

医院

THE HEALING GARDEN

Ilènia Molina, Fia Niklasson and Yiwen Zhou 2015

Life Gateway Jönköping

Future visions for healthcare, housing and work 3: ARK262 Healthcare Architecture
Department of Architecture at Chalmers University of Technology, Gothenburg, Sweden.

INTRODUCTION

LIFE GATEWAY JÖNKÖPING

The Ryhov hospital is the centre for healthcare of Jönköping, considered one of the most modern hospitals of Sweden when inaugurated in 1988. However, 30 years later new demands and changes have appeared. New technologies, new methods and a new approach has to be implemented and even a quite new hospital like Ryhov requires a technical upgrading in order to meet tomorrow's demands.

This is where the new Life Gateway Jönköping 2025 takes an important role for the centre. The need of a new place between the city and the hospital, acting as a buffer beyond a simple entrance, gifted by a long term strategic plan that embraces the unpredictable future needs and future development, as well as focused on patient safety, attractive working environment and good housekeeping.

HEALTHCARE ARCHITECTURE

A better way to provide healthcare needs to be supported by a resilient architecture that fits and adapts to its needs, using the applicable knowledge of the past and applying a future requirements foresight.

The healthcare development will lead to new facilities, and architecture has its part of responsibility to allow these new ways of providing it, foreseeing tele-medicine, new possibilities for patients to share experiences with people in the same situation. The patients and their relatives should feel safe and welcome in the hospital environment. At the same time

the spaces need to be adapted to the fact that they at the same time are a working place.

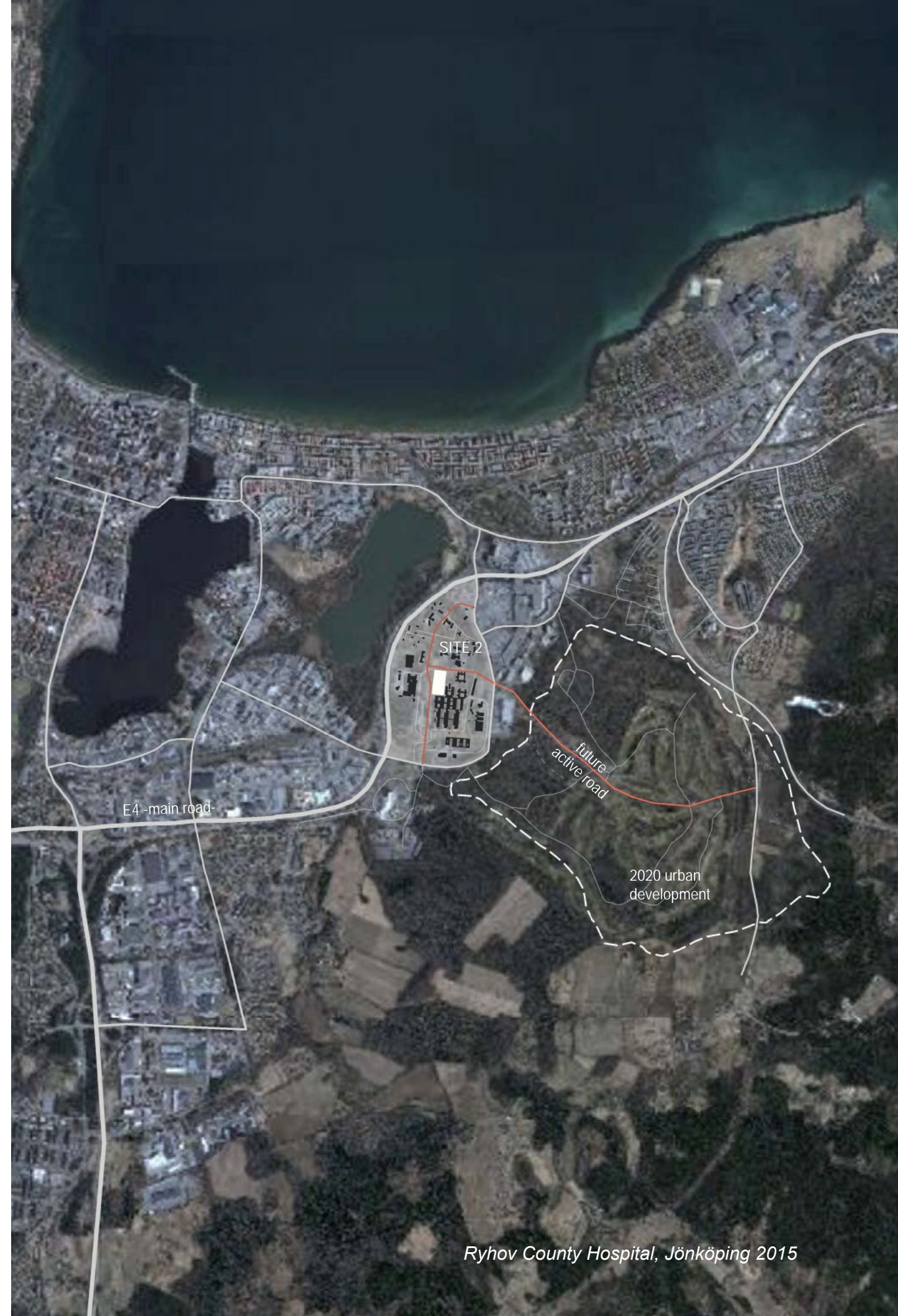
The new Life Gateway Jönköping has to respond to these future needs and promoting a positive living environment for all people in Jönköping. These are also important values within healthcare architecture where the goal for healthcare should be not only to cure but also to care. Evidence based design shows that the health of the patients and staff can be influenced by the environment they are in.

THE SITE

The Ryhov complex plays an central role in Jönköping's urban fabric, therefore it should be treated not as an isolated bubble inside the city but a welcoming meeting point integrated in it.

Currently it has one only main road that crosses the zone from South to North that connects the population's bags in NE and SW. However, the future urban development plan expects an outstanding increase of residents in the South-East zone adjacent to the complex. Taking that into consideration in ten years it may be a transversal road crossing the complex as important as the actual one.

Choosing site No 2 for our building allows an equal treatment for the two roads due to this intersection position, emphasizing in the current active one when it comes to the entrance location but still thinking in the future development.



VISION

THE HEALING GARDEN

A hospital is a health care institution providing patient treatment with specialized staff and equipment. In comparison with the swedish word *sjukhus* whose literal translation is 'ill house' understood as a place where sick people go in order to be treated, we found that the chinese version of this word -医院- can be translated as *healing garden*.

This poetical version of the concept, reflecting a humanized idea of healthcare and healthpromotion inspired us to turning it into a powerful basis for our project.

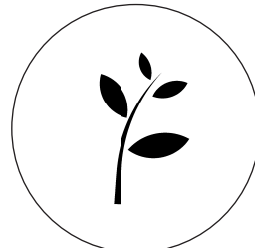
Our vision of Life Gateway Jönköping is therefore a building that includes the qualities from the garden, a place able to make the most benefit from the support of green spaces in order to promote a better healthcare.

Overall the idea is based in the creation of a building that takes care of its users and contributes to their recovering and also retained health.

The vision can be summarized in three main statements that gather around the main concept: *Bring in nature*, *Human feeling* and *Support interaction*.



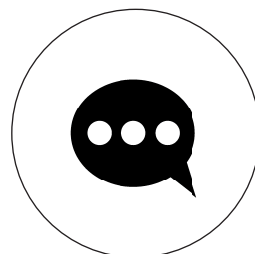
HEALING GARDEN



NATURE



HUMAN FEELING



INTERACTION

BRING IN NATURE

There is lot of evidenc for the healing power of nature. Patients with visual connection with the outside environment recover more quickly and with less pain.

Ryhov Hospital already offer a beautiful piece of greenery with its park, something that we want to keep and also take into our building. We want to make those qualities accessible for all the users of our building. Patients, staff and relatives should all get use of the benefits.

We interpret our statement in different ways. We ate literally bringing in nature with courtyards, but also visually through generous windows.

HUMAN FEELING

Revealing and transmitting warmth, confort and safety to the patients is a relevant aim in our project. These perceptions can be reached through certain design qualities such as:

A smaller **SCALE** perception that allows us to generate a safer environment in the room.

The **MATERIALITY** and a correct choice of **COLOURS** able to give warmth, recognition and wayfinding inside a building with such big dimensions.

VISUALS inside the building are useful to promote and easy orientation as well.

We also attempt to avoid the traditional corridors with doors on both sides typical

of the common institutios of hospitals. Our challenge is to break this static rhythm with a more charismatic corridor filled with different green spaces and resting areas that enlive and make more pleasant the monotony of such a length passage.

SUPPORT INTERACTION

Our architecture should promote cooperation and interaction between patients and staff as well as different professions at the hospitals. Two main connotations of communication are stipulated and have to be fostered in LGJ:

FORMAL communication for intentioned and planned meetings.

INFORMAL interaction that takes in more spontaneous and casual encounters.

Shared spaces are potentially needed in our building, both for the staff who can interact more naturally between them, and the patient when it comes to sharing their experiences and help each other.

Spontaneous meetings are facilitated by smaller group rooms close to both offices and examination rooms.

We also want to take care of the expected development with an increasing part of web-based healthcare and take it into consideration when designing the spaces.

Gardens take an important role for supporting the interaction between users, enhance the waiting areas as well as the office and workshop rooms.

CONCEPT

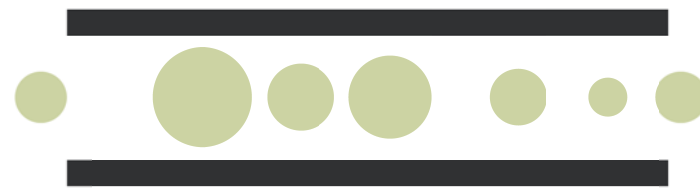
THE THREE RIBBONS

Starting from the *healing garden* as main focus we organise the building in a **succession of green spaces** concentrated in a central stripe that leads the long section and divides the building into **three ribbons**. The aim of this sequence of gardens is to create a feeling of a big green and public space in the central part.

The three ribbons are divided by two main corridors that link the different courtyards. They are connected at the same time visually with these green spaces and physically with shorter corridors. In this way the main corridors will act like a part of the garden system.

Each ribbon is distinguished by different characteristics according to their position. The **side lines** have a more private connotation in relation to the central one. They are more rational in their structure with facilities as examination rooms and office spaces.

