

# Hospifarm

## New psychiatry, Västervik

Project proposal booklet

Team 8




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ARK263 - Healthcare architecture studio - HT 2018

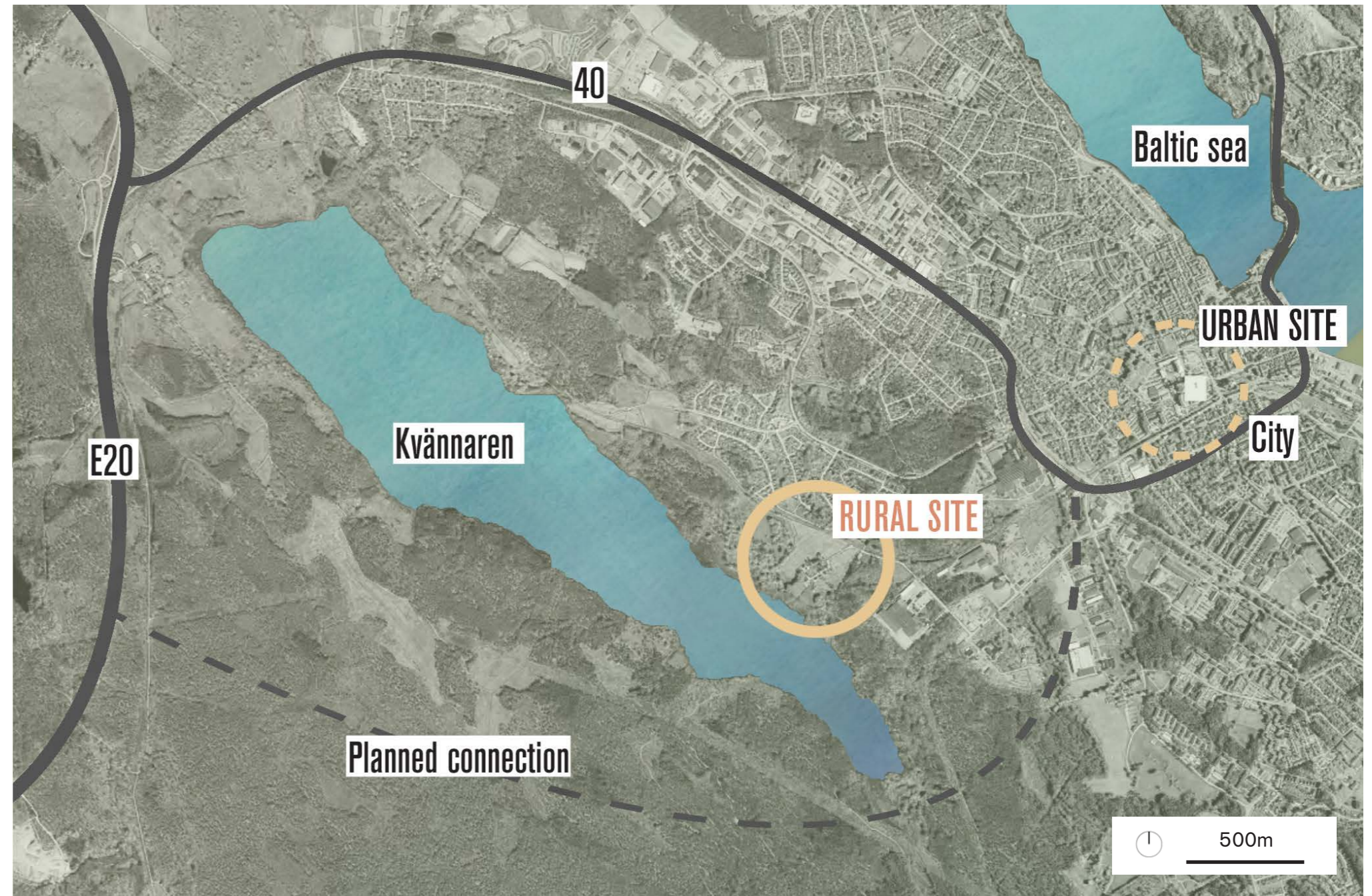
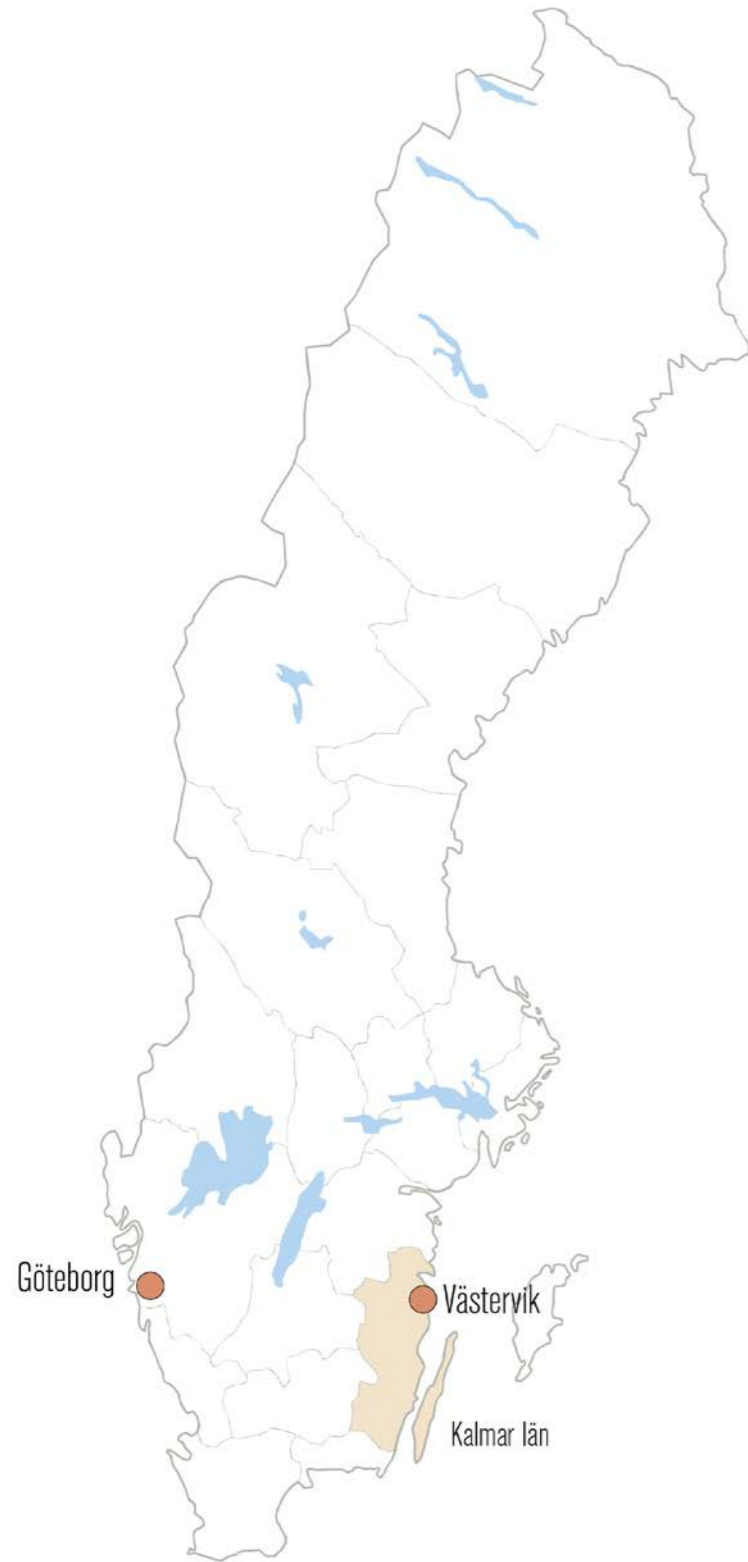
Examiner: Peter Fröst Studio teachers: Christine Hammarling, Elke Miedema, Lin Tan, Saga Karlsson



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# Context - Västervik



## Site description

After roughly analysing both available sites for the new psychiatry in Västervik, we have chosen the rural site situated southwest from the city centre. The site is located by the lake Kvännaren, which defines its southern border. The northern border is delineated by the railroad heading from Västervik to Linköping. Eastern and western borders are defined by woods with dense vegetation.

## Site selection

Main reason for choosing the rural site was an impression of the overloaded urban site. We believe, that at this moment it needs better organization and care for the outside areas and greenery, rather than a new construction. And generally a reduction of impermeable surfaces. The rural site, on the contrary, offers an opportunity of a healing nature environment for vulnerable patients in need of psychiatric healthcare. Placing

the new psychiatry facility on this site could also be a strategy for having a better chance to recover, but also to reorganize the current hospital site and enhance the quality of its outside areas.

## Historical perspective

Psychiatry in Västervik extends far back in history. Between 1912-1990 St Gertrude mental hospital (designed by architect Axel Kumlien) were run in the northern part of the city. The hospital was mostly self-sufficient. Patients participated in gardening, forestry, maintaining the pig house and many other activities. Today the buildings, that has been preserved, contains the Psychiatric Museum and locals for the Swedish Prison and Probation Service (Kriminalvården).

<http://www.psykmuseet.se/sjukhusets-historia/>  
 (1) <https://www.klt.se/Planera-din-resa/Tidtabeller/Linjekartor/>

## Basic information:

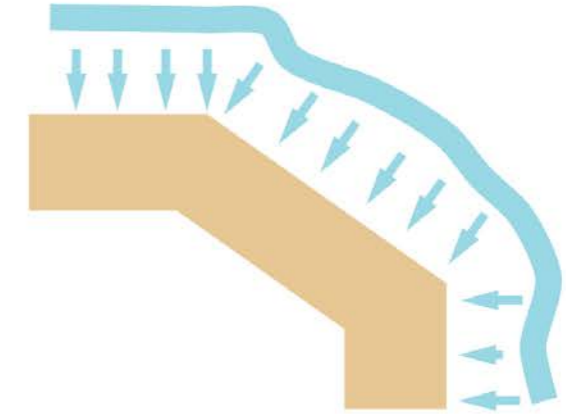
### Västervik

Province Småland  
 County Kalmar County  
 Population 30 000 inhabitants

# Visions and strategies

## Environment

- Preserve and enhance the existing greenery
- Preserve and enhance existing water streams and areas
- Protect existing bio-corridors and biotopes
- Integrate the building into the context
- Lowest possible use of arable lands



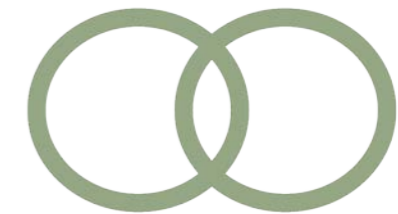
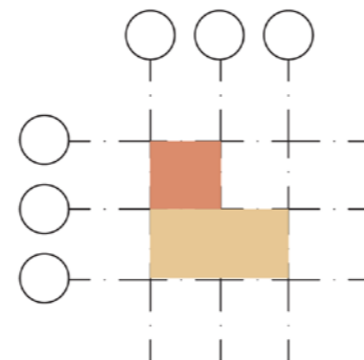
## Society

- Community based psychiatry
- Alternative therapy - mind and body employment
- Farm activities
- Public inclusion

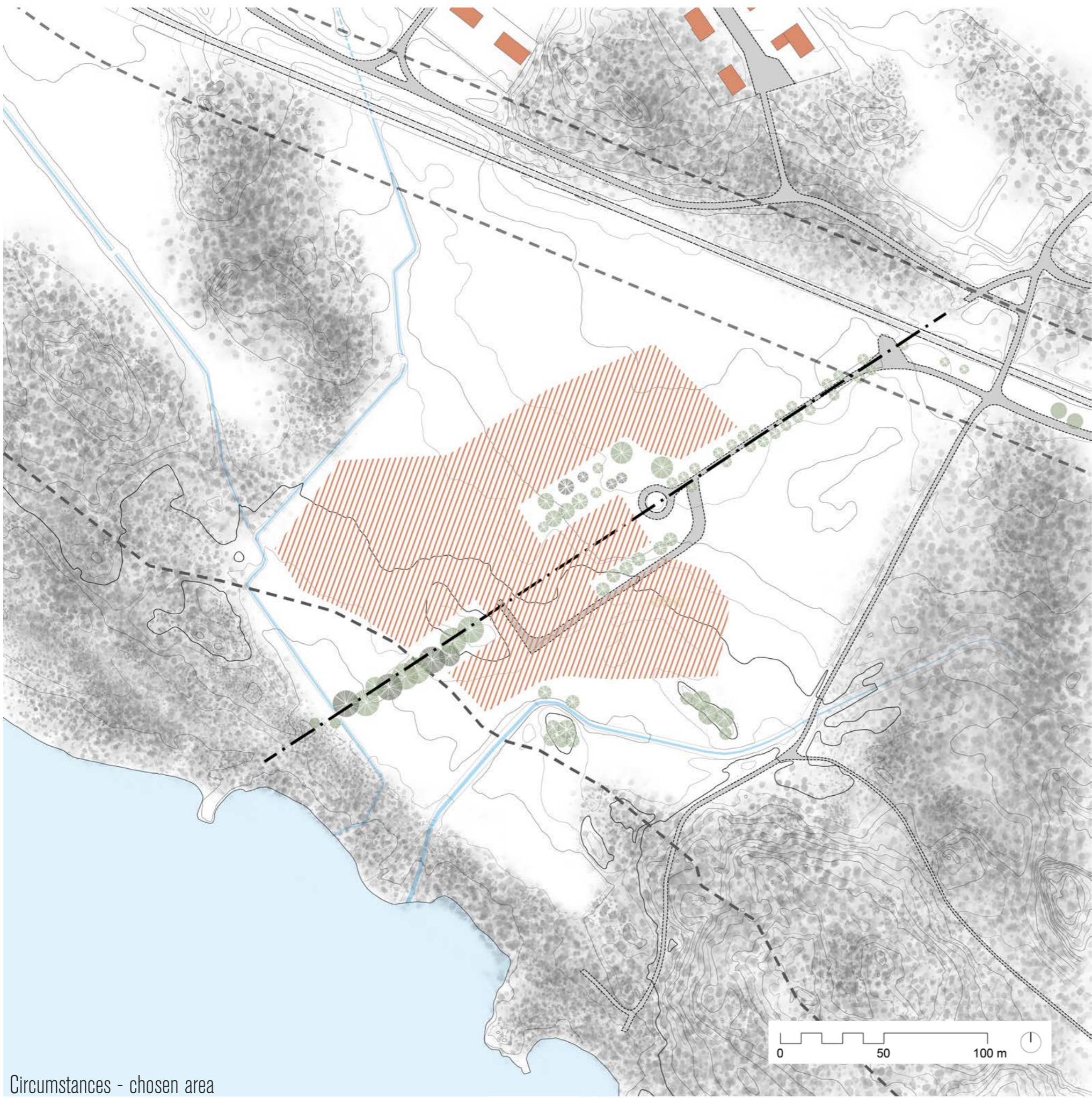


## Economical aspects

- Principles of permaculture
- Own local economy based on permaculture principles
- On site food production
- Return on investment
- Future expansion possibilities



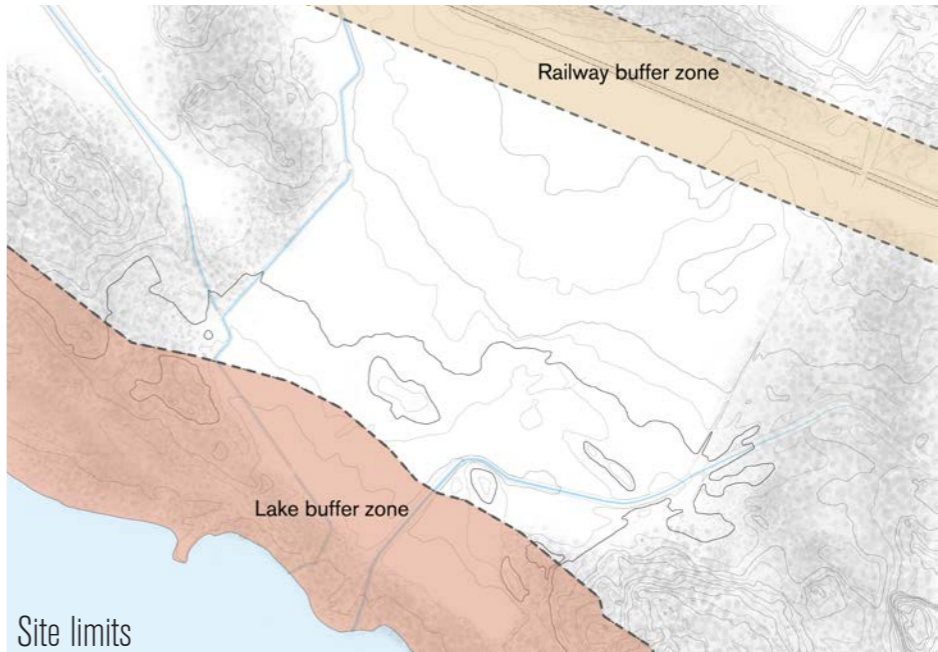
# Site analysis



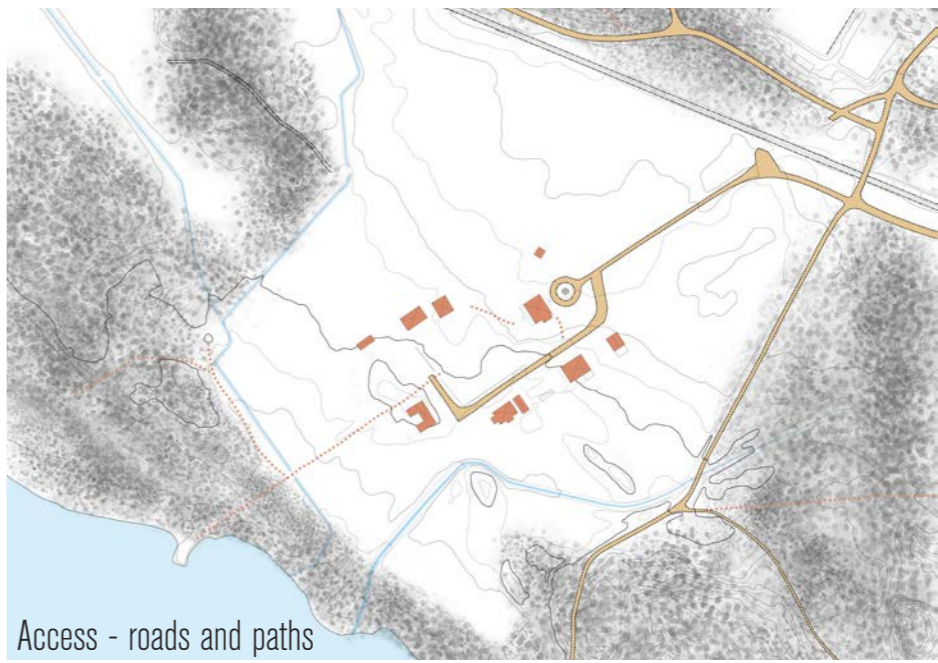
Circumstances - chosen area



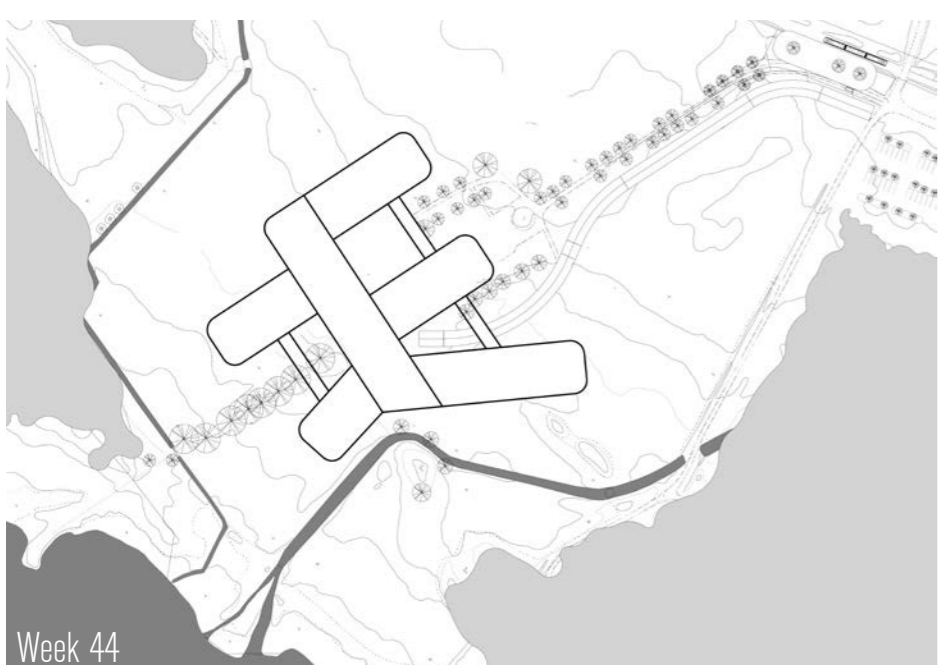
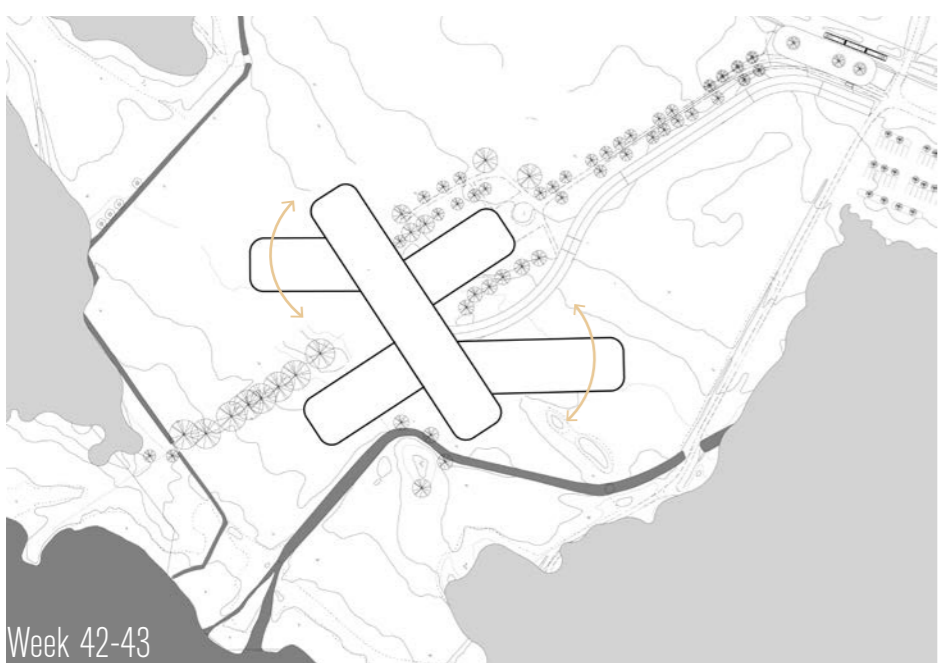
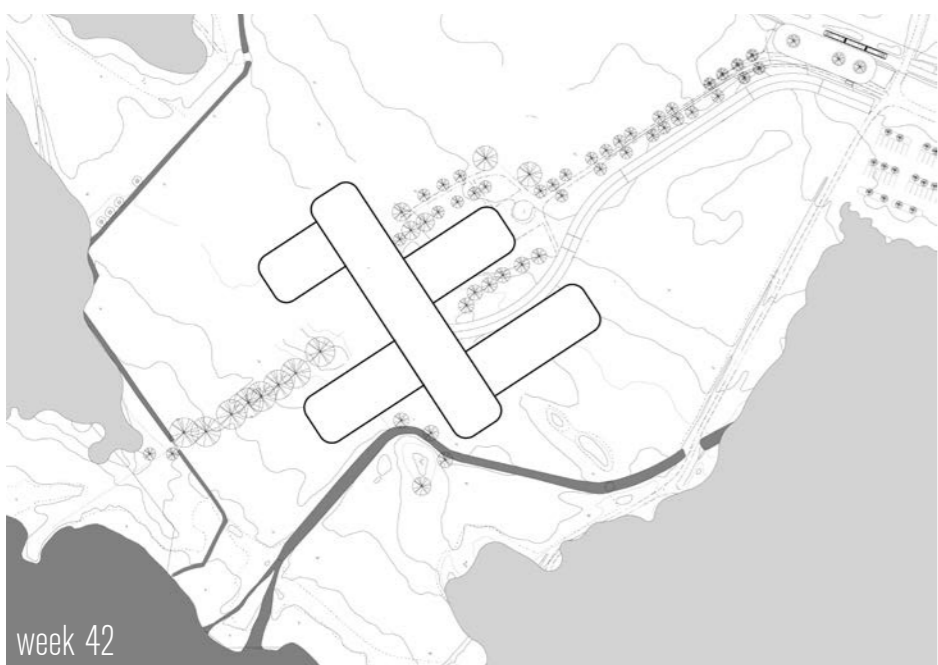
Existing blue and green structures



Site limits



Access - roads and paths



# Site plan



## Site plan

As a consequence of one of our visions, to preserve and enhance existing greenery and water areas, the hospital is fitted in between the natural elements of the site. By doing so we are able to preserve all the old trees on the site that gives the site its special character.

