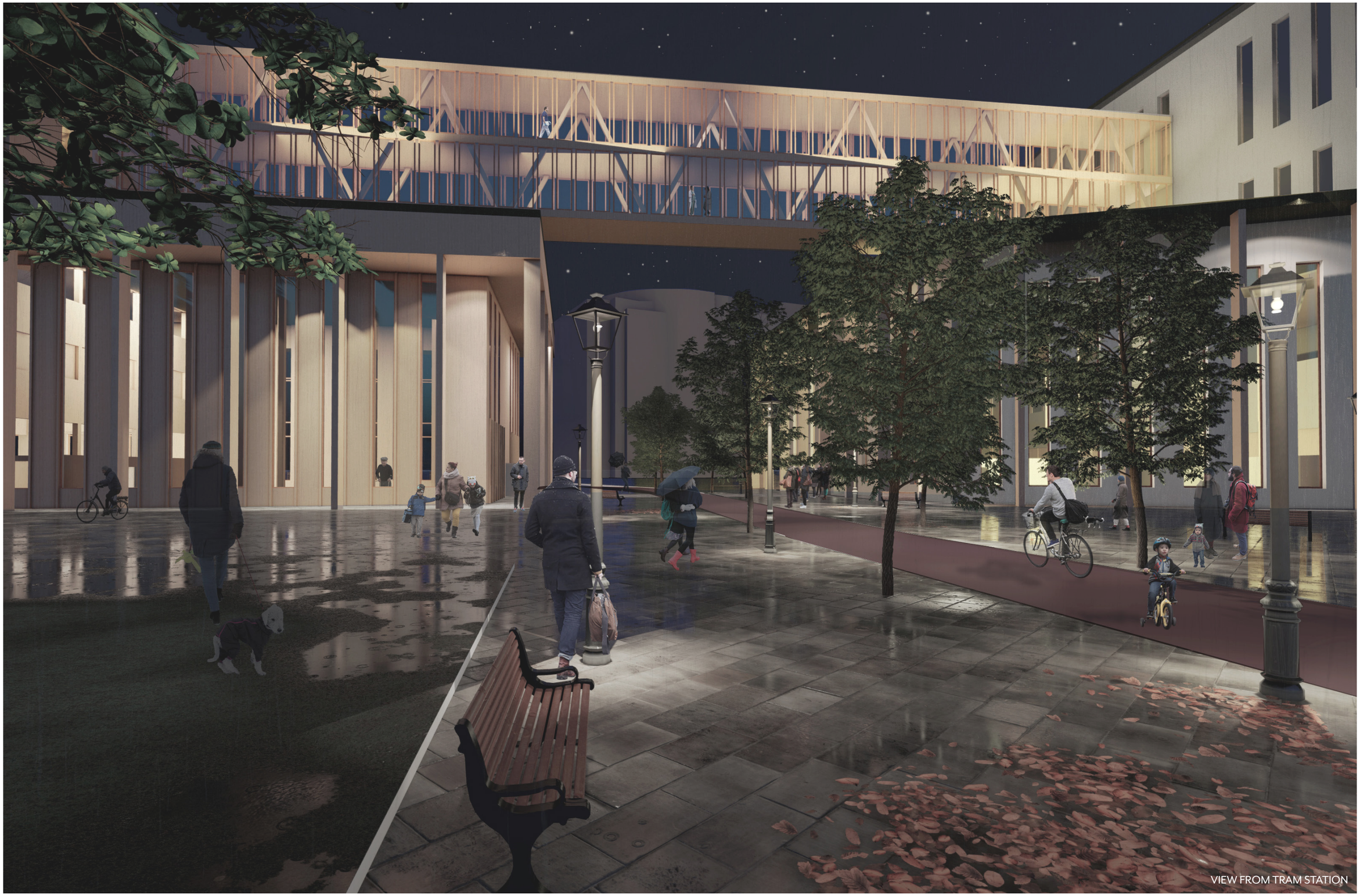
The staff manage all the activities in the hospital and can therefore use all elevators, with a direct communication from the parking garage, culvert and dressing room.

VISITOR FLOW

Visitors are using one main elevator in each building, placed near the main entrance. It improves the wayfinding within the building and gives a better overview for staff. The patient hotel has its own entrance and direct vertical communication.

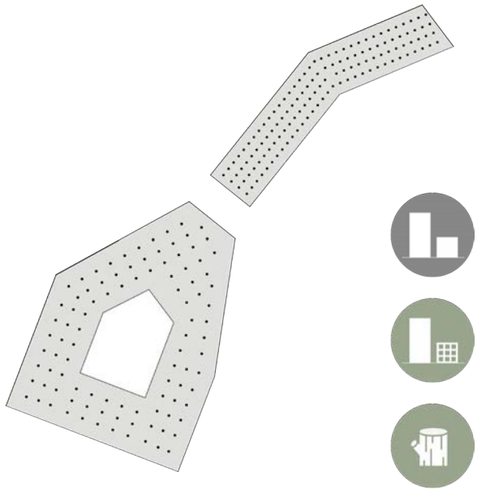
BED AND GOODS FLOW

The bridge is used to transport beds between the two buildings. Elevators are placed close to the healthcare facilities. Goods use one main elevator in each building to concentrate the flow. They use the same large elevators as the beds.



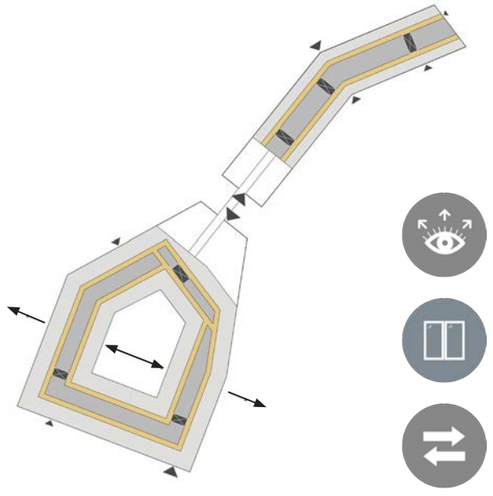
VIEW FROM TRAM STATION

CONCEPT FLOORPLANS



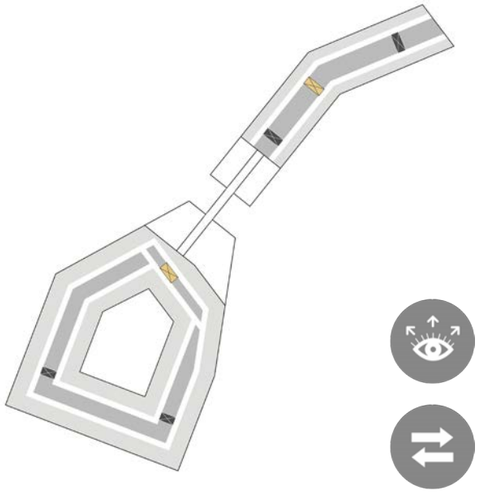
GRID

The floorplan layout is following the construction grid. The low tech grid is 4,8 x 6 m in timber construction and the high tech grid is 9,6 x 9 m in concrete construction.



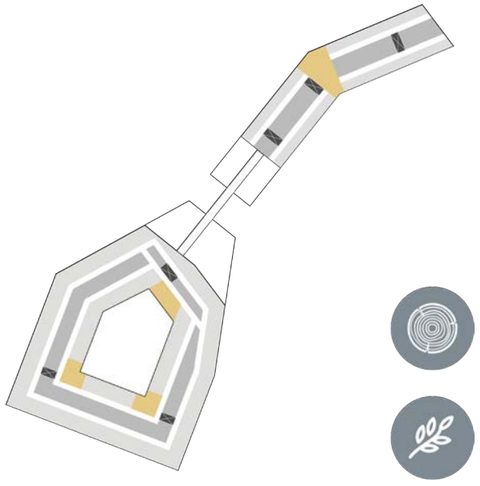
CORRIDORS & PRIVACY

Double corridors creates a core where functions such as vertical communication, storage and shafts are placed. Functions requiring daylight are placed along the facade.