On the contrary, the **middle ribbon** is freer both in terms of structure and functions. It can embrace bigger open spaces with more public and dynamic functions such as a gym, lecture hall or workshop spaces, and takes advantage of the immediate connection with the gardens whether for the daylight they give or the interaction they can offer with the facilities.



The rooms fitted between the corridor and the gardens have transparent walls in order to let the daylight reach the corridors, the darkest space of the building. Overall the level of transparency differs between the different parts, with less integrity in the public parts and more closed walls in the private.



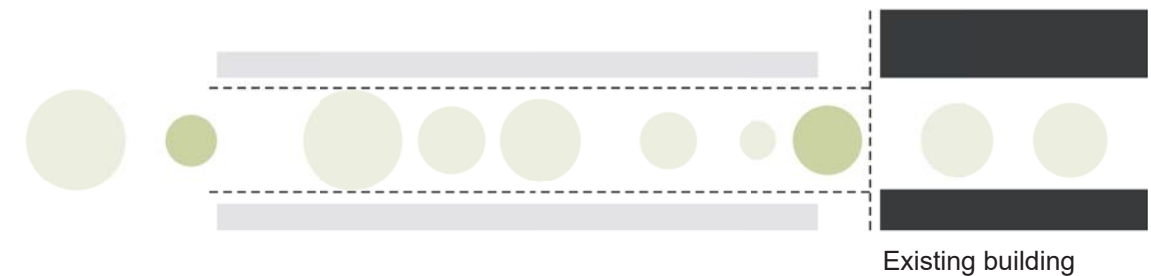
The building shall not exceed three floors in order to preserve the human scale when it comes to the height.



Each garden has its own personality and supports its adjacent rooms.



The garden ribbon expands indirectly to the existing green spaces adjacent to the building. In one end it continues outside with an outdoor area, while in the other end there is another transparent green space acting as a buffer between the new and the existing building.



SUSTAINABILITY

GREEN ALTERNATIVES

We rely on the natural resources for reducing all possible expenses and contributing to the self-sufficiency of the building.

SOLAR PANELS implemented on the roof for generating electricity or heating.

NATURAL DAYLIGHT brought by the gardens that helps reducing electricity expenses in the darkest zones.

RAIN WATER collected by a specialised garden and stored in the basement for a future re-use.

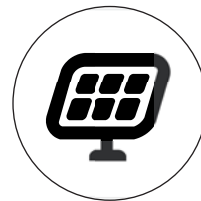
GREEN ROOF with natural insulation properties providing thermal inertia to the building.

KITCHEN GARDEN used both for teaching activities as well as for own consumption.

PROMOTING HEALTHY LIVING

Nowadays Ryhov hospital is the work environment for 2500 employees and a destination for 700 patients every day.

Therefore, Life Getaway Jönköping will implement solutions to foster public health as well as social and economic sustainability through deliberately designed spaces that raise awareness and promote a better way of living such as a lecture hall, different types of workshops and a public design of the immediate surroundings that fosters the use of public transport and walking activities.



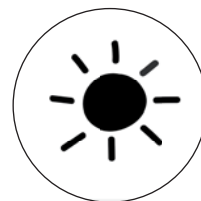
Heating



Energy savings



Food



Electricity



Healthy lifestyle

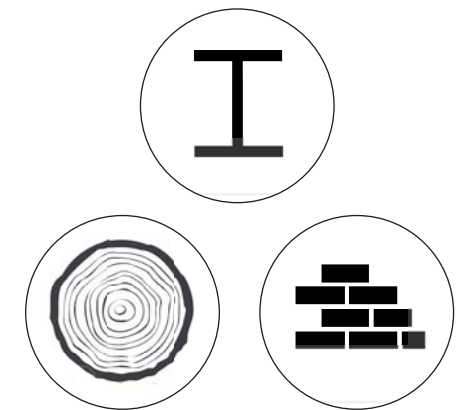
MATERIALS

STEEL used in the main structure framework as the most lasting material.

CONCRETE applied in the last layer of a composite slab in every floor, allowing lightness and thinness and giving space for the installation pass.

EXPOSED BRICK facade as a sustainable and economic material that embellish through the years and connects elegantly with the existing building.

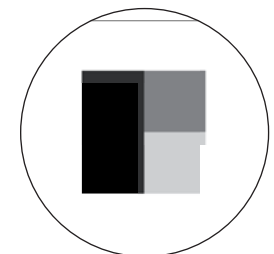
WOOD in the role of the less lasting element for the internal walls due to its probable immediate change of functions inside the building.



GENERALITY

There is an uncertain but highly important need of designing for unknown future needs. The applied grid system in the new hospital has been designed with possible future changes and adaptations in mind, being able to take in new functions, expansions or reductions of every single space in the future.

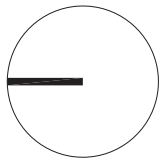
From the main structure to the internal partition walls of the building our intention is to ensure a sustainable choice for the materials in the design.



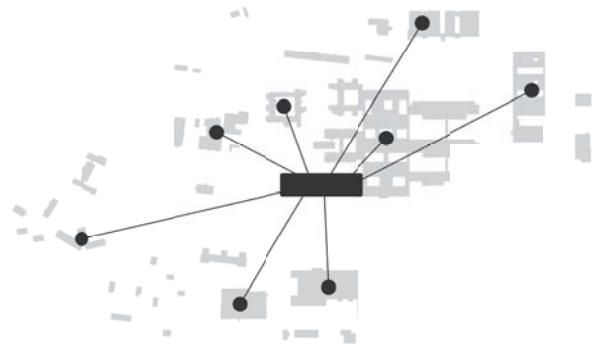
Flexibility

SITEPLAN

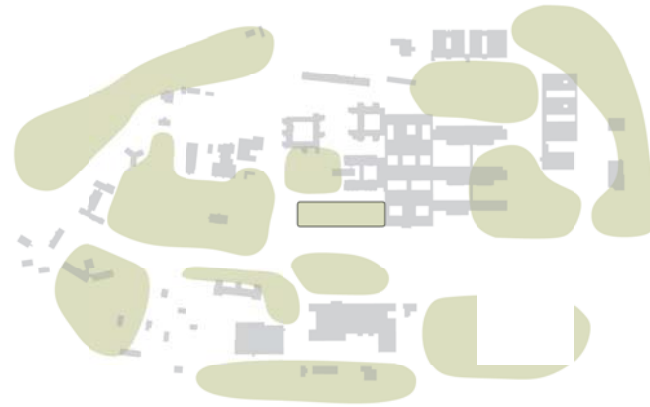
SCALE 1:1000



THE SITE 2



CENTRALITY
Offering the most possible physical and visual equality in relation to the existing buildings.



GREENERY
Letting the nature of Ryhov permeate the new building and become another green point of the complex..



INTERSECTION
Opportunity for treating the space adjacent to the confluence of the two principal roads, emphasizing the longitudinal one as the most active.

IMMEDIATE SURROUNDINGS

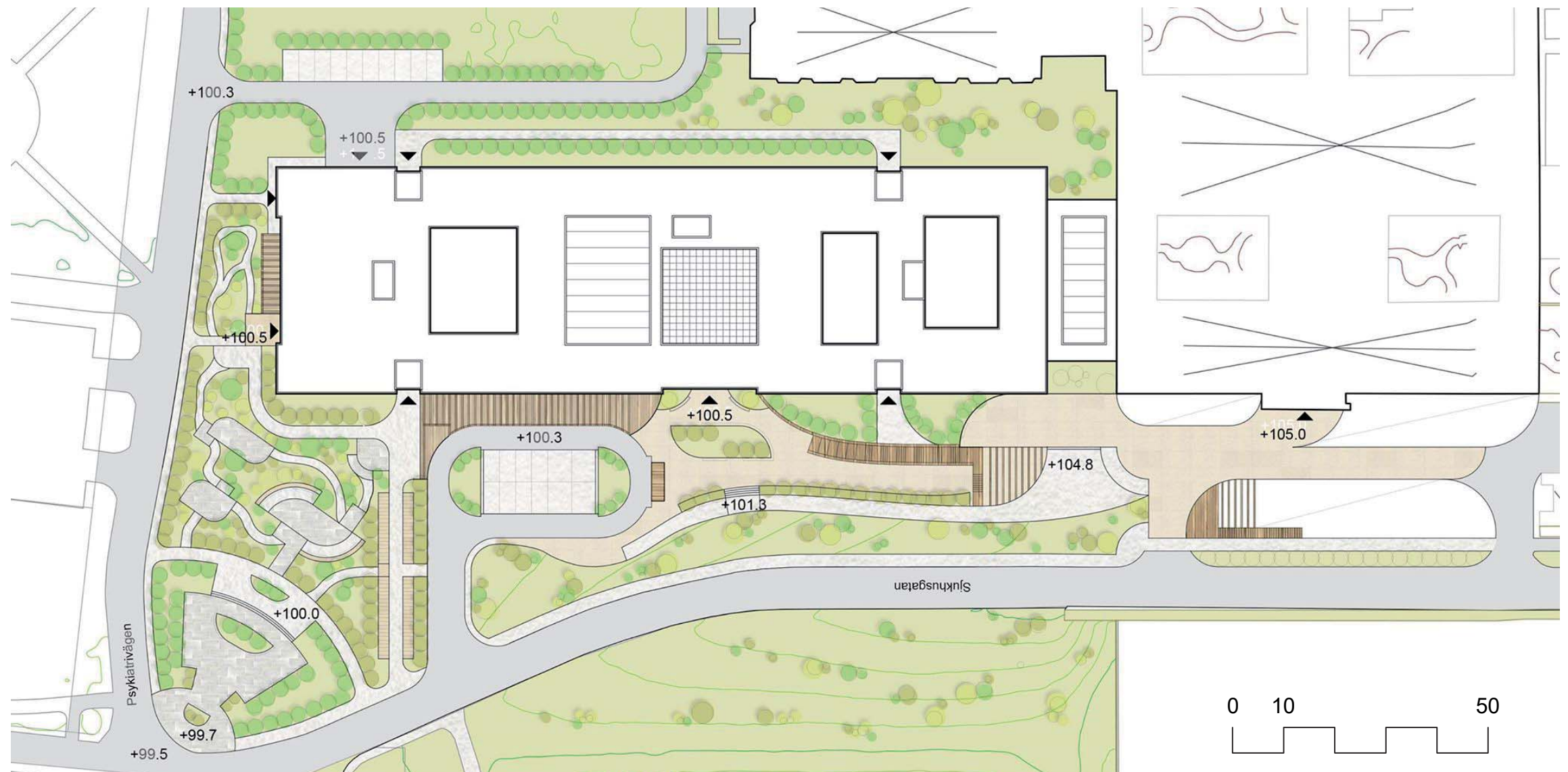
A main square is placed in front of the entrance, a central point where all the different paths meet.