We take advantage of the railway that goes alongside the site by proposing a new railway station to encourage people to choose the more sustainable transport, the train. For those who still takes the car, there will be a parking area next to the railway station. Only ambulance, police and people with special need can go all the way to the entrance by car. This implies both health promotion and a calmer hospital environment.

## Farm

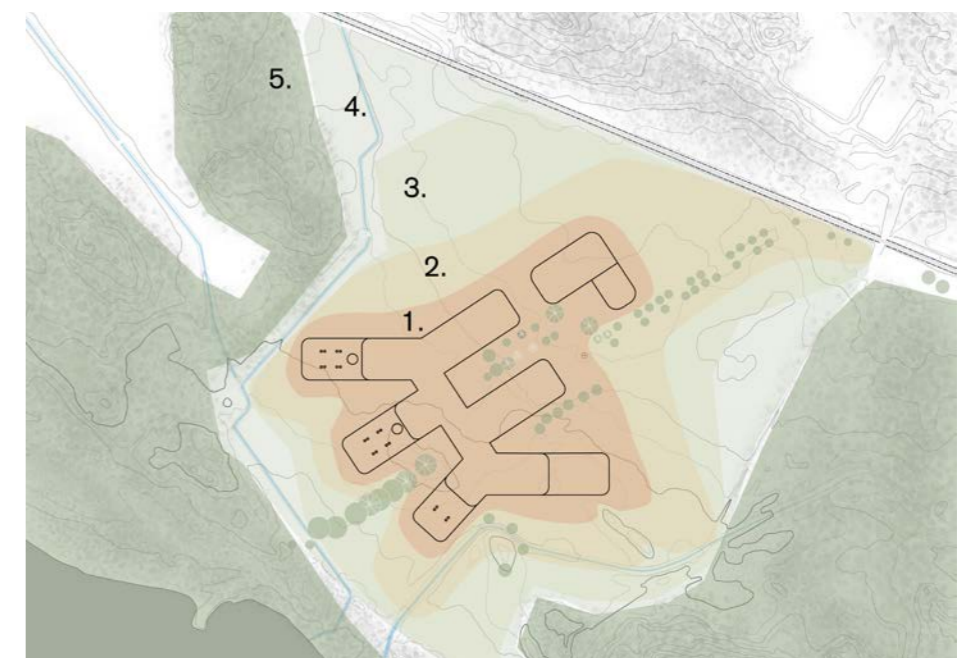
The farm is both integrated in the hospital facility but at the same time independent and open to the public. This makes an synergic cohabitation of these two institutions.

Those patients who can, will have some activities on the farm as a part of their therapy. Crops produced on the farm provides the hospital with food, but also invites the inhabitants of Västervik to share the joy of farming life and take part of the harvest by visiting the cafeteria or farm shop. For those inhabitants interested in culturing themselves it is possible to rent a smaller part of the agricultural land.

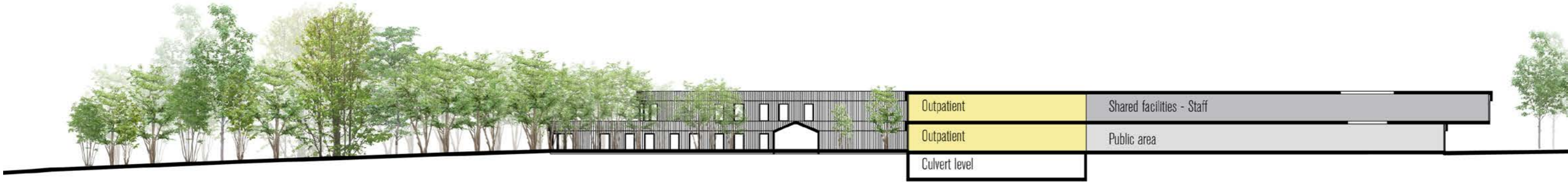
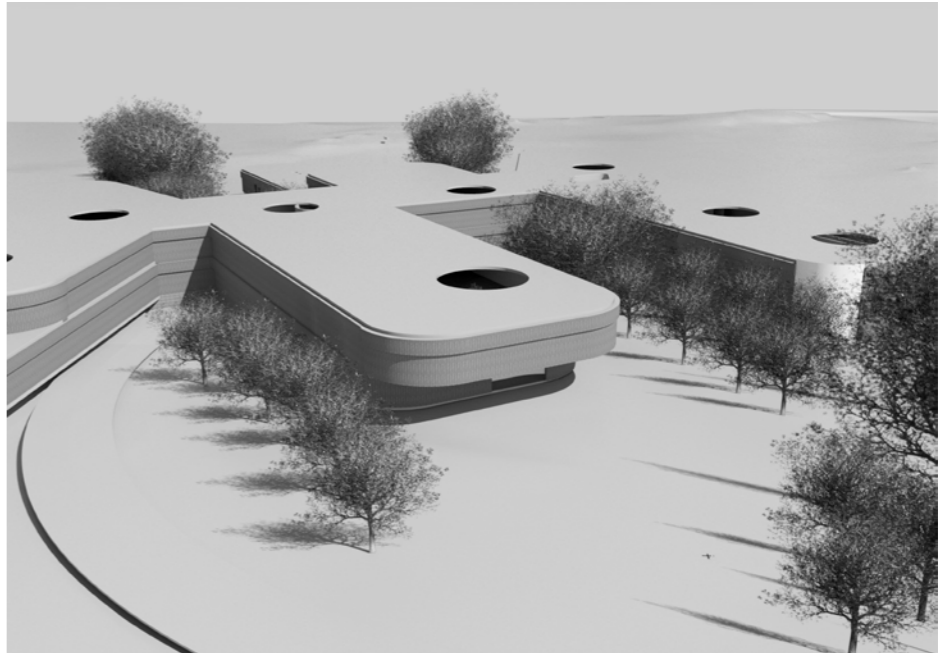
The area is divided in five zones, based on level of maintenance. (Scheme below)

(1) sensory garden, (2) bed with flowers and herbs, (3) fields for vegetable cultivation, fruit trees, a green house and a hen house, (4) meadows and farthest away wilderness (5).

Located in a separat building there is a garage where tractor and equipment for the farm is stored. z

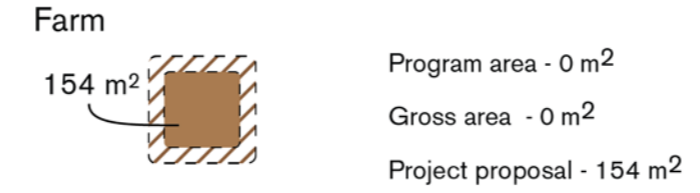
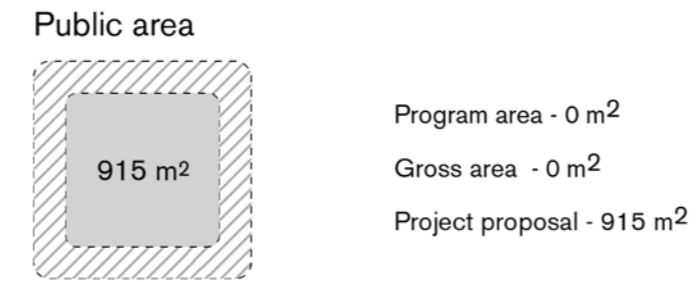
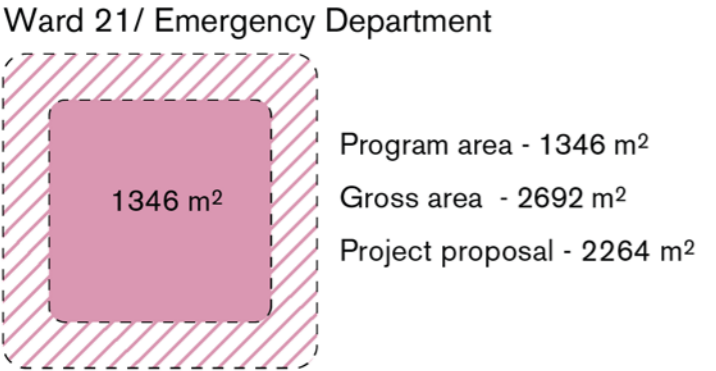
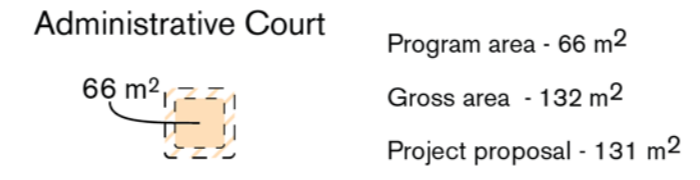
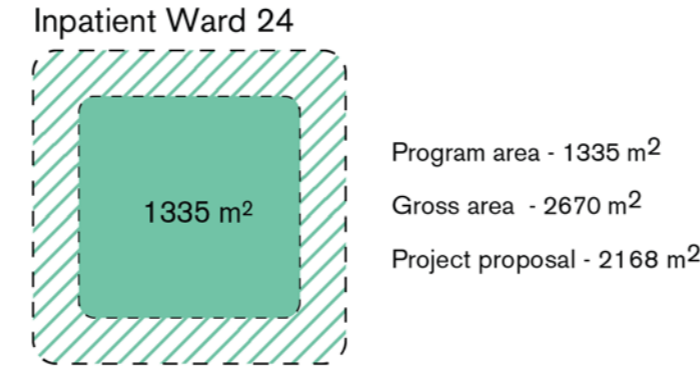
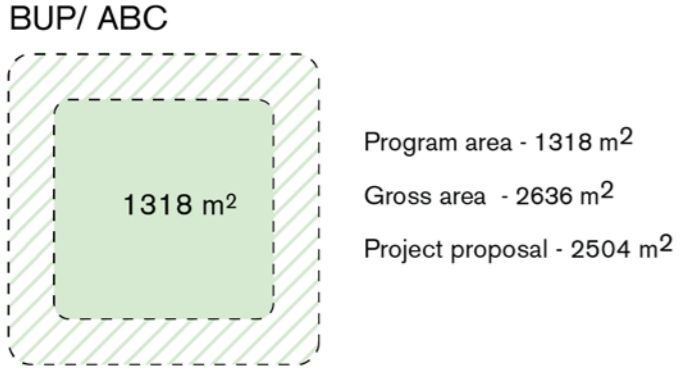
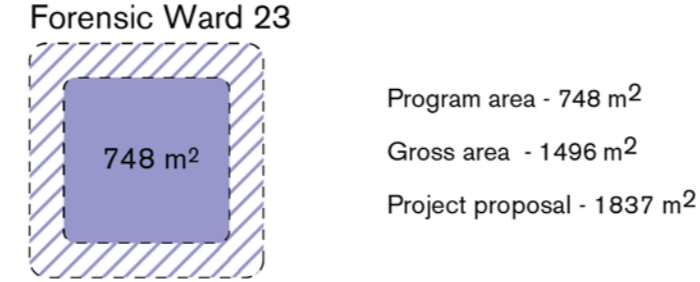
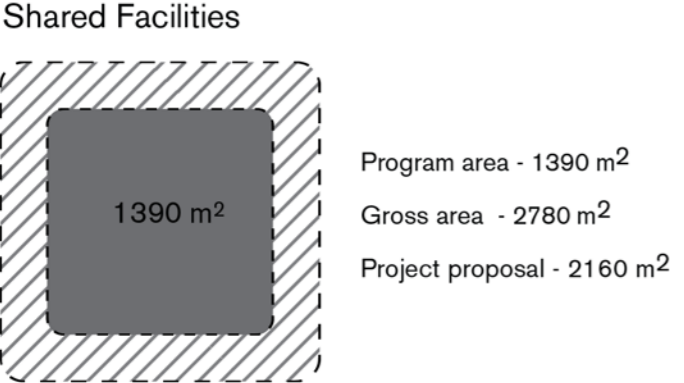
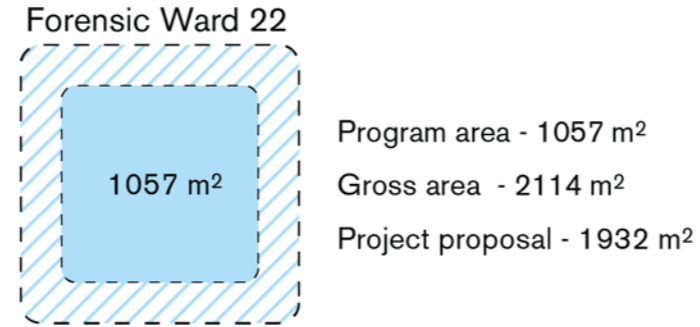
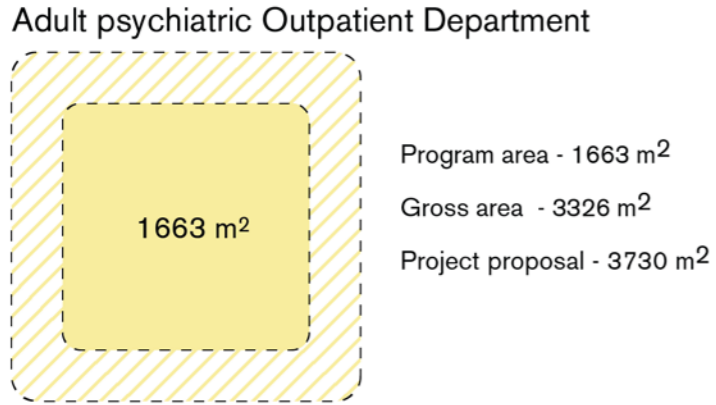


3d visualizations

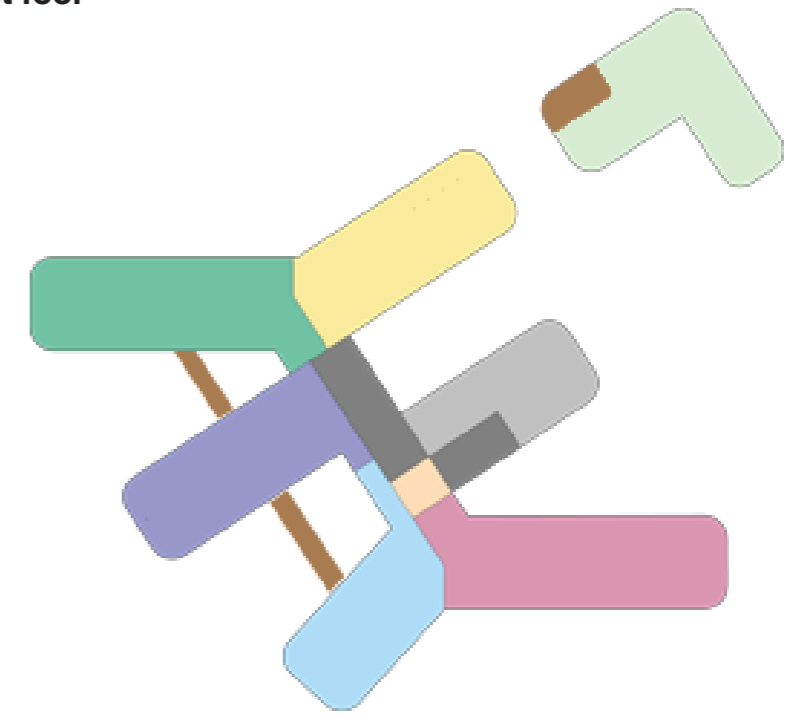




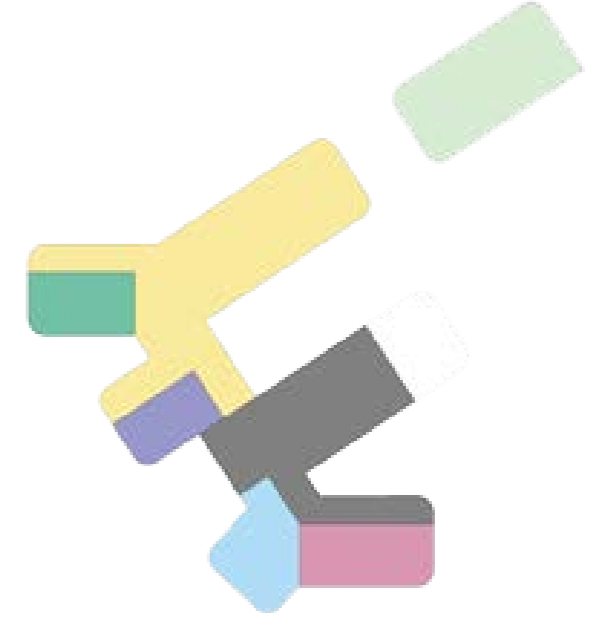
# Departments - program



**First floor**



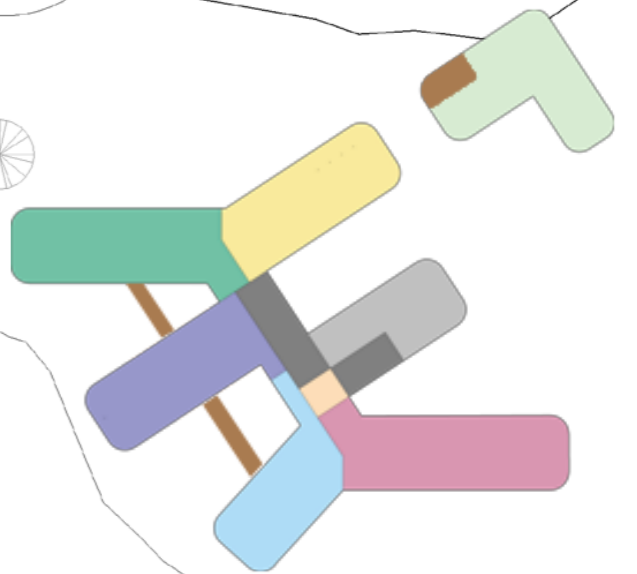
**Second floor**



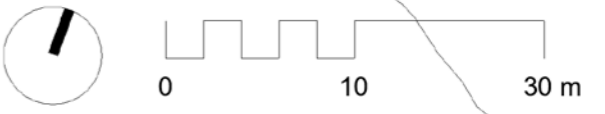
**Project proposal gross area**

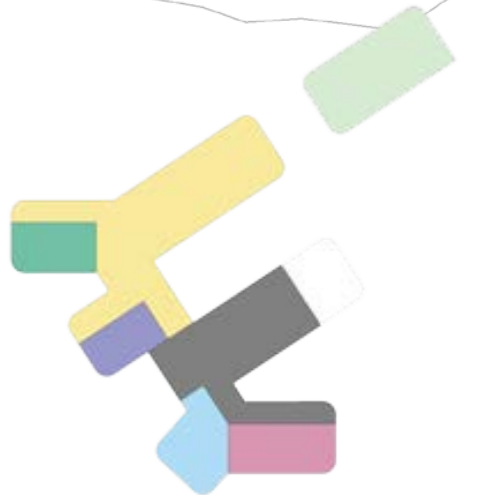
Gross area program: 17846 m<sup>2</sup>  
 Psychiatry hospital project proposal: **18535 m<sup>2</sup>**  
 Public areas: 915 m<sup>2</sup> (grocery store, café - restaurant)  
 Farm: 155 m<sup>2</sup> (tractor garage, storage for tools)  
**Total: 19605 m<sup>2</sup>**

Total program coeficient: 2.0  
 Corridors and walls: 0.5-0.6  
 Technical rooms: 0.4-0.5

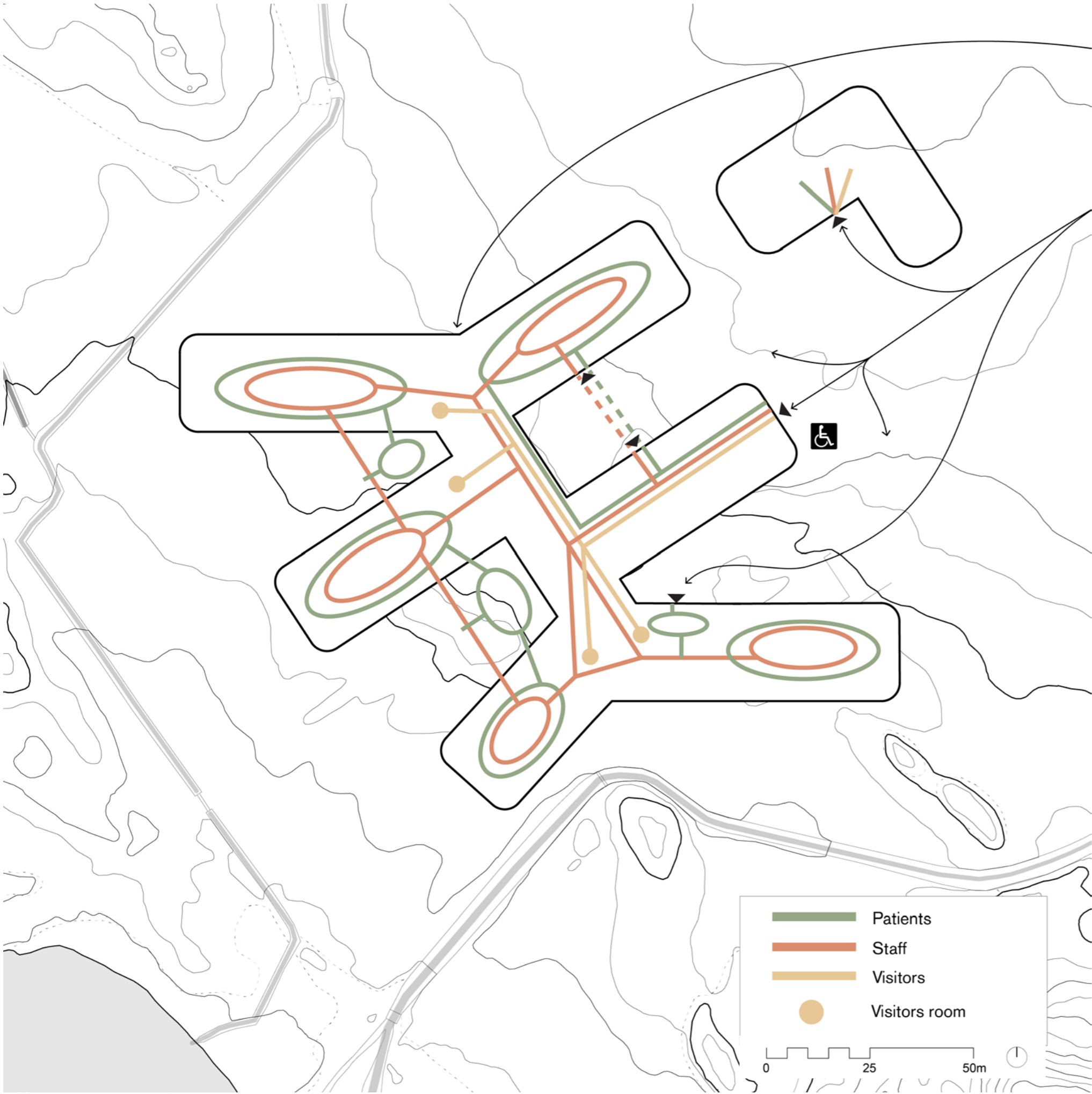


Scale 1:600 (A3)





# Flows and connections



The old tree avenue, which has been preserved, leads the visitor from the railway station and parking lot up to the main entrance.

