



IN-BETWEEN SPACES

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Healthcare Architecture Studio 2019

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INTRODUCTION

National



The municipality of Västervik is located along the east coast of southern Sweden. The municipality is about 7 kilometers long and four kilometers wide. It makes Västervik one of the larger municipalities in southern Sweden.

There is a railway connection with Linköping, and bus connection to cities like Stockholm and Kalmar. The nearest airport with regular traffic is Linköping City Airport in Linköping about 100 km away.

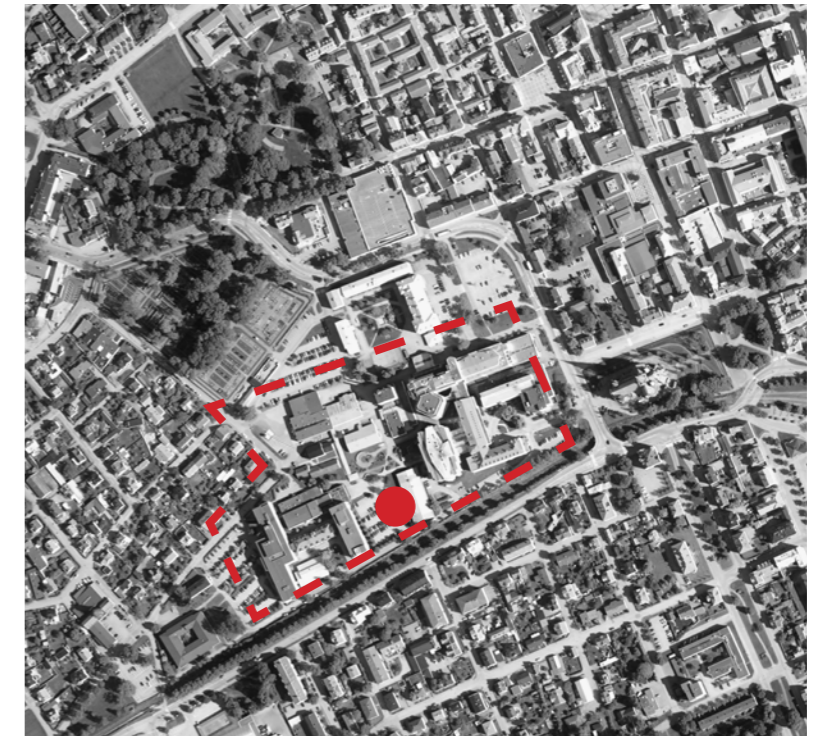
The city



The municipality of Västervik is known for the Tjust archipelago with almost 5,000 islands, the old port city of Västervik and a hilly inland. In the municipality - which is one of the largest in southern Sweden - has around 36,000 inhabitants, of which just over 21,000 live in the central town. Others live in the smaller urban areas or in the countryside.

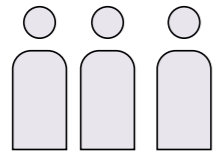
The County Council hospital and Västervik municipality have a total of 5,000 employees and are the largest employers in the municipality.

A new psychiatric hospital



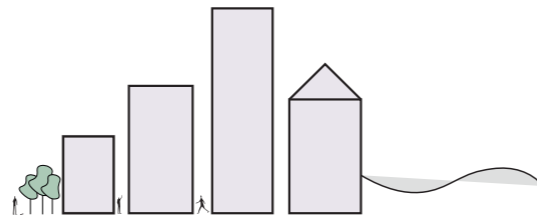
The existing hospital area is located in the heart of Västervik. The task is to develop a proposal for a new psychiatry in Västervik. We have chosen to work with the urban site, to work within a context, where the hospital has a close connection to the city and the urban life around it. This enables the patients to have easy access and feel a close relation to the society. They also have the liberty to feel anonymous in the hospital environment. The hospital also benefits from being located near the somatic departments and patients can easier get the treatments they need. Working on an already exploited site is also sustainable since it keeps the biodiversity and natural recreation area on the nature site.

VISION



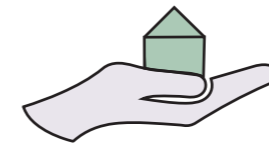
Patient centered care

A design approach that is proven to be helpful in how the patients feel during their stay at the hospital. Some of the aspects that is important is to create a stimulant environment where views, daylight and a flexibility in how patient can control the environment. Greenery and access to outdoor spaces is another aspect that have positive influence on the wellbeing of the patients.



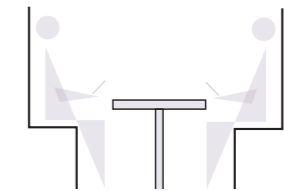
Being part of society

In an urban environment the patient can feel a closer connection to the society and the life outside the building can be positive distraction. The urban context helps to support the feeling of being anonymous in the hospital environment and reducing the stigma. The psychiatric hospital is also located near the somatic departments which creates easier communication between the departments.



Empathetic architecture

Being able to work with material to help reduce the feeling of being in a clinical environment. The resembles of a real home, where softer and warm material like wood help to support the patients to feel more at ease and comfortable during their stay in the hospital.



Variety of spaces

The hospital environment is proven to be a big part of the healing time for the patient. Being able to choose between a variation in activity and dayrooms is a big part of this. Different places for conversation and places where you can spend time on your own makes the wards more flexible to different personal preferences.

SITE

Surroundings

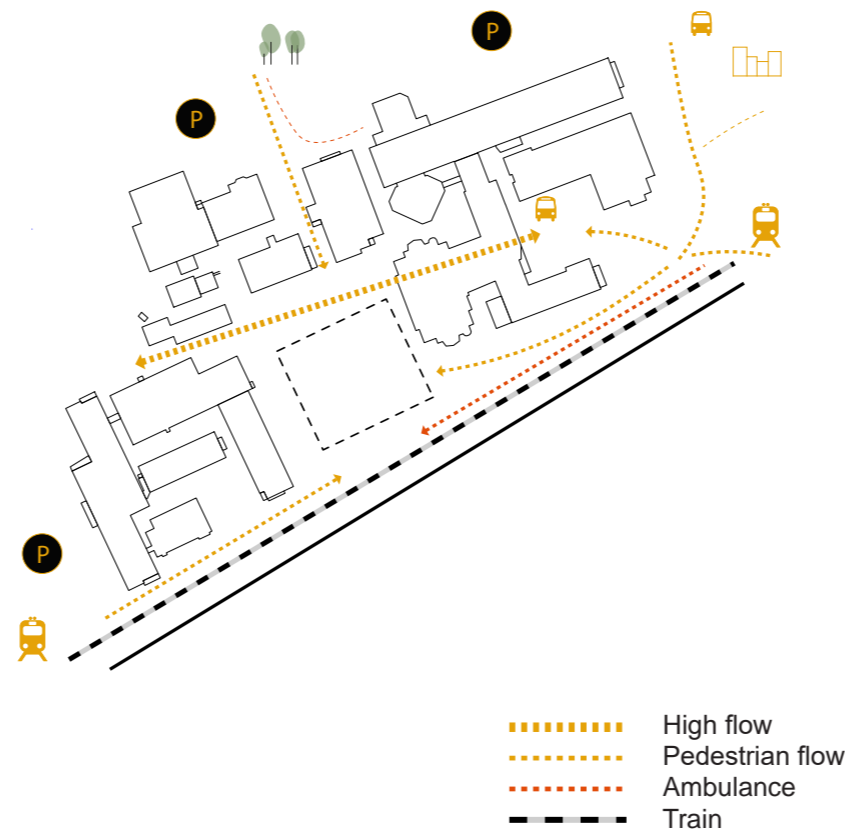


- Main roads
- - Hospital area
- Plot

The plot is located close to the city center and the harbor, which makes it easy accessible by both public transport and by foot. It is located close to the citizens of Västervik, but also the urban life around it.

North of the hospital area you can find the city park, which is located near the commentary in the east. Residential housing is found on the opposite side of the plot, but also in north. The main road, highway E22 leads you directly in to Västervik, with connecting roads to different parts of the city.

Flows

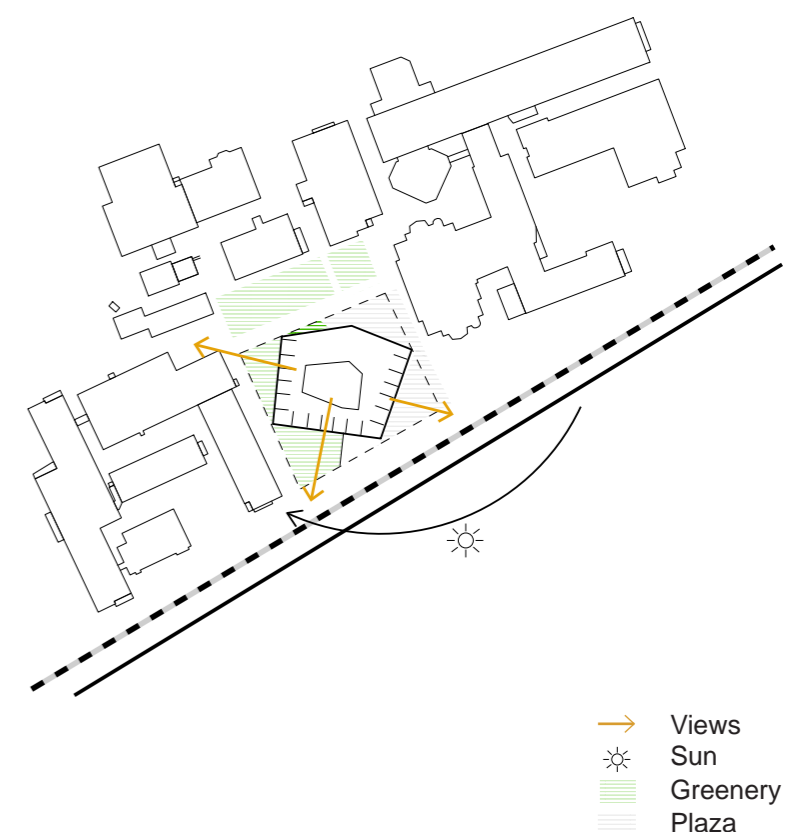


- High flow
- Pedestrian flow
- Ambulance
- Train

The pedestrian flow is mainly from east near the city center and north where the city park is located. There are two bus stops near the hospital on the east side, and a train station which makes it easy to use public transport. In the future there is a possibility to have another station on the west side of the hospital.

Vehicle traffic is mainly concentrated in the south near the train track, which is also the route for the ambulance.

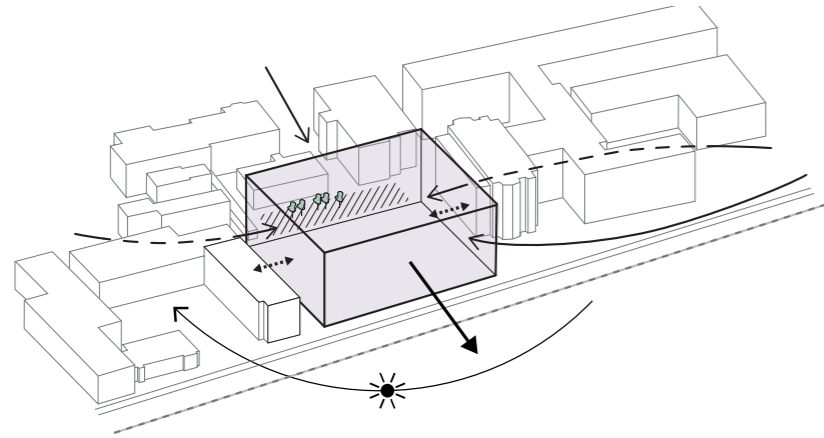
Relation to site



- Views
- Sun
- Greenery
- Plaza

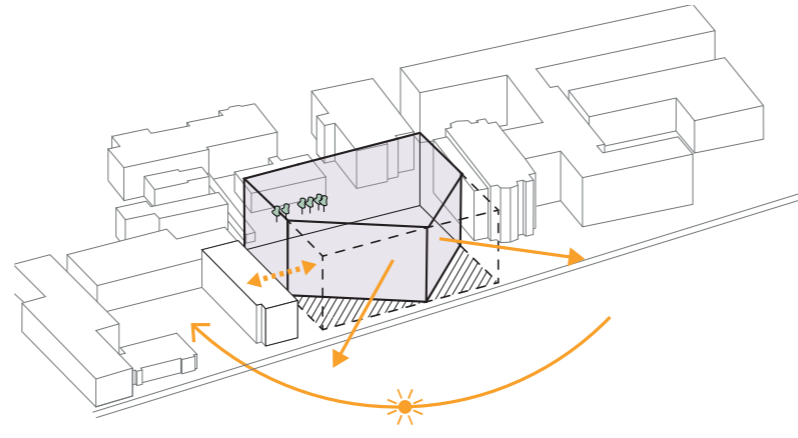
Looking at the urban scale, the new hospital will be higher than the majority of buildings in the hospital area. The cut of corners creates better conditions for the program that is need for most daylight such as patient rooms and administration areas. Privacy and views are enhanced by the cut off corners. This also creates places for small greenery and plaza pockets, directly linked to the hospital. On entrance level the east and north side is the most public where flows are the highest.