We respect the old entrance of the existing building and connect it with the new one through a common platform.

A visual and distance barrier is placed in front of the main facade to guarantee the privacy of the functions inside.

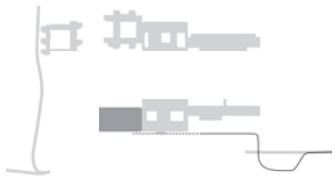
The home care centre has its own separated entrance on the backside.

A big natural space in the corner supports the rehabilitation unit with walking paths and a peaceful environment.



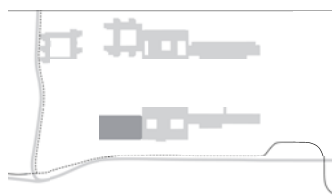
SITE OVERVIEW

TRAFFIC FLOWS



AMBULANCE

The existing ambulance road is extended in order to reach the new building.



CYCLE LANE

Connecting the existing ones and adding a parking lot. Possibility to create a perpendicular bikeway in the future that leads West.



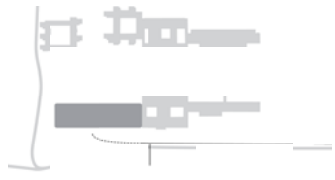
MOTOR VEHICLES

Bus stop and parking lots close to the entrance. The access at the same level as the ground floor so the parking has no drop.



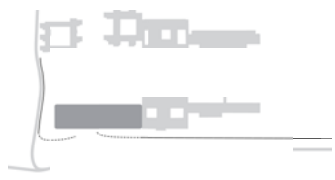
STAFF

Separated entrance for the home care centre. Prolongation to reach the backside staircase and connecting with existing road.



UPPER PEDESTRIANS

Coming from the old building entrance and the outdoor parking.

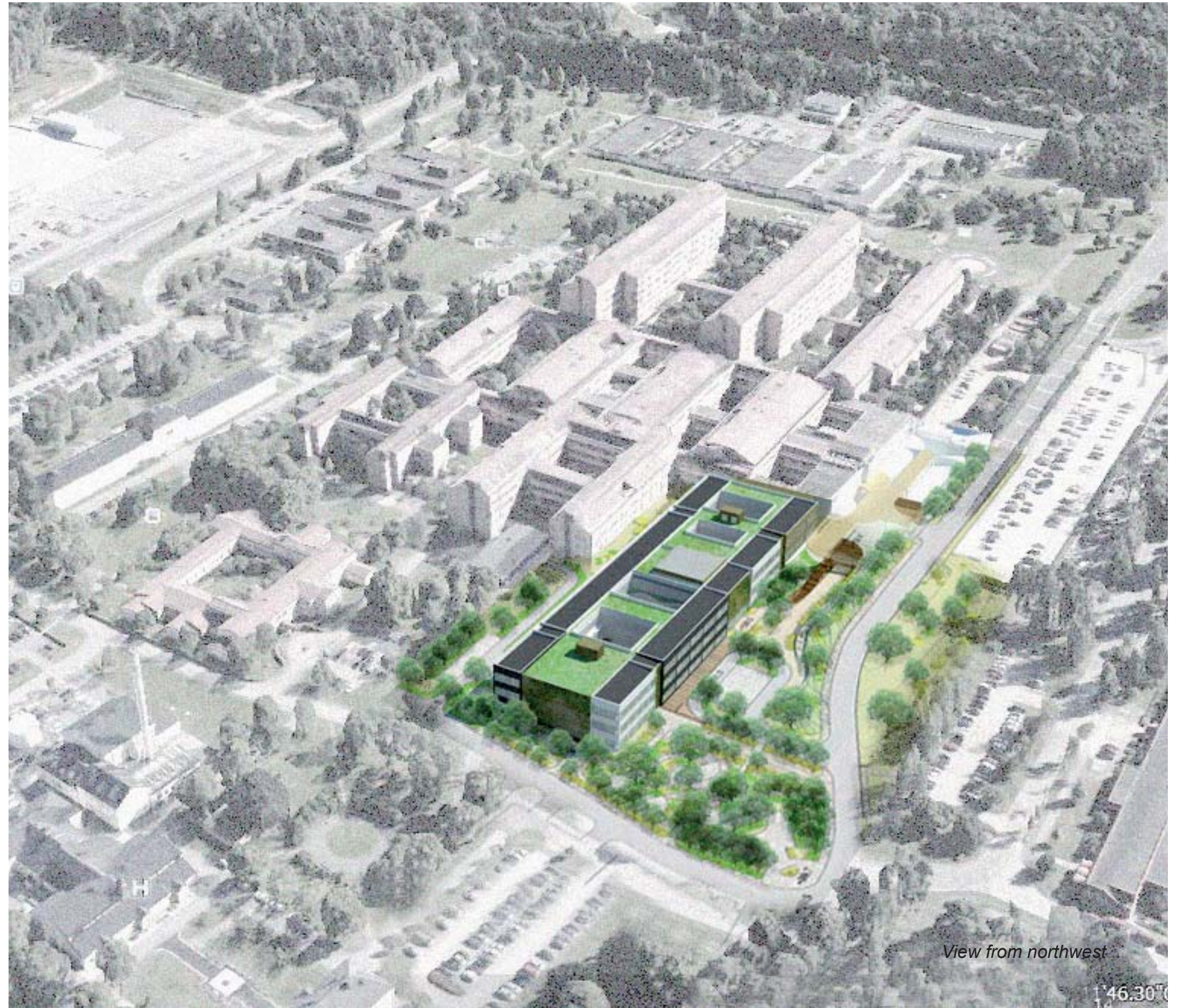


GROUNDFLOOR PEDESTRIANS

Coming from the north part and the downstairs parking.

————— EXISTING

----- PROPOSAL



View from northwest

FUNCTIONS

ENTRANCE

The main entrance of the building is situated in the groundfloor, in the middle of the long façade as a central point where all the different functions can gather around it. It leads right into the core garden, the hub for communication and waiting. The main reception is placed as a module in the middle.

ACCESSES

The whole building has different entrances according to the purpose of the visit. Generally all the influx of patients and visitors will be located in the main entrance, but specialised facilities will offer their own entrance as well, such as the home care centre, the ambulance garage and a rehabilitation / learning entrance, the one with more public connotation.

ACUTE CENTRE

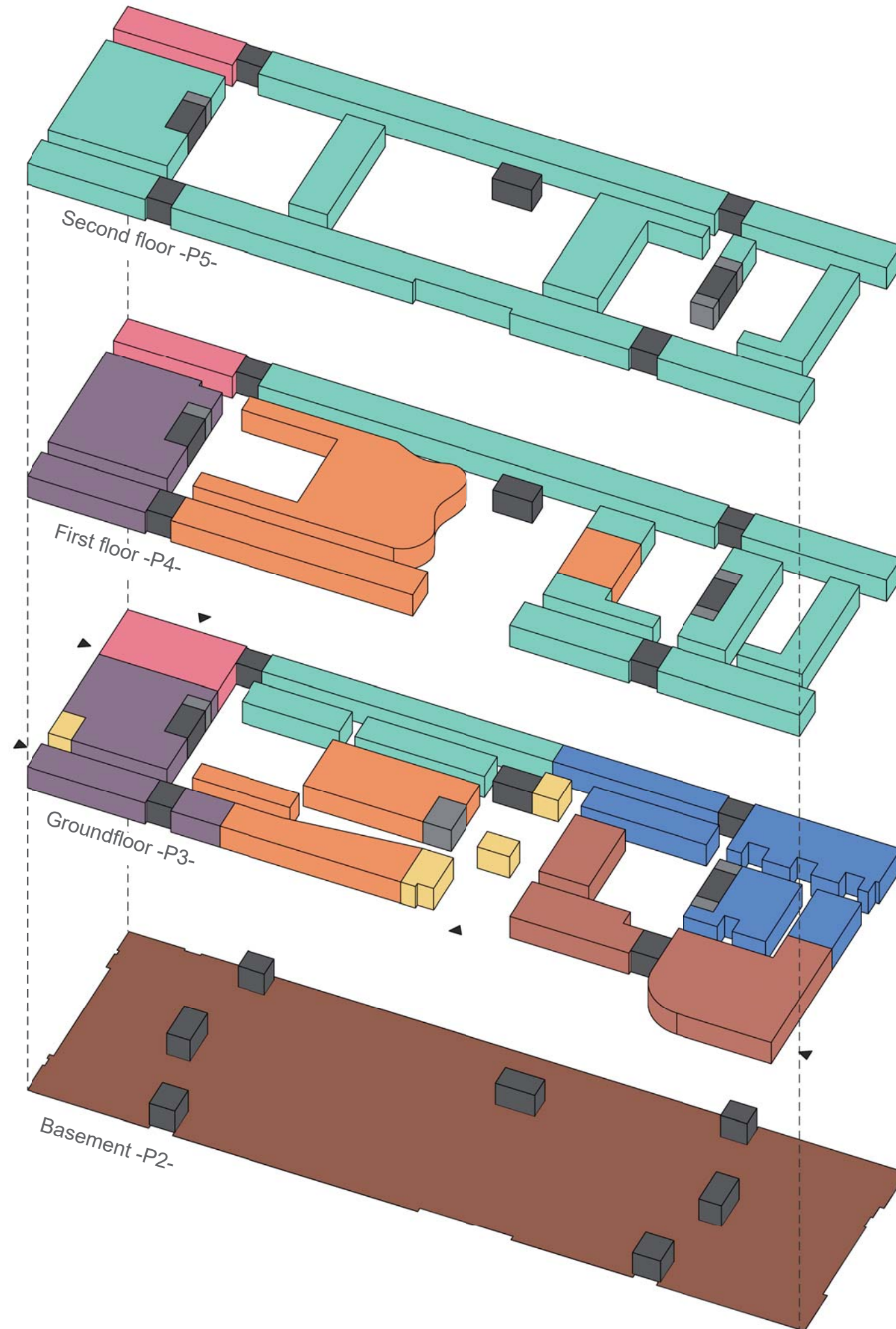
To the right from the entrance is acute and trauma placed. This area is closed from the essentially public ground floor. It is directly connected to the ICU in the existing building.