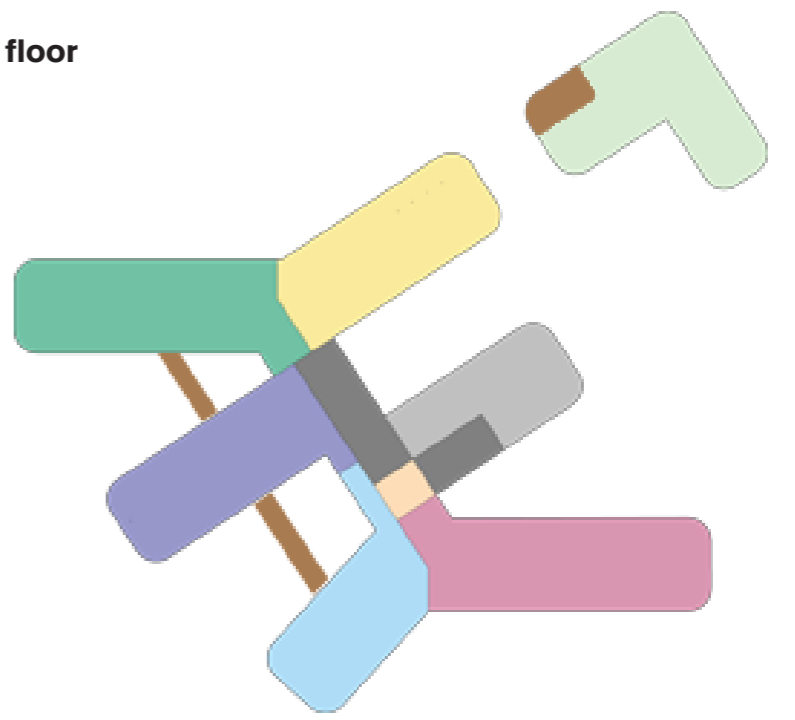
The main building is reached from four different entries; the main entry, one for the emergency, one for delivery and one for the outpatient ward. From the main entrance, strategically placed receptions and signs at different points, direct the user throughout the building.

Those going to the outpatient ward might use the main entrance as everyone else. Anyways, those who visit the hospital on a more regular basis and know where to go, there is a separate entrance direct to the outpatient ward, giving the patient the opportunity to take a faster way.

The emergency entry is only for vehicles (ambulance and police). Pedestrians reach the emergency ward from the main entrance.

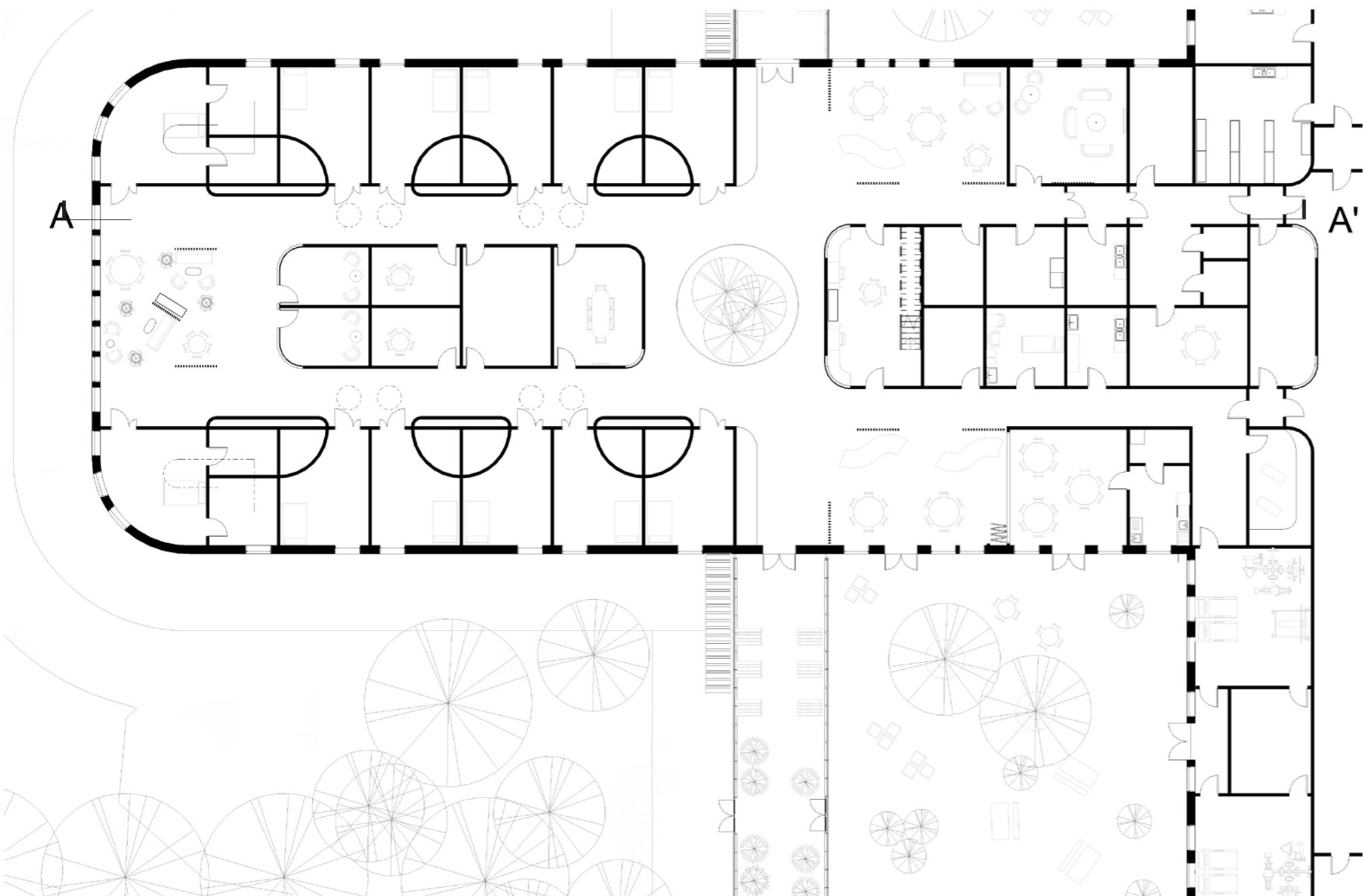
BUP/ABC ward, separated from the rest of the hospital, has its own entrance and flows.

## First floor



## Building Area Legend

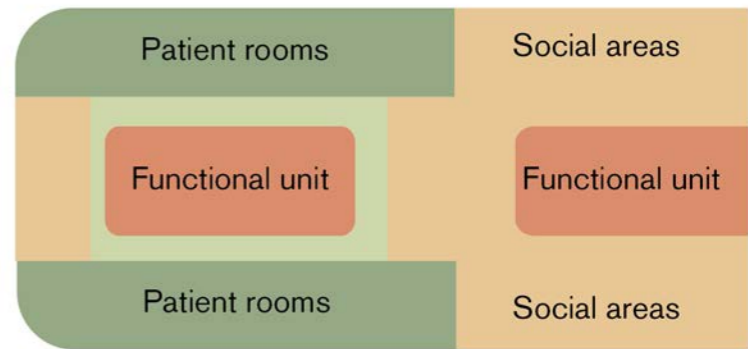
- BUP/ABC
- Emergency 21
- Forensic 22
- Forensic 23
- Inpatient 24
- Outpatient
- Shared facilities
- Public areas
- Farm



Department - Ward 23

The ward is zoned from public to private, further you go in. Visitors meet with their relatives at the beginning of the ward. Social areas (day room, activity room, dining room etc.) are located mostly around the big courtyard. There, where the activities take place. Around the patient rooms there is to be more calm and quite for the patient's sake. In the middle runs the 'functional core', consisting of entities such as team station, consultation room, sample taking room, disinfection room, storage etc.

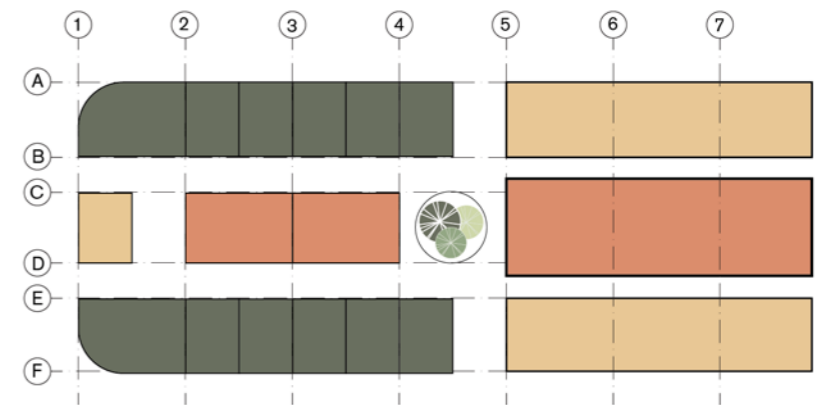
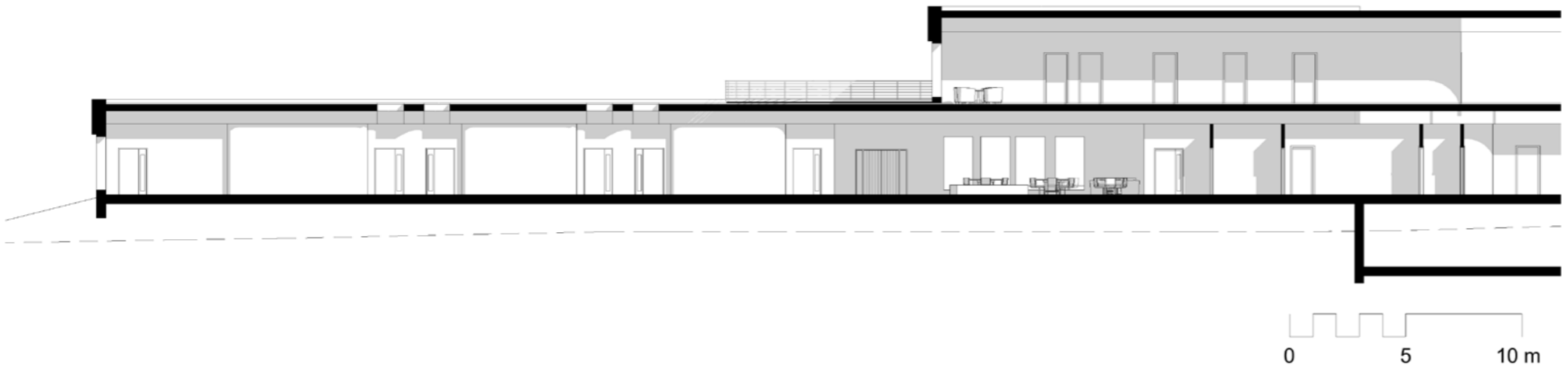
By breaking up the inner function units and placing an inner atrium we shorten the sense of long corridor and bring in light and greenery into the departments. The closed wards are linked together with the green house corridors.



Functions diagram - plan

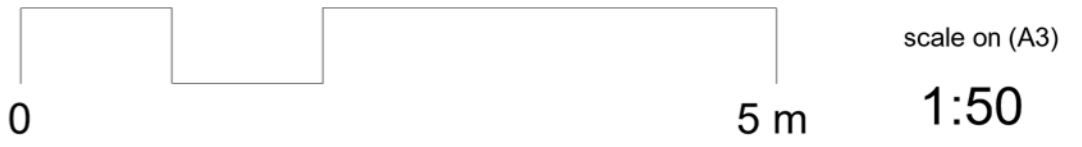
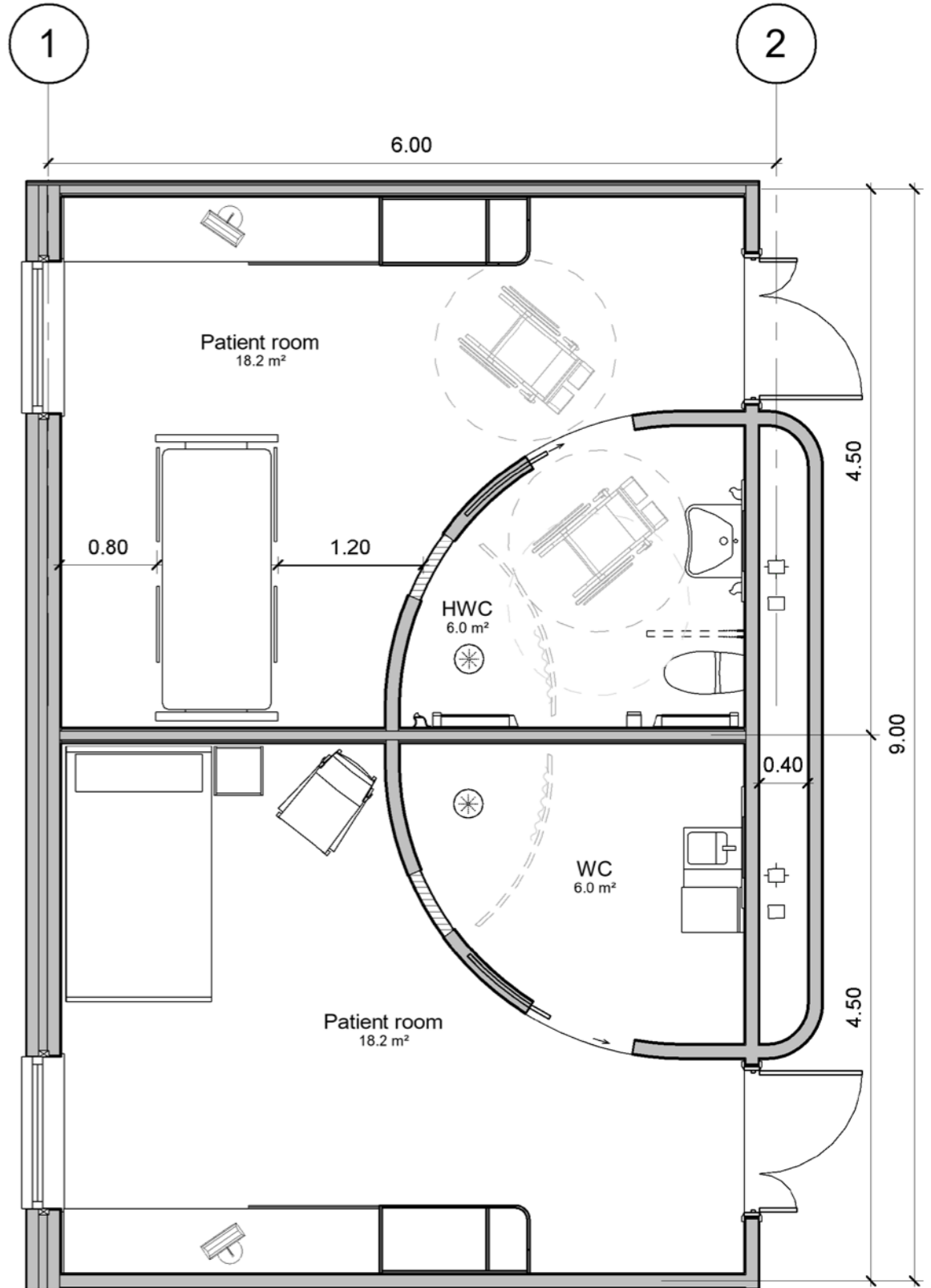
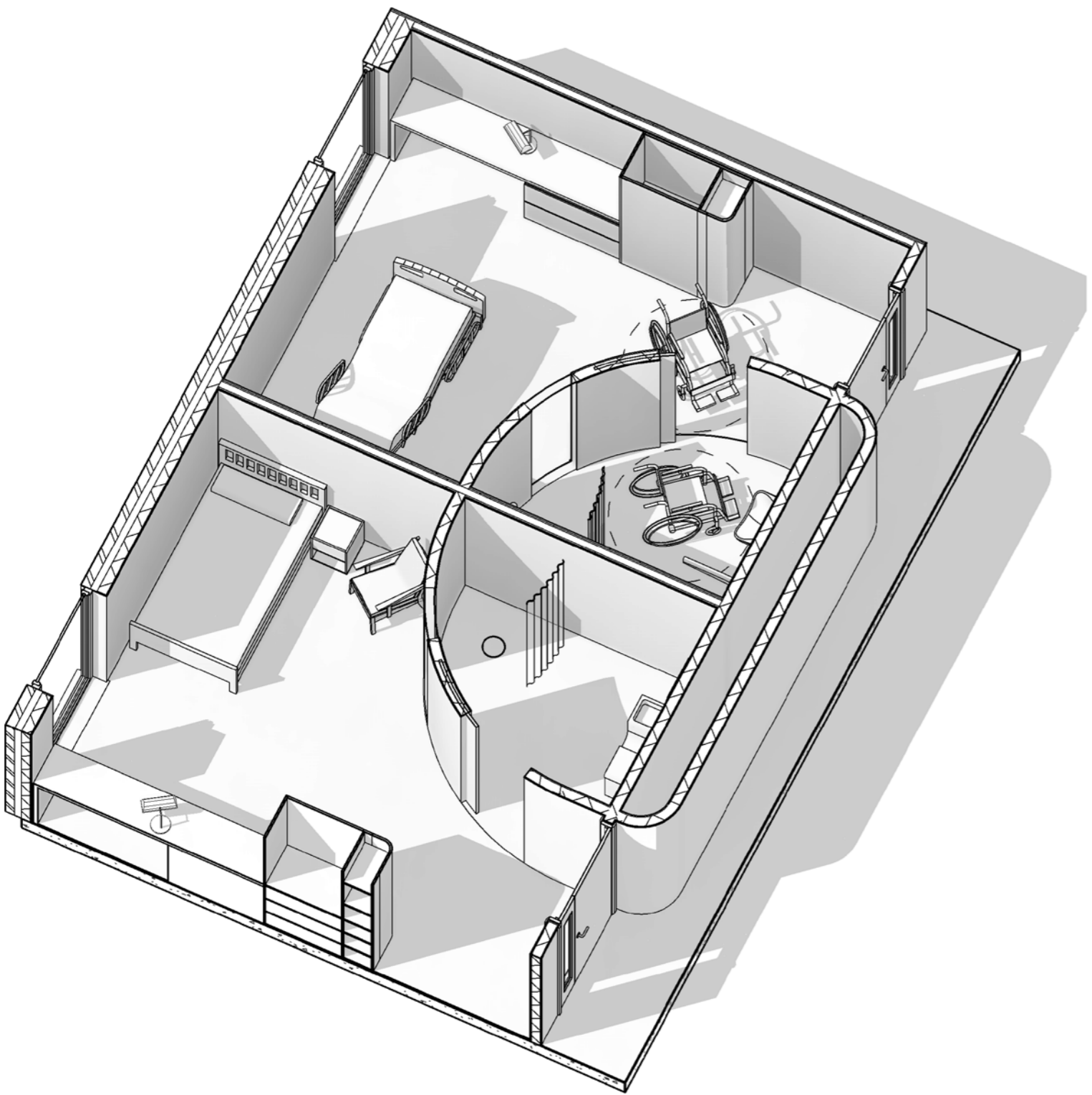


Functions diagram - section



Structural composition scheme

# Patient room





### Facade system

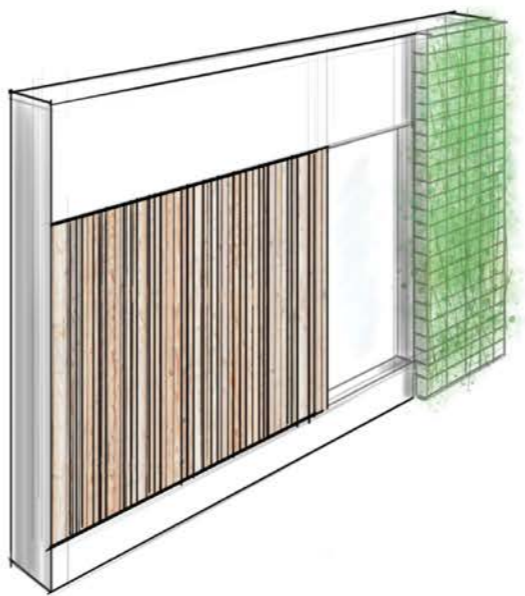
When it comes to facades and materials we aim to create a low-scale homelike feeling that looks warm and inviting. We have chosen a standing larch wood panel as primary façade material and combine it together with brick. In addition to that parts of the façade will be dressed in green.

Growing parts of the facades contributes to biodiversity as it attracts various species of insects and eventually birds. We choose vertical plants that look good for as much of the year as possible, so that the façade keeps its character and remains vivid throughout the year.