FORM STRATEGY



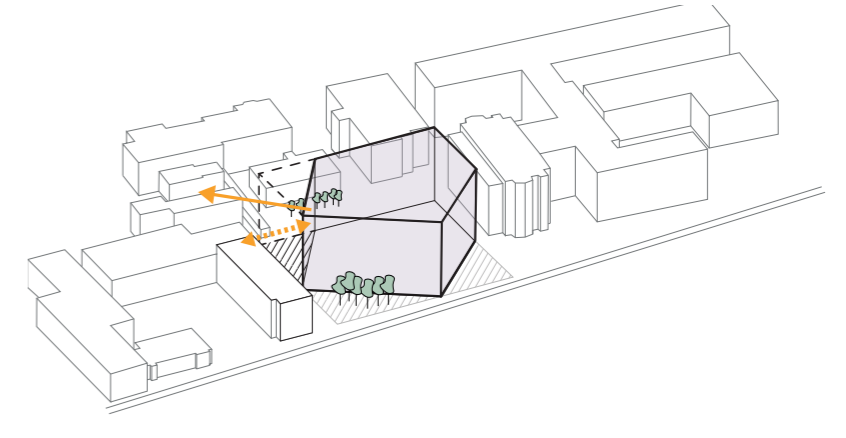
1. Challenges

The challenge of the site is the small plot, lack of greenery and privacy in the urban context.



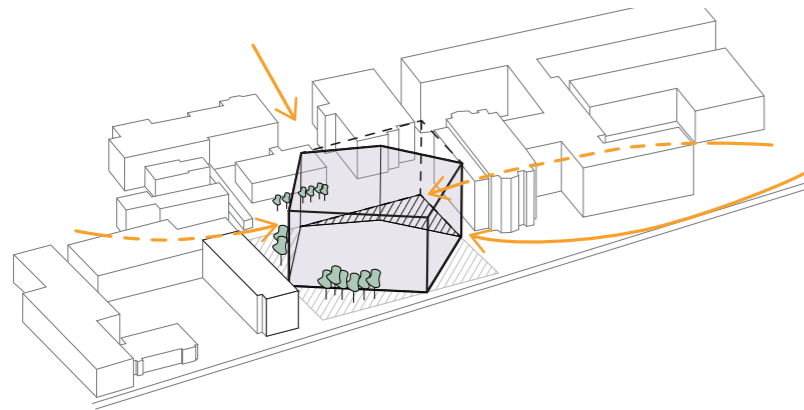
2. Views, privacy and sun

Corners are cut to create an angle to existing buildings for better privacy and views for patient. The cuts are also done to make the facade face south and south east to let more sunlight in.



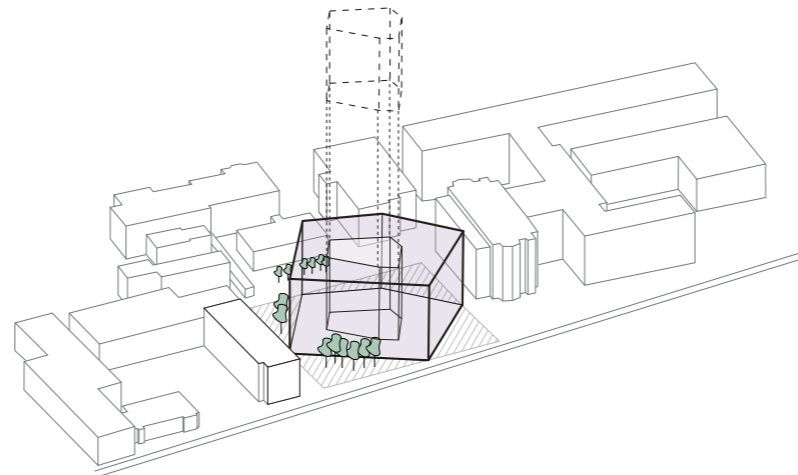
3. Views, privacy and greenery

The third corner is cut to create a view for patients and improve the privacy from surrounding buildings. In-between space opens up for greenery and plazas.



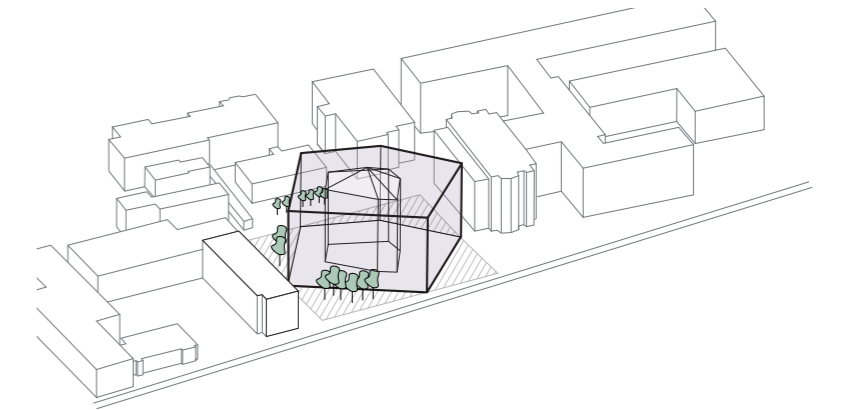
4. Creating an entrance

The last corner is cut with angles to lead the visitors into the main entrance and green oasis.



5. Light

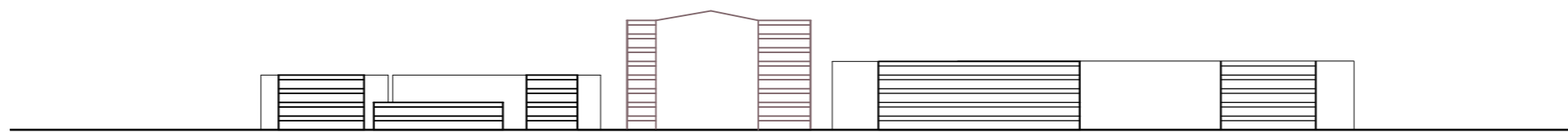
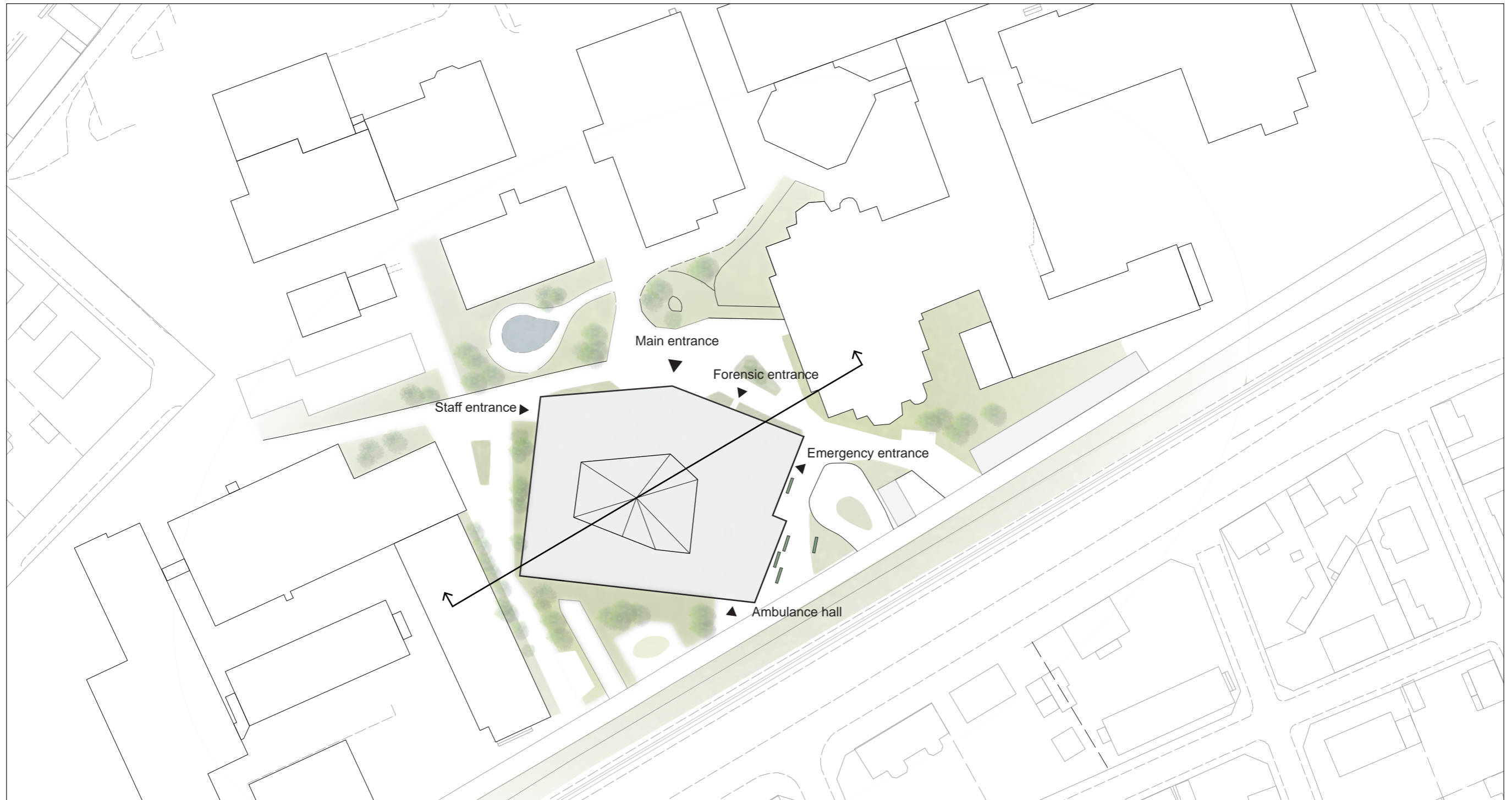
A hole is cut out to let plenty of light in.



6. Atrium

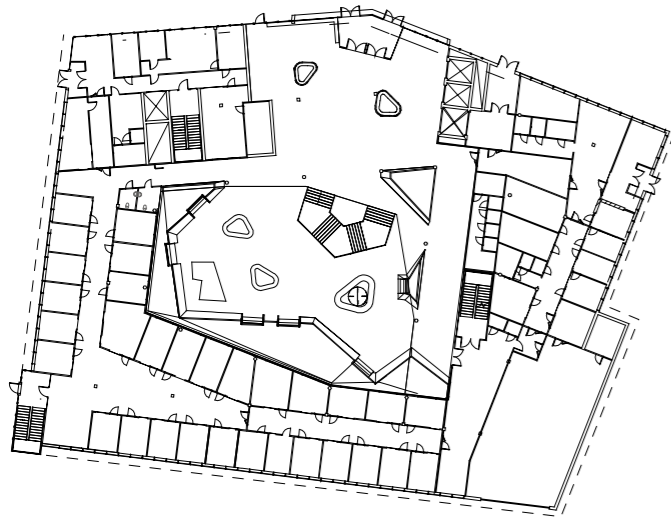
A glass roof is added for energy savings and makes it possible for greenery to grow all year around.

SITE PLAN

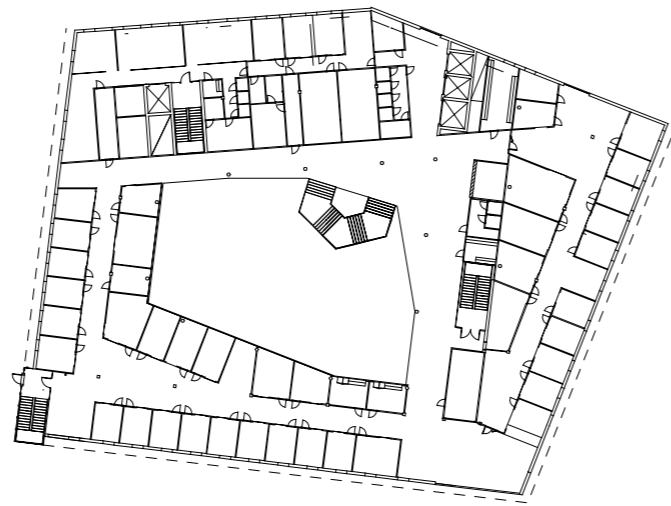


Scale 1:1000
1:2000

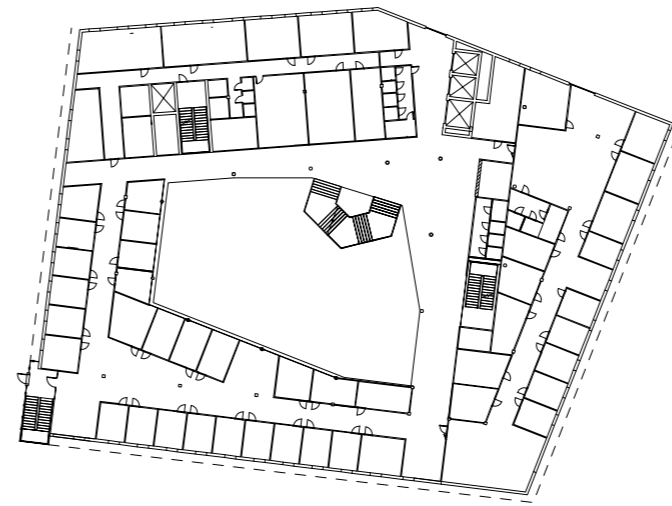
FLOOR PLANS



Groundfloor



2 floor - Outpatient



3 floor - BUP - ABC



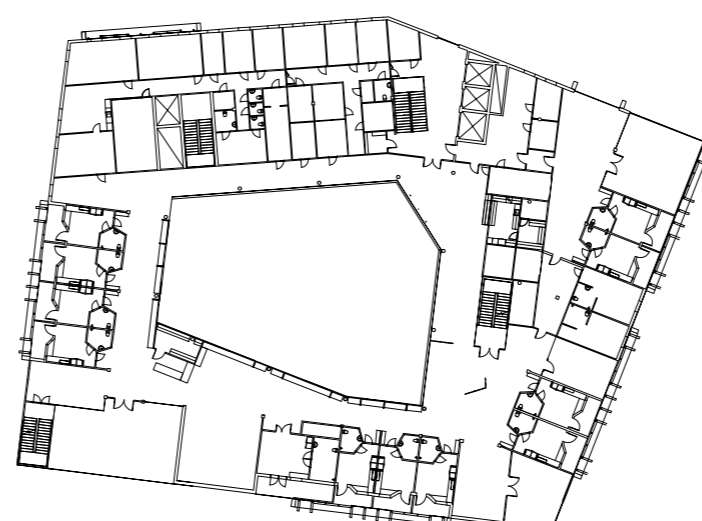
4 floor - Shared facilities



5 floor - Emergency




6 floor - Inpatient



7 floor - Forensic



8 floor - Forensic

Scale 1:800 

The program

The program could be divided in three main groups which are the forensic, inpatients and outpatient's departments. A hierarchy of privacy and flows is created vertically. The departments, forensic and inpatients, that need the most light, calm and secure space is located on the top floors. Outpatients departments, where more people are in motion and spend less time, are located on the lower floors.