TRAUMA UNIT

The ambulance garage is connected to the existing garage floor and leads to the trauma unit.

INVESTIGATION UNIT

The main part of the building consists of investigation. The facilities is distributed in all stories with examination and treatment rooms in the facade and smaller chat rooms facing the courtyards.



REHABILITATION UNIT

The rehabilitation facilities are concentrated in the northern part of the building in two floors and close connected to the learning centre.

LEARNING CENTRE

The learning is spread out through the building in order to interact with the different functions. The most public parts, library and lecture hall are located in the groundfloor close to the entrance. Different workshops related to the adjacent gardens are located in the first floor.

HOMECARE CENTRE

The home care has its base in the ground floor with garage, changing rooms and storage. In the upper floors there is offices and room for patient meetings.

- RECEPTION / CAFETERIA
- LEARNING CENTRE
- REHABILITATION UNIT
- HOME CARE CENTRE
- INVESTIGATION UNIT
- ACUTE CENTRE
- TRAUMA UNIT
- VERTICAL COMMUNICATION
- TOILETS
- TECHNIQUE / STORAGE
- ACCESS

FLOWS

HOME CARE

In a secluded corner of the building the home care center has its own car and walking entrance for the staff. Parking are and changing rooms are located in the ground floor while the office and working areas are distributed through the first and second floor. This facility makes special use of the adjacent elevators.

VISITORS

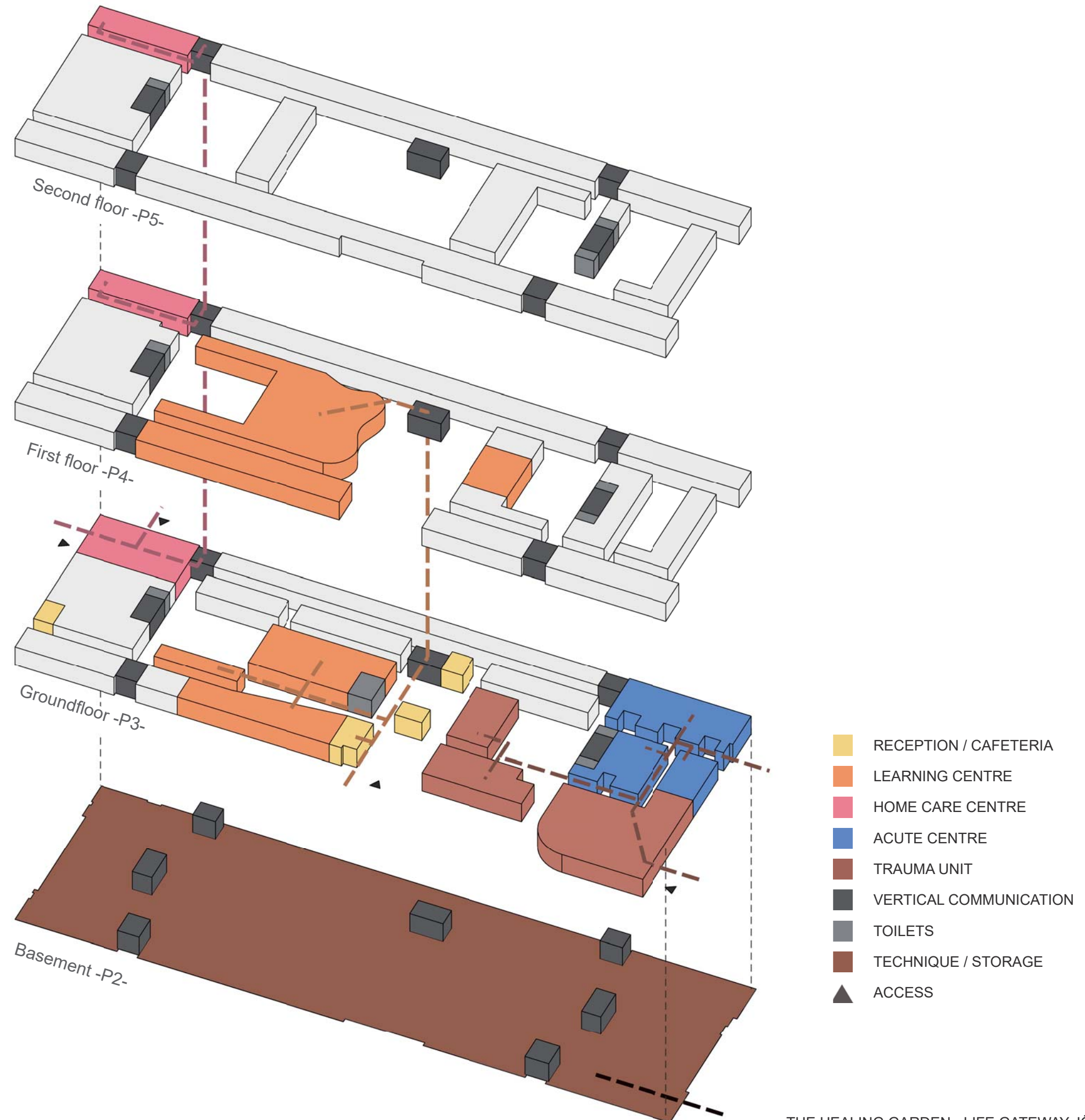
Life Gateway Jönköping takes in a significant number of rooms dedicated to workshops, conferences and different activities focused not only in the patients but also for any kind of visitors.

EMERGENCY

A separated entrance for the ambulance access allows the dropping of the acute patient with the maximum discretion. He's taken directly to the trauma room and X-ray for the first check and if necessary he's led to the operational theatre or to the ICU in the old building.

GOODS

Goods enter the building through the basement. The building is there connected to the existing delivery system. From there it is distributed to the different departments through elevators and corridors. Waste leave in the same way.



FLows

REHABILITATION PATIENTS

First time patients may access that facility from a previous observation room or from the main reception while experienced users with knowledge of the building can enter directly without crossing it, and can take advantage of a specialized reception for the facility. Placed in a corner offers a pool in the ground floor as well as a gym in the upper one, with their respective changing rooms.

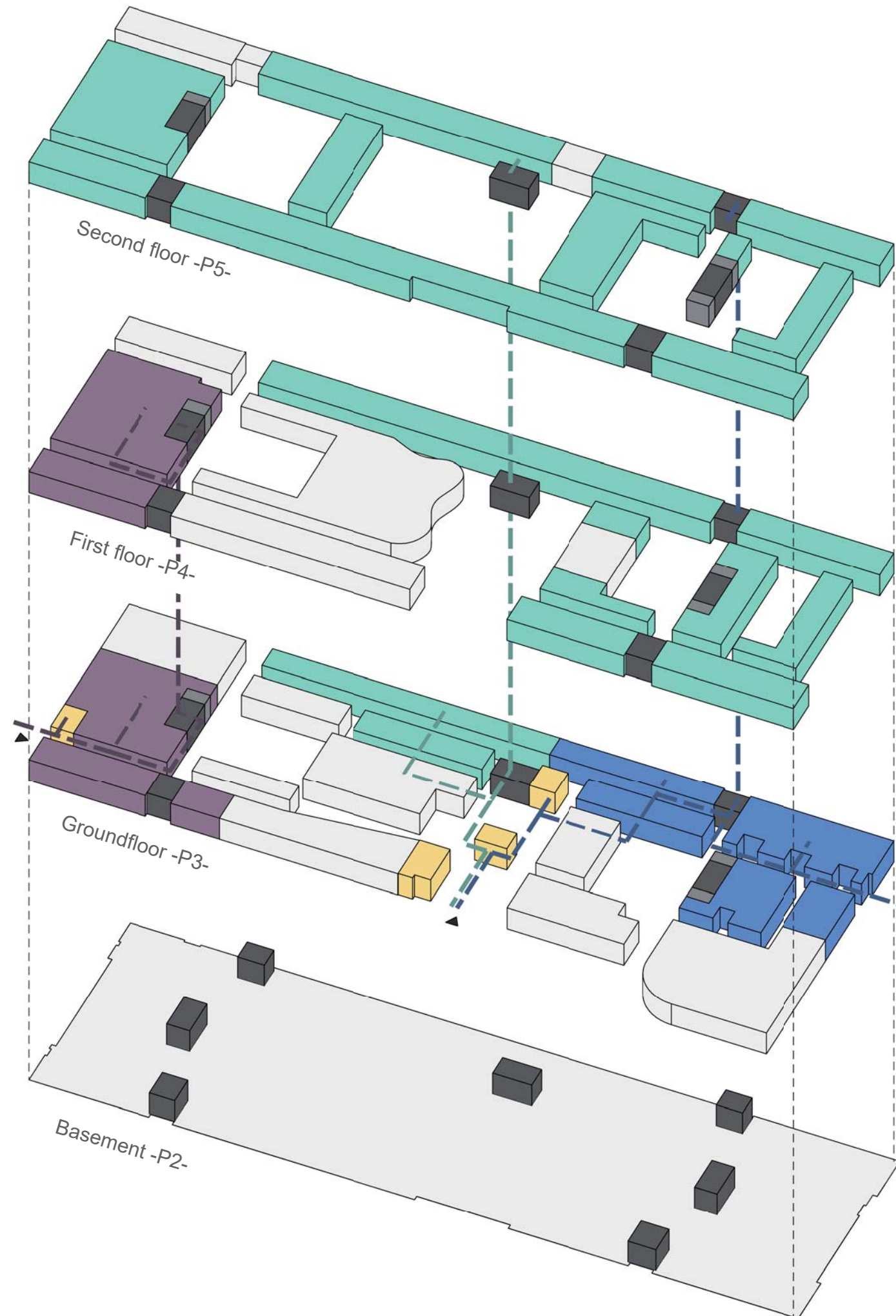
PATIENTS

DAYCARE PATIENTS

Users that have booked previously an appointment and don't go further the examination rooms. They go first through the triage or they may go directly to the upper floors to be examined.