### Species of climbing plants under different seasons

	parthenocissus	hedera	hydrangea
winter			
spring			
summer			
autumn			

### Facade system



# Visualizations





# Visualizations



# Psychiatric healthcare - grön omsorg (green care)



The farm is a part of the Grön Omsorg-concept. We believe that it is of great significance for people with mental illnesses to do something meaningful. 'It's about getting the chance to care for, rather than being cared of' as described by the founders of Grön Omsorg. From doing something so simple as planting seeds or taking care of hens, the patients benefit from fresh air and the joy of physical work which later pays off in form of food on the table. The patients are offered the sense of meaningfulness and not of just being locked in.

Historically there has been a farm located on this site but farming has also been a method earlier used in psychiatric healthcare. (<http://www.psykmuseet.se/sjukhusets-historia/>) So with the farm we go back to the roots in a double sense, both of the site and of psychiatry itself.

## Lantbrukarnas Riksförbund - Grön omsorg

Psychiatry (grön omsorg quote)

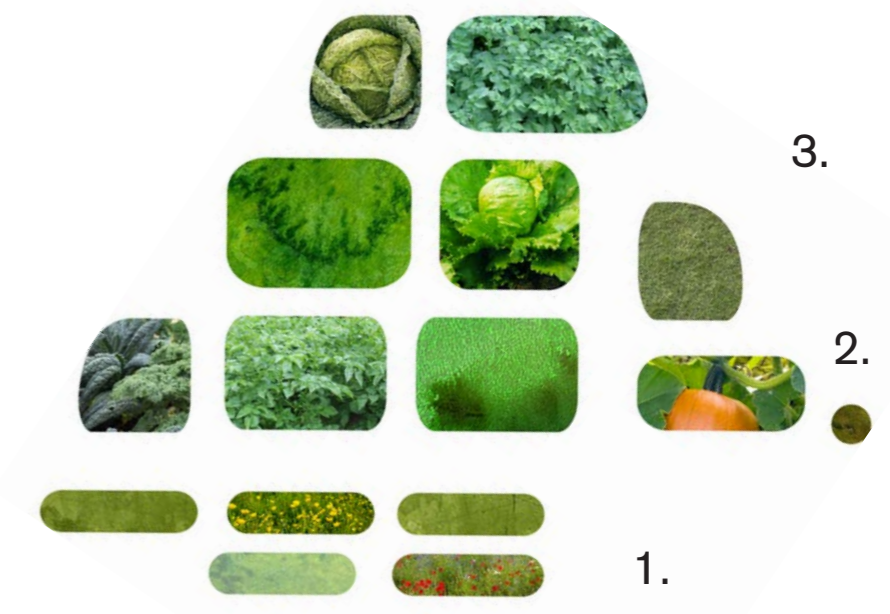
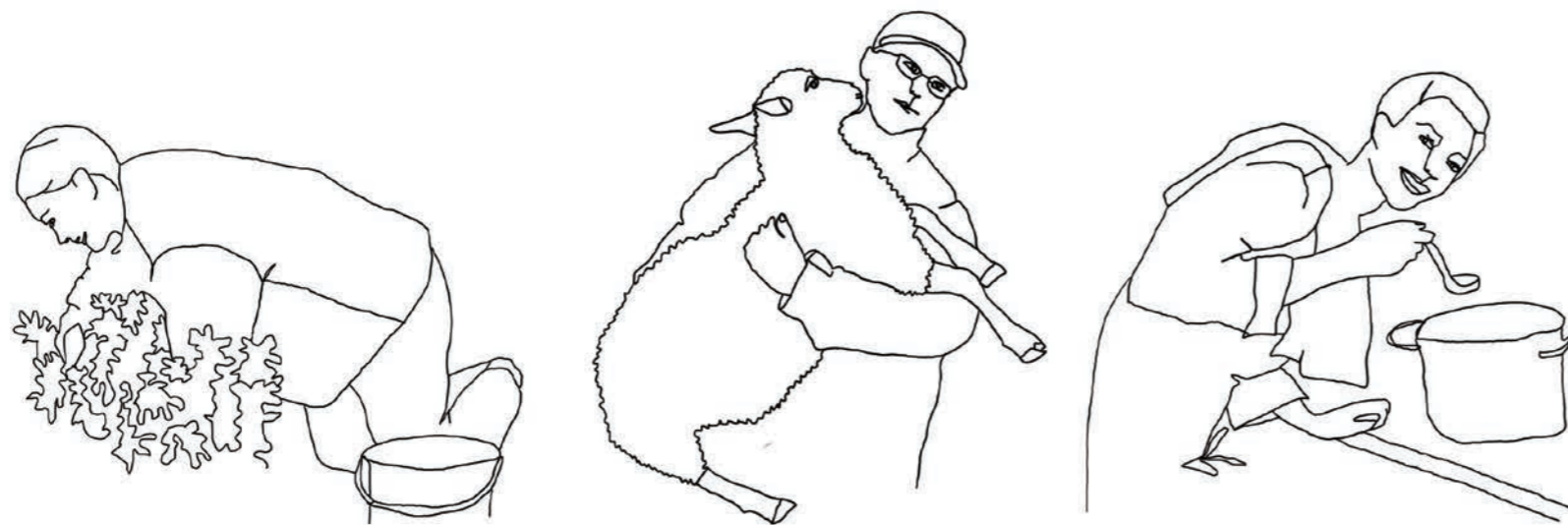
### 'Det handlar om att själv få vårda, inte att bli vårdad'

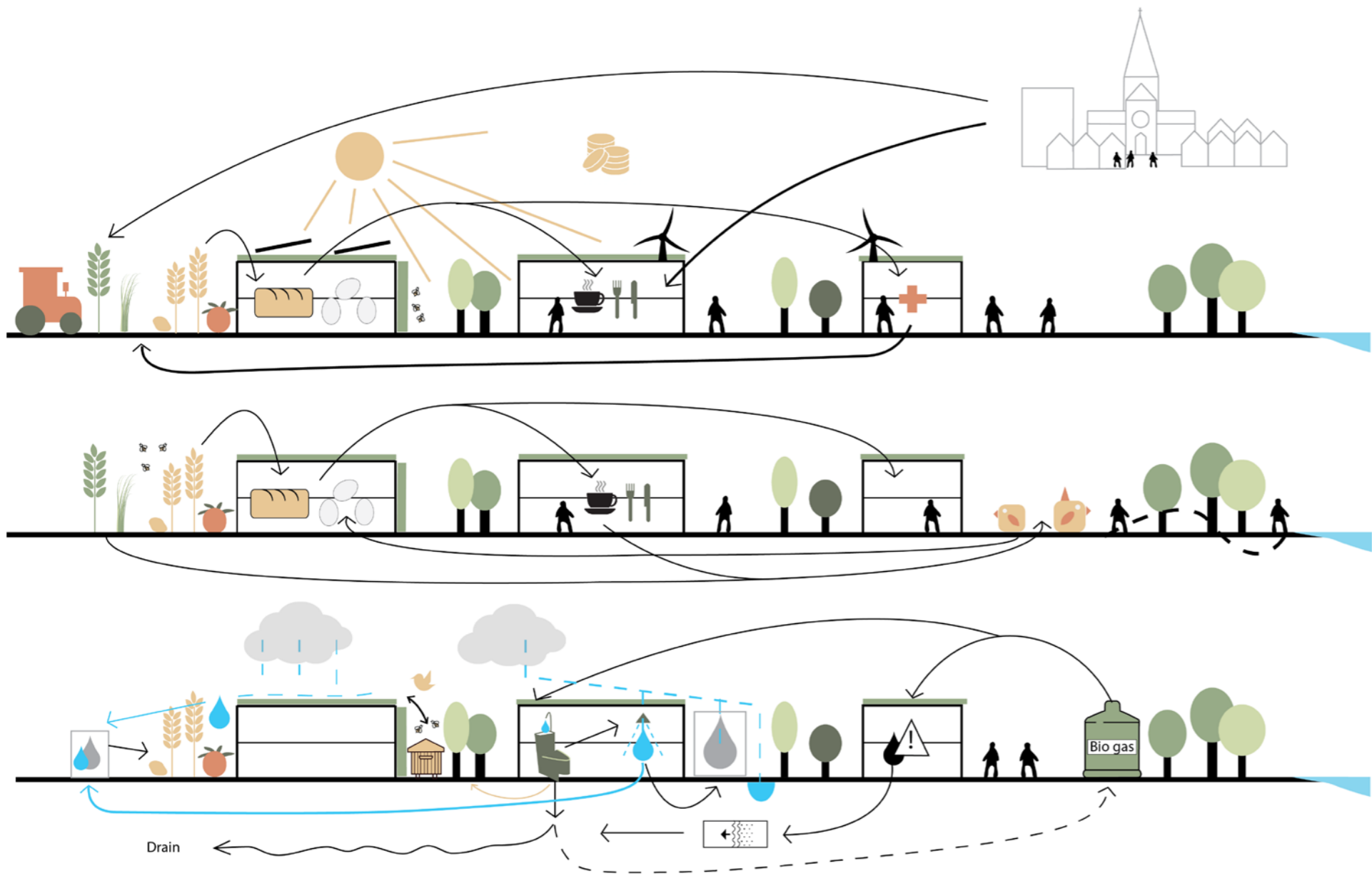
(It's about getting the chance to take care for yourself, rather than being cared for by someone.)

Source: <https://www.youtube.com/watch?v=NVS9LpJ0mv0>

Plan for the fields

(1) sensory garden (2) herbs (3) vegetables and grain





**Economical sustainability**

In our model the hospital works in synergy with a smaller non-industrial unit of a farm., creating opportunities for both to support each other. These two apparently not compatible functions were in history to a certain way integrated. There is examples of farms being a healthcare facility at the same time, such as Ramneå Lantgård in Edsele. These model is more widely described on of the previous pages talking about Grön omsorg.

In the proposal we suggest several solutions based on principles of permaculture which could possibly help with the return on investment in the facility.

For energy saving a bio-gas unit is placed on the site. This could cover use of the energy needs of the facility with eventual surplus which could be sent to the common net and create a secondary economical component.

**Social sustainability**

The concept is to integrate the new hospital in the existing social context so that it is not appearing as a closed visitors unfriendly institution. Public parts of the hospital strategically positioned in the centre of the facility include grocery store and a restaurant/cafe. The goal is to invite even random visitors into the facility and enhance the share of knowledge among the society and where possible, prevention.

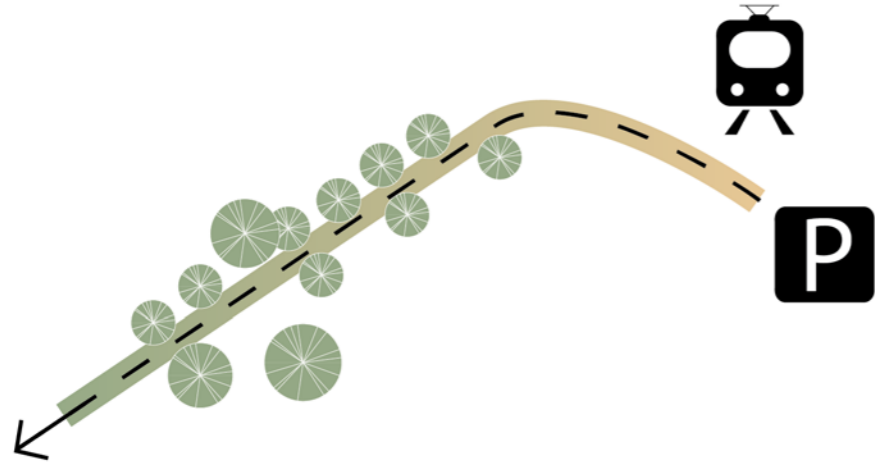
**Environmental sustainability**

Use of environmentally friendly materials is one of the premises not only for green solutions but also for healthier environment within the hospital, avoiding any kind of toxic materials.

Growing parts of the facade could be attractive for various species of insects and eventually birds. One of the species could be for example parthenocissus (wild wine).

Other sustainability principles in our proposal:

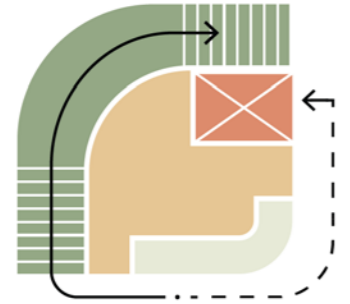
- Keeping distance from the lake
- Use of alternative energy source - bio-gas unit



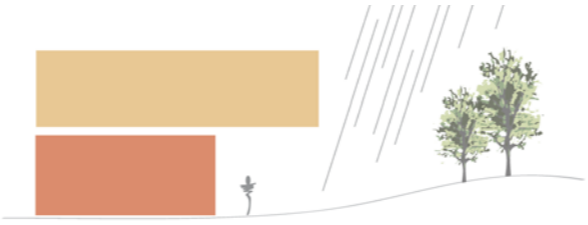
Healing path - tree alley



Nature integrated in the building



Staircase placement and visibility



Sheltered outdoor areas



**Health promotion**

We have chosen to work with some general health promoting principles placed in each and every department.

Protruding roofs give a shelter and might encourage people to go outside even when it is not the nicest weather.

The principle of consciously putting the elevator behind the stairs is intended to encourage the user to take the stairs instead of the elevator. This is a simple design trick that might increase the amount of daily exercise and improve the health of the user.

Atriums and inner courtyards give access to daylight and fresh air and breaks up the otherwise closed building bodies.

By offering services such as the cafeteria and local store, we also include the neighbours in our facility. They are also invited to take part in the farm and grow their own products there.



**Intitition and materials**

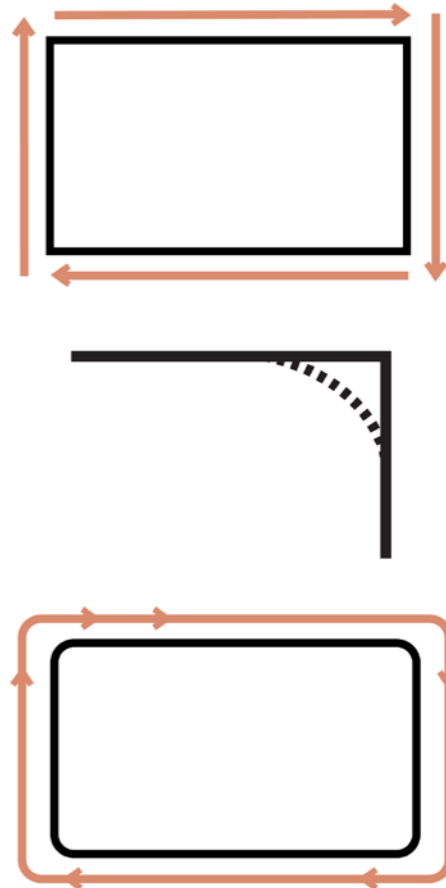
It has been proven that sharp corners interrupt thought. Prof. Jürg Nänni, specialized in the field of visual cognition, states that 'a rectangle with sharp edges takes indeed a little bit more cognitive visible effort than for example an ellipse of the same size. Our 'fovea-eye' is even faster in recording a circle. Edges involve additional neuronal image tools. The process is therefore slowed down.'

If good location and easy way finding is important in public buildings used by mentally stable people, how important isn't it then in spaces used by people who are not? By those suffering from mental illnesses, who might be confused and whose cognitive ability is reduced?

By rounding the corners we create not only a way that's easier to follow for everyone but also a sense of greater security sence. Because it's easier to see around a curved wall than a sharp one.

In addition to that the rounded corners creates a softer atmosphere and safer spaces since there are less sharp corners to stumble against.

The homelike and soft feeling is reflected even in the interior materials and furniture, by working with a lot of soft and natural materials (such as wood and textiles) and a warm colour palette.



Illustrations source: <https://designmodo.com/rounded-corners/>



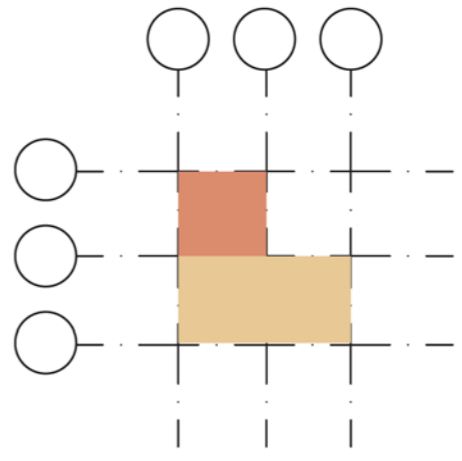
In our project there is two characteristic future proofing principles forming our proposal.

**Good location**

The size of the site offers great possibilities of future expansion. The site plan to the left shows the expansion principles. If there is a need of an expansion, the building will primarily grow in the 'fingers' and secondarily in the centre part, the spine, so that an extra finger may be added in the north. If that happens, there will be some reorganization of the agricultural land.

**Grid system**

The building consists of an orthogonal standard grid. This rational and systematic grid system, with pillars as bearing element, is intended to facilitate any future rebuilding or rearrangement of the organisation.



Standard grid



Possible extension

# Rid - Project references

Meyer children's hospital



Örebro trädgårdarna



REHAB Basel,



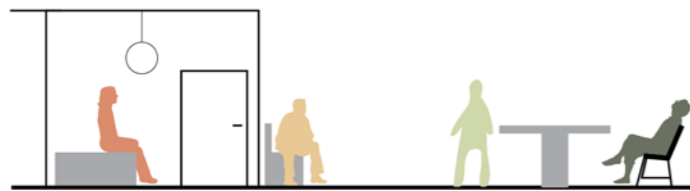
Although the project takes up a big part of the site, we still want to create a low-scale atmosphere. Something that can cooperate with the small-scale society of Västervik. That's why we work in only two levels and chose exterior materials such as brick and wood.

We have looked at reference projects such as Trädgårdarna retirement home in Örebro and REHAB Clinic for neurorehabilitation and paraplegiology in Basel, Switzerland where nature is well integrated with the building architecture and where we think that the meeting between facade and surrounding greenery is solved in an elegant way.

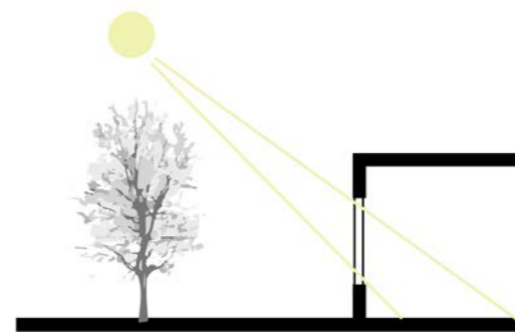
In addition to that we have glass corridors, inspired by green houses, that creates bright, airy spaces in between the building fingers but also closes the courtyards without making it feel closed.

It frames the closed courtyards without necessarily taking away the sense of openness and view towards the lake. During wintertime, when the farm activities are in hibernation, it might work as winter gardens where the users can keep what they have cultivated.

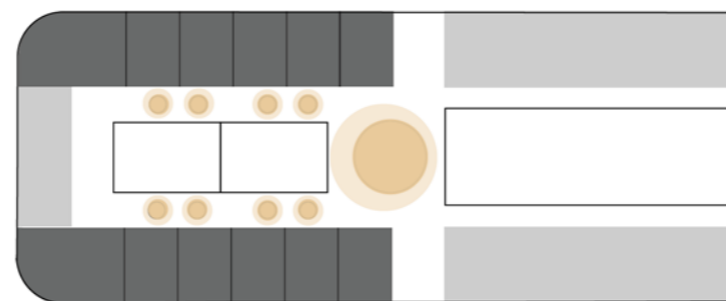
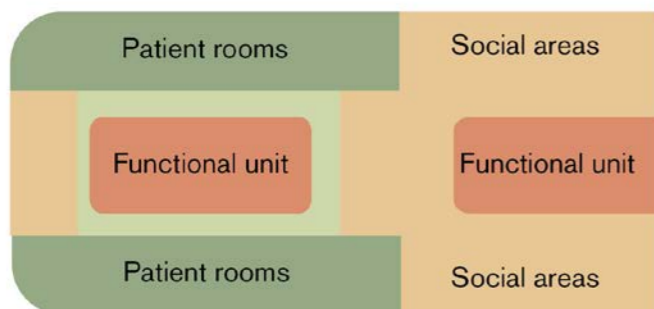
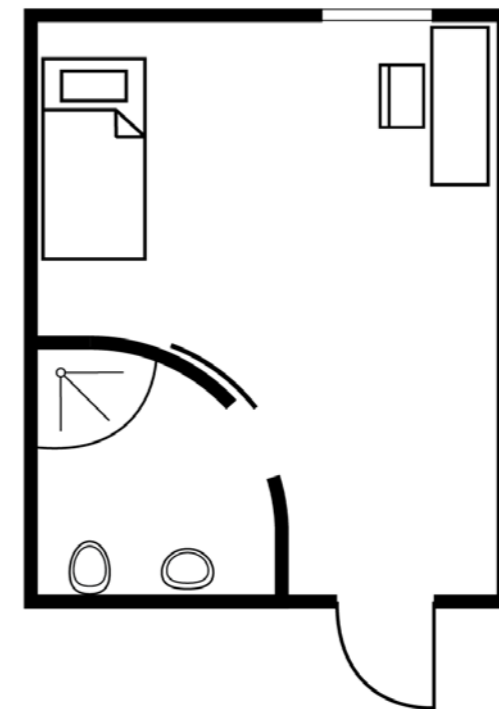
Social density