The vertical flow is divided to staff and gods, forensic and emergency and last other public flow. The forensic and emergency elevator can be reached from the emergency reception and a separate entrance from outside. Communication for staff is located in a staff core so the personal can be able to move freely within the building.

The building is designed with a basement level which is connected to the hospital culvert system where gods come. The basement also serves as a parking lot that can be reached from the south.

Large public stairs are located in the middle of the building going up to the shared facility floor to create a central and well used staircase and ease the high flow in the building.

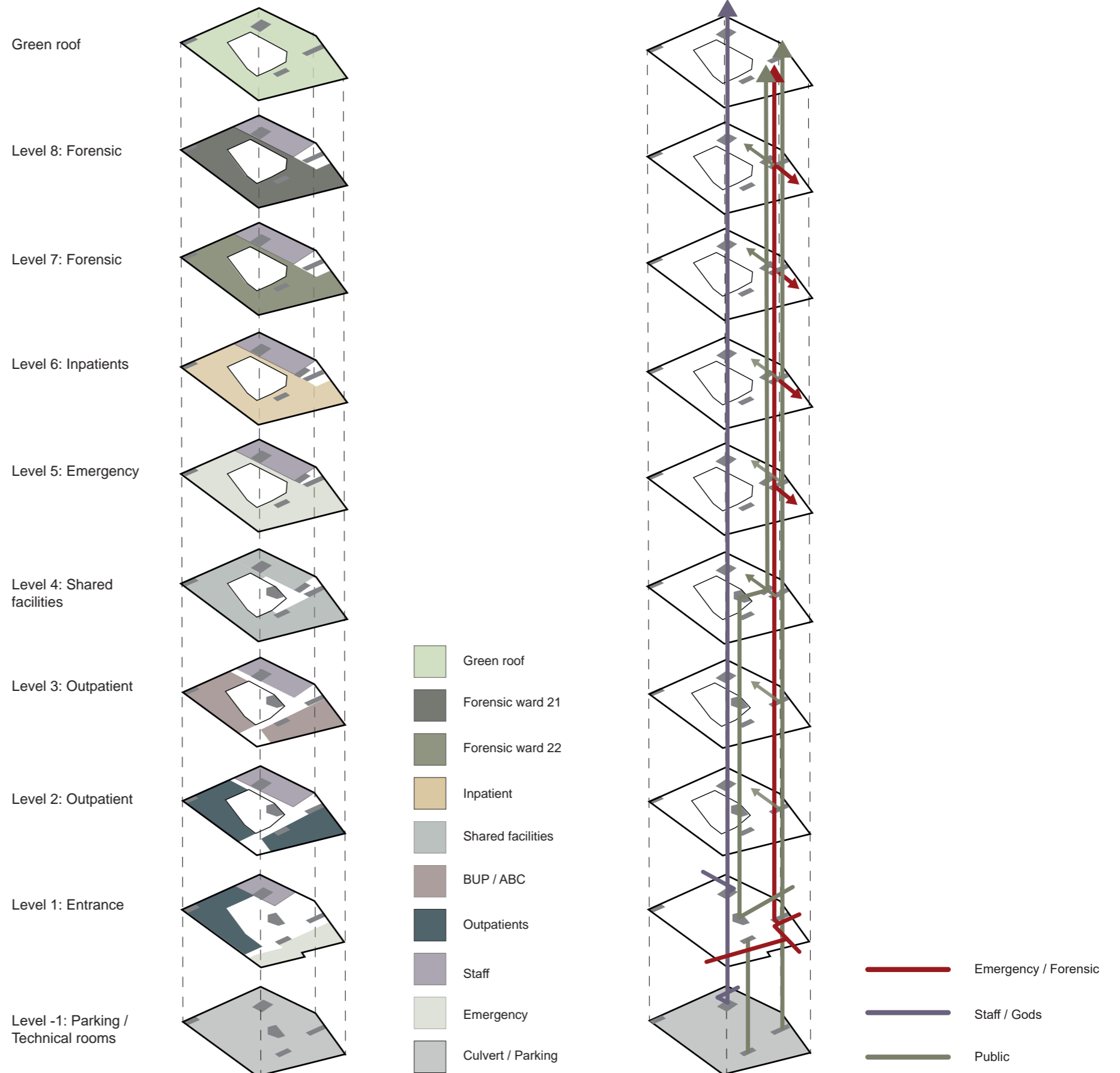
Aproximate areas

Level 1: 2 900
 Level 2: 2 300
 Level 3: 2 300
 Level 4: 2 400
 Level 5: 2 200
 Level 6: 2 200
 Level 7: 2 100
 Level 8: 2 000

Toatal: 18 400

Basment level -1: 2 900
 Total with basement: 21 300

PROGRAM



GROUND FLOOR

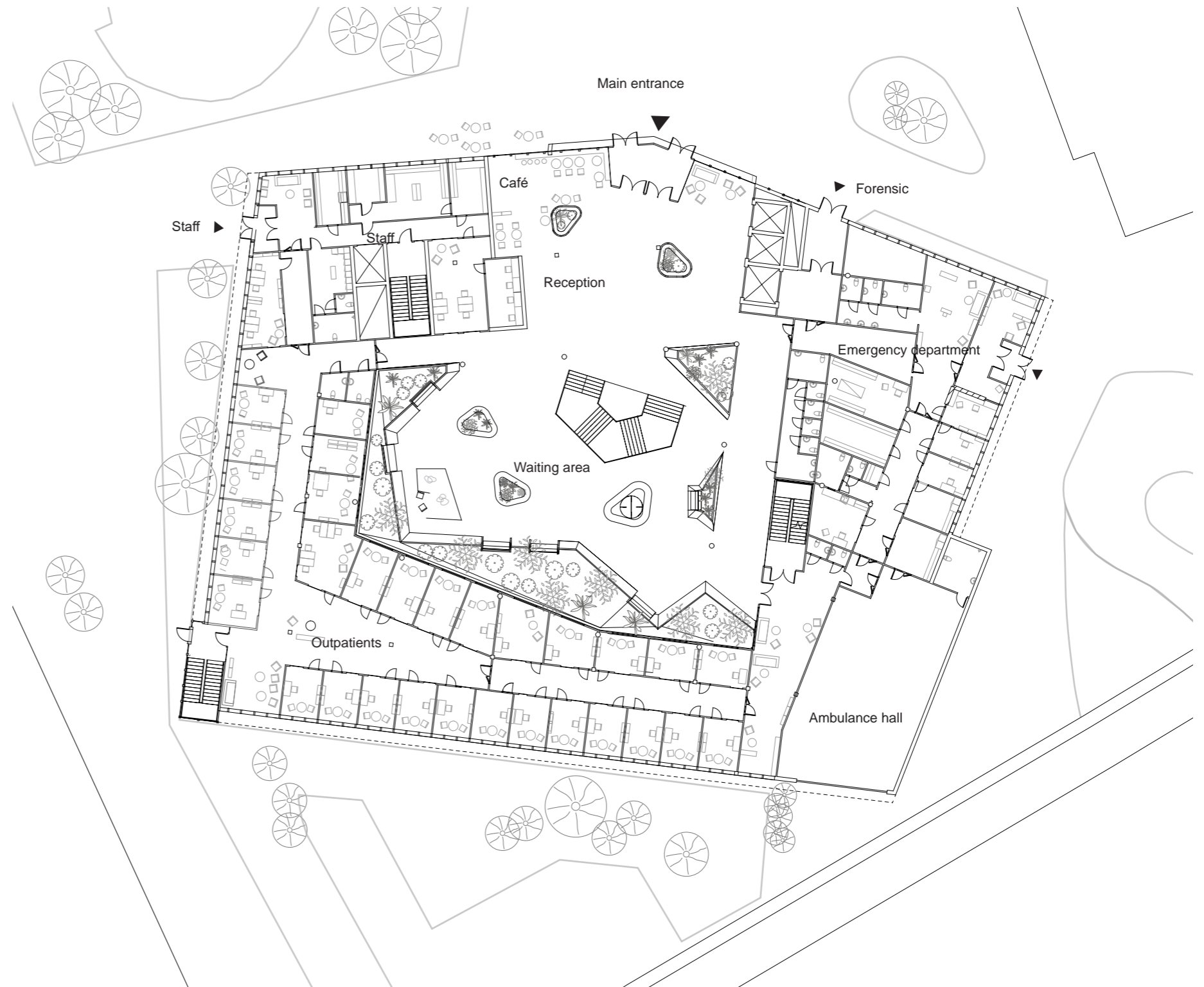
The entrance

The main entrance is located on the top corner from where most paths leads in to the building. When entering the building one meets the reception on the right side, elevators on the left and the stairs and green atrium straight ahead. The space in the atrium works as the main waiting area of the building where one can find one's own space, read a book or relax in-between the greenery. A café is located with views towards the plaza and garden where in summer one can also sit outside.


The ground floor holds the emergency reception and outpatients. The emergency entrance is located on the more private side but is visual from the road to be found easy for patients and family.

Outpatients are located on the first three floors to create easier access amongst the departments with the largest flow. These floors can also be reached by a visible large public stair.

The staff has its own entrance in the north west corner and elevator and stairs for internal communication in a staff core.



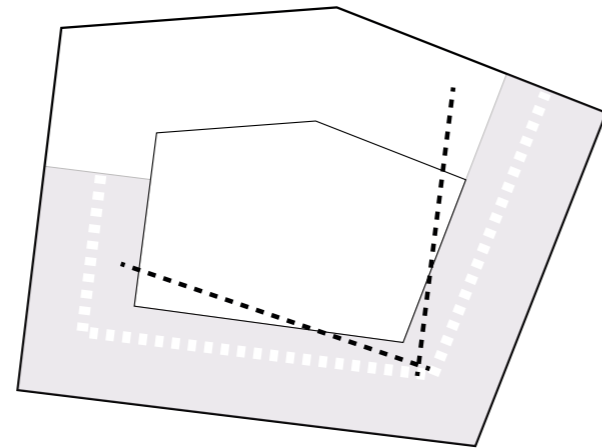
The first meeting

Scale 1:400 



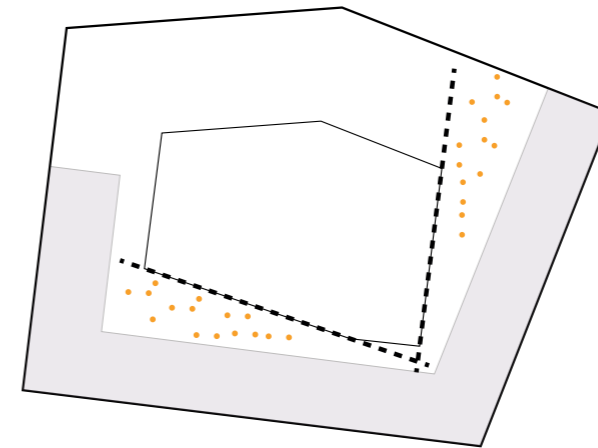
Entrance - reception and atrium

WARD CONCEPT



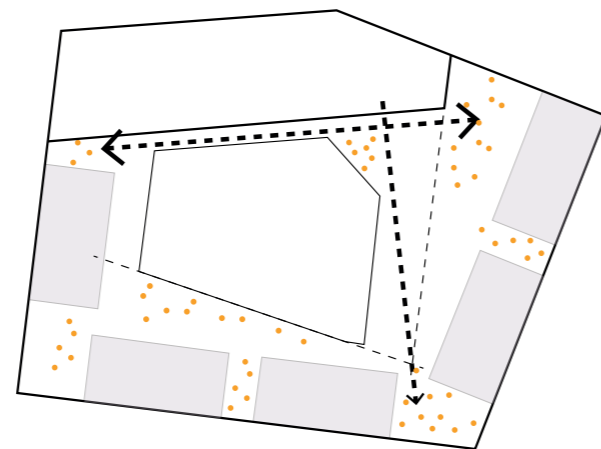
1. Patient rooms

The patient rooms are facing south, west and east for best daylight conditions.