ACUTE PATIENTS

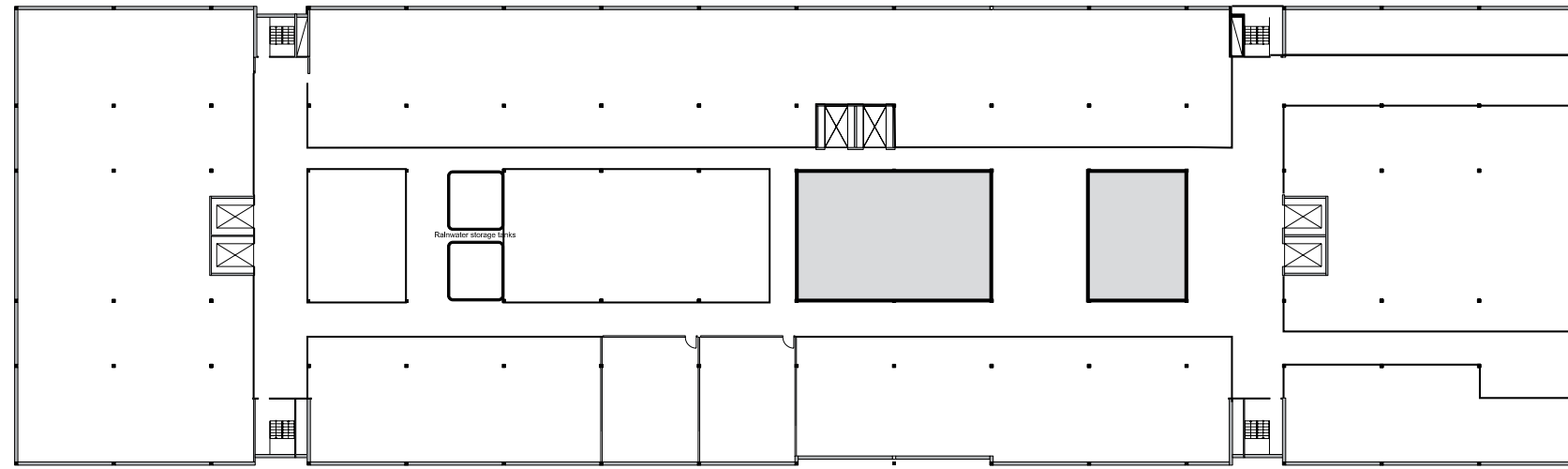
Although they enter through the main entrance as the other patients and visitors and they may use the main reception as well, this kind of users with more immediate needs have also a specialized reception behind the main one. The acute department contains a specialized triage close to the examination areas and the acute center if needed.



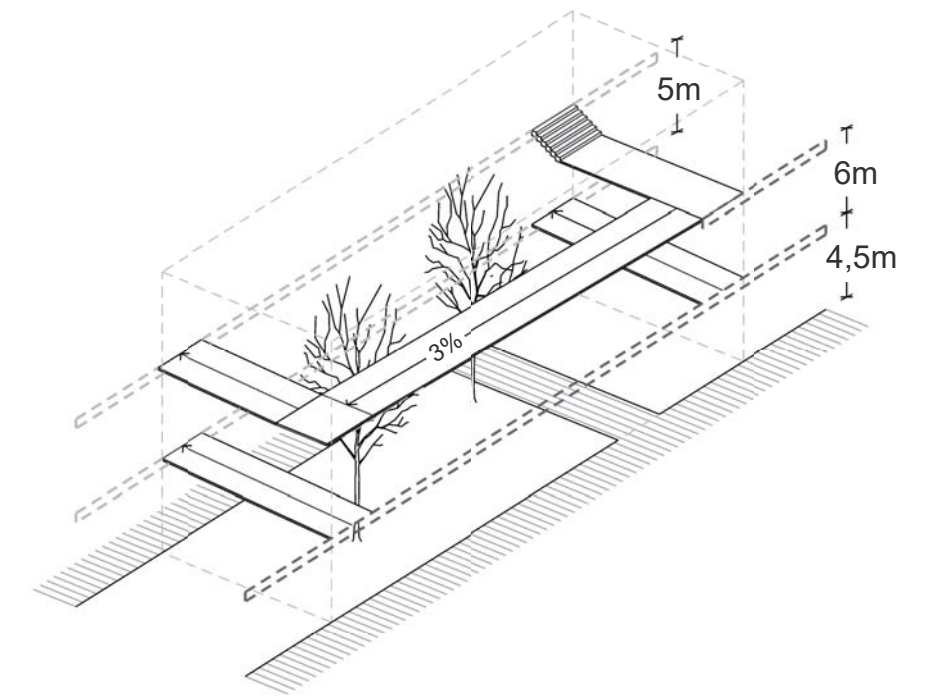
- RECEPTION / CAFETERIA
- REHABILITATION UNIT
- INVESTIGATION UNIT
- ACUTE CENTRE
- VERTICAL COMMUNICATION
- ACCESS

PLAN 2 - BASEMENT

SCALE 1:500



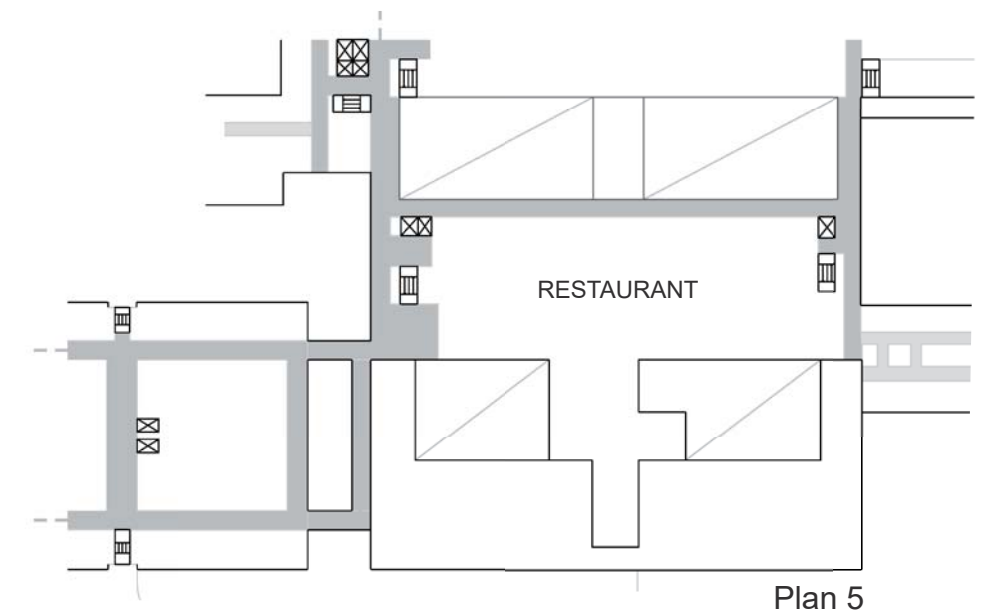
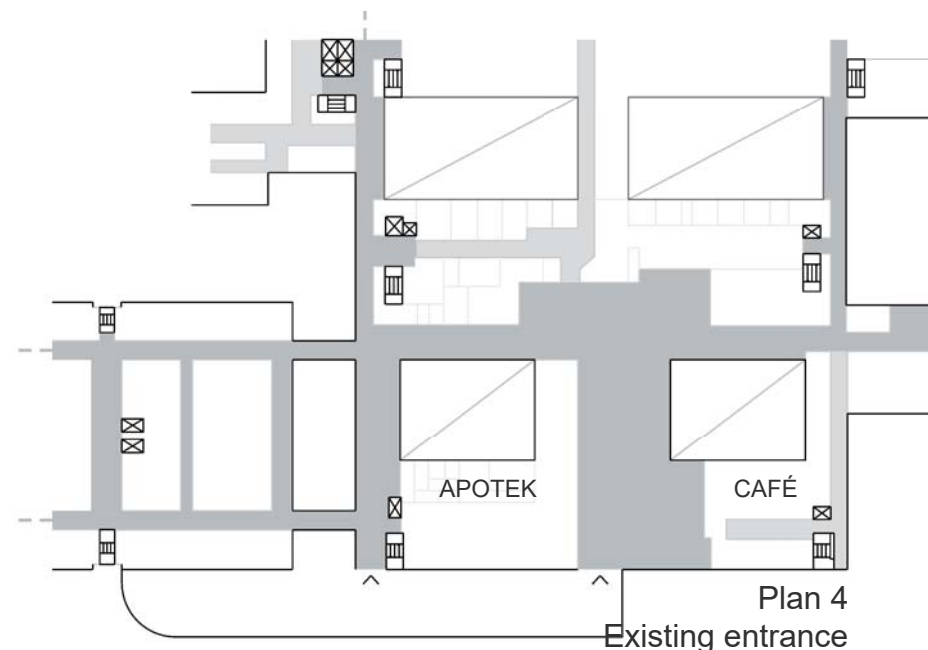
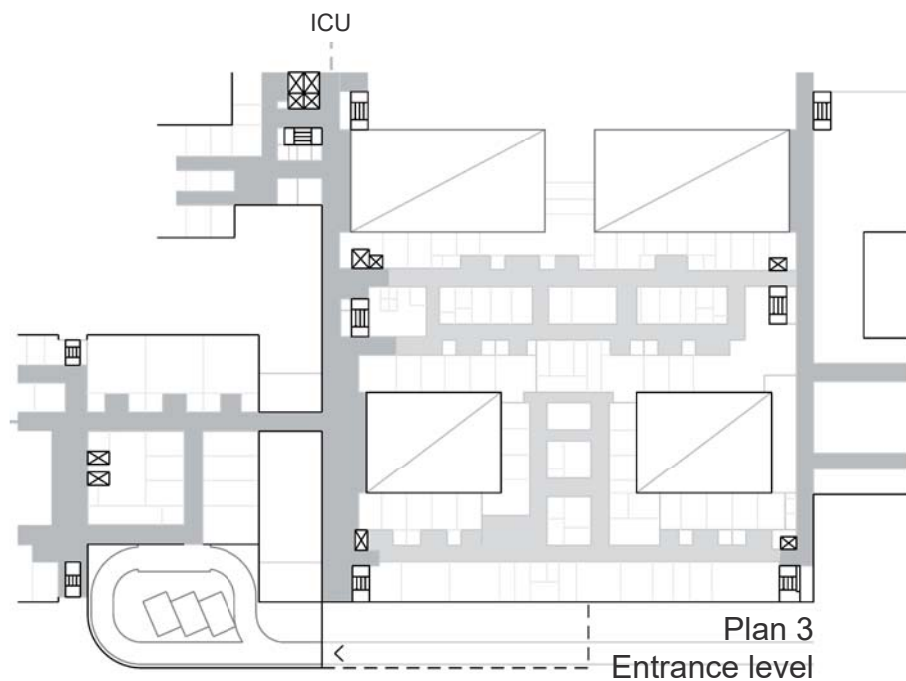
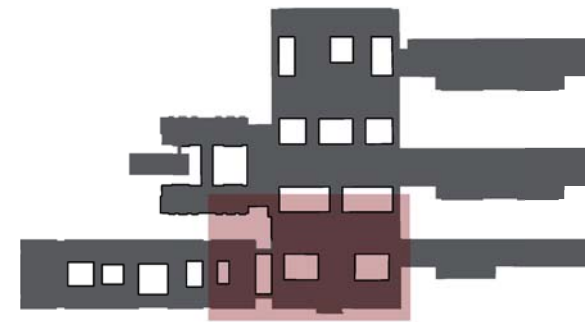
The basement contains substantially the storage and technique facilities. It includes room for the cafeteria and the library, as well as a few tanks for water storing coming from the rain garden.