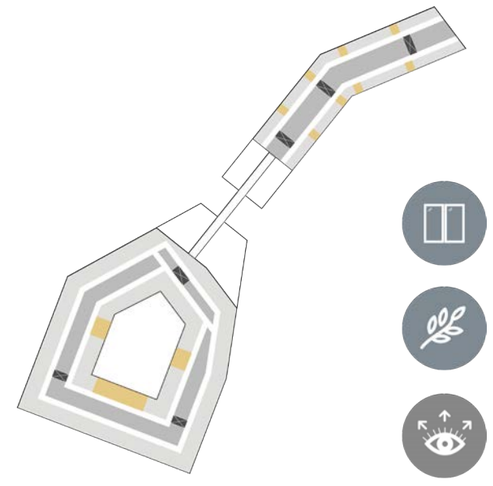
VERTICAL COMMUNICATION

For easy access and wayfinding, the visitor elevators are placed close to the reception and waiting areas.



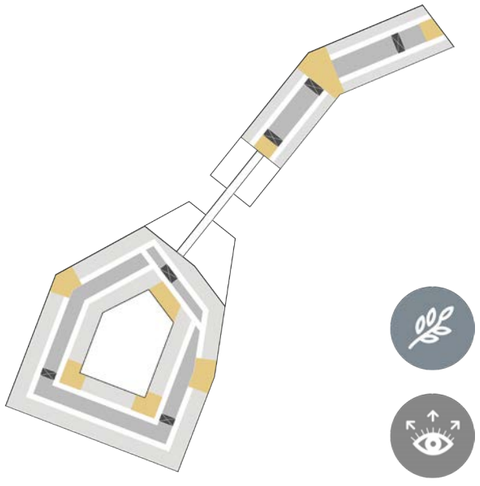
WAITING AREAS

Waiting areas are placed close to the entrances for good orientation and staff overview of patients. They provide views towards nature for a calming effect.



STAFF AREAS

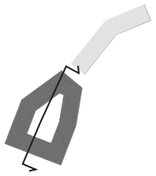
Staff rooms are placed along the facade for good daylight conditions. They are spread out in the building to improve overview of patients.



COMMON AREAS

Some common areas are placed in the end of the buildings for a private atmosthere, while others are placed in the middle of the building order to stimulate contact and interaction.

SECTION



HIGH TECH SECTION

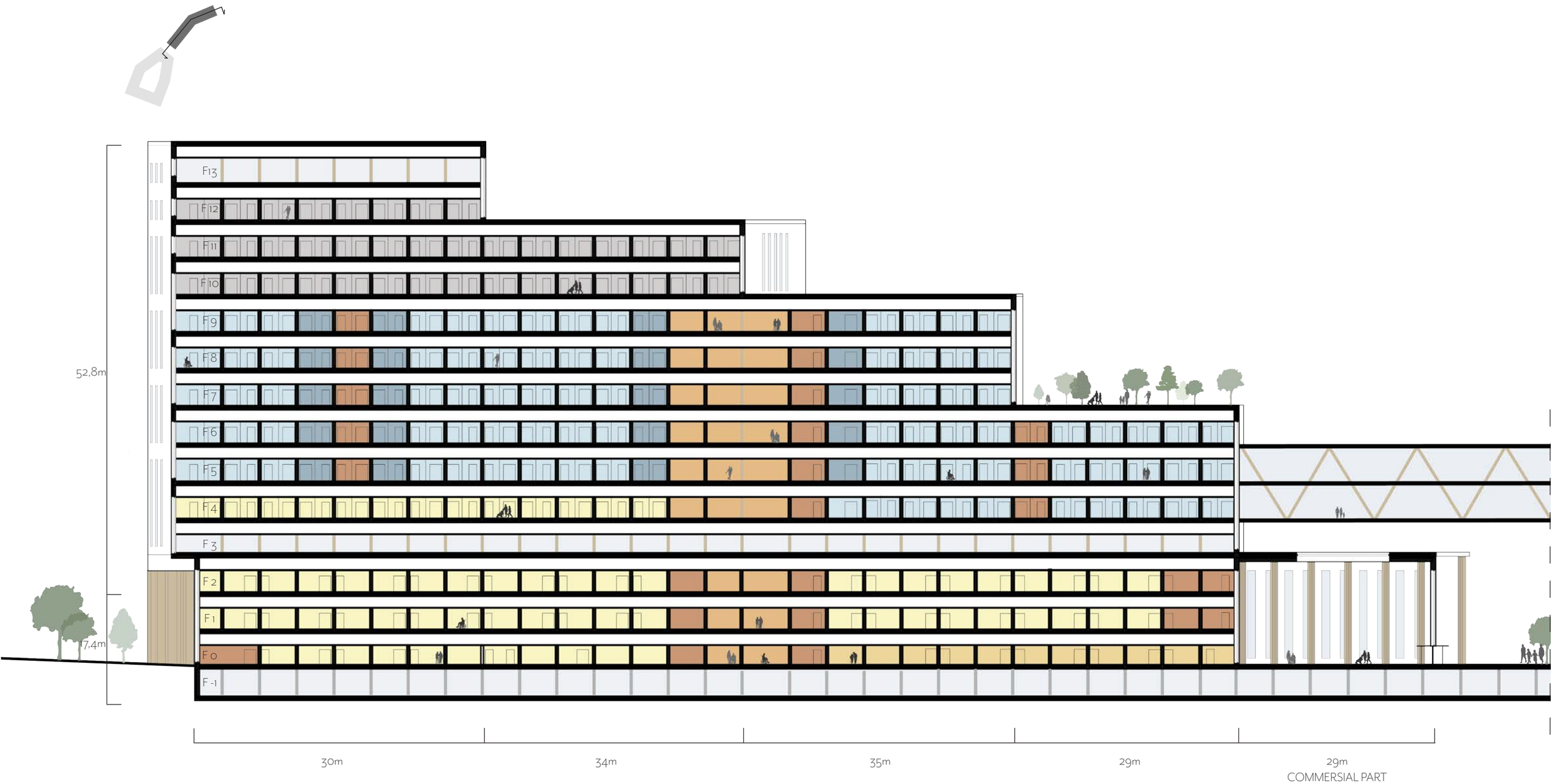
An emergency unit on the ground floor is connected vertically with imaging and diagnostics, intensive care units and surgery floors above. The mother and child floor is connected to the low tech building through the bridge. Below the surgery units, a technical floor that spans all over the building is placed. The upper levels host facilities for education and staff. In the future, they can be used for future hospital extensions.

- emergency unit
- intensive care unit
- surgery rooms
- imaging and diagnostics
- education
- staff rooms
- waiting / common rooms
- technical
- storage

1:500

0 10 50

SECTION



LOW TECH SECTION

The outpatient flows are limited to the lower part of the building. Outpatients come to the hospital for short visits and can reach their department easily. This division also allows for more privacy and better hygiene in the inpatient facilities further up in the building. The ward units are located in the midst of the building. If a patients state changes, they are moved between the ward, ICU and Surgery. The staff moves in-between the buildings through the bridge. The patient hotel on top benefits from a great view of Lund.