Views on nature and daylight



Single patient room







# Hospifarm

## New psychiatry, Västervik

PROCESS BOOKLET

Team 8

Karin Nylinder, Maria-Therese Lidenholm, Václav Grmela

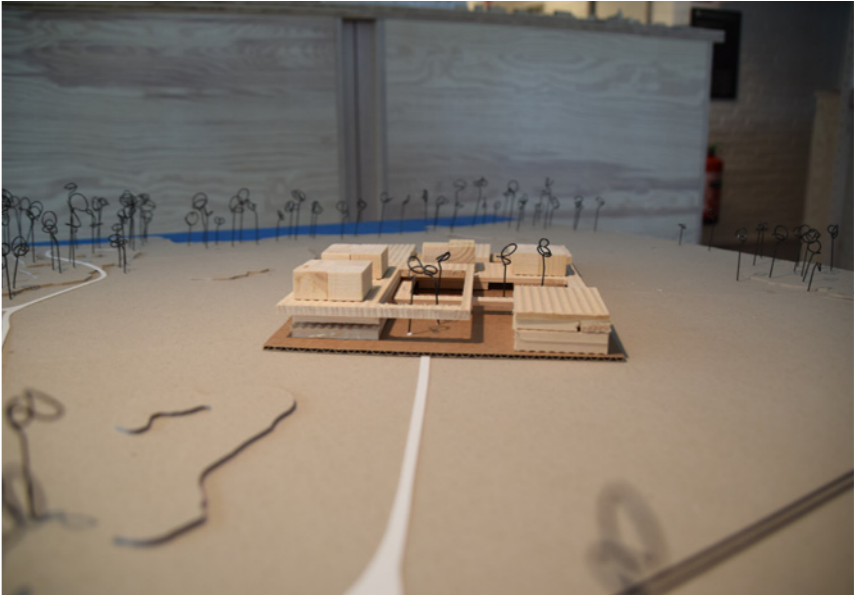
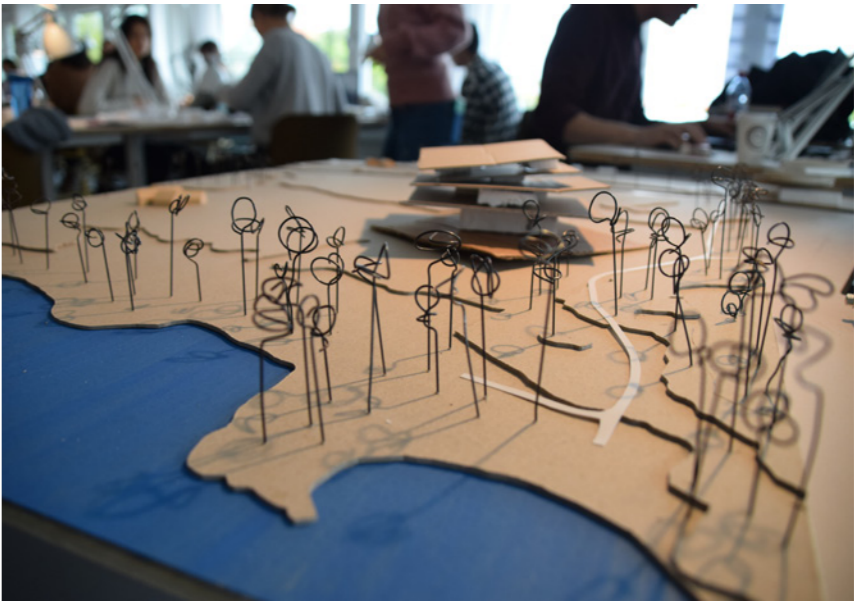
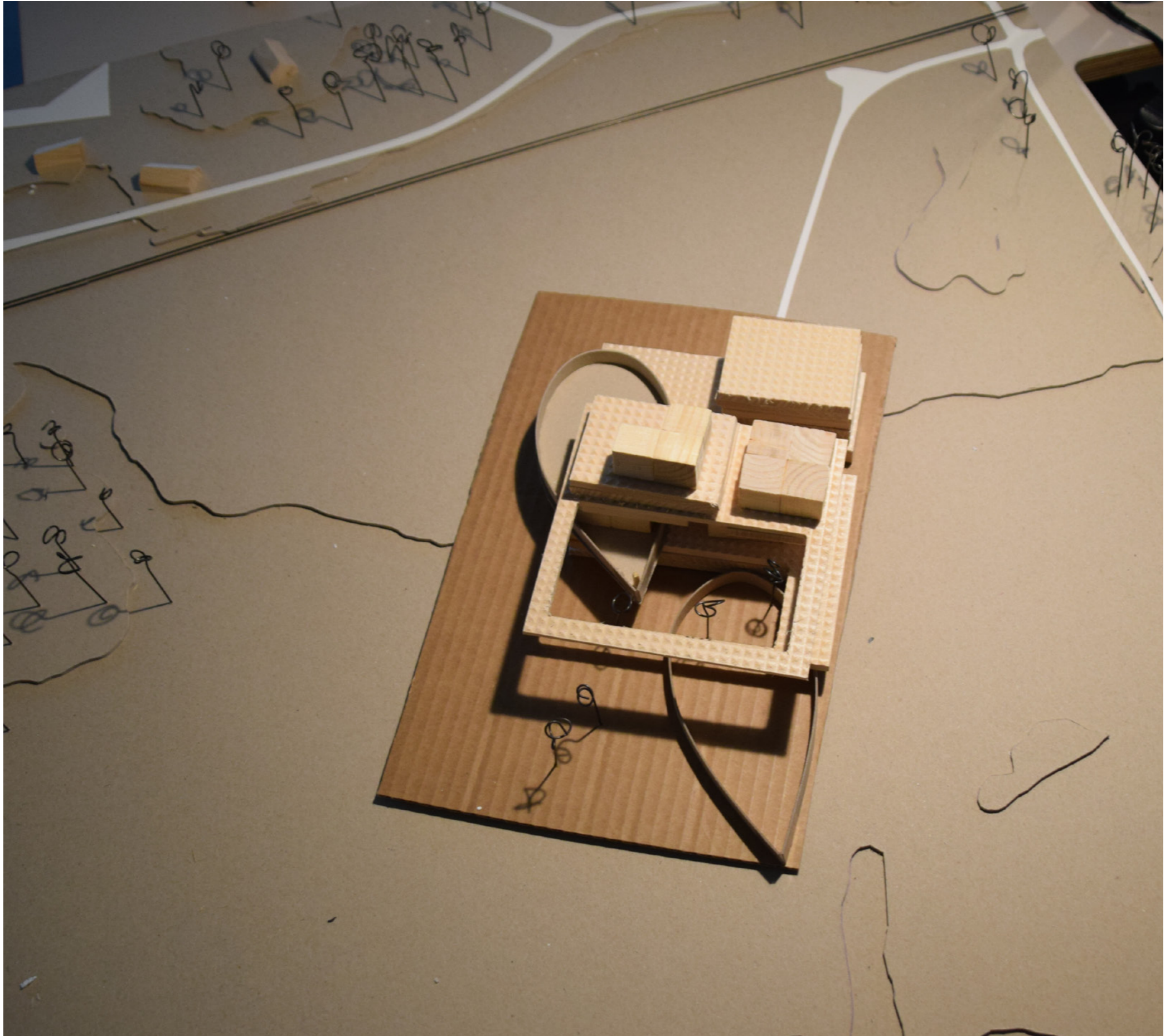
ARK263 - Healthcare architecture studio - HT 2018

Examiner: Peter Fröst Studio teachers: Christine Hammarling, Elke Miedema, Lin Tan, Saga Karlsson



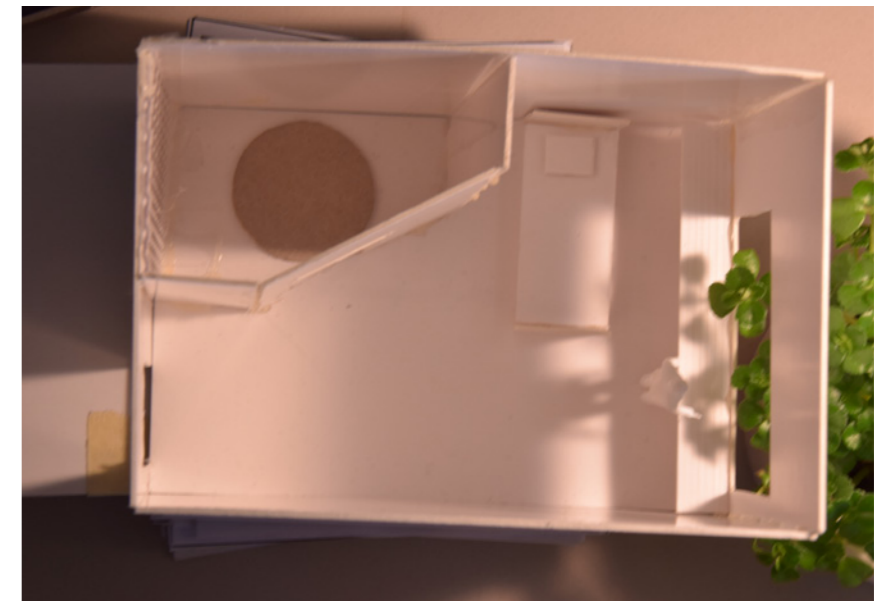
# Urban composition

Models from Björn Gross' workshop. From the very first start we saw the nature of the site as a great quality and agreed that we'd like to take advantage of this in our proposal. Therefore our main theme was 'synergy with existing green structures'.



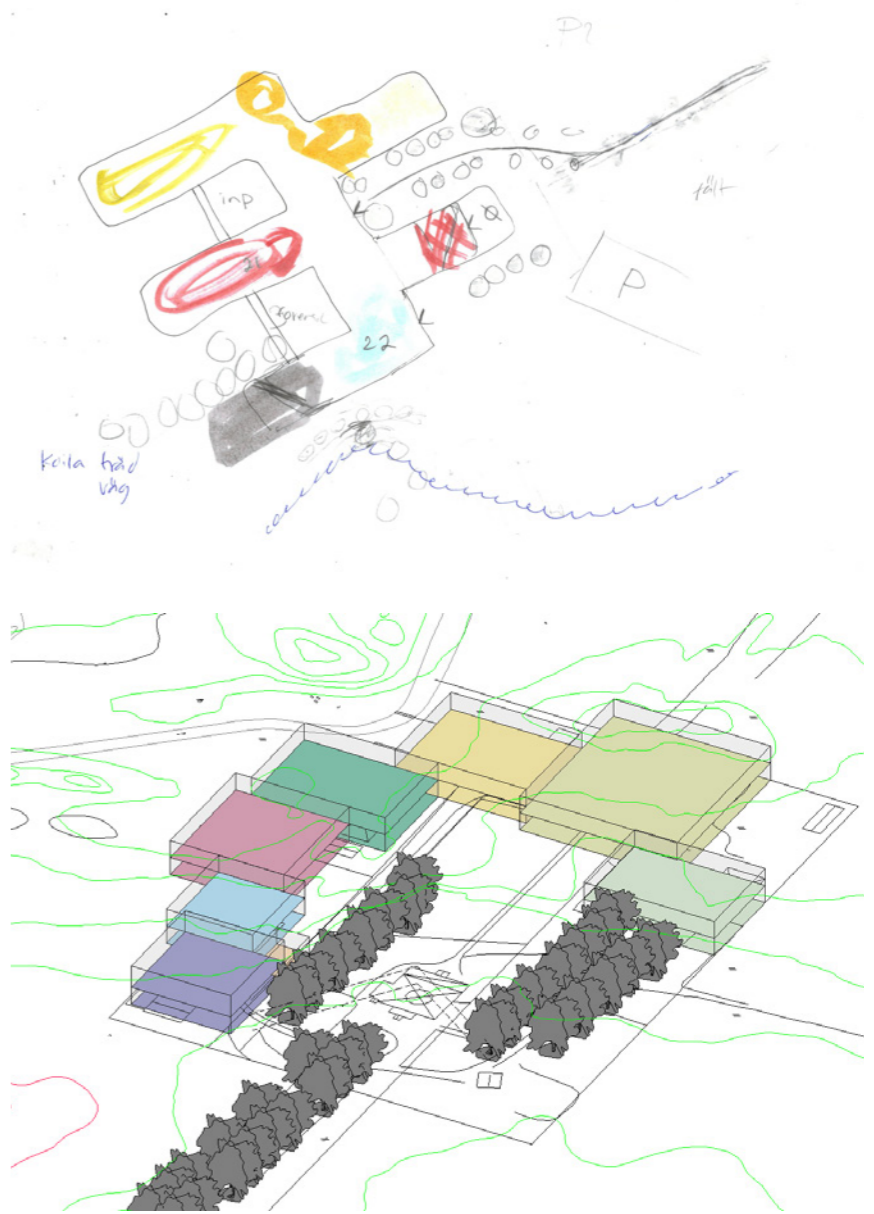
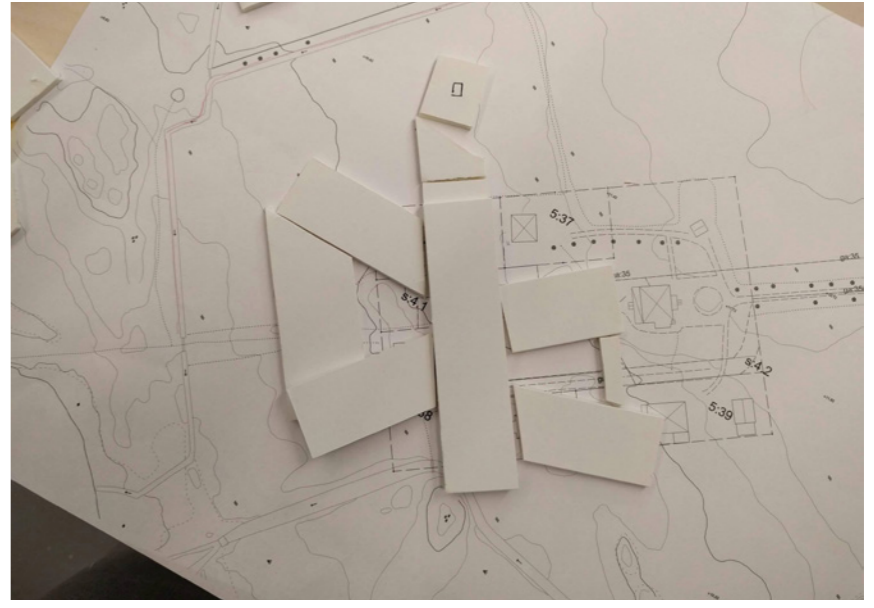
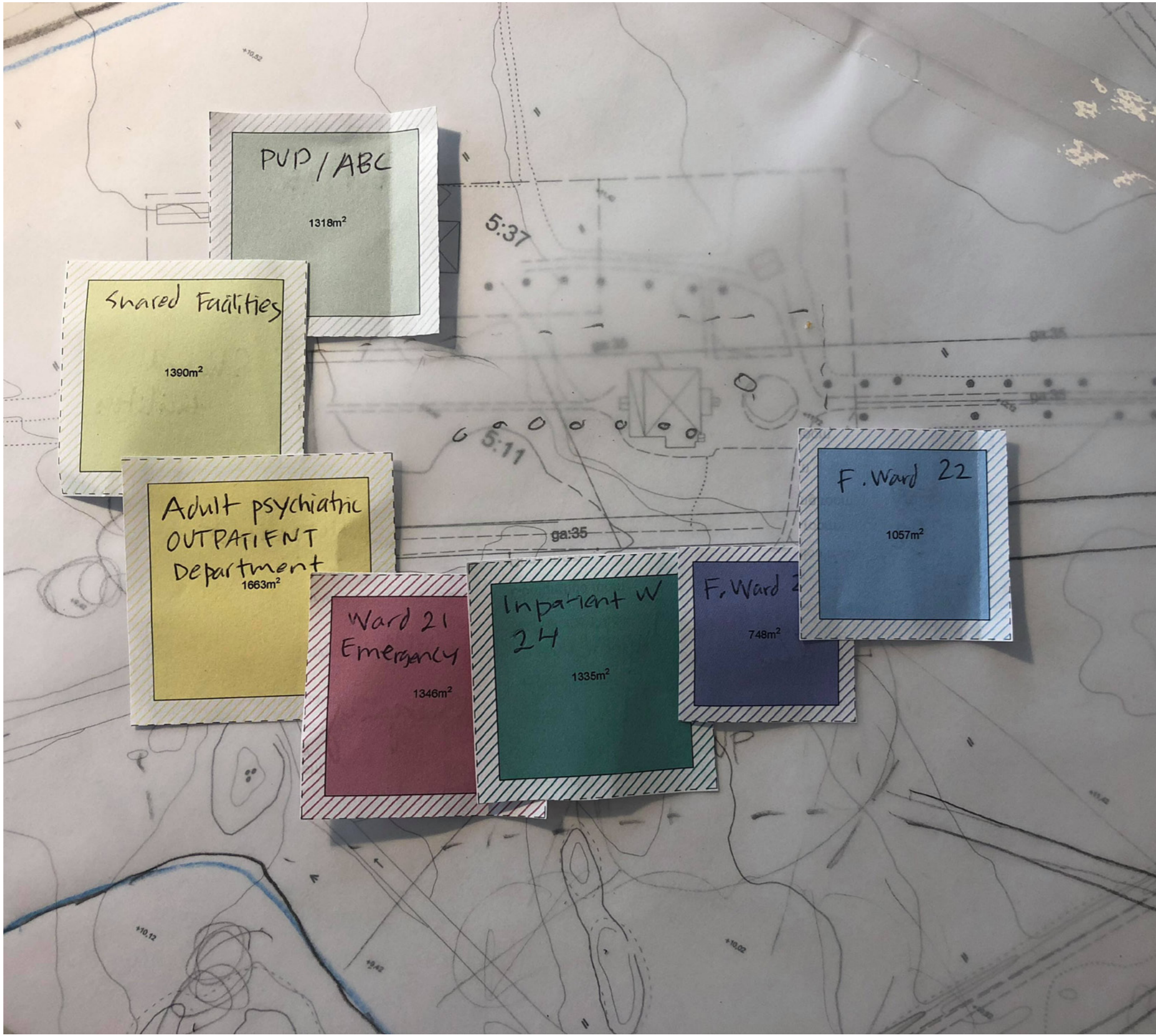
# Patient room

Pictures of patient room examples developed during Lin Tan's workshop. We worked with the ideas of good overview and a safe feeling for patient as well as staff. We chose to work on the one with rounded inner wall, because it's an interesting architectural detail that gives a softer feeling and good overview.



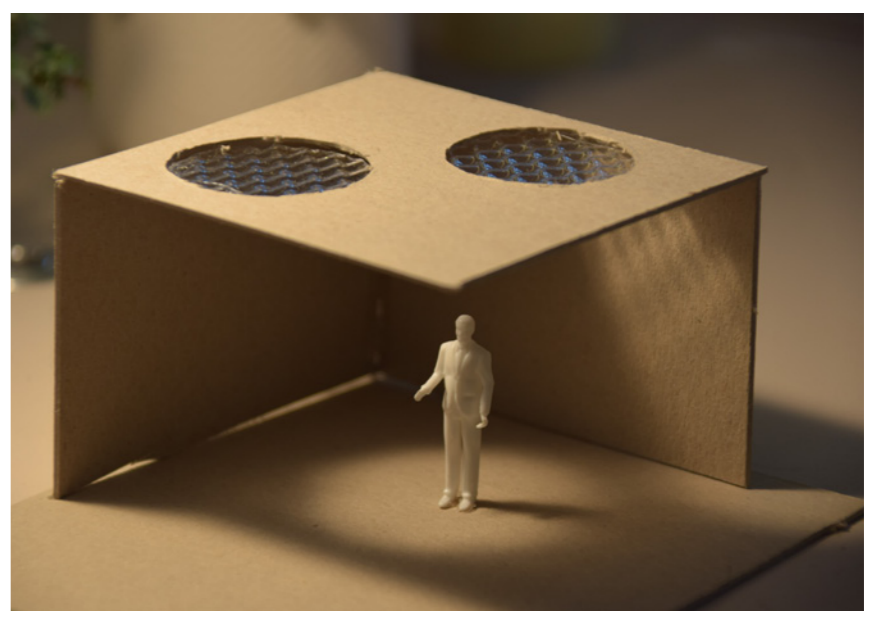
# Floor layout

We started analyzing the need of the wards and relation in between them. In order to develop the building form we made a game where we, by adding and removing cardboard pieces, explored and developed different form options. The form was adapted to existing green structures. At the same time we worked with the inner flows and developed it parallel to the shape.



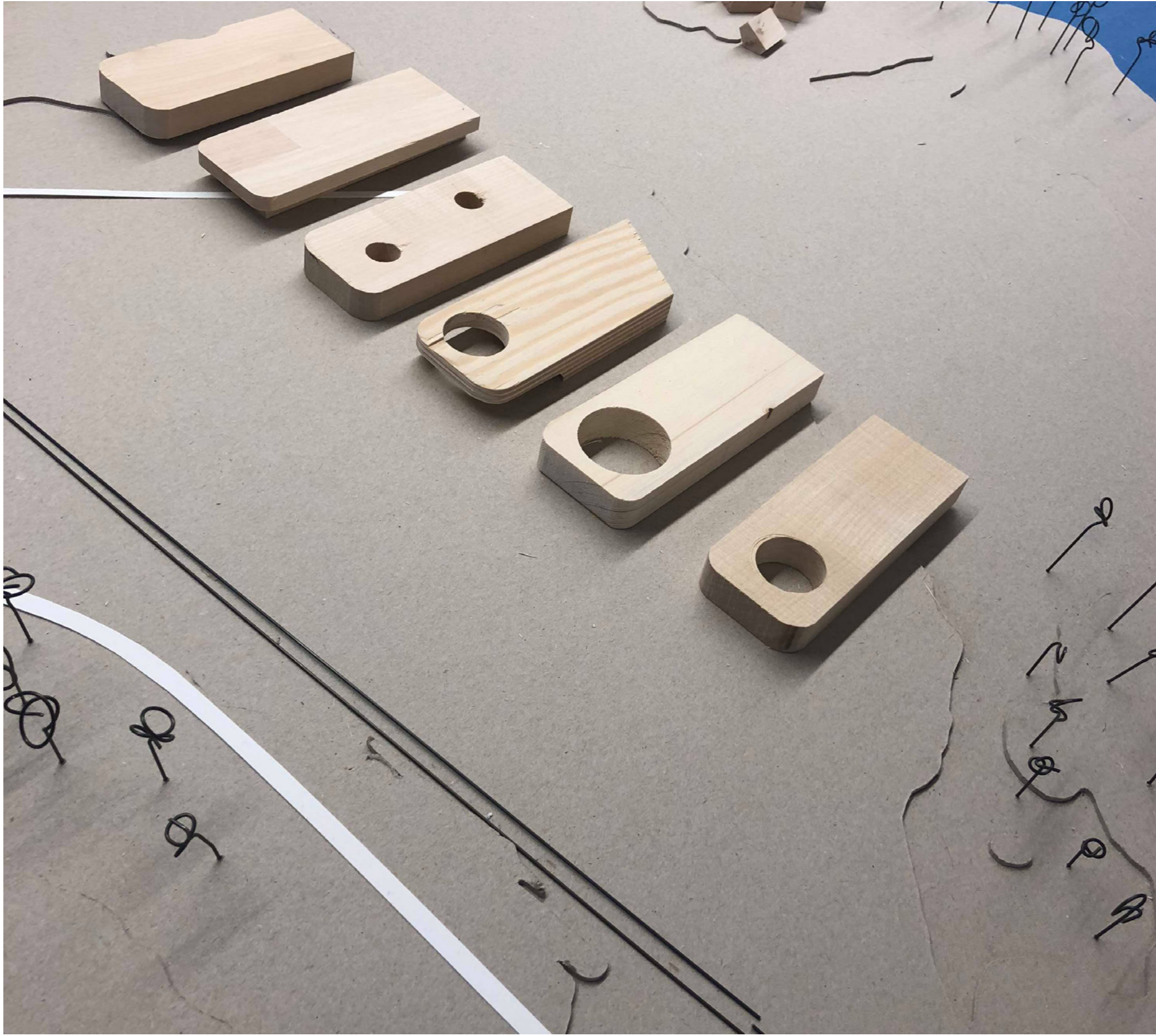
# Atmospheres

Models from Saga Karlsson's workshop. Here we worked with themes of wood and greenery, light and transparency and a warm and natural color palette. Our themes were mostly based on RiD.