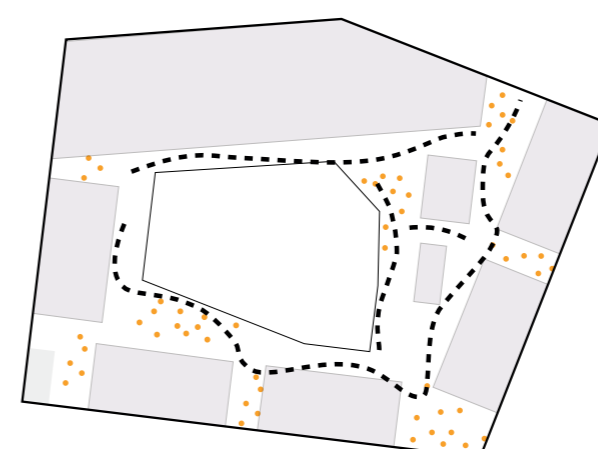
2. Angles

The corridors are slightly angled to avoid narrow corridors and to create common spaces along them.



3. Break up the corridors

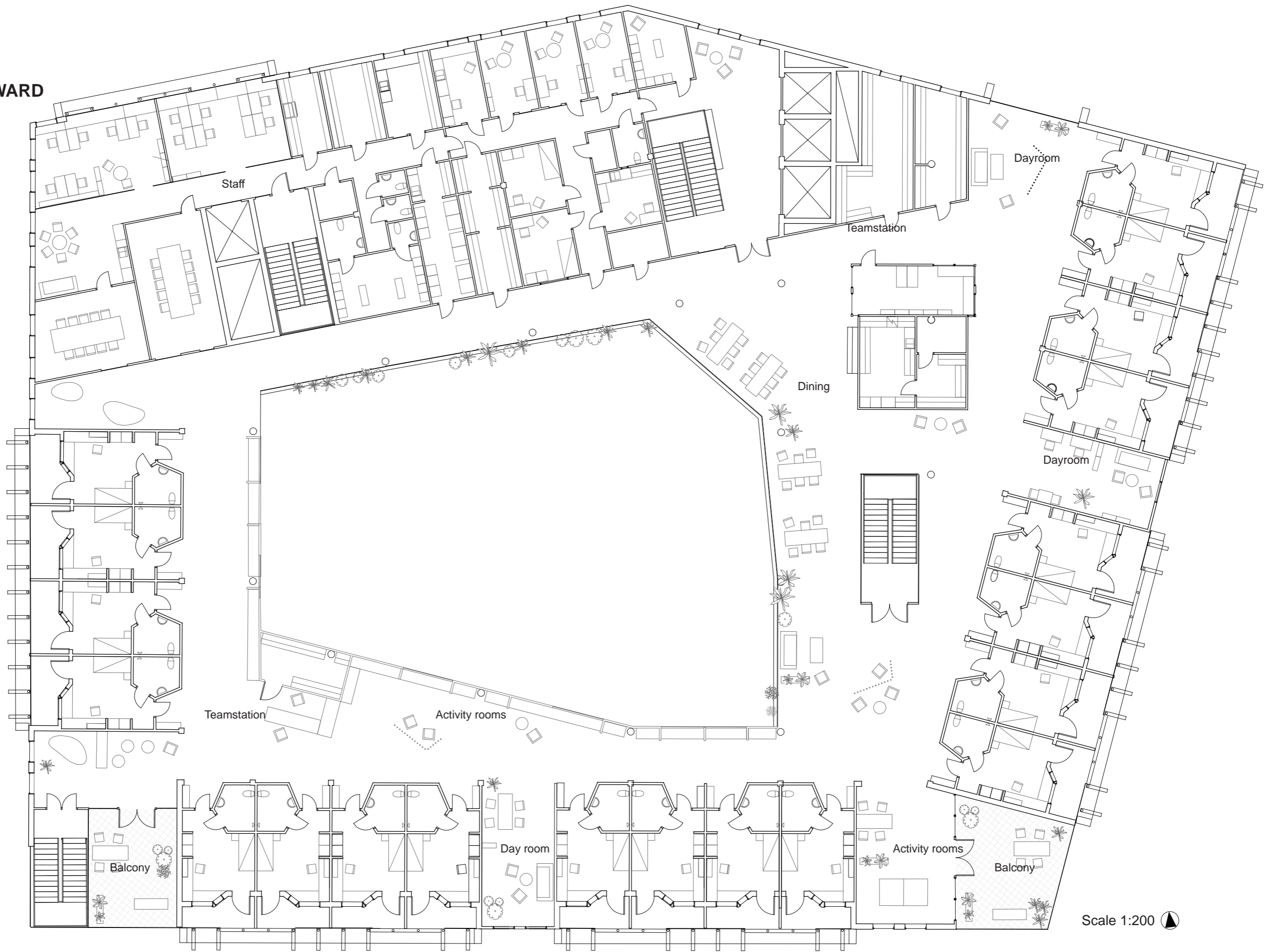
The rooms are clustered into groups to break up the corridors and a path along the atrium connects the two sides of the ward.



4. In-between spaces

The angled corridors and the clustered rooms create in-between spaces and a path for patients.

INPATIENT WARD



Scale 1:200

INPATIENT WARD

Common spaces

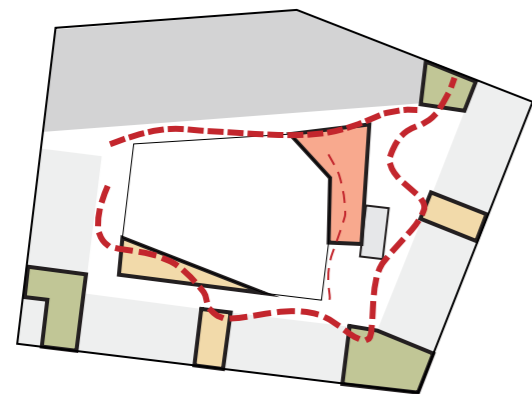
The inpatient ward is a light space with many opportunities to find one's own place.

The concept of the ward is for patients to feel free in the way one can move and where to interact. There is always an alternative way to choose if a patient doesn't feel safe meeting another patient.

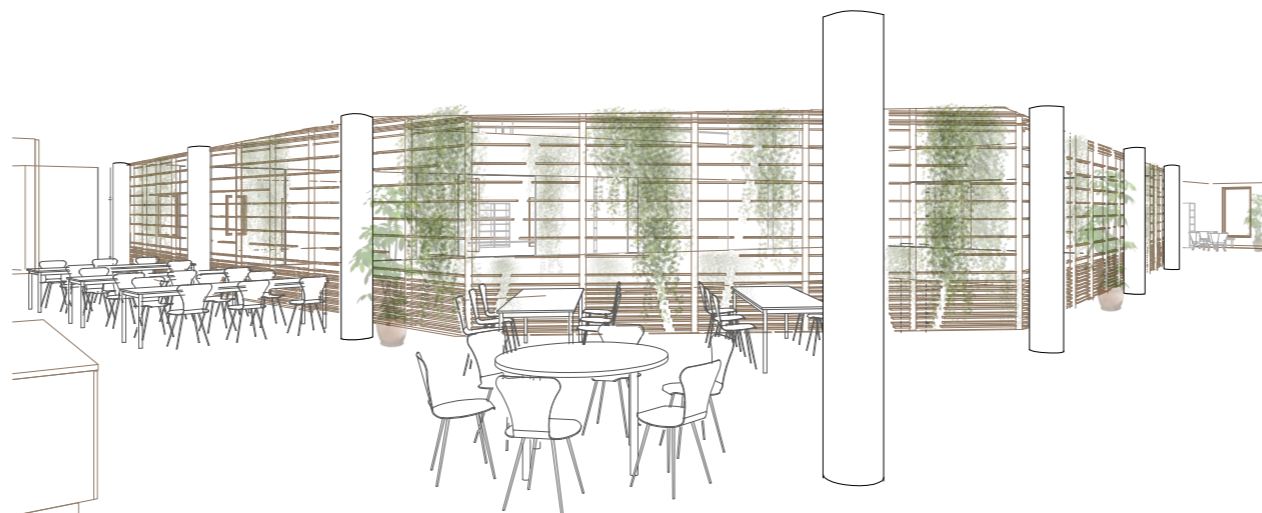
The ward is divided into two wings and the rooms are clustered into groups of four to break up the corridors. There is always a common meeting space in-between with views to the city. Another concept of the in-between spaces is to angle the corridor. In this space a calmer common space with views towards the atrium is created, so that the patient has a more appealing view when leaving the room.



View of common space in corridor



Common spaces



Dining area

The dining area is a light space and disconnected from the patient rooms since it is where most people gather. It is also where patients enter the ward. When entering, the space opens up and one can see the atrium, greenery and light coming in.

The atrium is covered with a wooden horizontal raster to keep the visual connection within the ward and to see who is coming around the corner. The raster is also made to prevent visual connection between the wards.

PATIENT ROOM

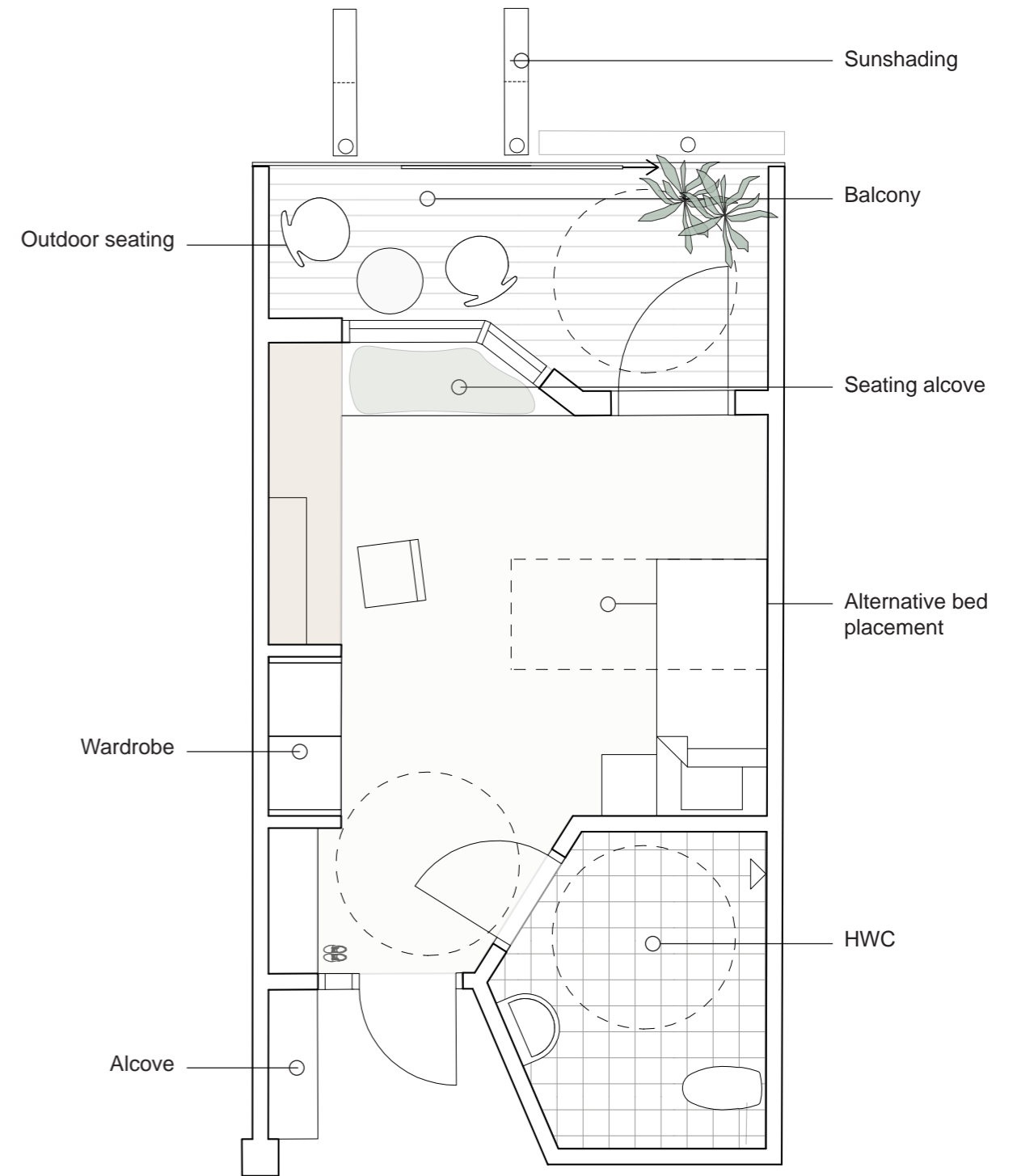
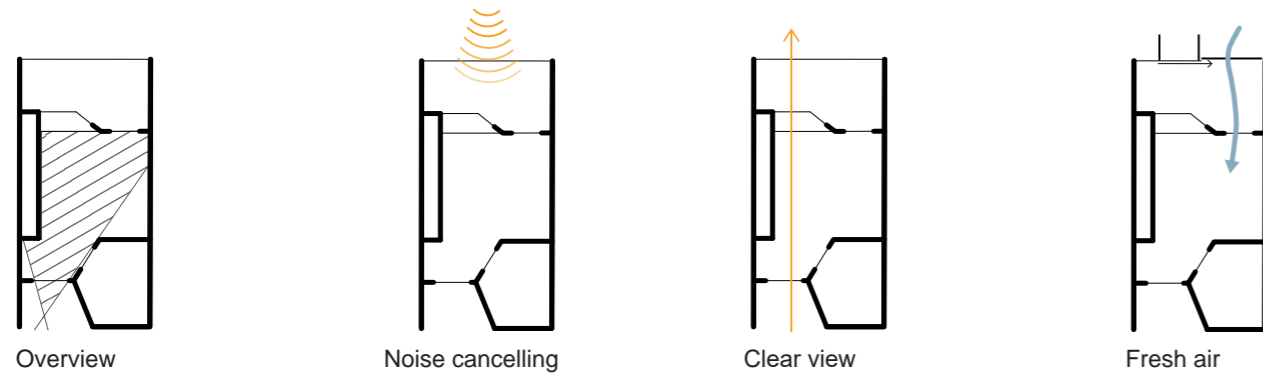
Patient control and safety

The patient room is design with the intentions to make the patient safe with fixed furniture and good overview. The privacy and a feeling of a safe space for the patient is kept since space is made for the bed behind the bathroom.