- patient hotel
- ward room
- IMCU room
- staff
- common room
- outpatient
- technical
- storage

1:500

0 10 50

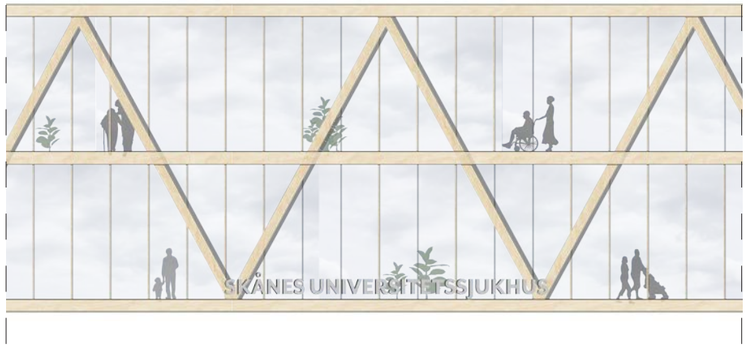
FACADE

LOW TECH

HIGH TECH

1:1000

1:100



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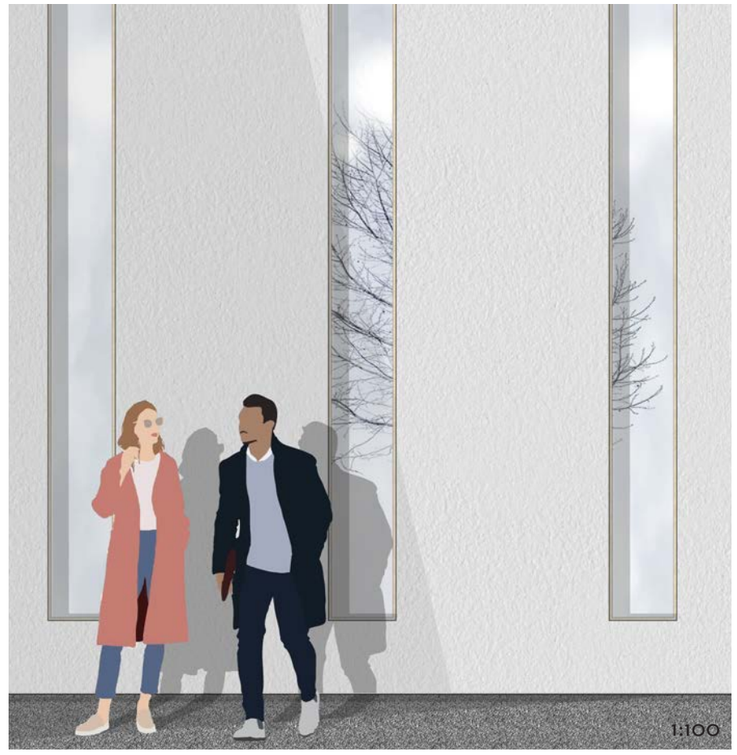
FACADE

The facade materials and details are telling a story about the function and construction of the building. The robust high-tech building with a concrete construction has a light and uniform plaster façade. Tall narrow windows span over several floors to break down the scale. The lighter and more flexible low-tech building with a timber construction has a wooden facade and details. The 4,8 m construction grid is revealed in the facade, and helps break down the scale. From the West, the buildings look like twins in shape. The contrast in materials make the wholeness dynamic, yet harmonious. The arcade links the buildings together, and contribute to a more human scale on the ground level.



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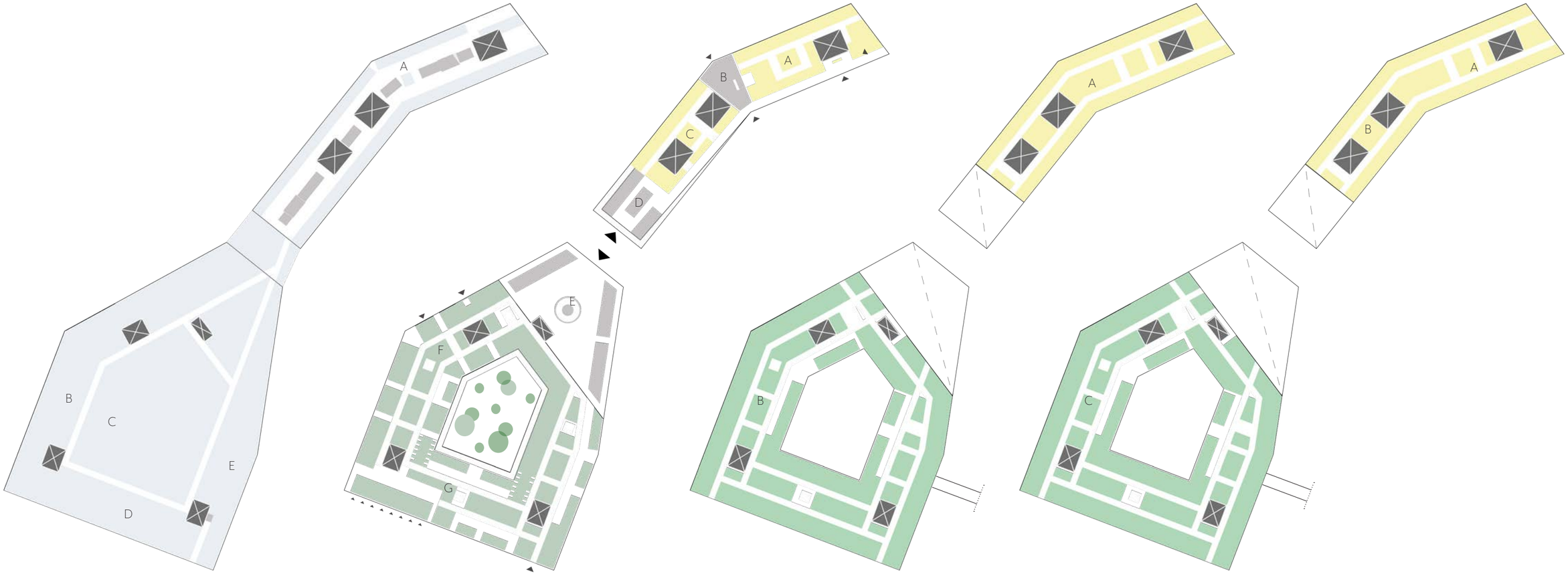
FLOORPLANS

TOTAL BTA: 154 650 sqm



-1. UNDERGROUND

A. PARKING GARAGE 4800 sqm
B. CYCLOTRON 1000 sqm
C. STE 1500 sqm
D. BICYCLE GARAGE 2500 sqm
E. DRESSING ROOMS 7000 sqm

0. ENTRANCE

A. DAY SURGERY 1500 sqm
B. RECEPTION 500 sqm
C. PRIMARY CARE 1330 sqm
D. RESTAURANT 750 sqm
E. RECEPTION + COMMERSIAL 1950 sqm
F. EMERGENCY WARD 9000 sqm
G. DELIVERY EMERGENCY 420 sqm