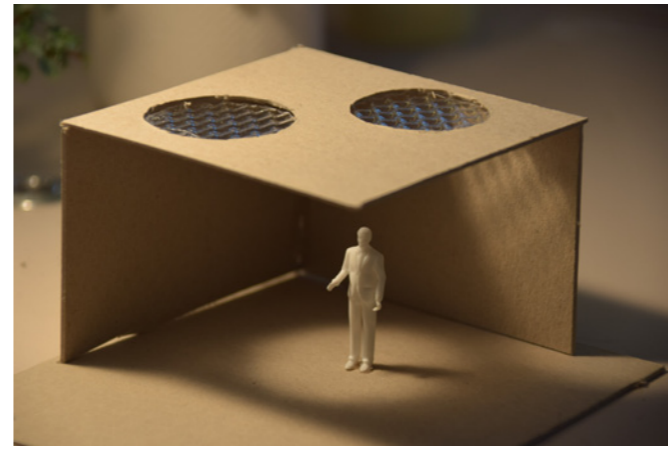
# Alternatives

When developing the shape of the building we worked a lot in model, testing different sizes and locations of atriums. Further on we had a 'mini-workshop' within our team, where we tried to combine our chosen materials - wood and brick - in different ways to find out our exterior design.



# Innovation

In this theme we worked with our concept of rounded corners. Because of our building's depth we worked with placing atriums, to open up the solid volume.



# Model photos

To the left you see a model of the whole building and its surrounding areas. To the right you see a model of ward 23.





# New psychiatry, Västervik

## Hospifarm

Team 8

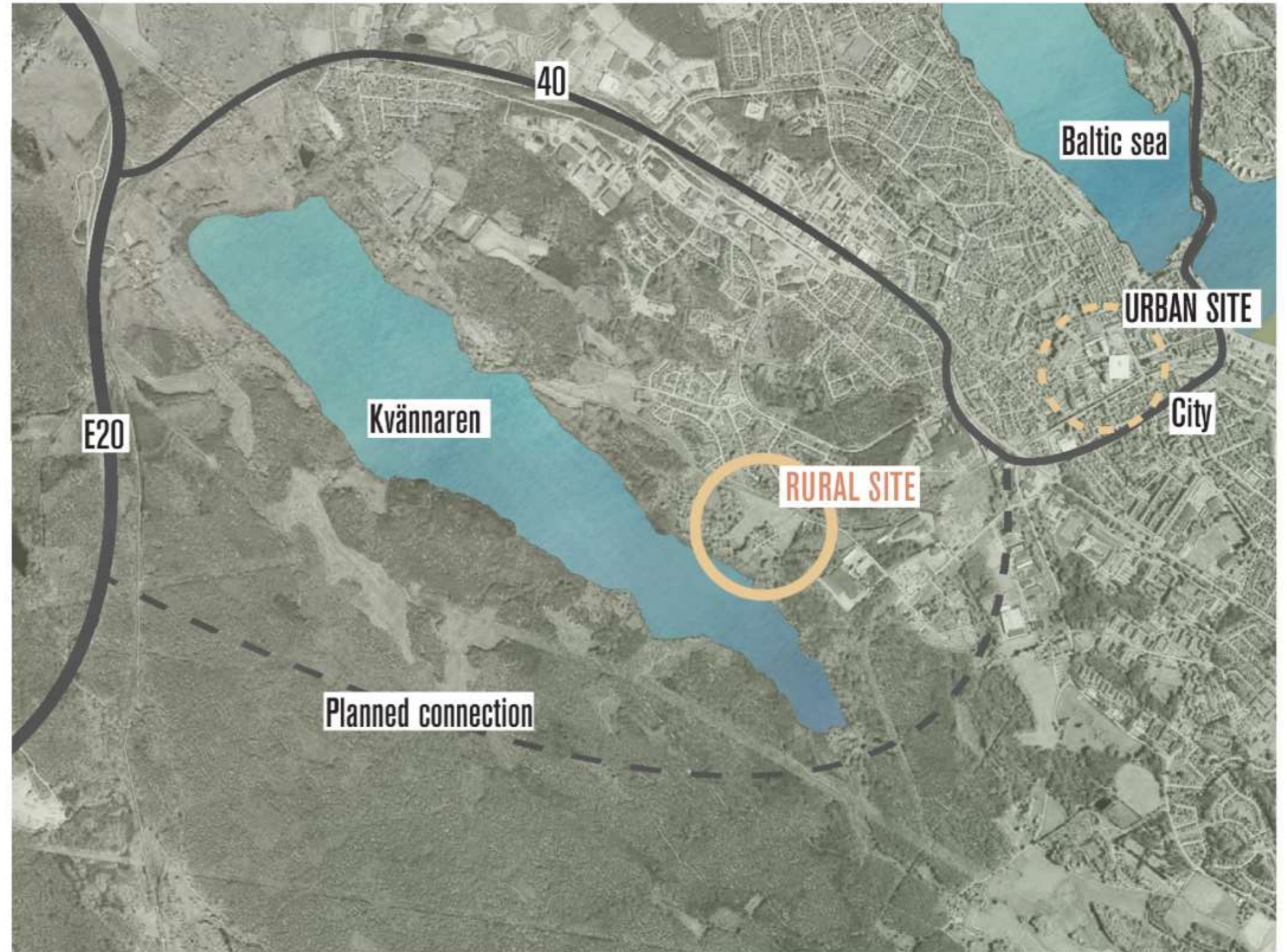
Václav Grmela, Maria-Therese Lidenholm, Karin Nylinder

ARK263. Architecture & Civil Engineering CTH

Final presentation (14.-15.1.2019)



# Context - Västervik

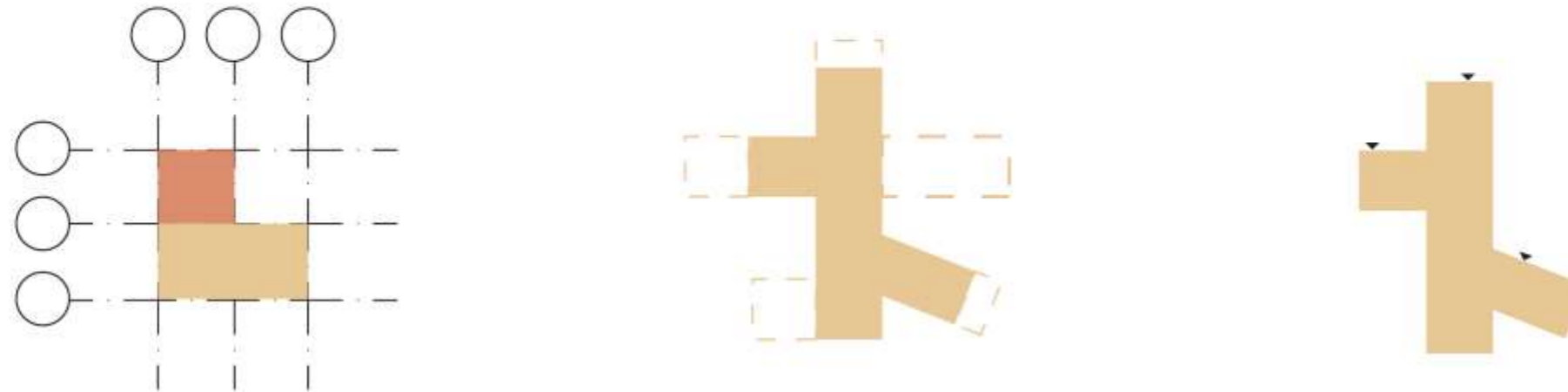


# Visions

Building shaped by existing green and blue structures



Future proofing



Society



# Research informed design

## Grön omsorg (green care)

ref. Lantbrukarnas Riksförbund - Grön omsorg

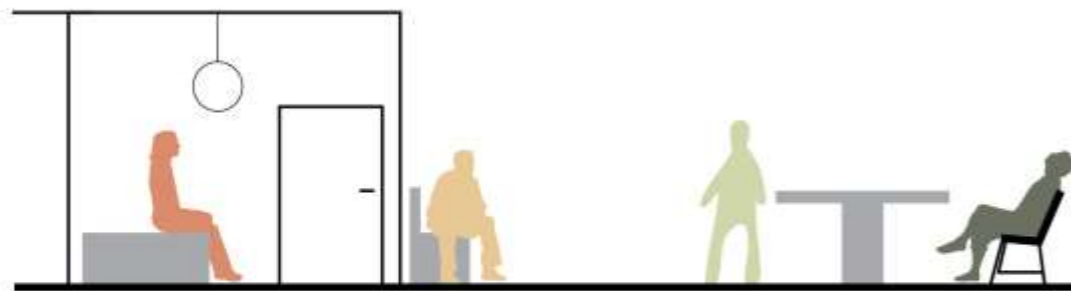


'Det handlar om att själv få vårda, inte att bli vårdad'

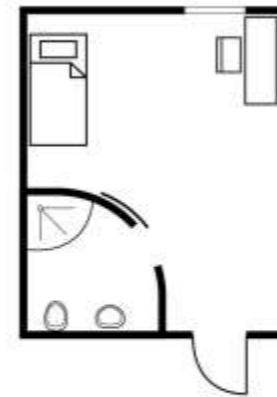
(It's about getting the chance to take care for yourself, rather than being cared for by someone.)

Source: Grön omsorg - [www.youtube.com/watch?v=NVS9LpJ0mv0](https://www.youtube.com/watch?v=NVS9LpJ0mv0)

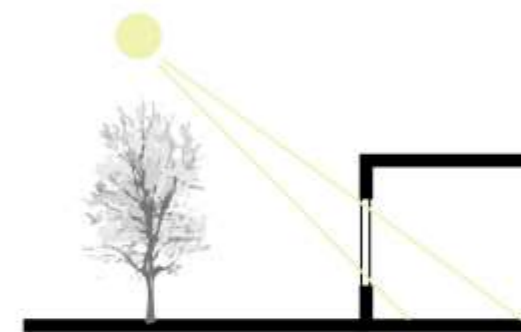
## Social density



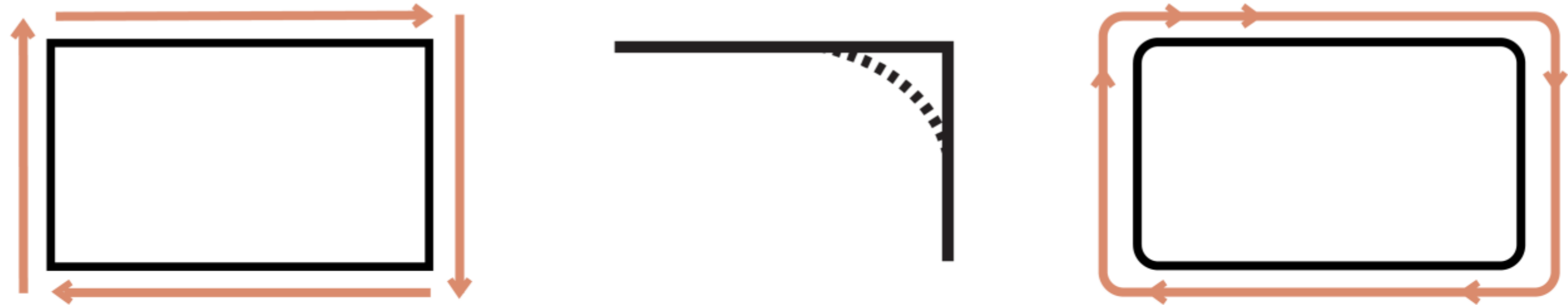
## Single patient room



## Views on nature - day light



# Intuition



Sharp corners interrupt thought  
Rounded corners are easy on the eyes (and the brain)

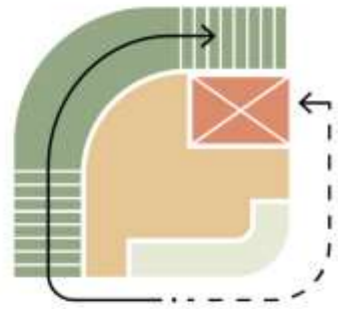
Jürg Nänni - Visual perception (2009)

Illustrations source: <https://designmodo.com/rounded-corners/>

# Health promotion



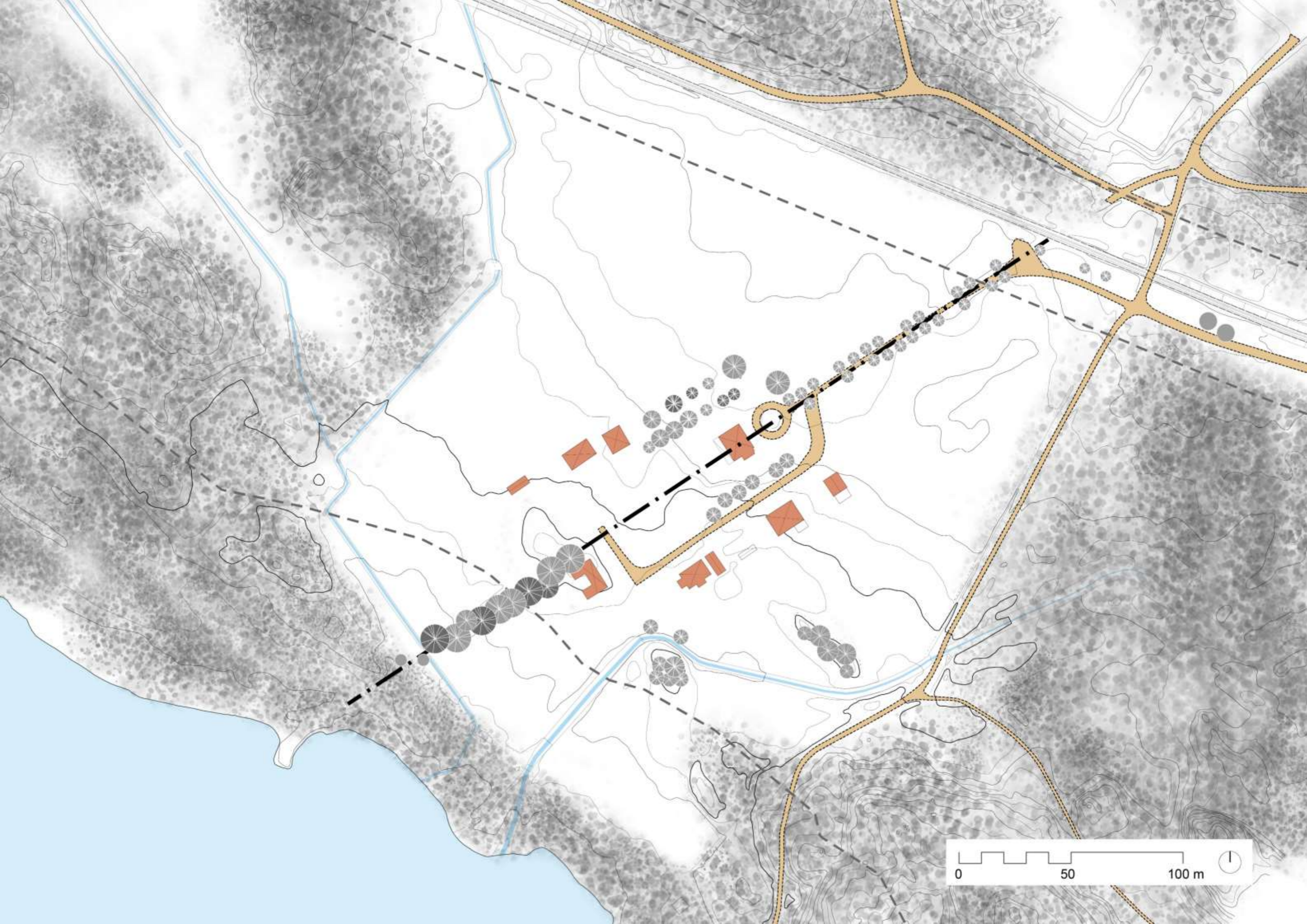
Healing path - tree alley

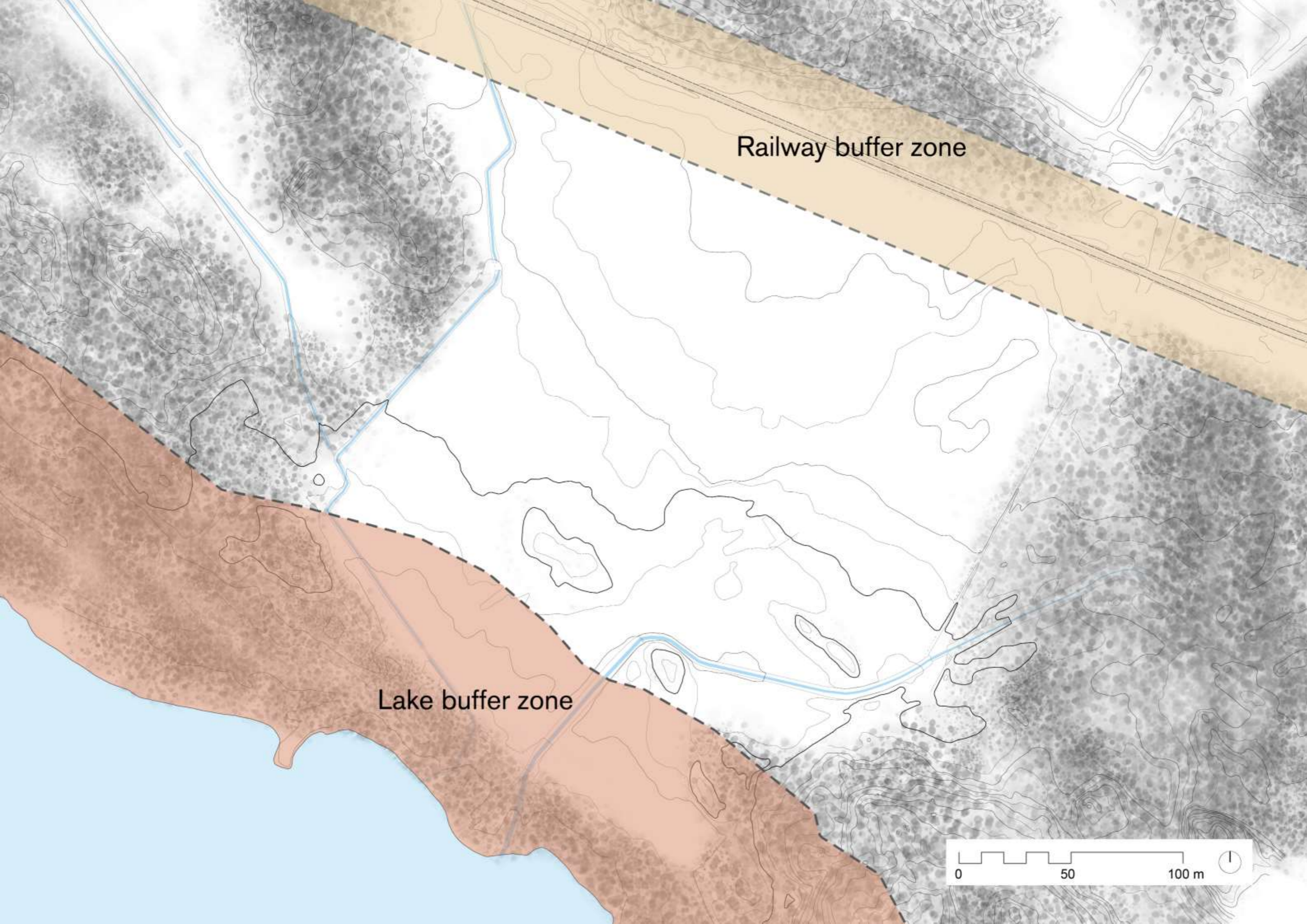


Staircase placement and visibility



Sheltered outdoor areas





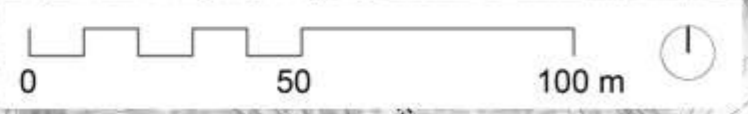
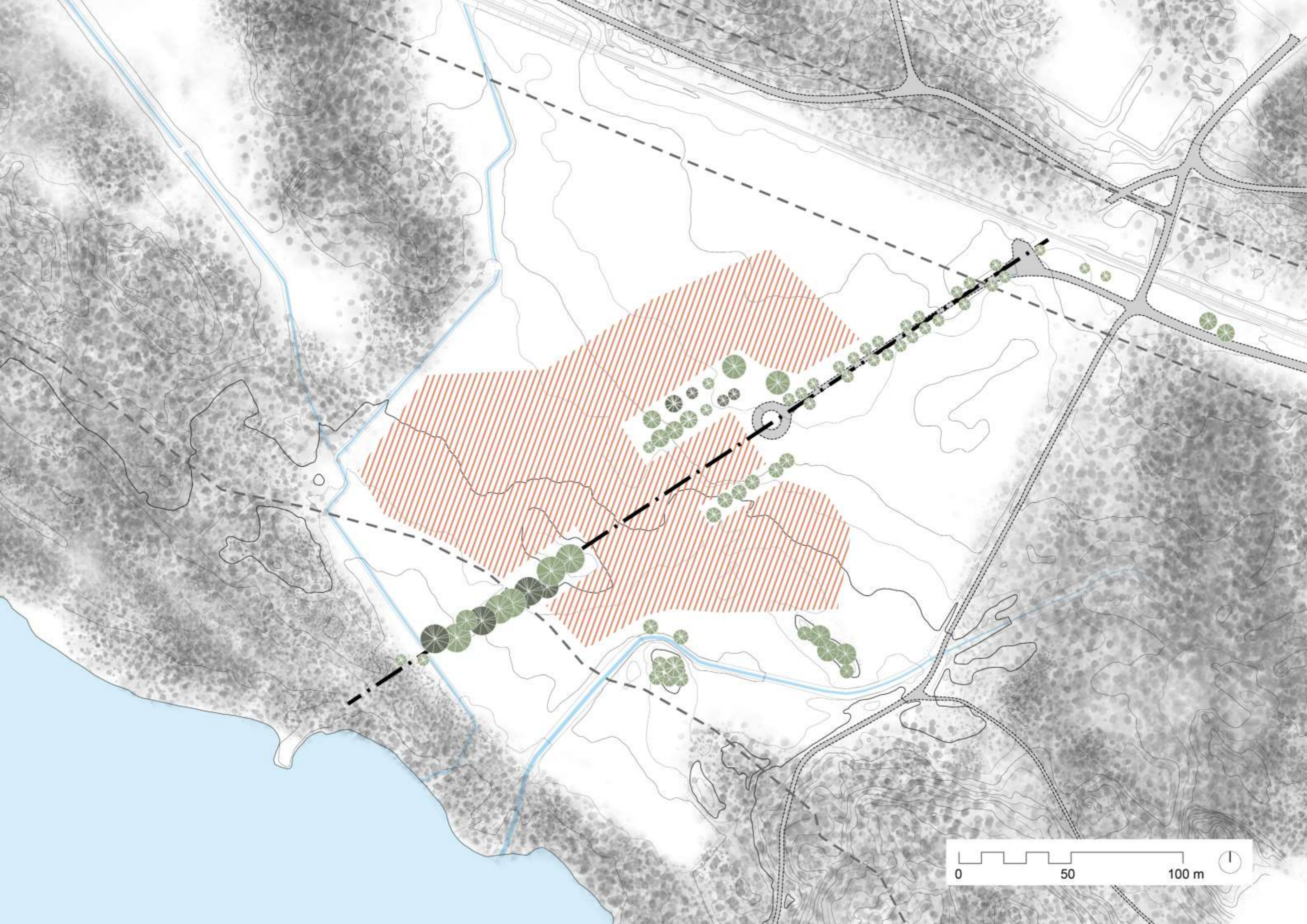
Railway buffer zone