The building has an urban location and the outdoor connection is limited. Therefore, a balcony is added which gives the patient a certain freedom. Research also shows that it is important for patients to be in a calm space.

Therefore, the balcony is covered in glass to create a buffer zone to keep out disturbing noise from traffic.

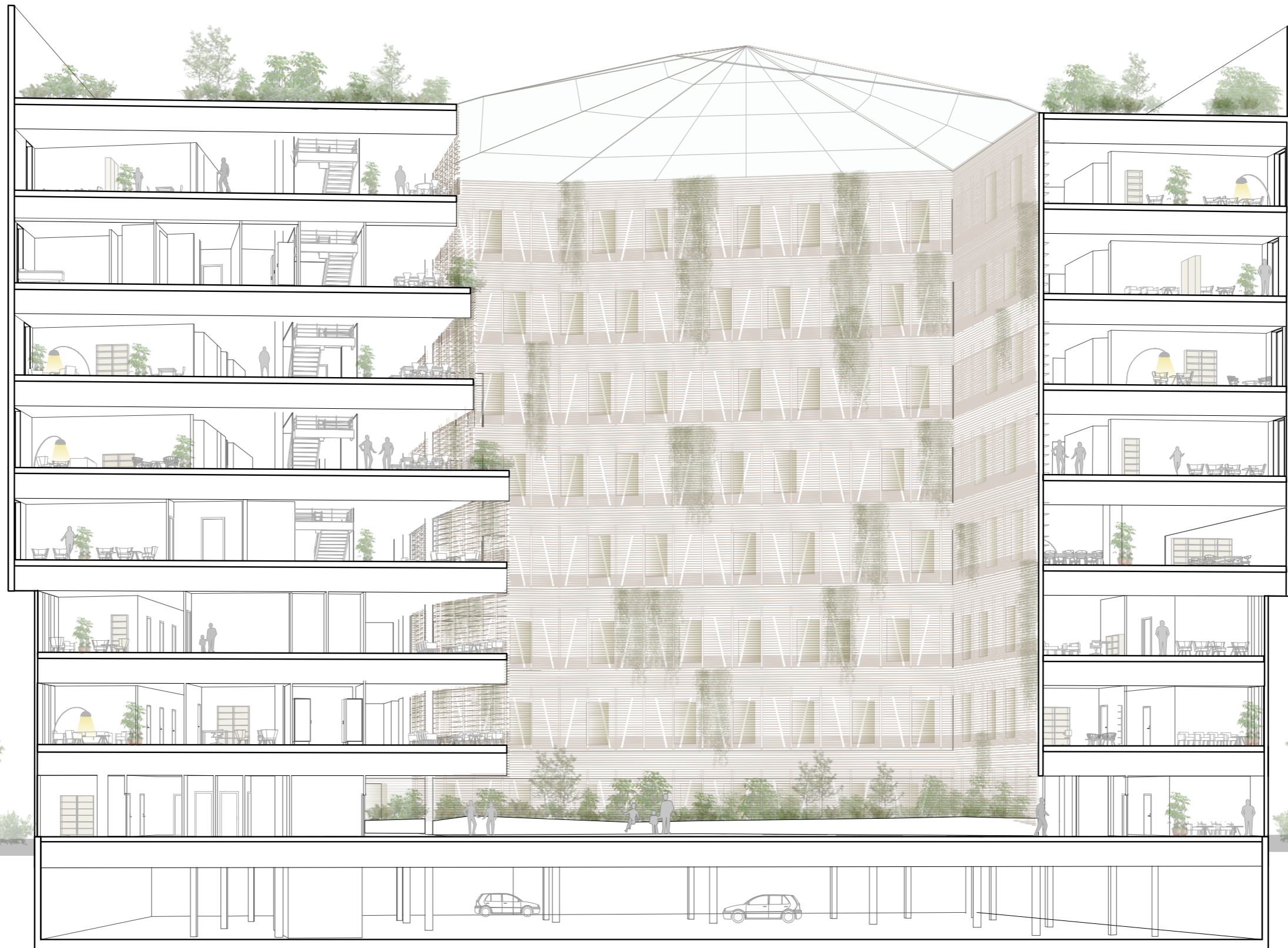
A sun shading system is added outside the glass that patients can control. Part of it is always closed and has a glassed sliding door that patients can open to let fresh air in. One can then choose how one would like to use the balcony, as outdoor space or in-between outdoor and indoor.



Scale 1:50

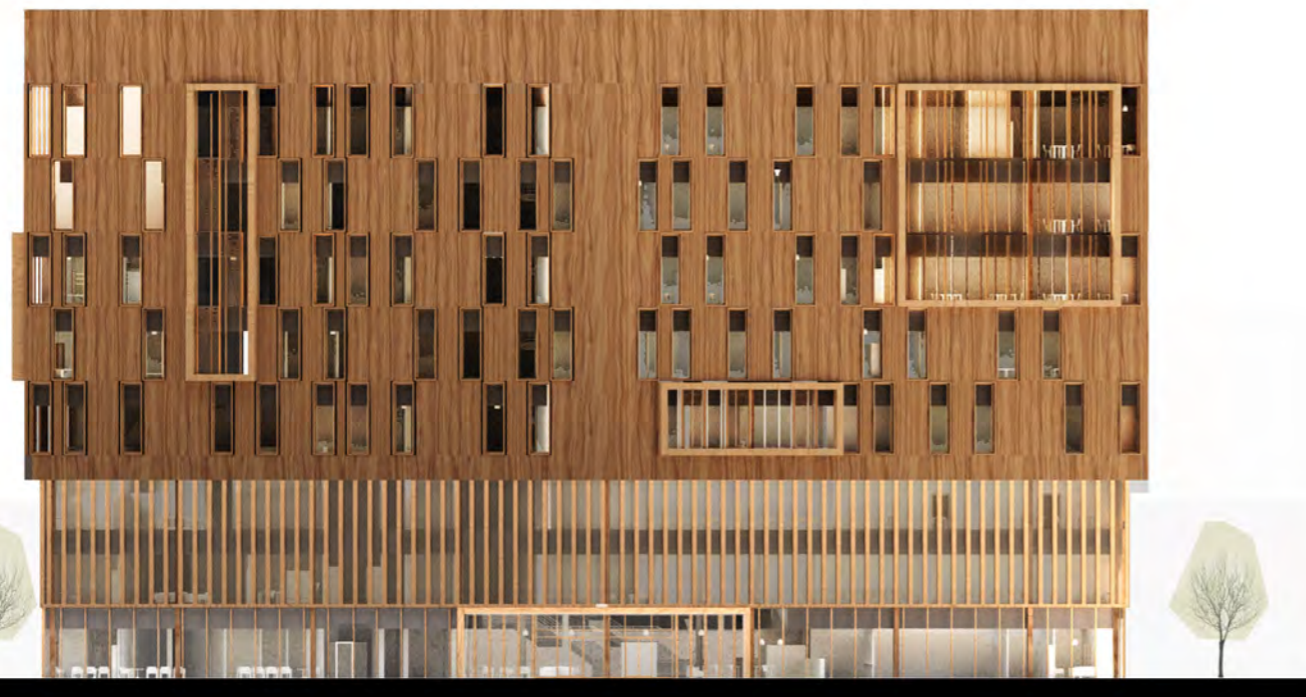


SECTION



Scale 1:200

FACADES



North 1:500



South 1:500

Facade

The idea of the facade is to break up the volume by different facade expressions. The lower floors that holds the outpatient departments has a glass facade to improve the light conditions closer to the ground. This also creates a feeling of a more welcoming public building instead of a hospital. The idea is to have glass that is not transparent to keep the privacy of the patients and a system of wooden pillars create less insight due to the angles of the building.

Higher up on the inpatients floor the facade has a more private expression.