CONNECTION WITH THE EXISTING BUILDING

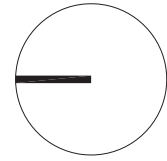
Due to the structural height differences between the existing building and the new one we have proposed connecting both of them through the separation. Leaving a gap between the both buildings not only we let the daylight permeate

both facades but also we can avoid the meeting of both structures. The connection between the buildings will be shaped by the extension of the two main corridors of the LGJ and solving the height difference with ramps and stairs.



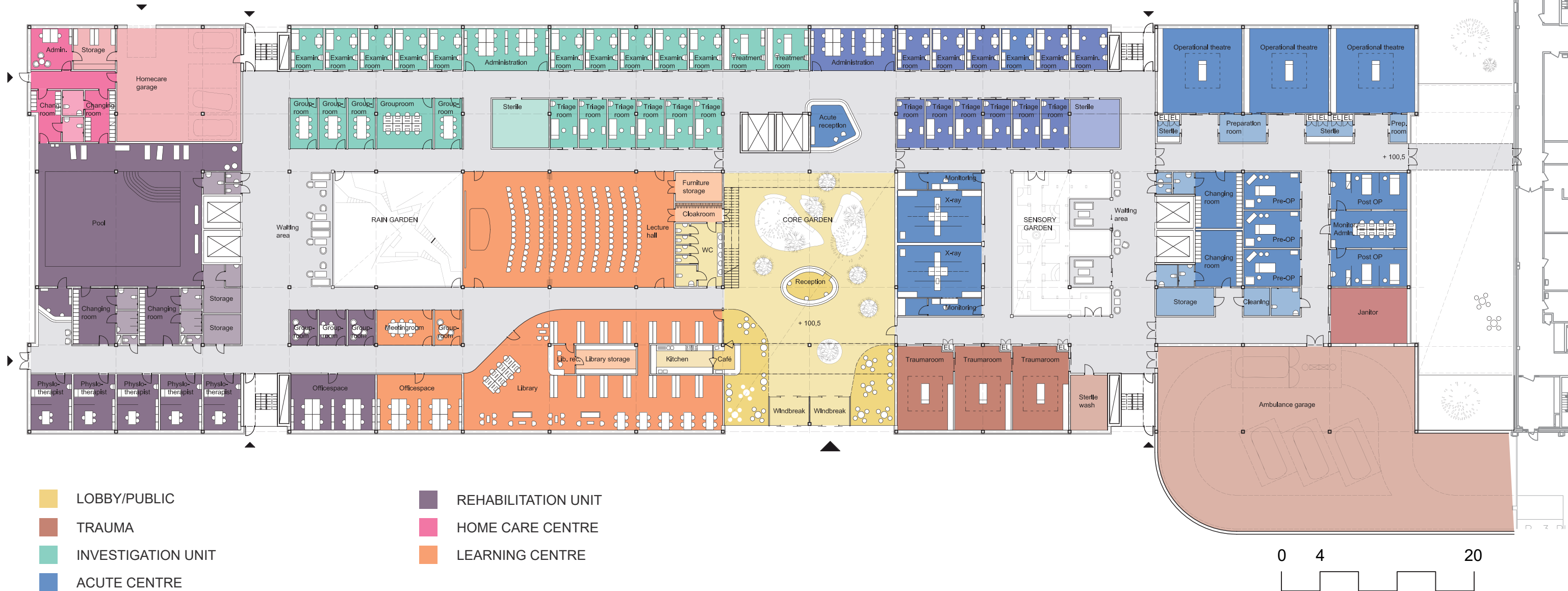
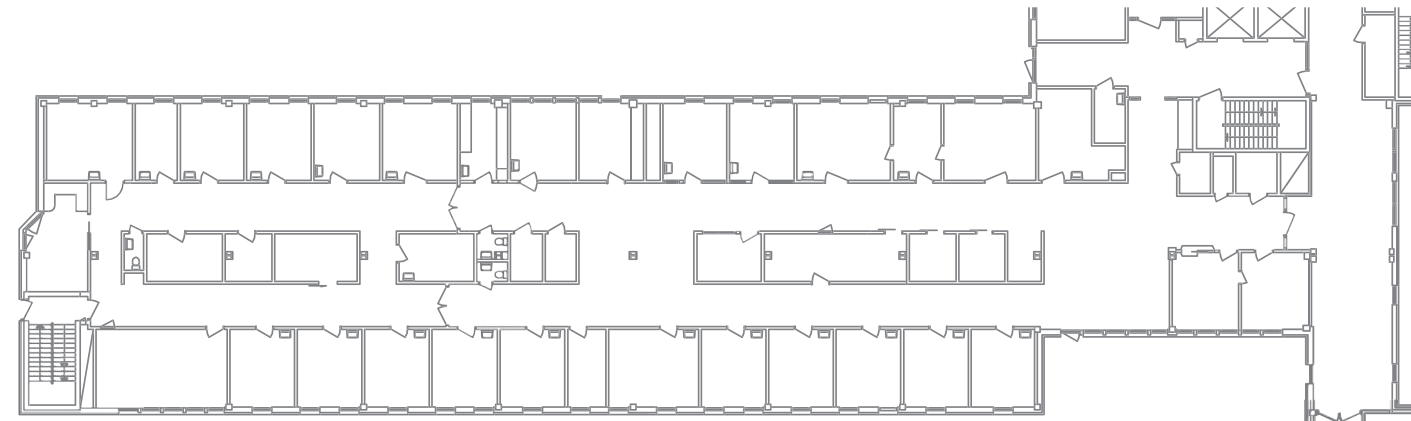
PLAN 3 - ENTRANCE FLOOR

SCALE 1:400



The entrance floor is quite public with the library and lecture hall as a hub for the learning centre with conferences possibilities and visitor space. The rehabilitation has its own entrance for frequent visitors.

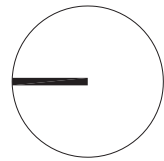
The ambulance intake is also placed here with immediate connection to trauma unit.



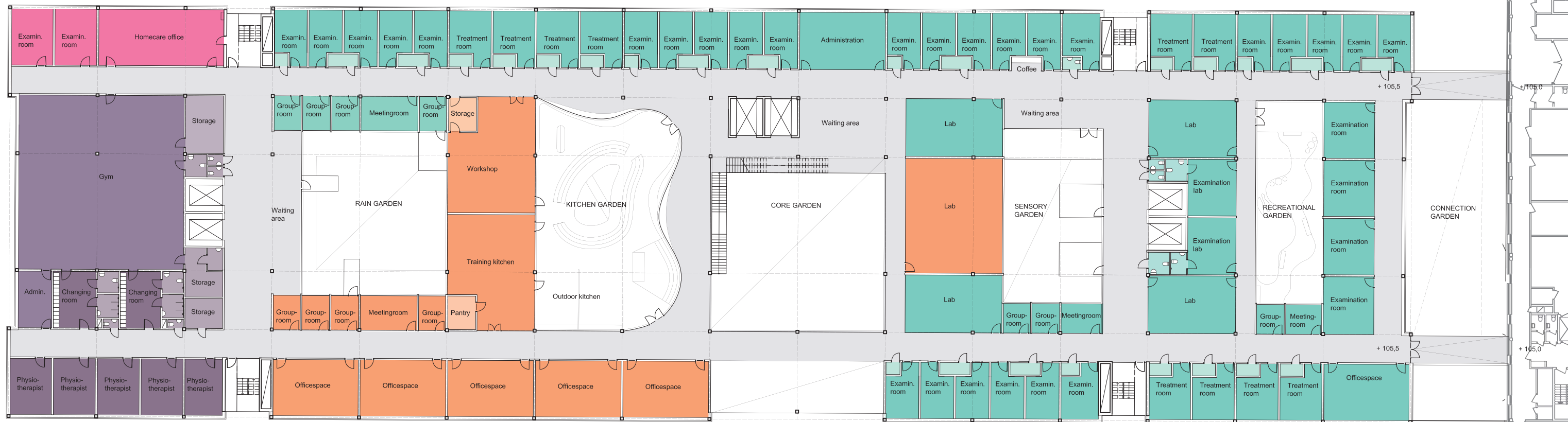
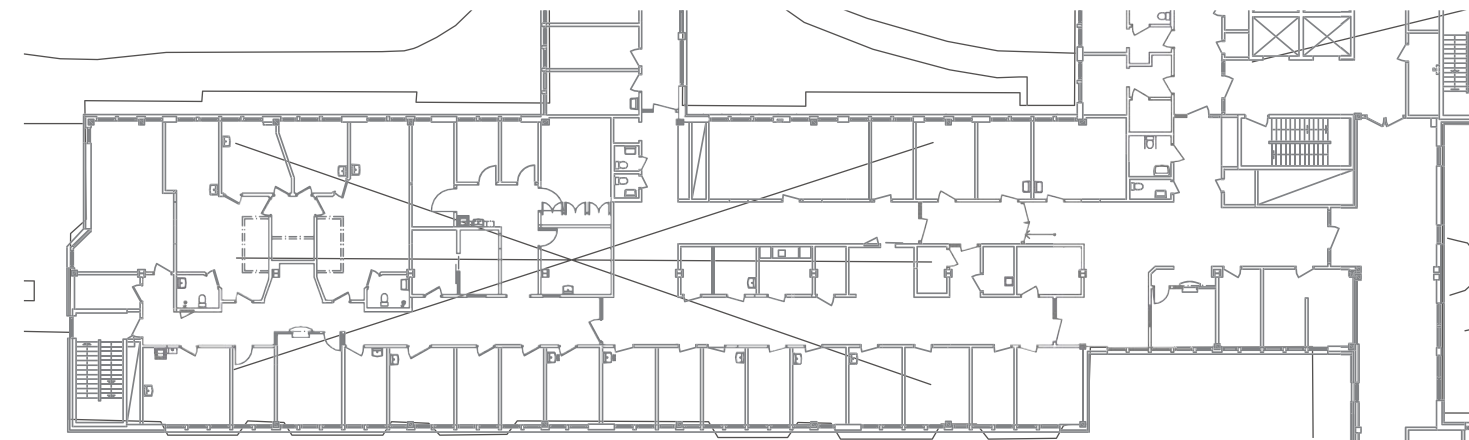
- LOBBY/PUBLIC
- TRAUMA
- INVESTIGATION UNIT
- ACUTE CENTRE
- REHABILITATION UNIT
- HOME CARE CENTRE
- LEARNING CENTRE