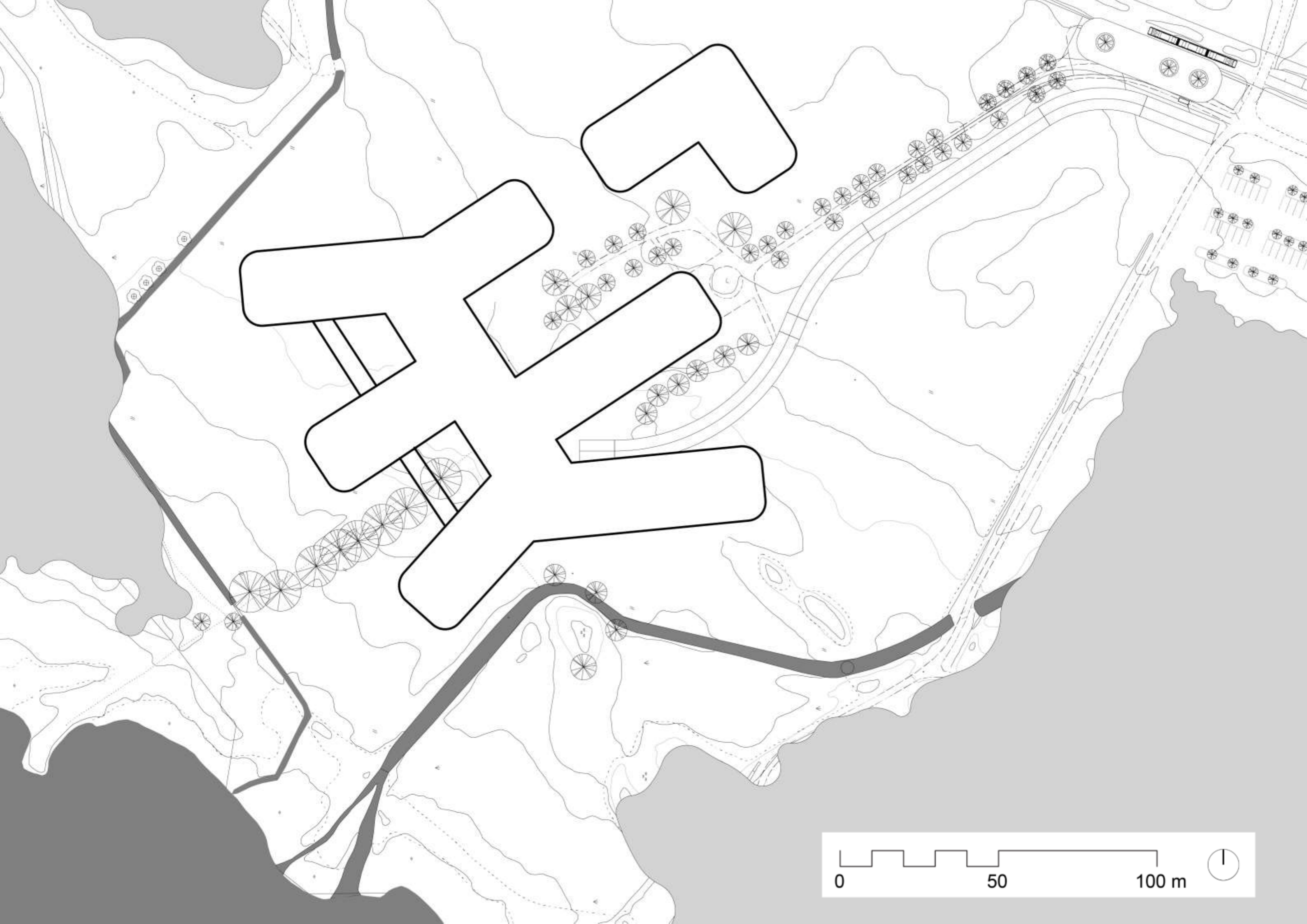
Lake buffer zone













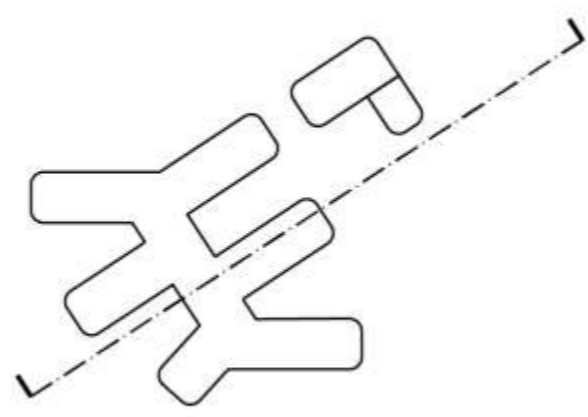






-  Paths
-  New roads
-  Fields
-  New trees
-  Existing trees



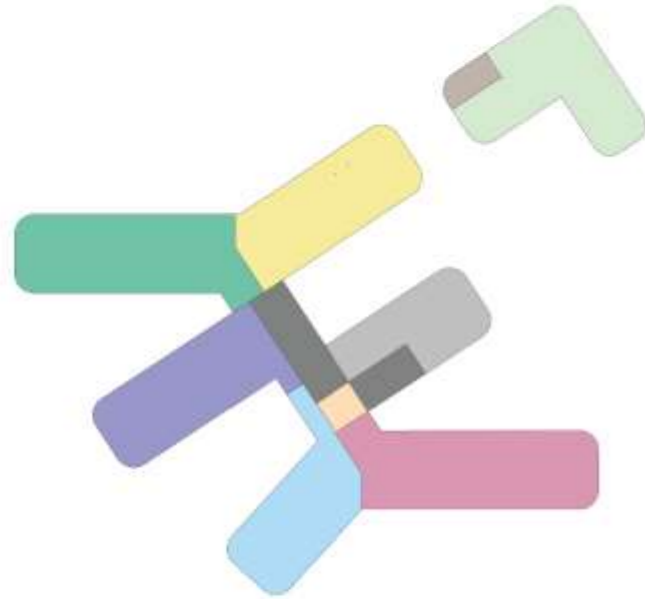




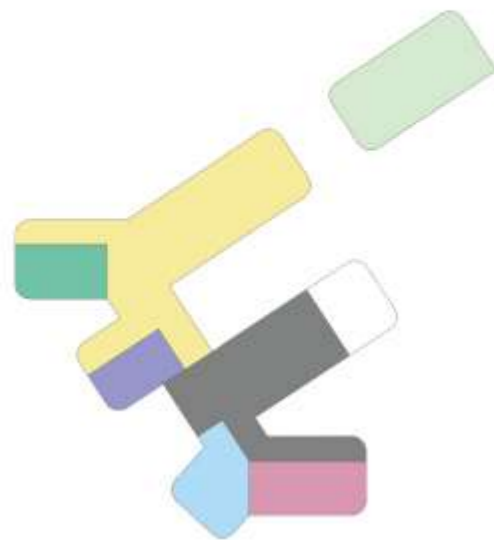


# Program

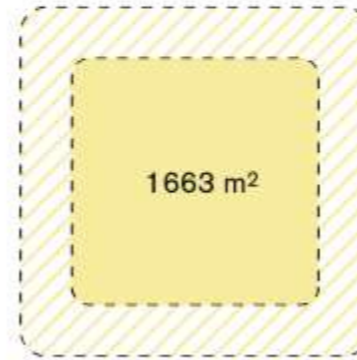
First floor



Second floor

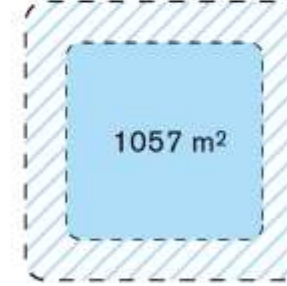


## Adult psychiatric Outpatient Department



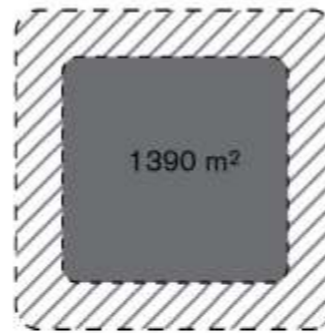
Program area - 1663 m<sup>2</sup>  
Gross area - 3326 m<sup>2</sup>  
Project proposal - 3730 m<sup>2</sup>

## Forensic Ward 22



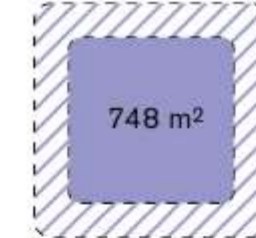
Program area - 1057 m<sup>2</sup>  
Gross area - 2114 m<sup>2</sup>  
Project proposal - 1932 m<sup>2</sup>

## Shared Facilities



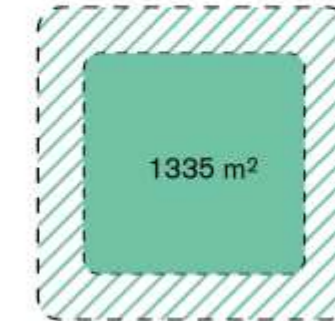
Program area - 1390 m<sup>2</sup>  
Gross area - 2780 m<sup>2</sup>  
Project proposal - 2160 m<sup>2</sup>

## Forensic Ward 23



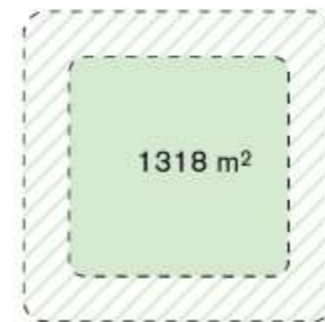
Program area - 748 m<sup>2</sup>  
Gross area - 1496 m<sup>2</sup>  
Project proposal - 1837 m<sup>2</sup>

## Inpatient Ward 24



Program area - 1335 m<sup>2</sup>  
Gross area - 2670 m<sup>2</sup>  
Project proposal - 2168 m<sup>2</sup>

## BUP/ ABC



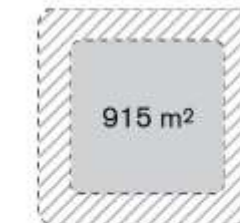
Program area - 1318 m<sup>2</sup>  
Gross area - 2636 m<sup>2</sup>  
Project proposal - 2504 m<sup>2</sup>

## Administrative Court



Program area - 66 m<sup>2</sup>  
Gross area - 132 m<sup>2</sup>  
Project proposal - 131 m<sup>2</sup>

## Public area



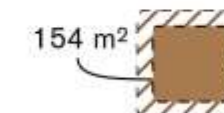
Program area - 0 m<sup>2</sup>  
Gross area - 0 m<sup>2</sup>  
Project proposal - 915 m<sup>2</sup>

## Ward 21/ Emergency Department



Program area - 1346 m<sup>2</sup>  
Gross area - 2692 m<sup>2</sup>  
Project proposal - 2264 m<sup>2</sup>

## Farm



Program area - 0 m<sup>2</sup>  
Gross area - 0 m<sup>2</sup>  
Project proposal - 154 m<sup>2</sup>

## Project proposal gross area

Gross area program: **17846 m<sup>2</sup>**

Psychiatry hospital project proposal: **18535 m<sup>2</sup>**

Public areas: 915 m<sup>2</sup> (grocery store, café - restaurant)

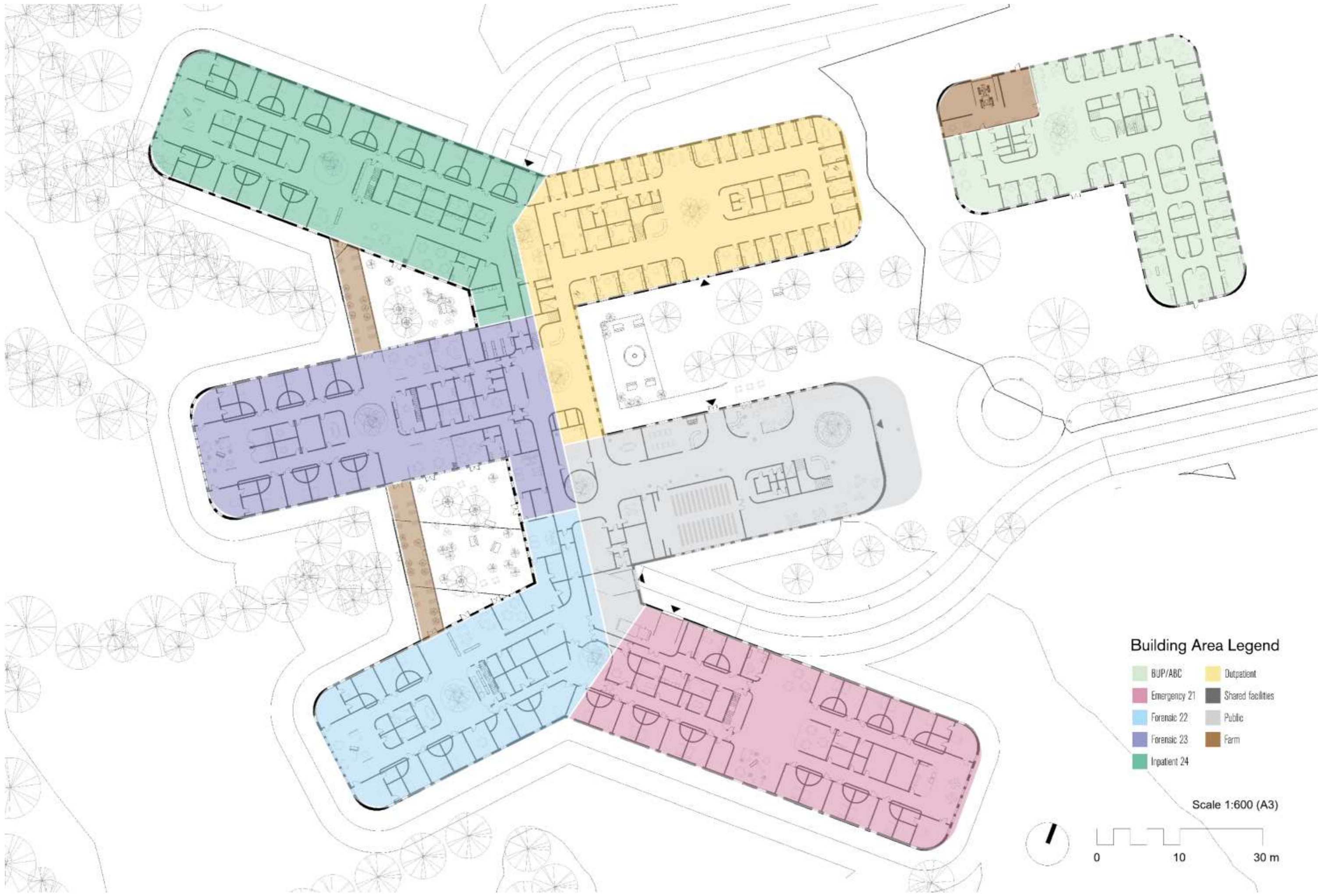
Farm: 155 m<sup>2</sup> (tractor garage, storage for tools)

Total: **19605 m<sup>2</sup>**



Scale 1:600 (A3)



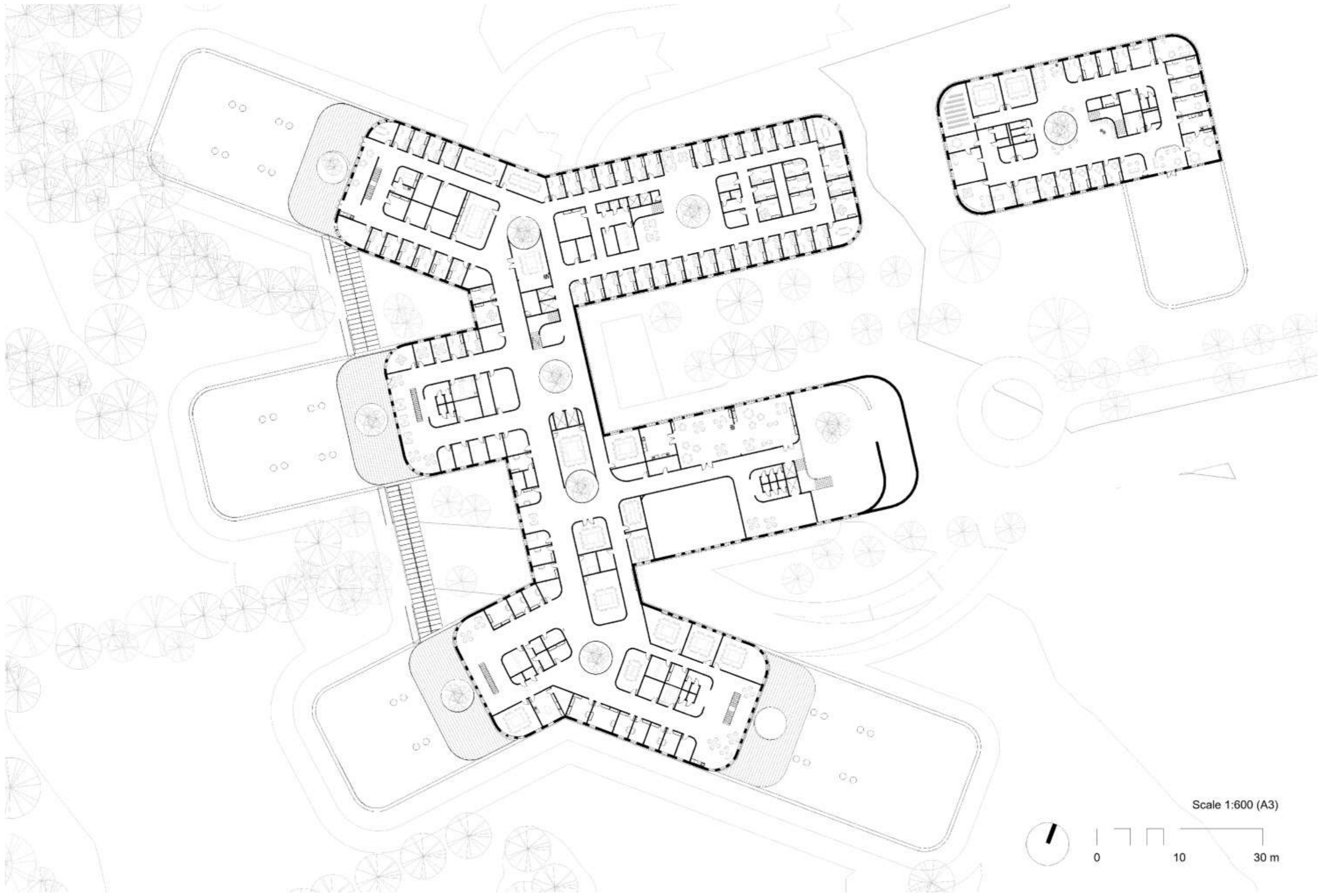


**Building Area Legend**

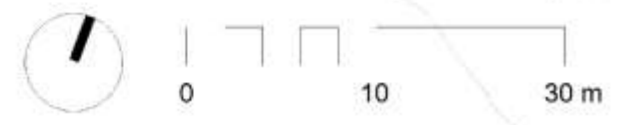
- |   |  |
|---|--|
| <span style="color: #90EE90;">■</span> BUP/ABC      | <span style="color: #FFD700;">■</span> Outpatient        |
| <span style="color: #DC143C;">■</span> Emergency 21 | <span style="color: #333333;">■</span> Shared facilities |
| <span style="color: #6495ED;">■</span> Forensic 22  | <span style="color: #A9A9A9;">■</span> Public            |
| <span style="color: #6A5ACD;">■</span> Forensic 23  | <span style="color: #8B4513;">■</span> Farm              |
| <span style="color: #3CB371;">■</span> Inpatient 24 |  |

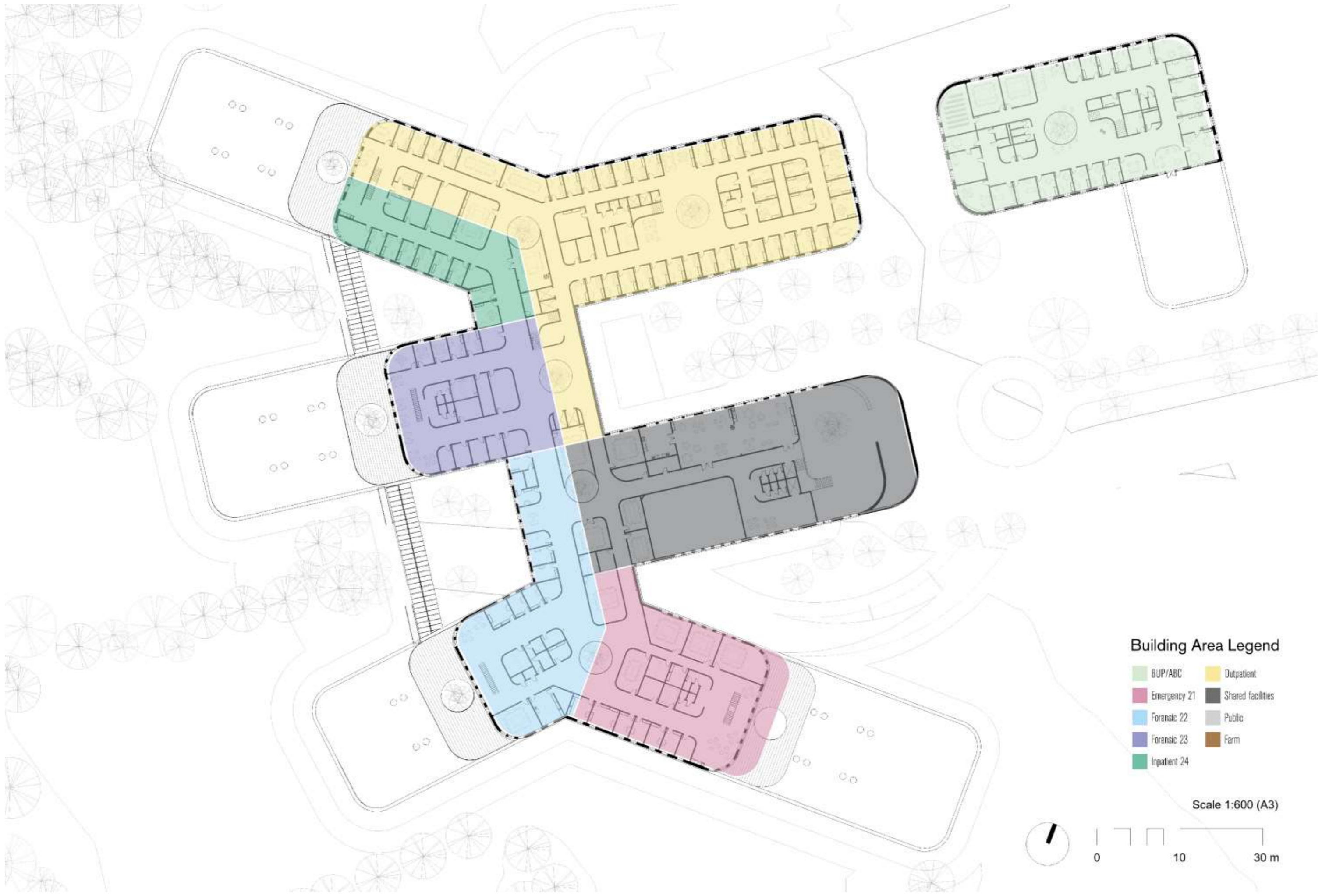
Scale 1:600 (A3)