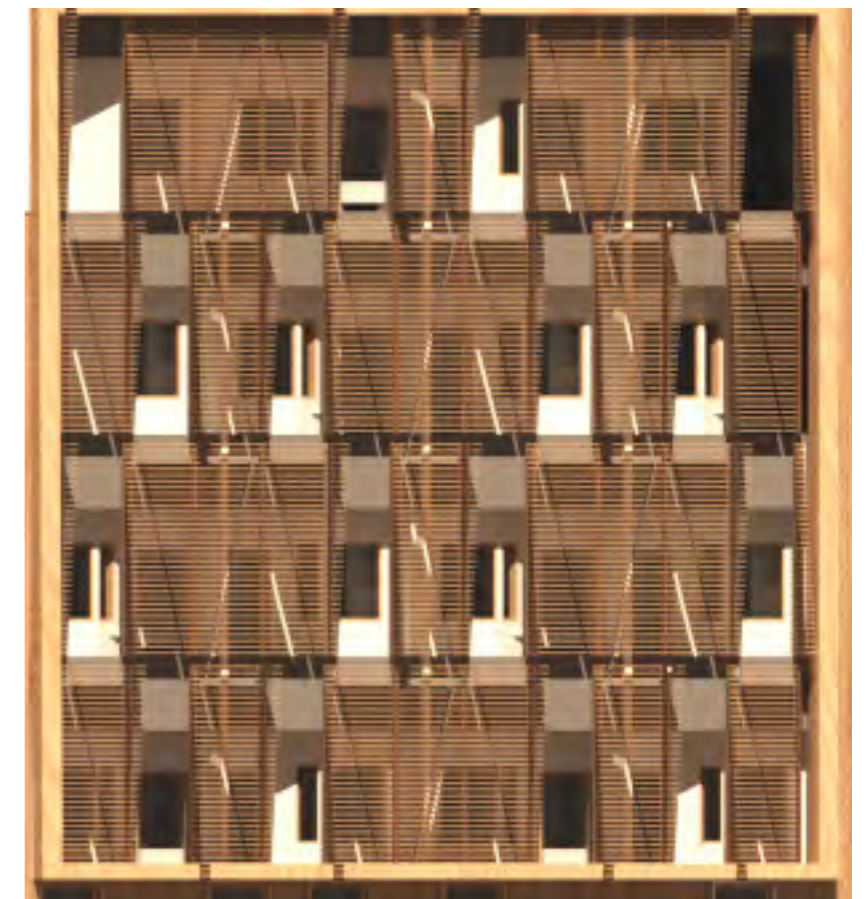
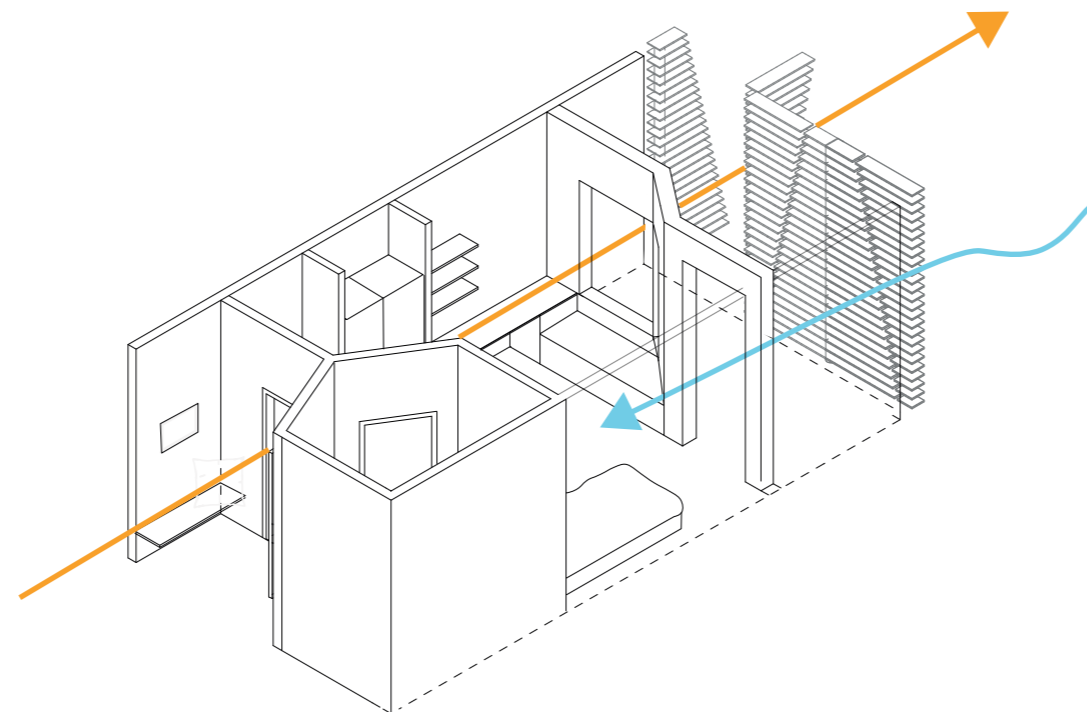
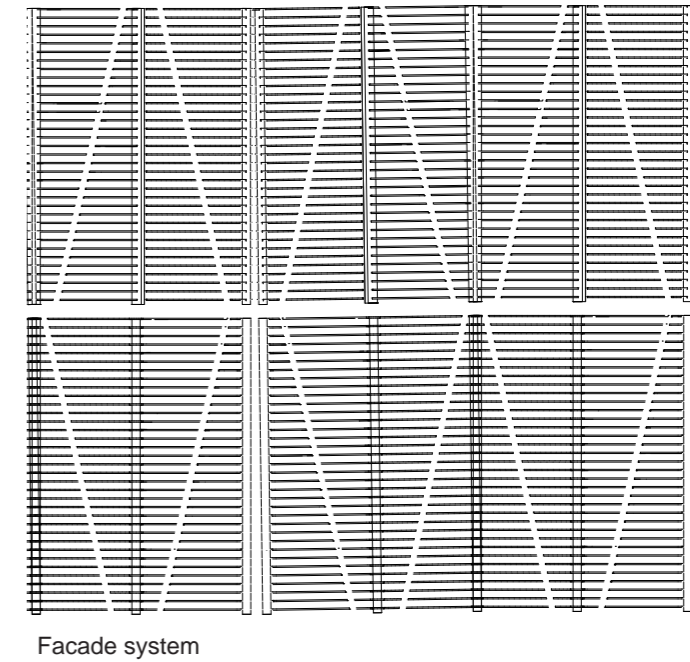
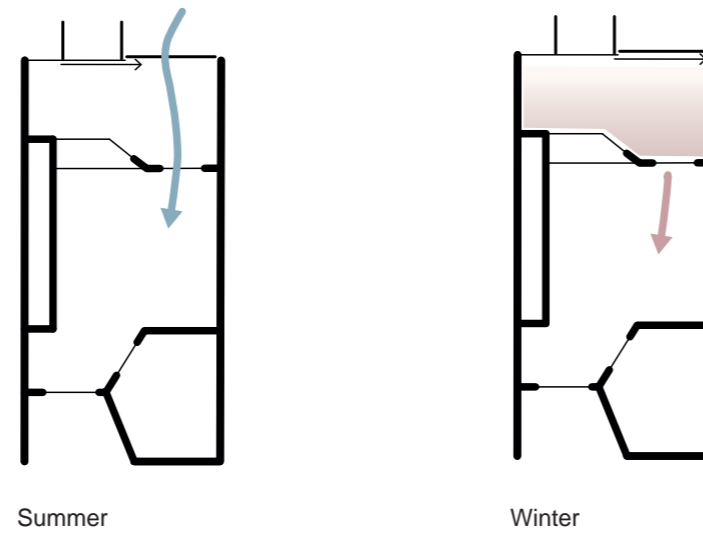
FACADE DETAIL

Facade system

A sun shading system of wood that patients can choose to keep open or closed to maximize views out, while reducing glare and cutting down on heat gain. One part of the sun shading fins is always fixed on the balcony to let fresh air in, and the other part the patient can choose to open. The one which the patient can open, have glass within it for protection. The glassed balcony can also help reduce energy cost through pre-heating of air or let cold air in.

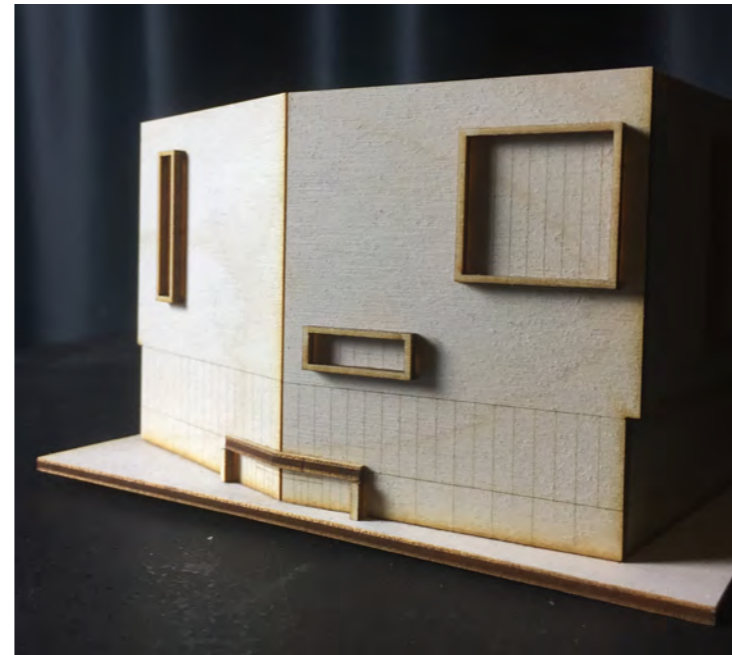
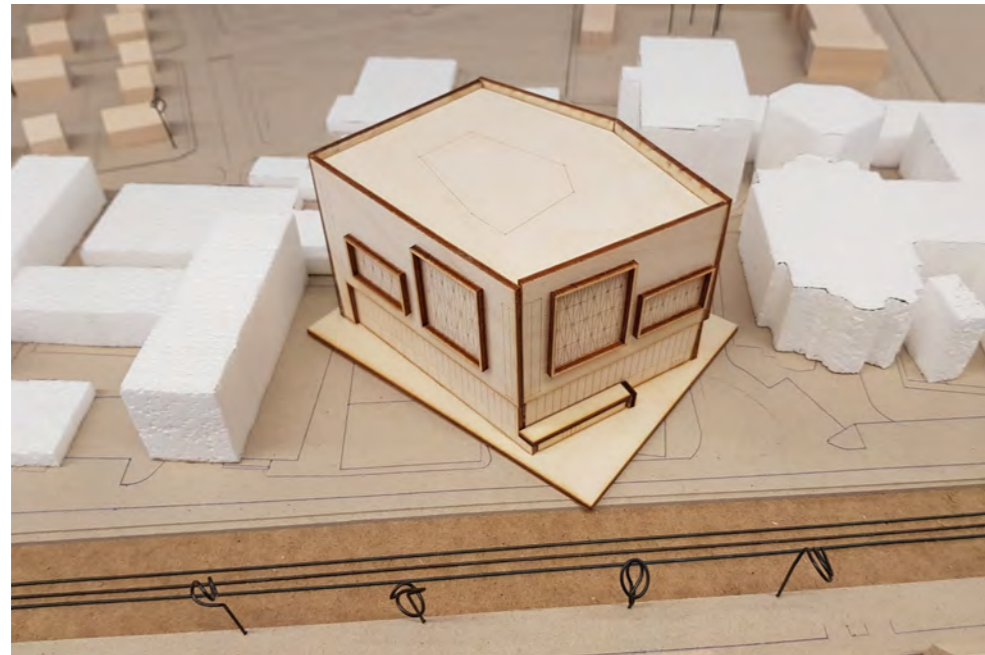
When closed the sun shading system creates a triangular pattern and serves to give the aesthetic character to the facade.

The balcony can also help to reduce energy cost depending on the sliding door. If closed the air can be heated before entering the room and if open cool air can be let in

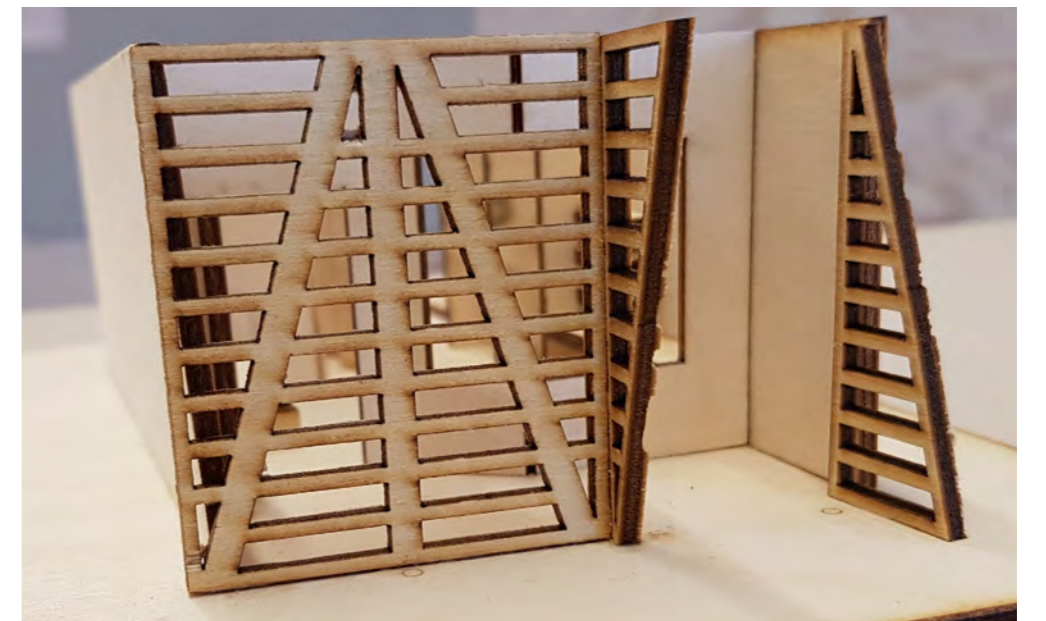


MODELS

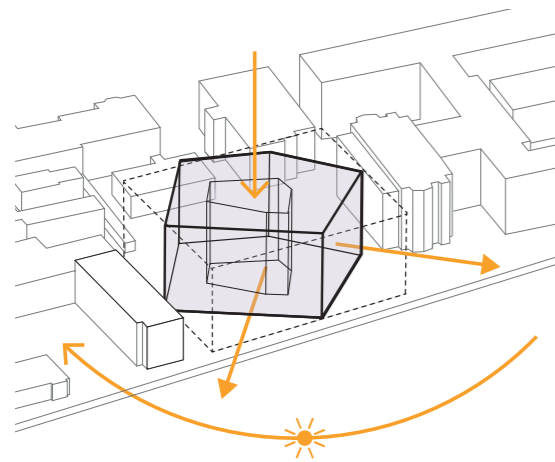
Building model



Patient room



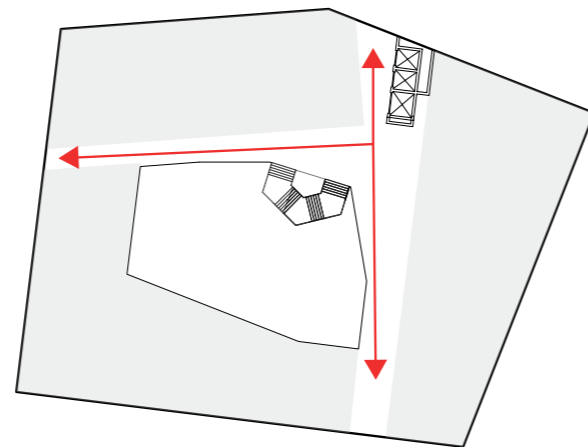
RESEARCHED INFORMED DESIGN



Sunlight and views

One important aspect relating to a patient's comfort and healing time is the amount of daylight and sun exposure. This has been proven to be important for both patients and the employees. Not only does it reduce stress, but it also created a more positive environment where both the patients and staff are in better spirits.