PLAN 4 - SECOND FLOOR

SCALE 1:400



The second floor is the main connection to the rest of the hospital. It contains part of the investigation unit, a gym for the rehabilitation unit and a central ribbon that includes open space rooms with workshops and educational activities, some of them related to the adjacent gardens.

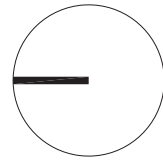


- LOBBY/PUBLIC
- REHABILITATION UNIT
- HOME CARE CENTRE
- TRAUMA
- INVESTIGATION UNIT
- ACUTE CENTRE
- LEARNING CENTRE

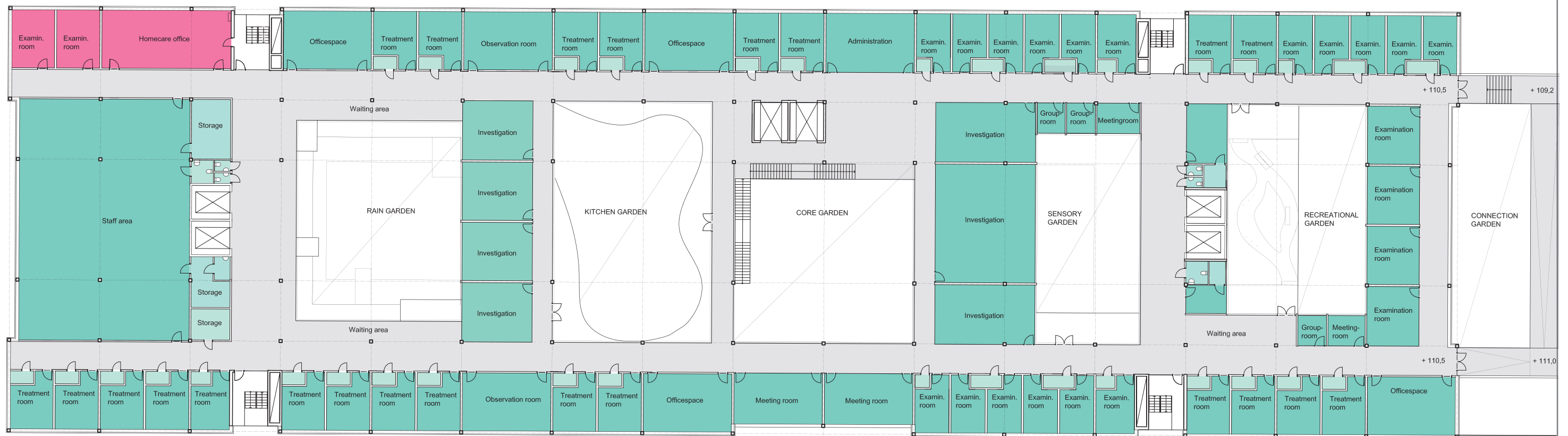


PLAN 5 - THIRD FLOOR

SCALE 1:400



The third floor contains mainly investigation space and areas for staff. Common lunch and meeting rooms in addition to administrative parts.



- | | |
|---|--|
| LOBBY/PUBLIC | REHABILITATION UNIT |
| TRAUMA | HOME CARE CENTRE |
| INVESTIGATION UNIT | LEARNING CENTRE |
| ACUTE CENTRE | TECHNIQUE/STORAGE |



SECTIONS

SCALE 1:400



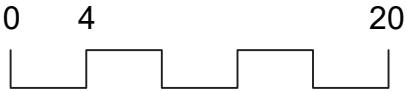
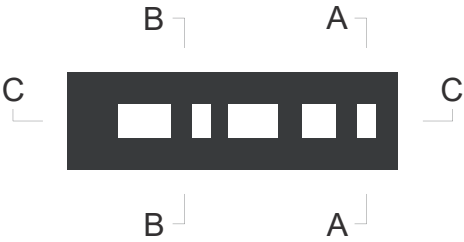
SECTION A-A
Ambulance garage and resting garden



SECTION B-B
Corridor



SECTION C-C
Connection with existing building

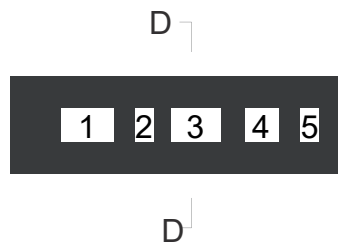


ENTRANCE

SCALE 1:400



SECTION D-D
Entrance and core garden



CORE GARDEN (3)

The green space that supports the access of the building. It's the only garden that can be seen from the outside in order to catch the attention of the visitors when looking for the entrance. Covered with a wood strip framework, this indoor space represents a common outside area with a strong nature component

in order to make the patient or visitor feel comfortable and avoiding the first violent impression when entering a hospital.

The main reception is placed immediately after the access, and the acute reception and triage are located right after the green space.

GARDENS

The gardens is one of the main ideas and an important part of the project.

There is five courtyards within the building with different characters.

Besides the glazed coregarden there is four open ones:

RESTING GARDEN (5)

The more private space orientated to the staff is located in the less public part of the building, closer to the existing one. It offers daylight and pleasant visuals for the investigation unit.

GARDENS

SCALE 1:200



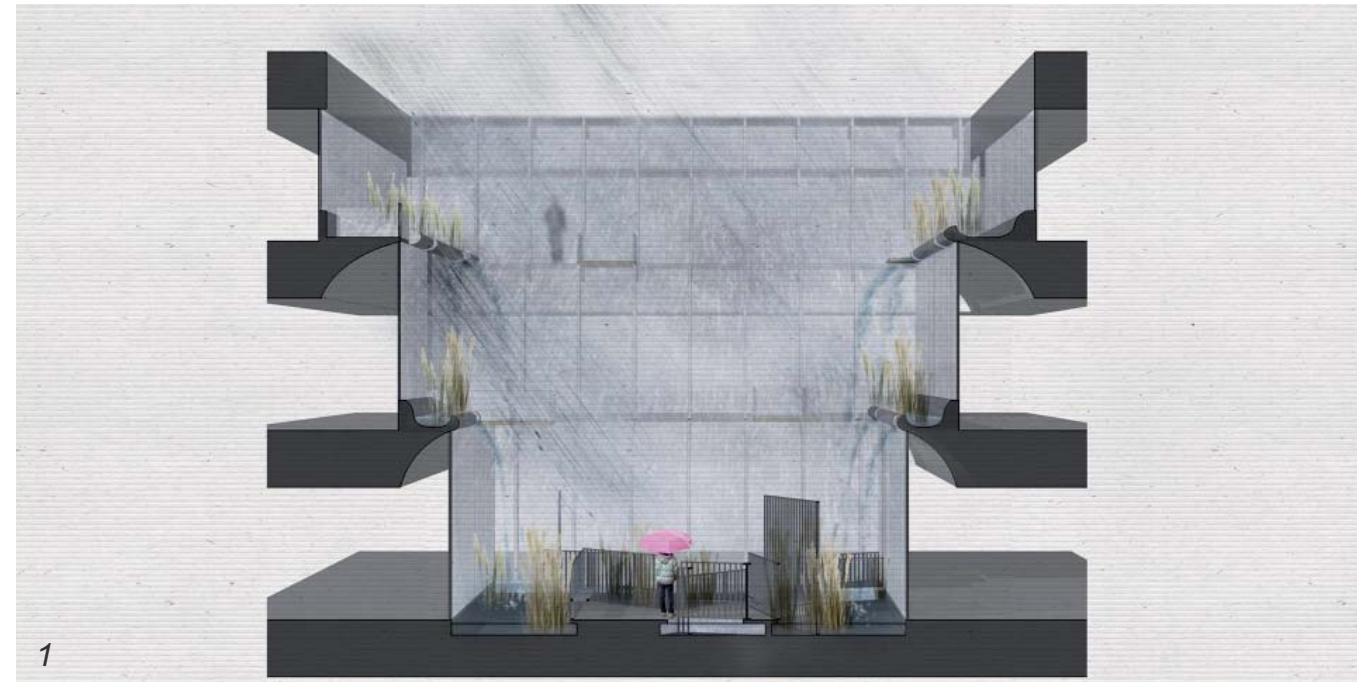
KITCHEN GARDEN (2)

A green space orientated to cultivation for educational and rehabilitational aims and at the same time used for the own consumption of the hospital. Vegetables grown in the garden can primary be used

in the training kitchen but also in the existing restaurant. It is directly connected to workshop rooms and offers a unique dynamic experience for the visitors and patients.



4



RAIN GARDEN (1)

Taking advantage of the frequent rain of the site, a garden focused in water collection helps to the water supply system and at the same time offers a especial

experience to the patient. This garden is contiguous to the lecture hall, a resting area and offers visual connection to the meeting rooms close to it.

SENSORY GARDEN (4)

Connected basically with the investigation unit, this garden has a more poetical character and looks for personal introspection and peaceful environment.