1. OUTPATIENT

A. KIDNEY DIALYSIS 4200 sqm
B. IMAGING AND DIAGNOSTICS 9400 sqm

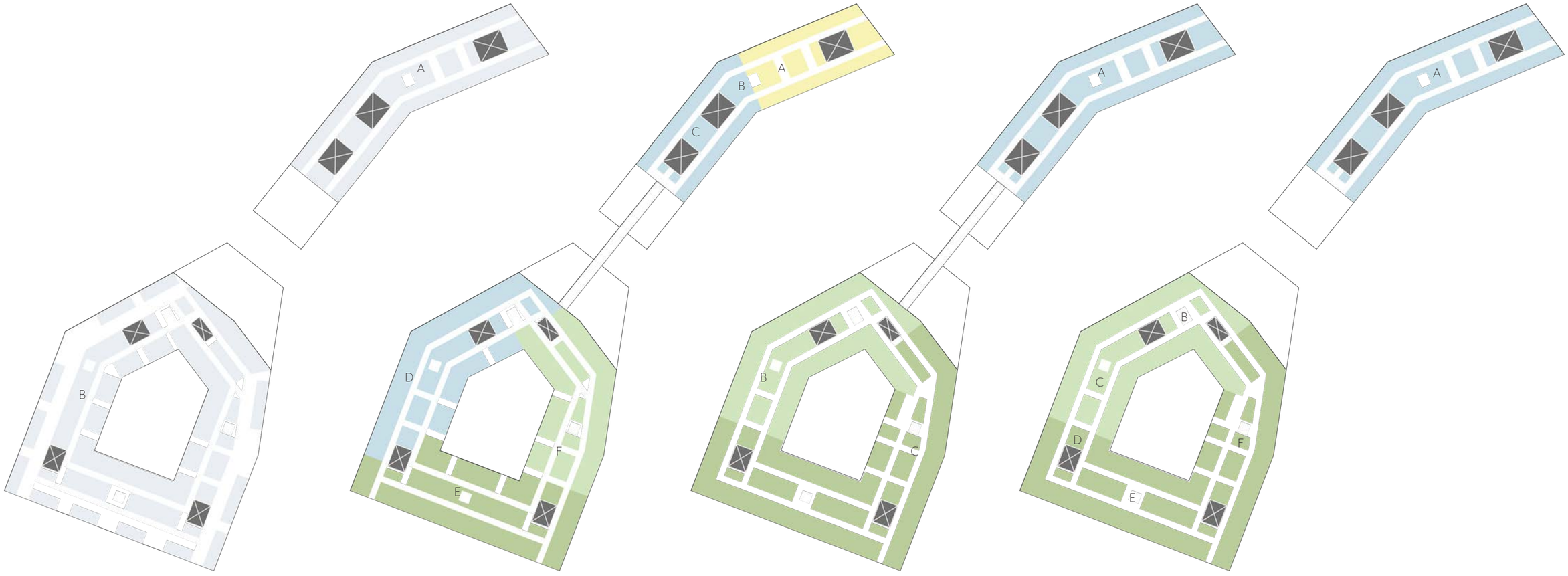
2. OUTPATIENT

A. MOTHER ULTRASOUND 1900 sqm
B. GYNECOLOGY 2300 sqm
C. IMAGING AND DIAGNOSTICS 9400 sqm

1:2000

0 40 100 200

FLOORPLANS



3. TECHNICAL

A. TECHNICAL 9400 sqm
B. TECHNICAL 4000 sqm

4. MOTHER & CHILD

A. NEONATAL RECEPTION 500 sqm
B. PRENATAL WARD 1800 sqm
C. NEONATAL COMMON SPACE 1700 sqm
D. DELIVERY WARD 3200 sqm
E. DELIVERY OPERATION 800 sqm
F. NEONATAL ICU WARD 5400 sqm

5. SURGERY, ICU AND WARD

A. WARD 4000 sqm
B. ICU 2400 sqm
C. ANESTESHIA SURGERY 7000 sqm

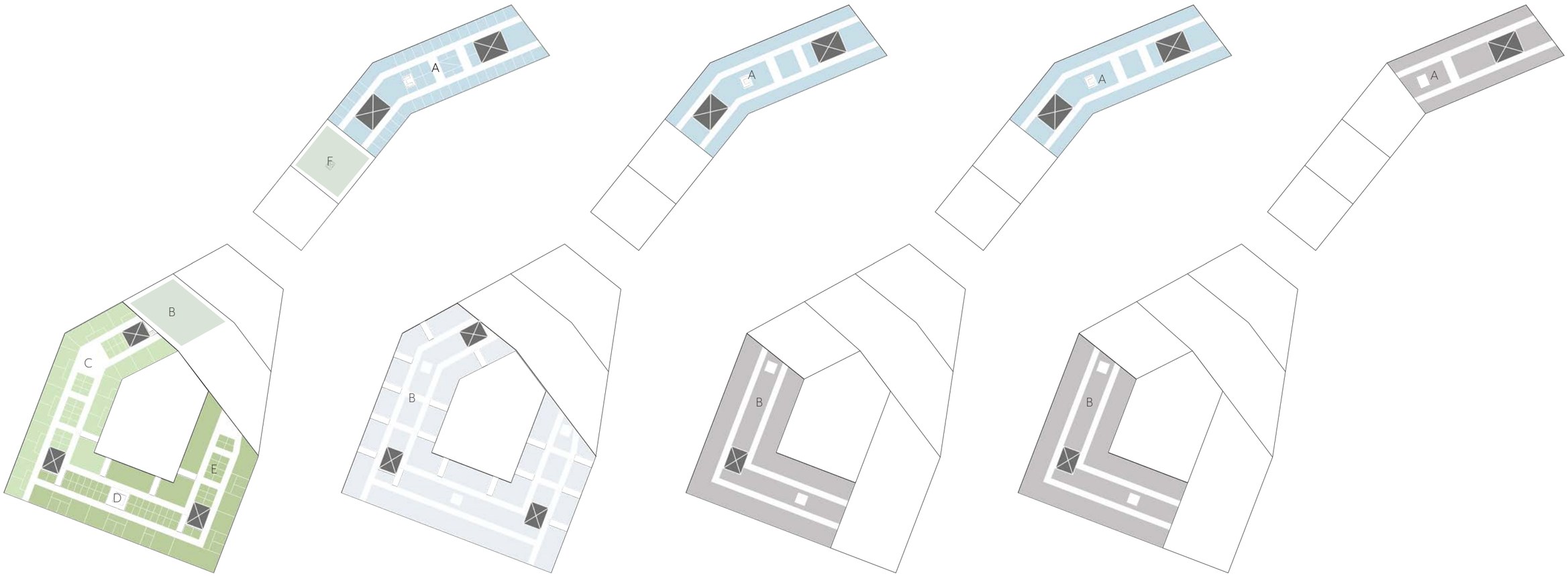
6. SURGERY, ICU AND WARD

A. WARD 4000 sqm
B. ICU SPINAL 1200 sqm
C. ICU NEURO 2500 sqm
D STE 1500 sqm
E GYNECOLOGY SURGERY 2100 sqm
F. NEURO SURGERY 2100 sqm

0 40 100 200

1:2000

FLOORPLANS



7. SURGERY, ICU AND WARD

A. WARD 3200 sqm
B. TERRACE 1000 sqm
C. ICU THORAX 2800 sqm
D. SURGERY THORAX 2600 sqm
E. VASCULAR SURGERY 2100 sqm
F. TERRACE 900 sqm