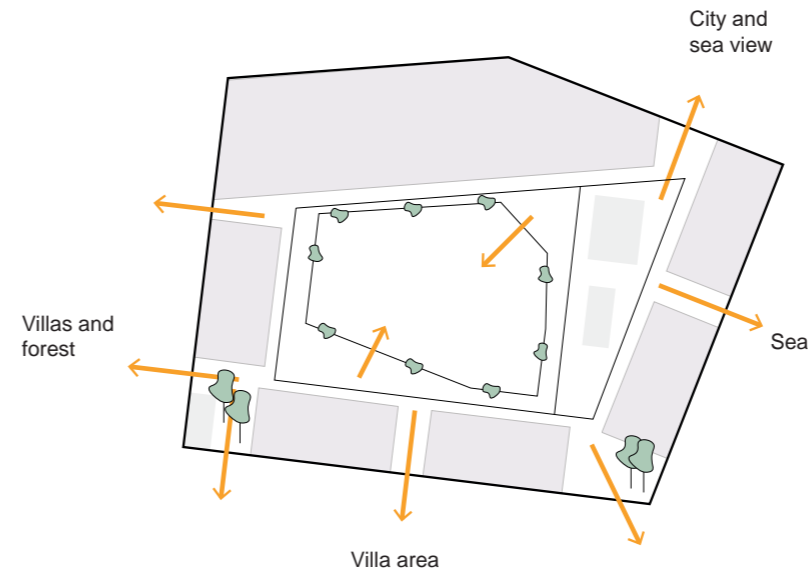
The building has an atrium which creates daylight in the darker parts of the building. The angles of the building create better daylight for the patient rooms. Views that are not directed into another building also helps the patients healing time. Therefore, we have shaped the building to get free sightlines.



Wayfinding

Research shows that difficulties in finding the way in hospitals contributes to stress for patients. In the different wards, views from windows and corridors help to support the orientation. Paths along the atrium also contributes to support the orientation.

On the outside the angles of the facade help to support the patients and their family to find the entrance and the public space.

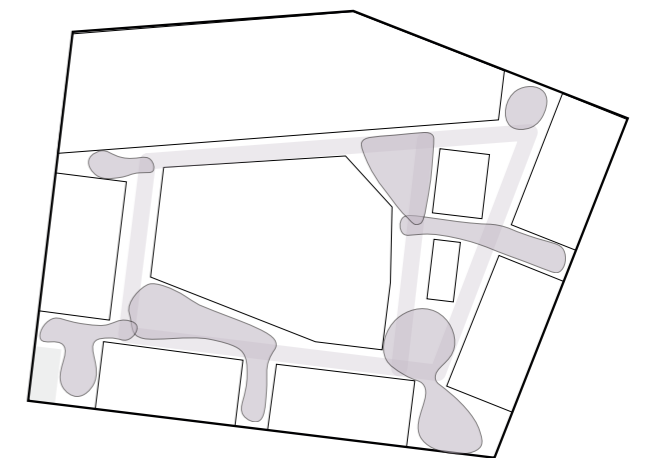


Positive distraction

The lack of design in the physical environment has a negative effect on the patients, both physically and mentally. Views and different kind of rooms create a better environment for the patients.

The atrium functions as a meeting place where a variety of spaces such as dayrooms and dining room are located around. The atrium can provide the patients with greenery and a glimpse of what is happening in the building.

By clustering the rooms views are created to the surrounding areas which can give patients stimulant during the stay.

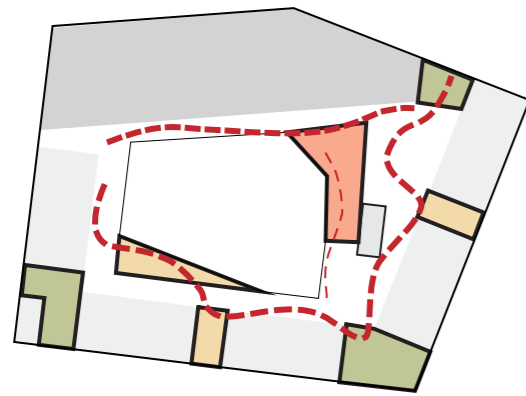


Breaking up corridors

The hospital environment is proven to be a big part of the healing time. Low social density through single patient bedrooms improves communication between the patient and the staff, but also creates better safety. A home like environment where you can have access to different kind of activity rooms and dayrooms is equally important.

The strategy is to break up the corridors by clustering the patient rooms and create a break in-between. Another strategy is to angle the walls and create dayrooms to decrease the feeling of long and narrow corridors.

HEALTH PROMOTION



Functions

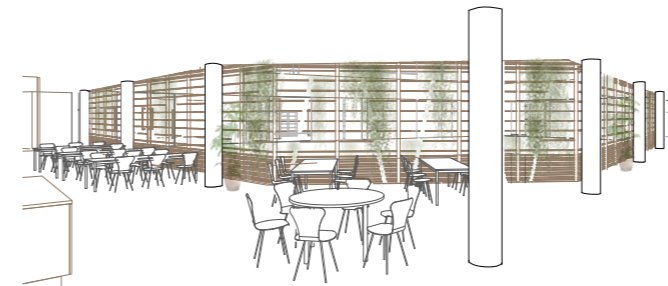
The building functions are located in different parts which encourages patients and staff to walk.

Supporting walking routes with view and different activities such as balconies and a variation of dayrooms make it more appealing.



Material

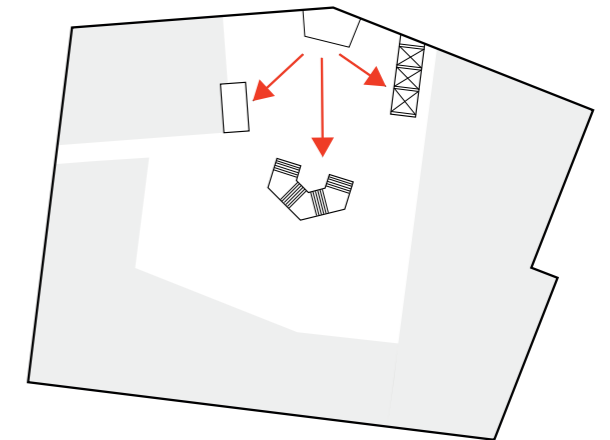
Working with natural colours and material help to reduce the feeling of being in a clinical environment. The resembles of a real home, where softer and warm material like wood, helps to support the patients to feel more at ease and comfortable during their stay in the hospital. The wooden facade feels more friendly and human, and less monotonous when passing by. The common spaces are designed with wood to create a warm and friendly atmosphere.



Greenery

Views towards nature help to reduce stress and improves the time of recovery of patients.

Greenery are incorporated in the design through an indoor garden on the ground floor where visitors and outpatient can relax. Green balconies are provided for the inpatient and plants are hanging in the atrium to be surrounded by nature.



Orientation

A clear orientation within the building helps to reduce stress among patients and visitors.

In the entrance hall the vertical communications as well as the reception are clearly visible to help visitors in their first visit in the building. The staff has a good overview from the reception of who comes in and out of the building.

A path along the atrium on outpatient wards can remind you where you are in the building.

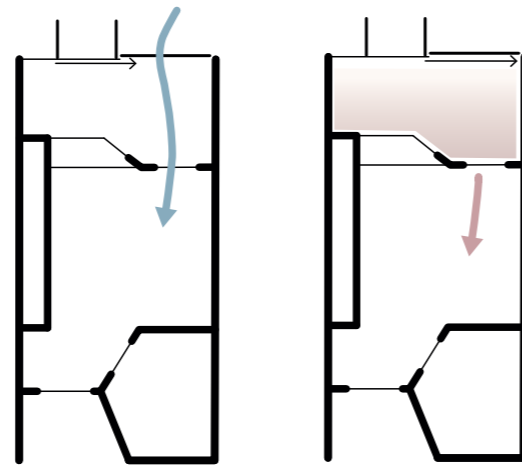
SUSTAINABILITY



Sunshading

A sun shading system of wood that patients can choose to keep open or closed to maximize views out, while reducing glare and cutting down on heat gain. One part of the sun shading fins is always fixed on the balcony to let fresh air in, and the other part the patient can choose to open. The one which the patient can open, have a glass within it for protection.

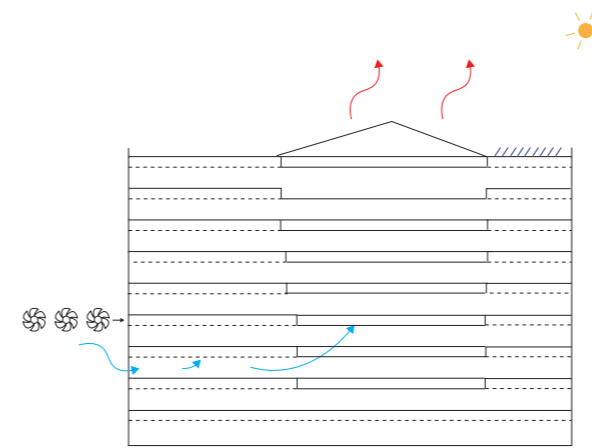
When closed the sun shading system creates triangles pattern and also serves to give the esthetic character to the facade.



Temperature

The heat inlet in the building can vary depending on season. A sliding glass door on the balcony that can open and close can regulate the temperature. If open, fresh and cool air can enter in the summer, and if closed the air can be heated before entering the building.

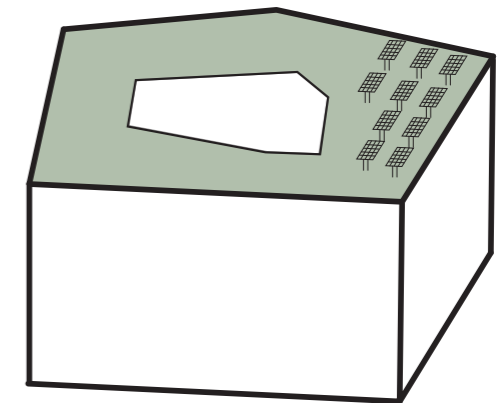
This is controlled by the patient but could reduce the overall heating and cooling consumption in the building.



Stack ventilation

The energy consumption can be decreased with natural ventilation. Stack ventilation works well in tall buildings with an atrium since warm air is rising and creates a difference in pressure.

Depending on season the natural ventilation is differently effective. To ensure a good and healthy climate it can be combined with mechanical ventilation, that partly can get electricity from solar panels.

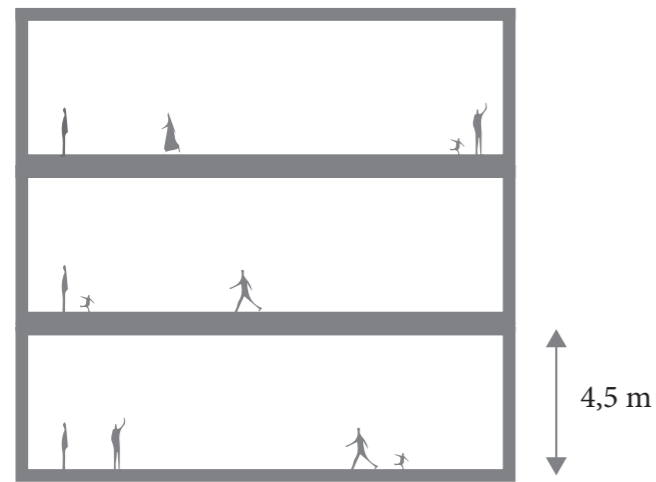


Green roof

There are many benefits of having green roofs, especially in a dense urban setting. The ecological gains of green roofs are that they create conditions for a richer flora in the city and thus have a positive impact on biodiversity.

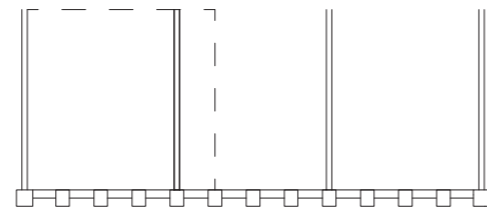
In addition, it collects storm water which reduces the pressure on the urban drainage systems.

FUTURE PROOFING



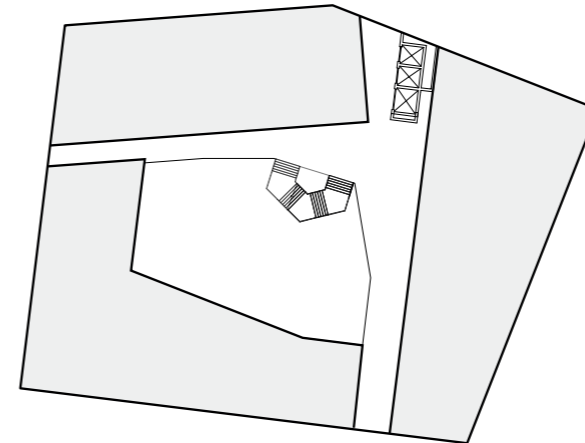
Ceiling height

A higher floor to floor height than necessary in psychiatry can help the building to adapt to future changes and technical support. One scenario could be that the wards turn into somatic departments. Therefore, the structure and its ceiling height helps to support any future changes.



Facade grid

A flexibility in the facade system makes it easier to expand and decrease the rooms. This makes it possible to change room arrangements and different hospital departments gets opportunities to expand to some extent into each other and share rooms when it's needed



Flexibility in functions

The floor plans are divided into different sections which can help future changes within the building. Departments can grow or shrink or be rented out to other stakeholders. Having public paths along the atrium also makes it possible to divide the different sections into smaller departments. This makes it more adaptable towards change in functions over time.