Scale 1:600 (A3)





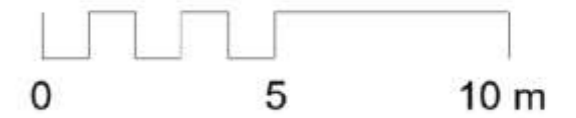
**Building Area Legend**

- |  |   |
|--|---|
|  BUP/ABC      |  Outpatient        |
|  Emergency 21 |  Shared facilities |
|  Forensic 22  |  Public            |
|  Forensic 23  |  Farm              |
|  Inpatient 24 |   |

Scale 1:600 (A3)



# Facade



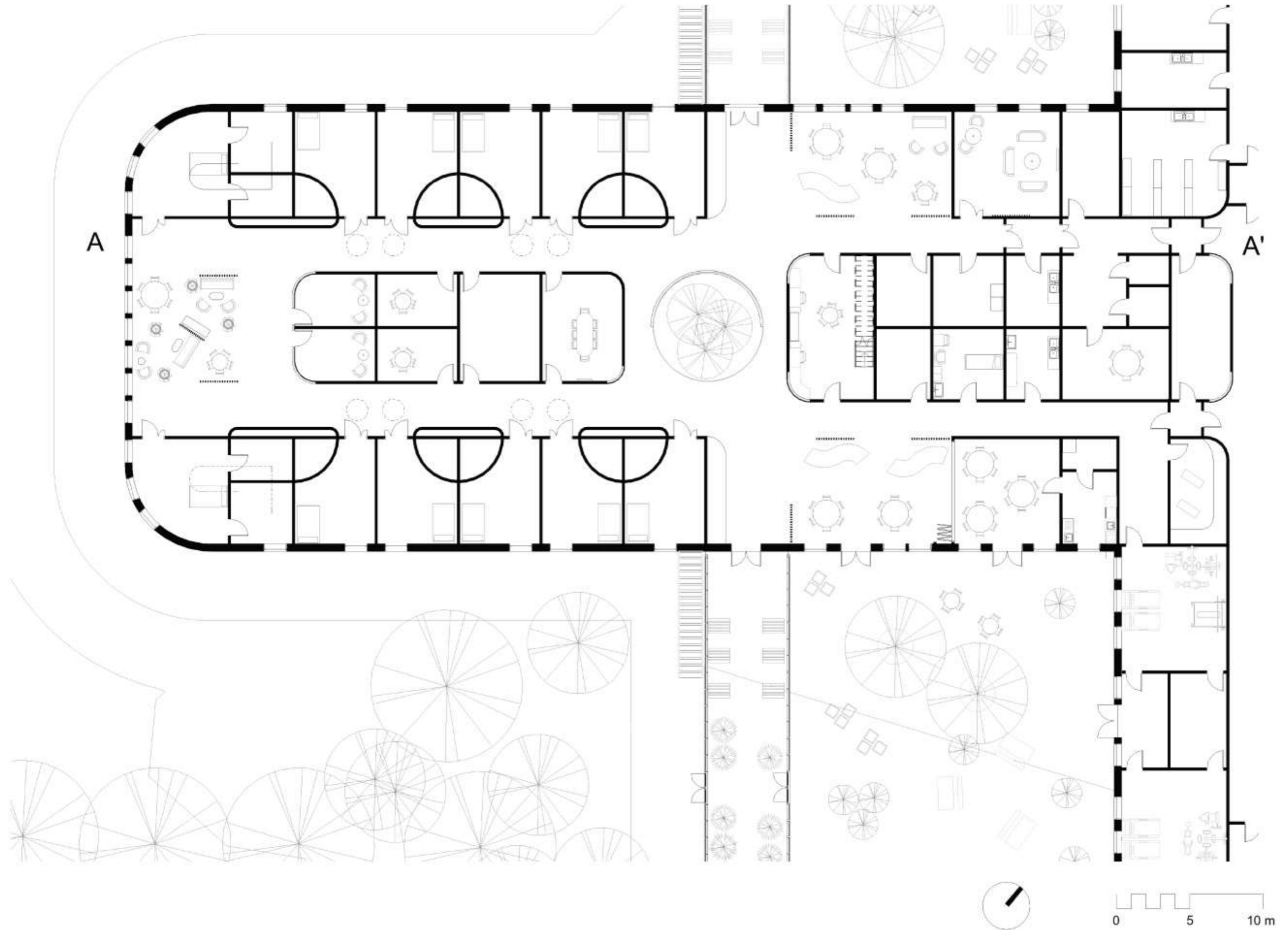
Species of climbing plants under different seasons

	parthenocissus	hedera	hydrangea
winter			
spring			
summer			
autumn			

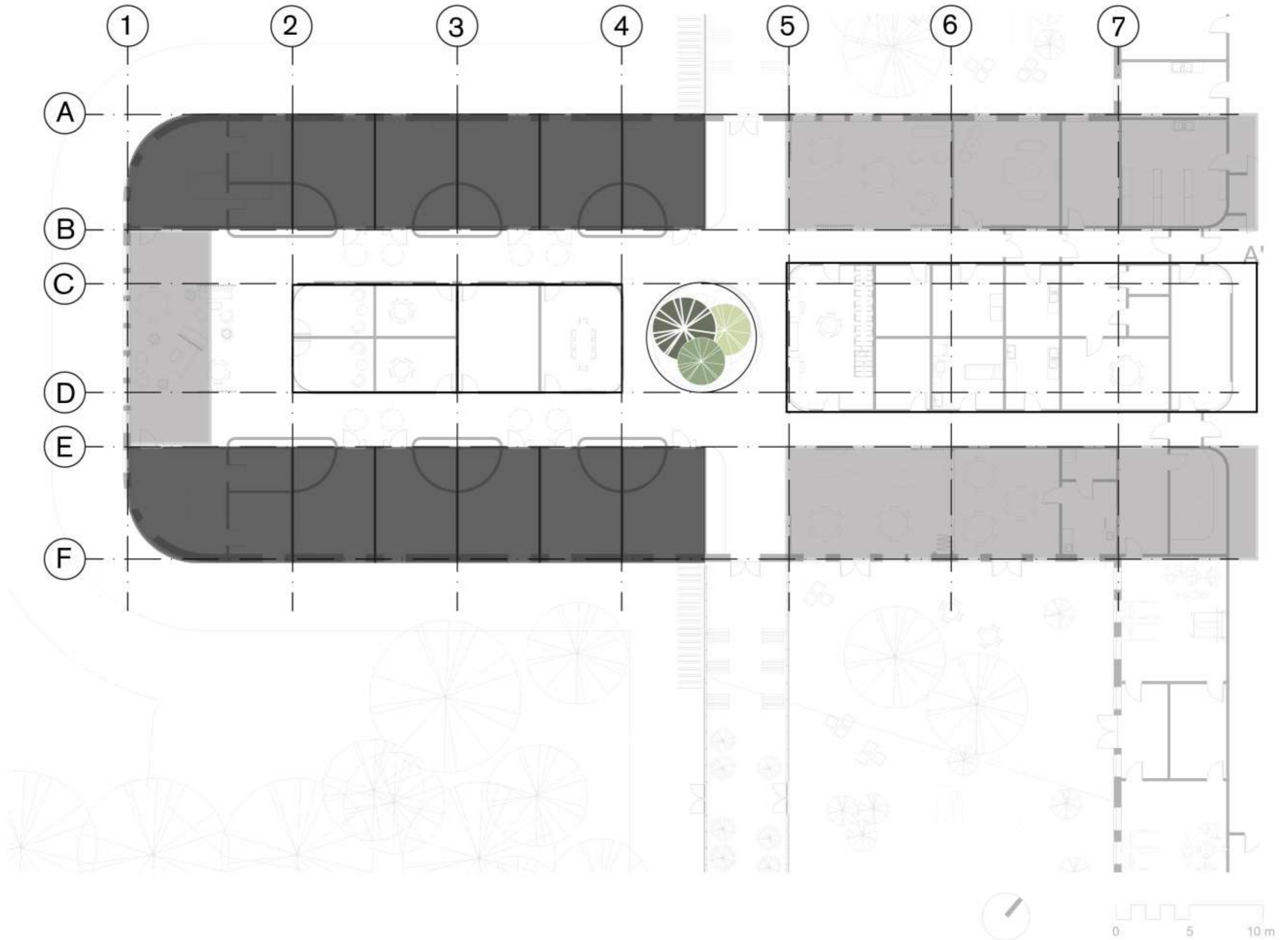
Facade system



# Forensic ward - 23



# Forensic ward - 23

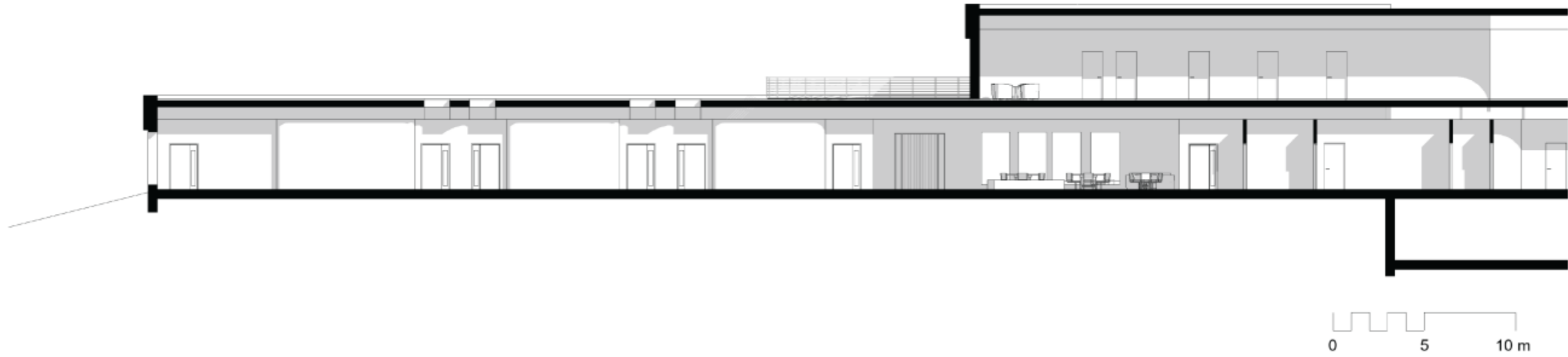




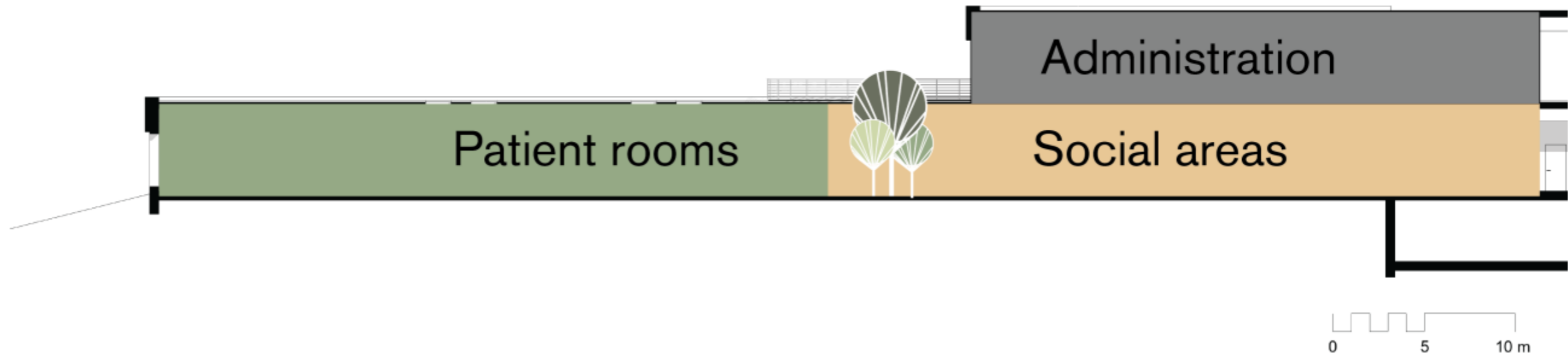
# Forensic ward - 23



# Forensic ward - 23 - section



# Forensic ward - 23 - section

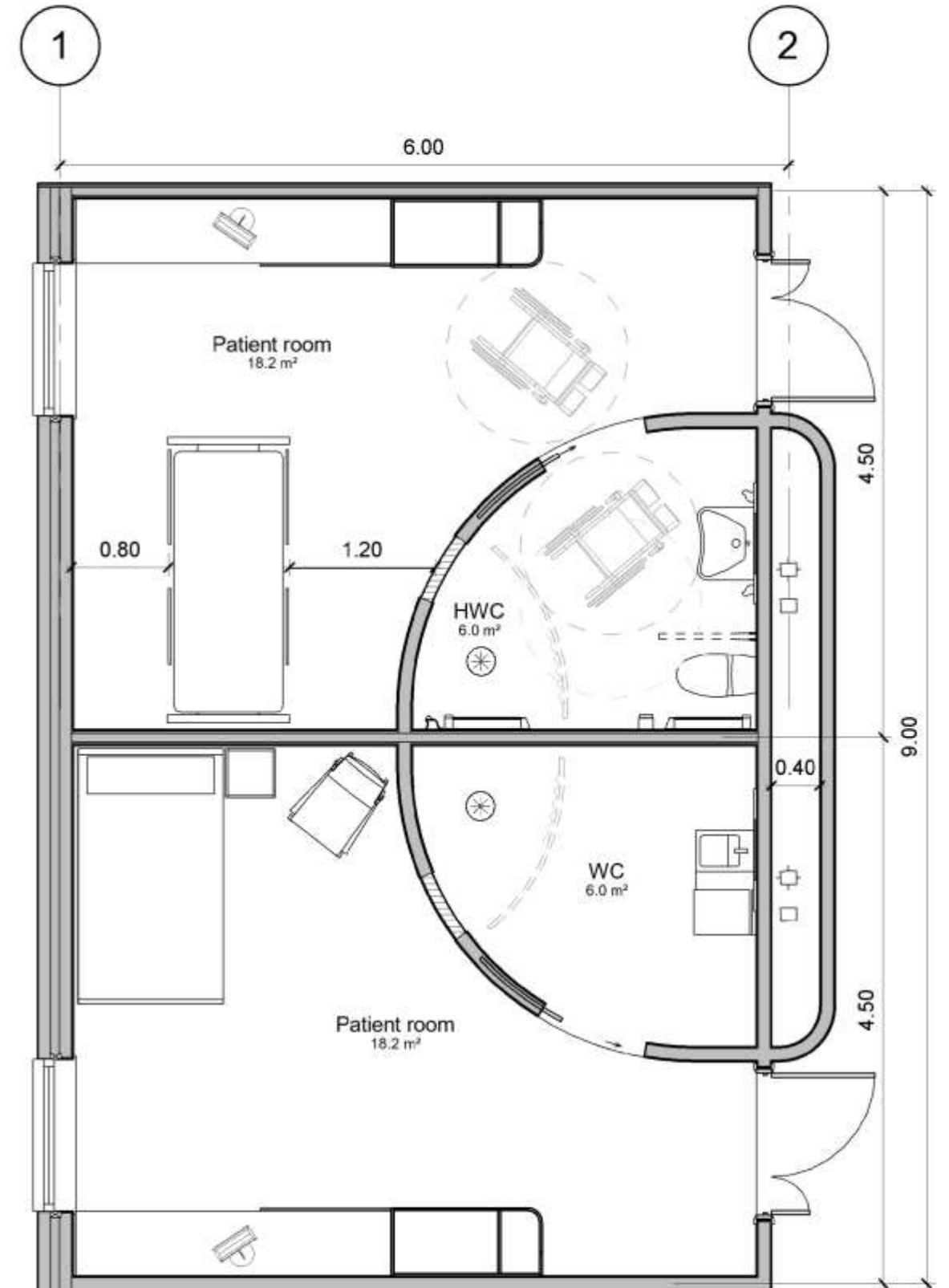
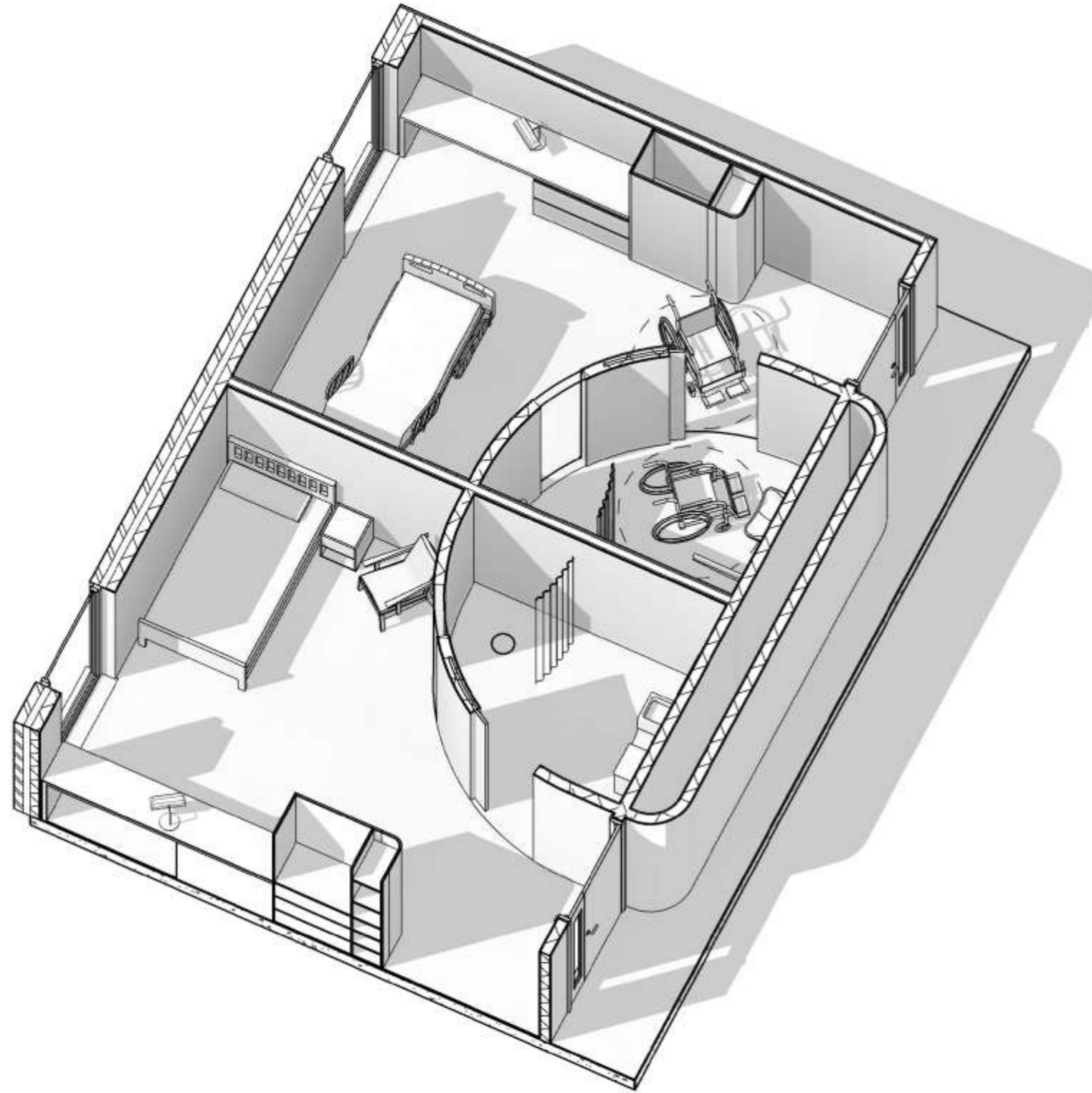




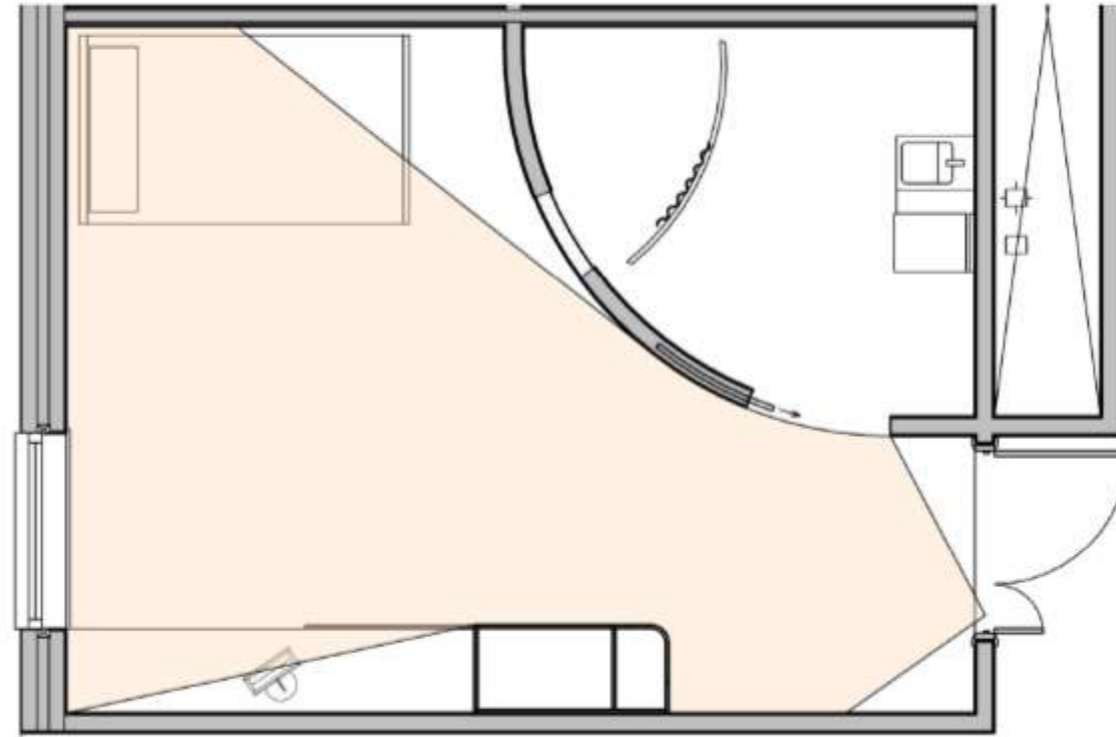




# Patient room



# Patient room



Overview - ca. 85% of the room









Thank you



# Forensic ward - 23