8. TECHNICAL AND WARD

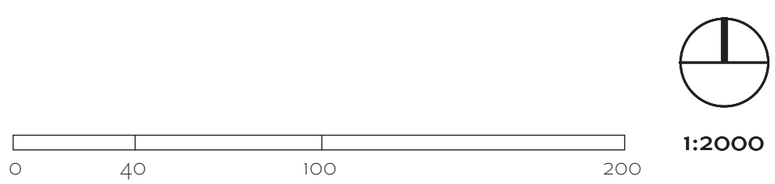
A. WARD 3200 sqm
B. TECHNICAL 7500 sqm

9. EDUCATION AND WARD

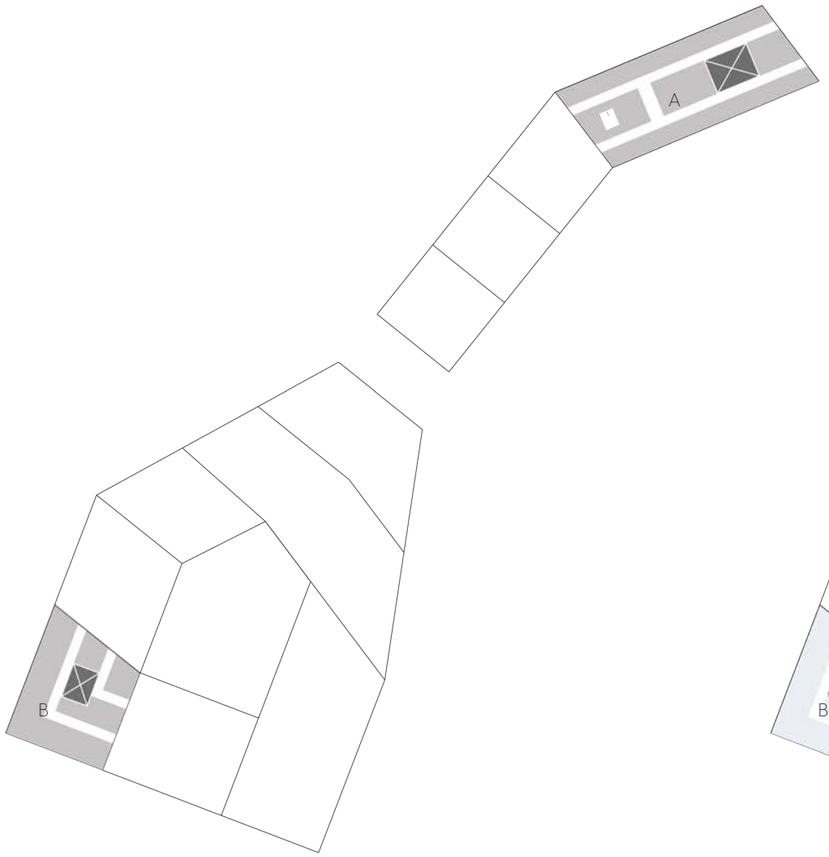
A. WARD 3200 sqm
B .EDUCATION 4000 sqm

10. EDUCATION AND HOTEL

A. PATIENT HOTEL 2100 sqm
B. EDUCATION 4000 sqm

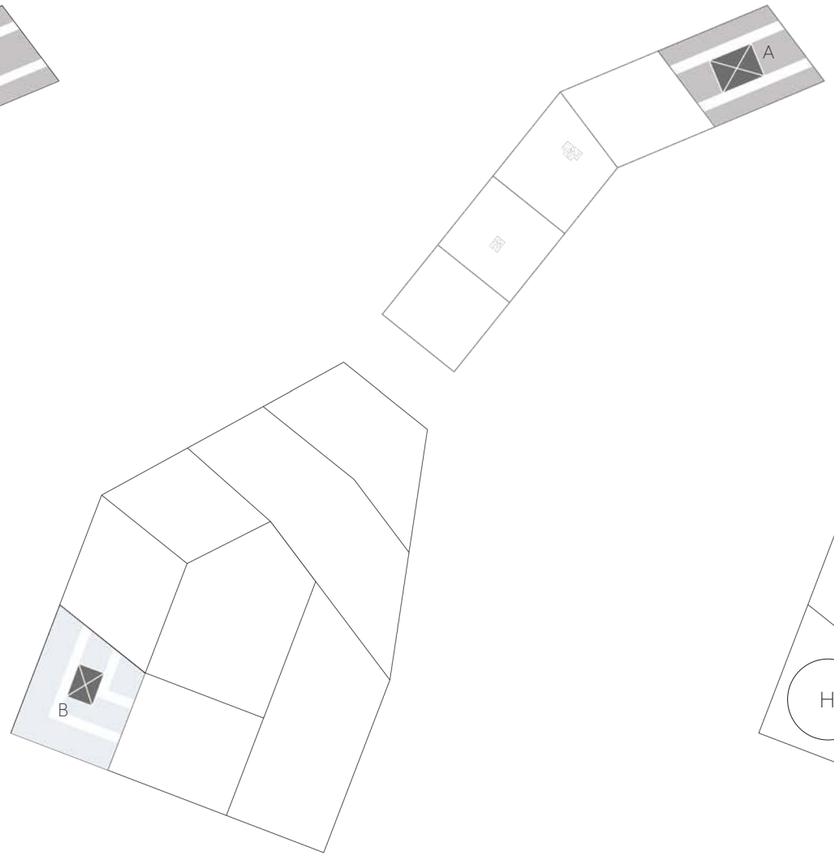


FLOORPLANS



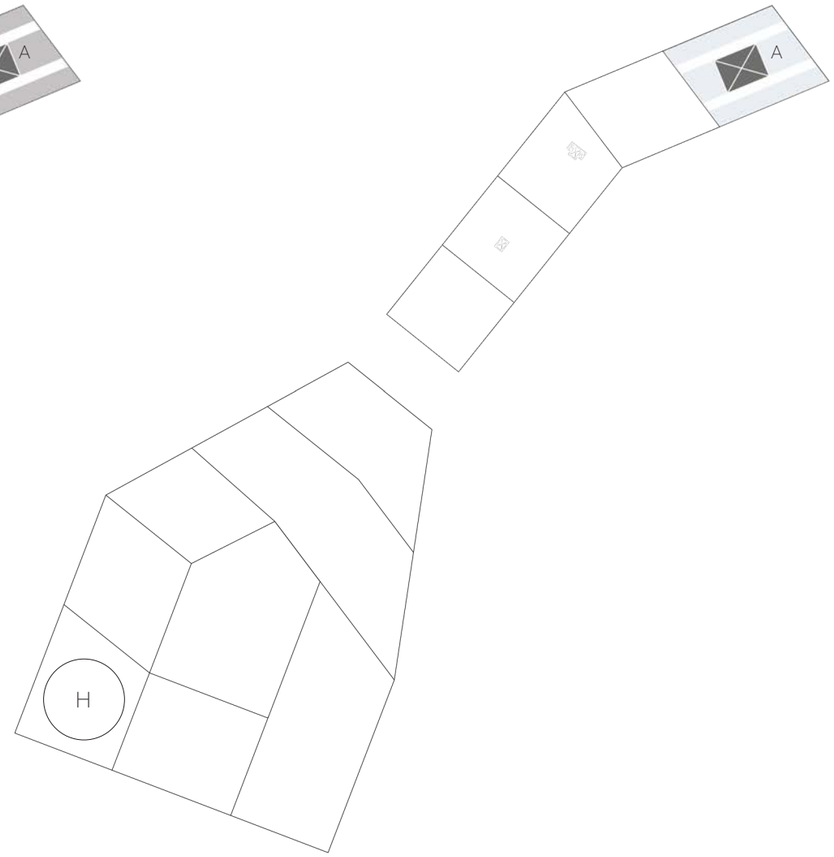
11. STAFF AND HOTEL

A. PATIENT HOTEL 2100 sqm
B. STAFF 1300 sqm



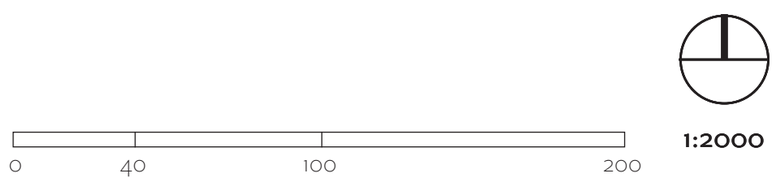
12. TECHNICAL AND HOTEL

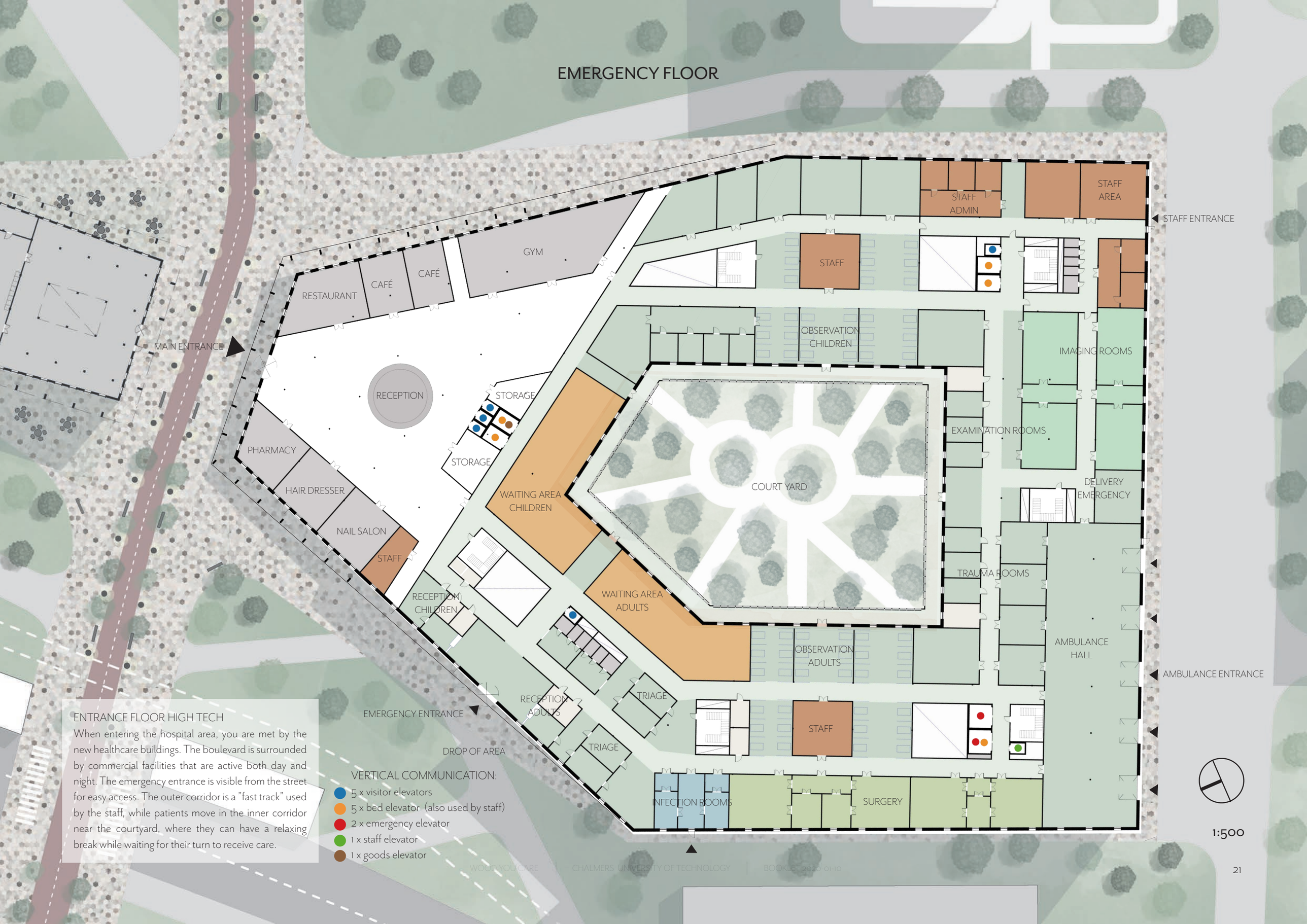
A. PATIENT HOTEL 1100 sqm