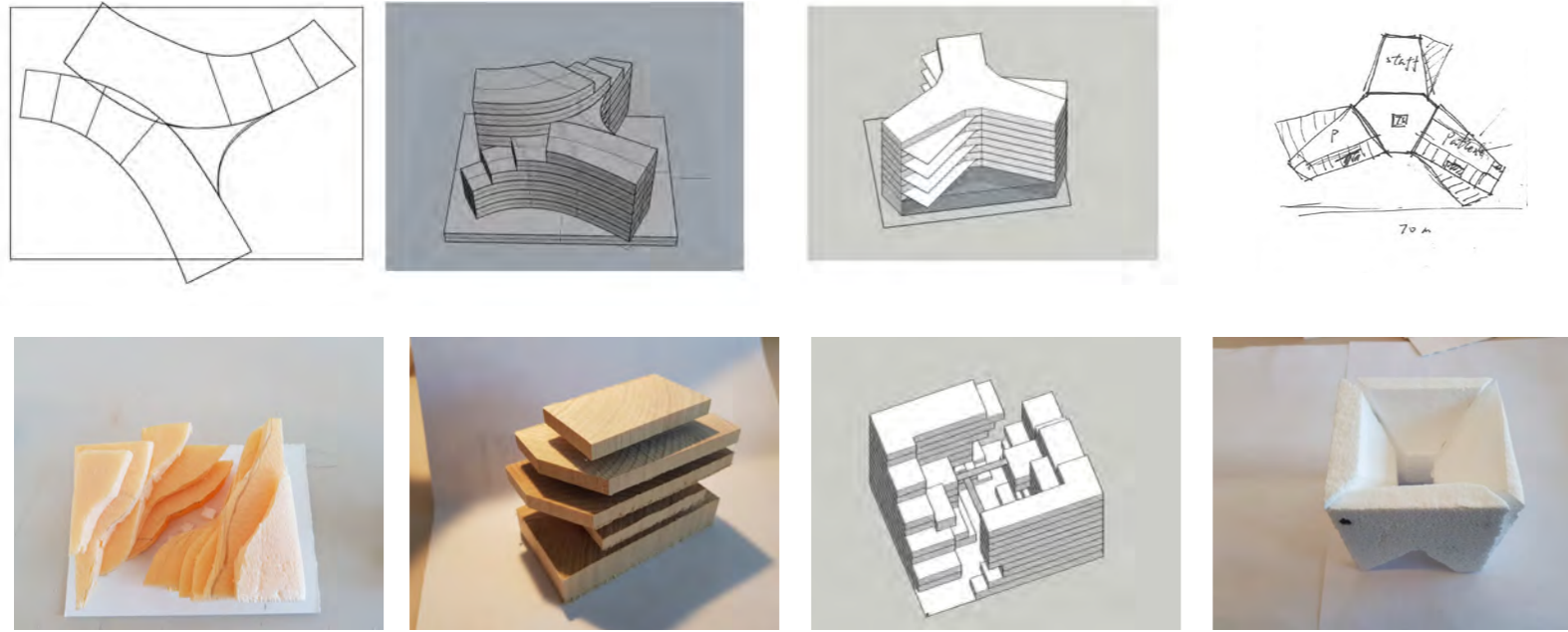


Replacable materials

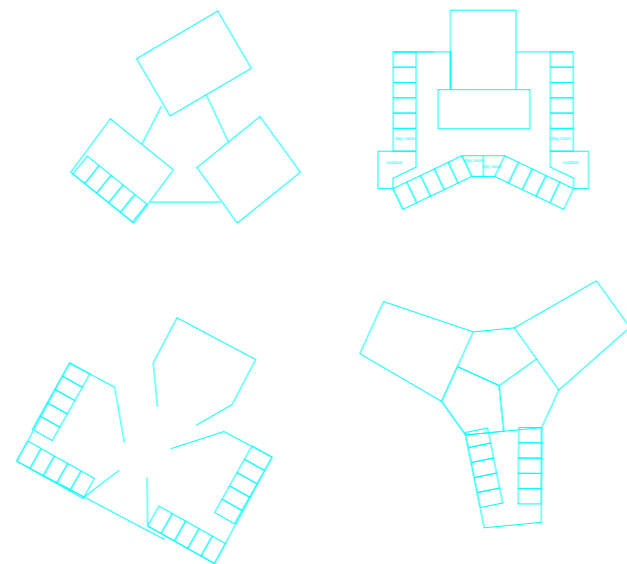
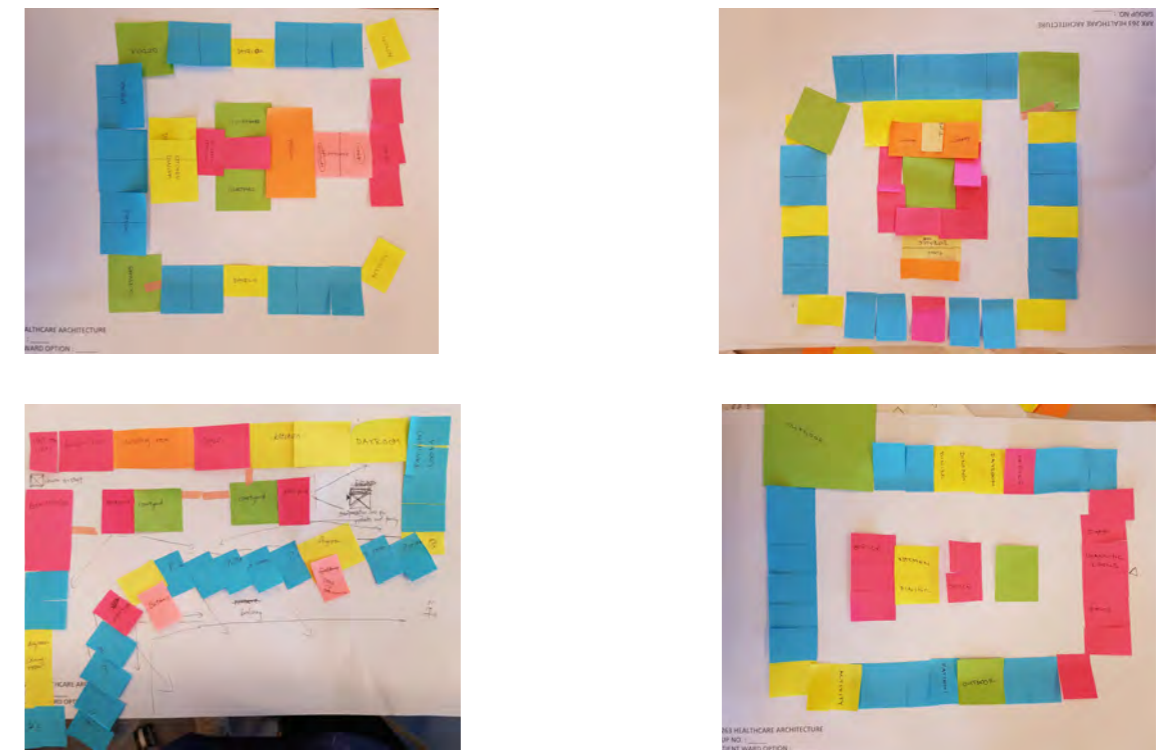
Easy replaceable materials create a flexibility in changes over time in terms of expansion and costs. Natural material such as wood is also sustainable over time.

PROCESS

Shape



Layout

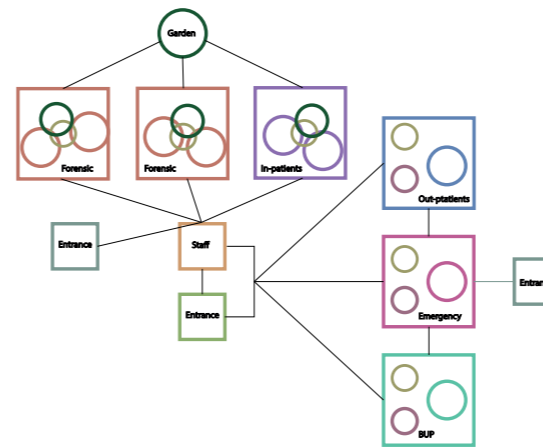


-where does the light come in?
 -the different relationships between the different rooms and spaces
 - what is more public and what is more private?

Volume workshop



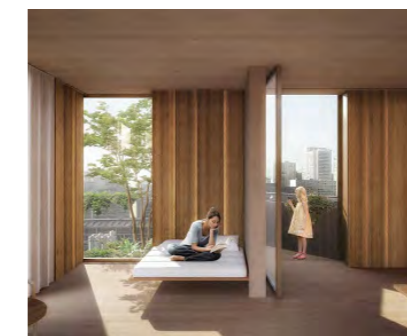
Program



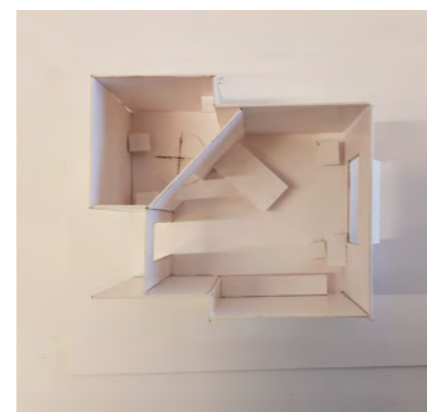
Atmosphere workshop

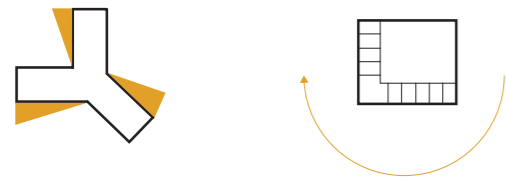


Inspiration

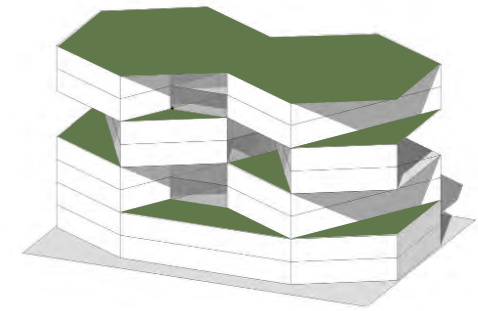
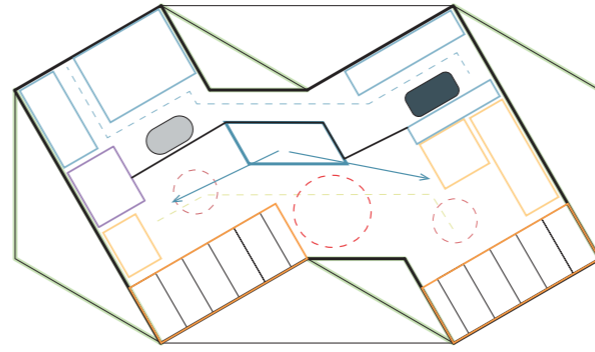
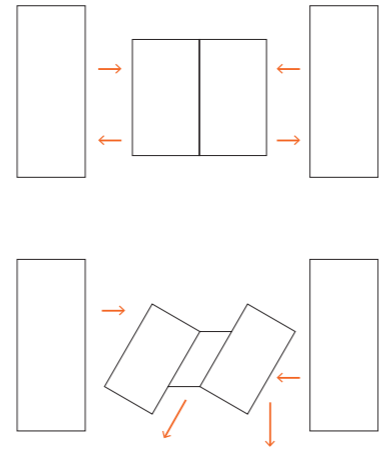


Patientroom workshop

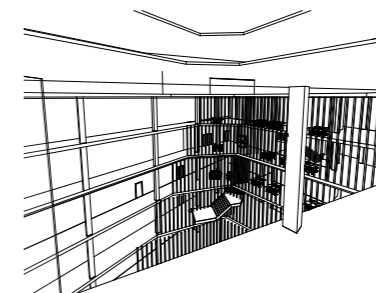
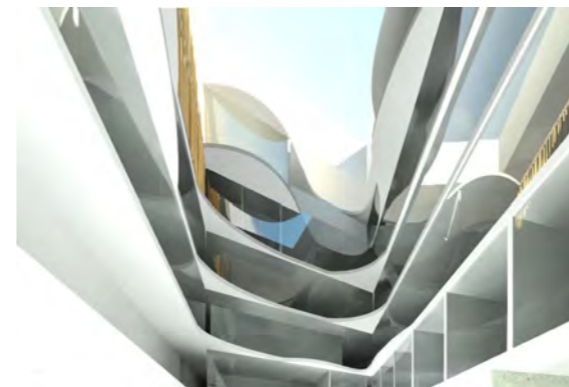
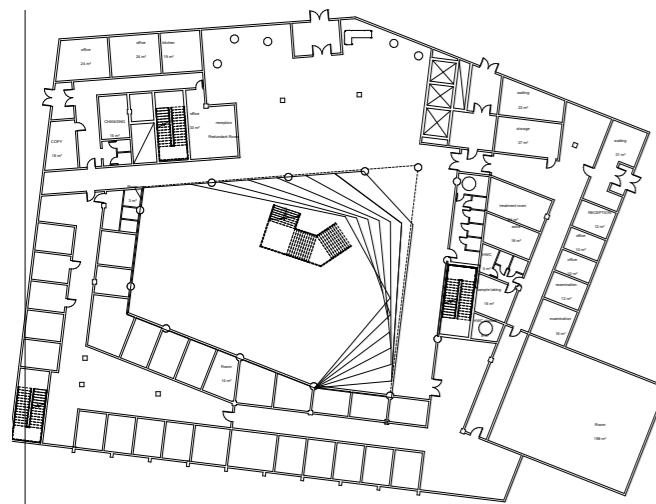




Concept critique



Sketch critique



Atrium

Facade