B. TECHNICAL 1300 sqm



13. TECHNICAL

A. TECHNICAL 1100 sqm
H. HELIPAD





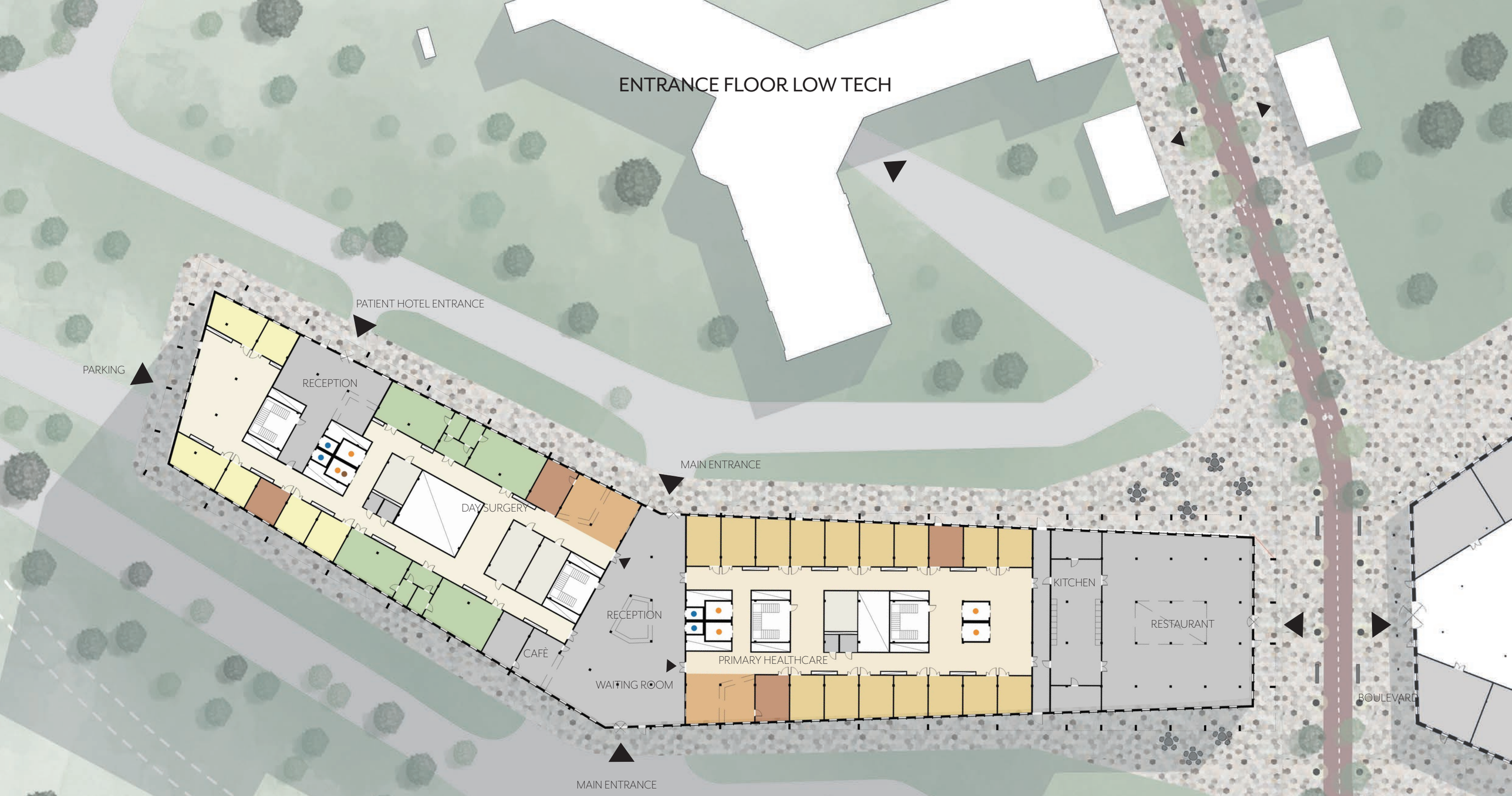
ENTRANCE FLOOR HIGH TECH

When entering the hospital area, you are met by the new healthcare buildings. The boulevard is surrounded by commercial facilities that are active both day and night. The emergency entrance is visible from the street for easy access. The outer corridor is a "fast track" used by the staff, while patients move in the inner corridor near the courtyard, where they can have a relaxing break while waiting for their turn to receive care.

VERTICAL COMMUNICATION:

- 5 x visitor elevators
- 5 x bed elevator (also used by staff)
- 2 x emergency elevator
- 1 x staff elevator
- 1 x goods elevator

1:500



LOW TECH ENTRANCE FLOOR

A commercial entrance facing towards the boulevard and a main entrance facing the new tram line will create an efficient flow in the building. All patient will enter the building in the heart of the building, creating shorter flows, easier wayfinding and better orientation. This structure prevails throughout all the floorplans. The central reception guides patients and visitor to upper levels. The patient hotel has its own entrance and reception, for a less “hospital like” experience.

- outpatient
- surgery rooms
- staff rooms
- waiting / common rooms
- commersial
- primary health care
- bathrooms
- storage

VERTICAL COMMUNICATION:

- 5 x visitor elevators
- 5 x bed elevator (also used by staff)
- 1 x goods elevator

1:500

SURGERY AND ICU FLOOR

1:500

SURGERY AND ICU FLOOR

Surgery and intensive care units are combined in themes on one floor to limit elevator transports of patients in a critical stage of health. This also improves the collaboration between staff. The ICU department has comfortable and calming waiting areas for relatives. Staff rooms are placed toward the courtyard for nature outlooks. The surgery department has operation theaters facing outwards to prevent unwanted views into the rooms.

- ICU rooms
- surgery rooms
- staff rooms
- waiting / common rooms
- bathrooms
- storage

VERTICAL COMMUNICATION:

- 5 x visitor elevators
- 5 x bed elevator (also used by staff)
- 2 x emergency elevator
- 1 x staff elevator
- 1 x goods elevator

WARD FLOOR

WARD FLOOR

The five ward floors are located in the low tech building. Each floor consists of four (3200 sqm) or five (4000 sqm) units. Visitors enter the ward floor in the centre of the building. From here, the staff can direct them to meet their friends and family in their room or in the common cafeteria. Common rooms are also placed in the short ends of the floor. These are areas for calmer and more private activities shared by two or three ward units. Just like the patient rooms, the staff rooms have direct daylight access for better working conditions. The inner core consists of functions such as shafts, storage, elevators and fire escape stairs.

- 6 x ward rooms
- 2 x itermediate care ward rooms
- 1 x staff room
- storage
- bathrooms

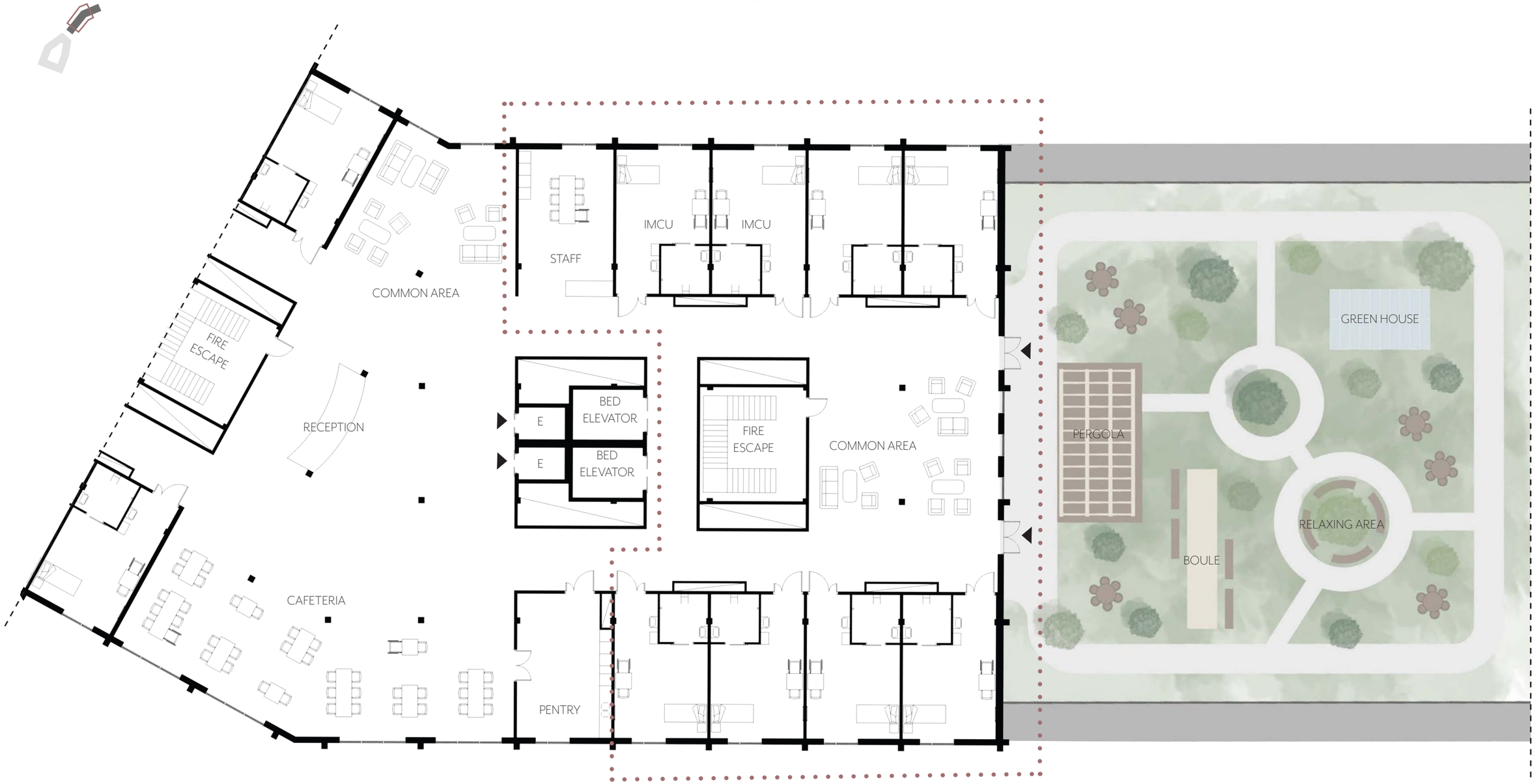
VERTICAL COMMUNICATION:

- 4 x visitor elevators
- 6 x bed elevator (also used by staff)
- 1 x goods elevator

1:500

0 10 50

WARD UNIT



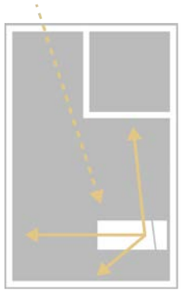
WARD UNIT

Each ward unit consists of six regular ward rooms, two intermediate care ward rooms and a staff working station. The staff is closest to the intermediate care ward rooms, as these patients are in most need of care. The clear grid structure allow for the rooms to be produced as modules, for lower construction costs and easier future changes. Wooden details create a soft, homelike feeling in wardrooms and corridors, with the aim to provide a better and more pleasant healing atmosphere. The common terrace on this floor is shared by all inward patients, inviting them to a calming break in the fresh air.

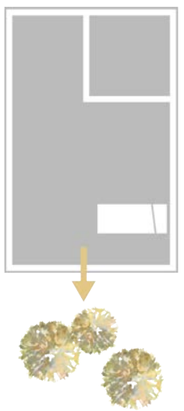
0 5 10 20

1:200

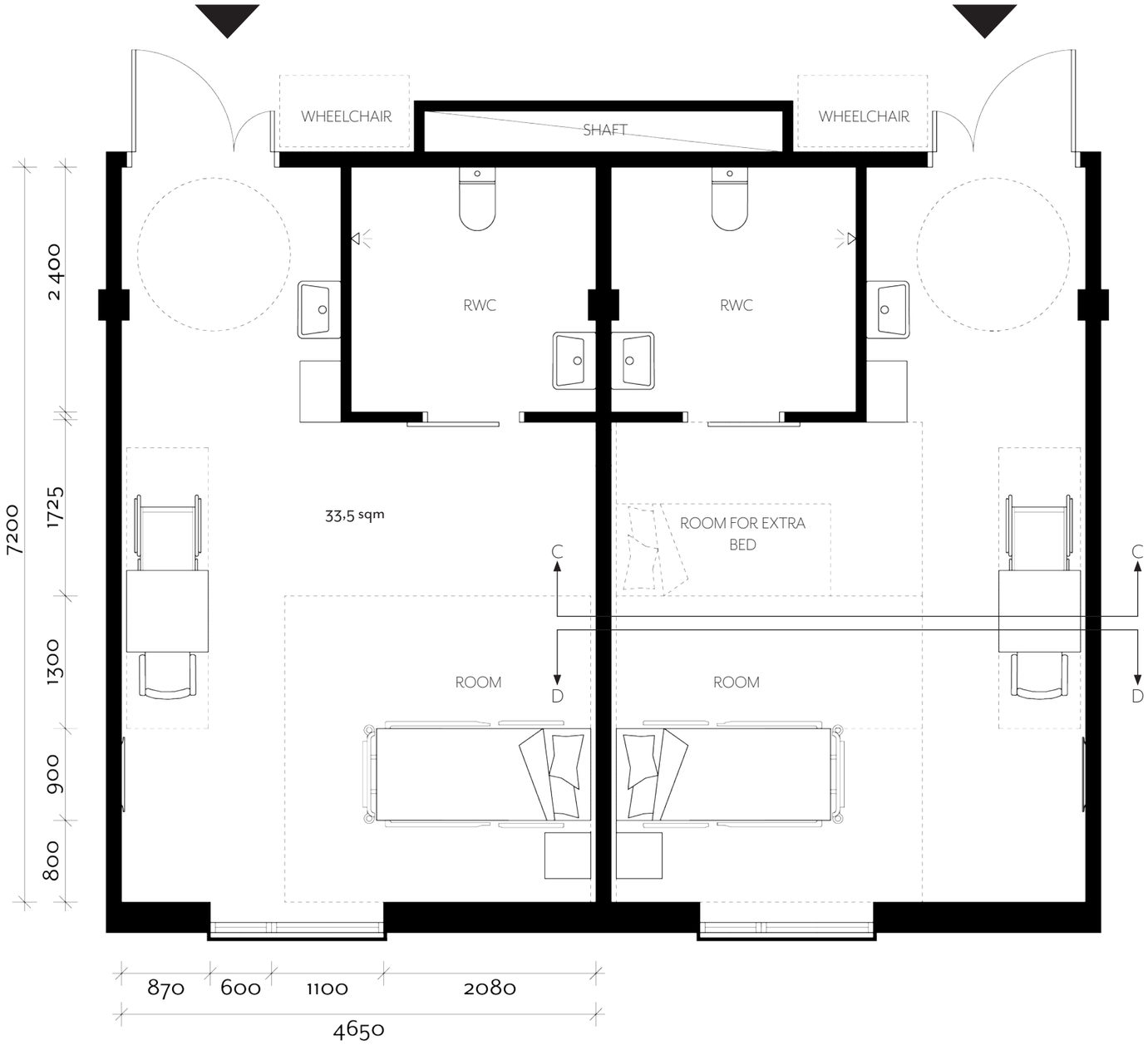
WARD ROOM

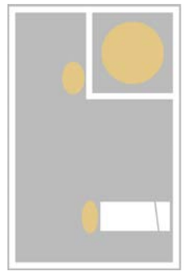


SIGHTLINES
The patient has a good overview of the room and bathroom from their bed, while the staff has an overview of the patient.

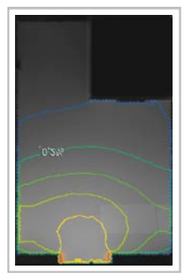


NATURE
The ward rooms have views of nature, of the cementry and buffert zone to the north, and parks in the hospital area from the south.





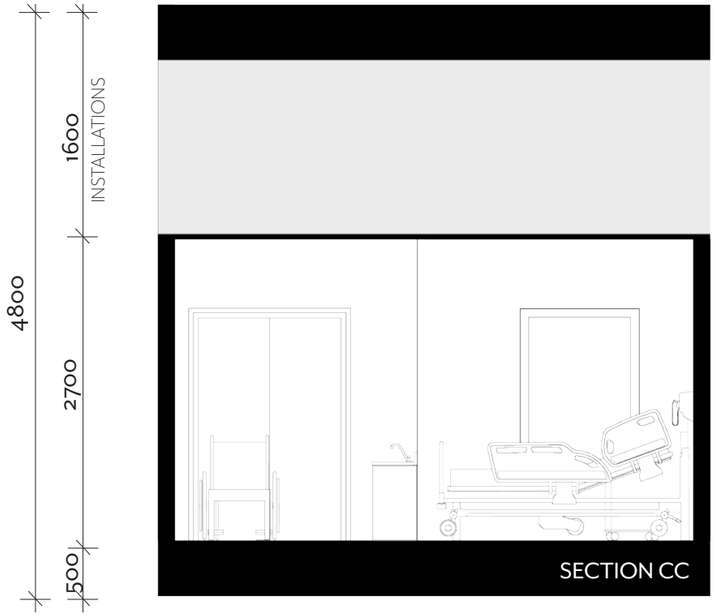
HYGIENE ZONE
The rooms have clear zones for caring and hygiene.

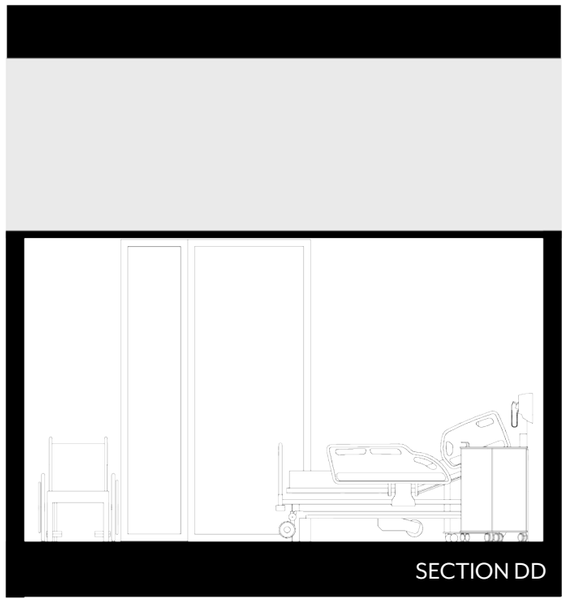


DAYLIGHT
The size of the windows are adapted to letting in the right amount of daylight without causing overheating.

1:50

WARD SECTION





1:50