FACADES

SCALE 1:400



EAST FACADE

Although a building should not be judged only by its facade, the first impression always comes from it. Besides, it's important to match up the character of the facade with the authority it needs to transmit.

Overall the concept centers around four main aims that we want to achieve:



CONCEPT REFLECTION



CLEAR ENTRANCE



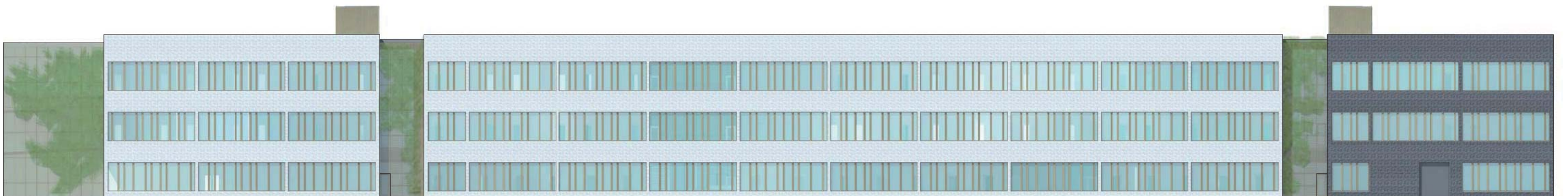
BREAK THE LENGTH



KIND VISUAL CONNECTION WITH THE EXISTING BUILDING

The proposal consists in a exposed brick facade with a continuous window in each floor. The building is divided in different modules with different brick tones in order to vary but still keeping the homogeneity.

The East facade contains the main opening while the West has a more closed character.



WEST FACADE



FACADES

SCALE 1:400



Brick in three colours



Climbing greenery, reference:
Sihl City Green Wall in Zurich, Theo Hotz, 2007

A glimpse of the main steel structure can be seen in the gaps between these brick modules, where the staircases and the main entrance are. Vertical wood strips with climbing plants let a visual intuition of nature that resides inside of the building.

The North facade shows the social and public connotation through its transparency.

The visual connection with the existing building is settled thanks to the homogeneous brick facade, allowing a kind union with it.

Therefore the overview shows a continuous long facade that distinguishes the old and the new design through the new and coloured bricks and the greenery and transparency as an allusion of the healing garden concept.



NORTH FACADE



STRUCTURE

SCALE 1:400

GRID

The main structure grid is quite simple with measurements of nine and six meters in order to embrace all possible combinations.

PRIVATE RIBBON

Adjacent to the facade, this side line takes in the examination, observation rooms and office spaces. They can be structured and organised in smaller or bigger spaces and allows change in the future.

The shape of the rooms varies according to the departments. Acute and Trauma have bigger rooms while the Learning Centre and the Investigation Unit is organized in smaller ones.

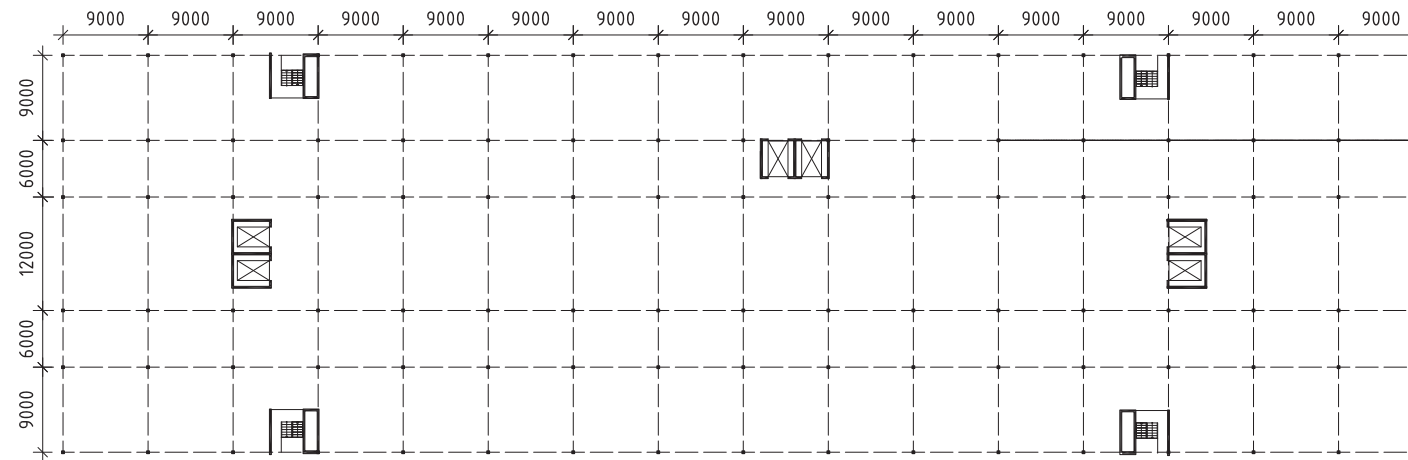
PUBLIC RIBBON

Composed of smaller and more transparent rooms. They include meeting areas, and spaces for encounters related to educational aims and investigation reunions.

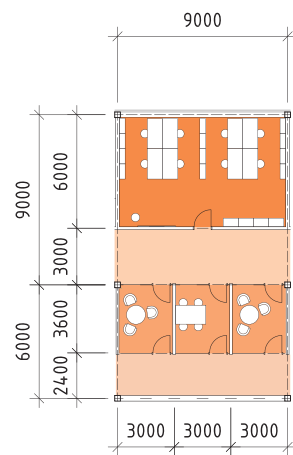
FUTURE POSSIBILITIES

A grid that is suitable for a lot of different future uses. Our different room typologies can, with some changes of internal walls, be placed everywhere in the building. The measurements would also fit a ward, although a major intervention then would be required.

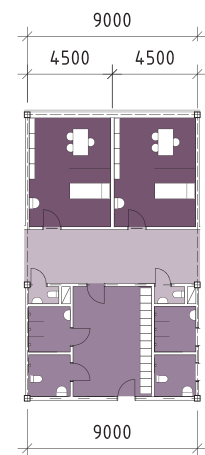
The structure can easily be extended to the north in case of a future development.



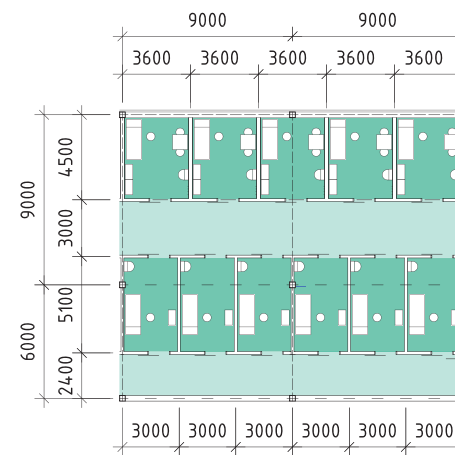
Grid, scale 1:800



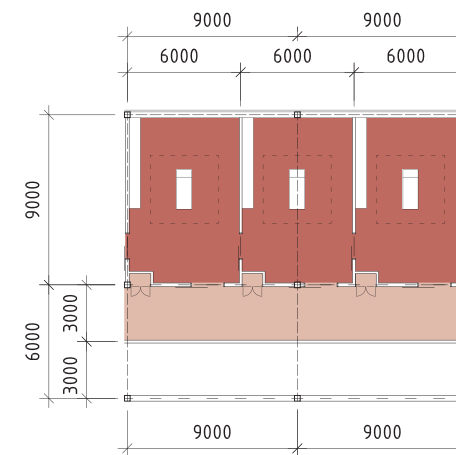
Office Meeting/chat



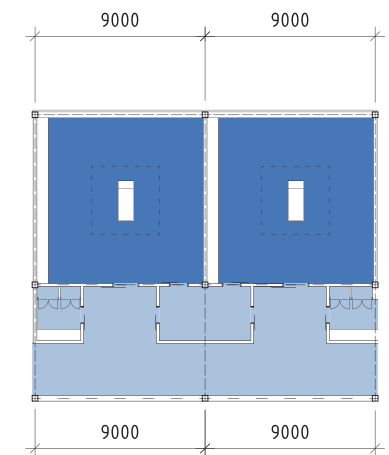
Physiotherapy Changing



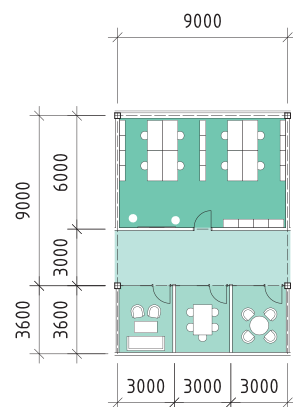
Examination Triage



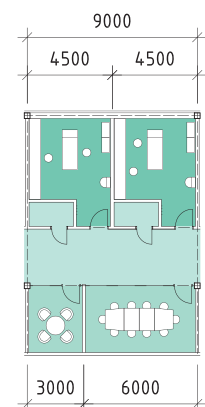
Trauma room Supporting functions



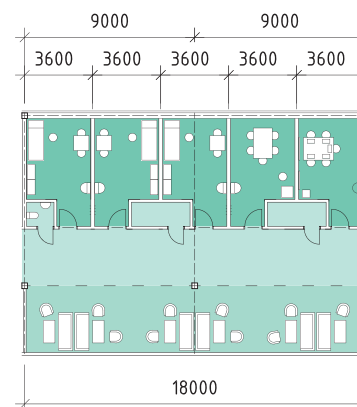
Operational theatre Supporting functions



Office Meeting/chat



Treatment Meeting/chat



Examination Waiting area



MAIN CORRIDOR

LIGHT

An intention from the very beginning was to avoid the classical hospital corridors that is efficient, but also boring with a lack of daylight. The main corridors are therefore closed just to one side, the other one is facing the gardens and more transparent facilities.

TRANSPARENCY

In some places the transparency against the gardens is total when the corridors is extended to waiting areas. In other cases the light and view from the courtyards is glimpsed through chat/meeting rooms.

In functions as laboratories with confidentiality requirements, the glass is frosted.

WAITING AREAS

The waiting areas is part of the corridor and give the patient a overview, at the same time as the courtyards contributes to a nice and light space. In some cases the waiting area also leak out in the garden, a complement that can be used in nice weather.

GROUP ROOMS

The group/chat/meeting rooms that is facing the gardens are intended for different uses. They can be used for booked meetings aswell as spontaneous ones. Between staff or between staff and patient.

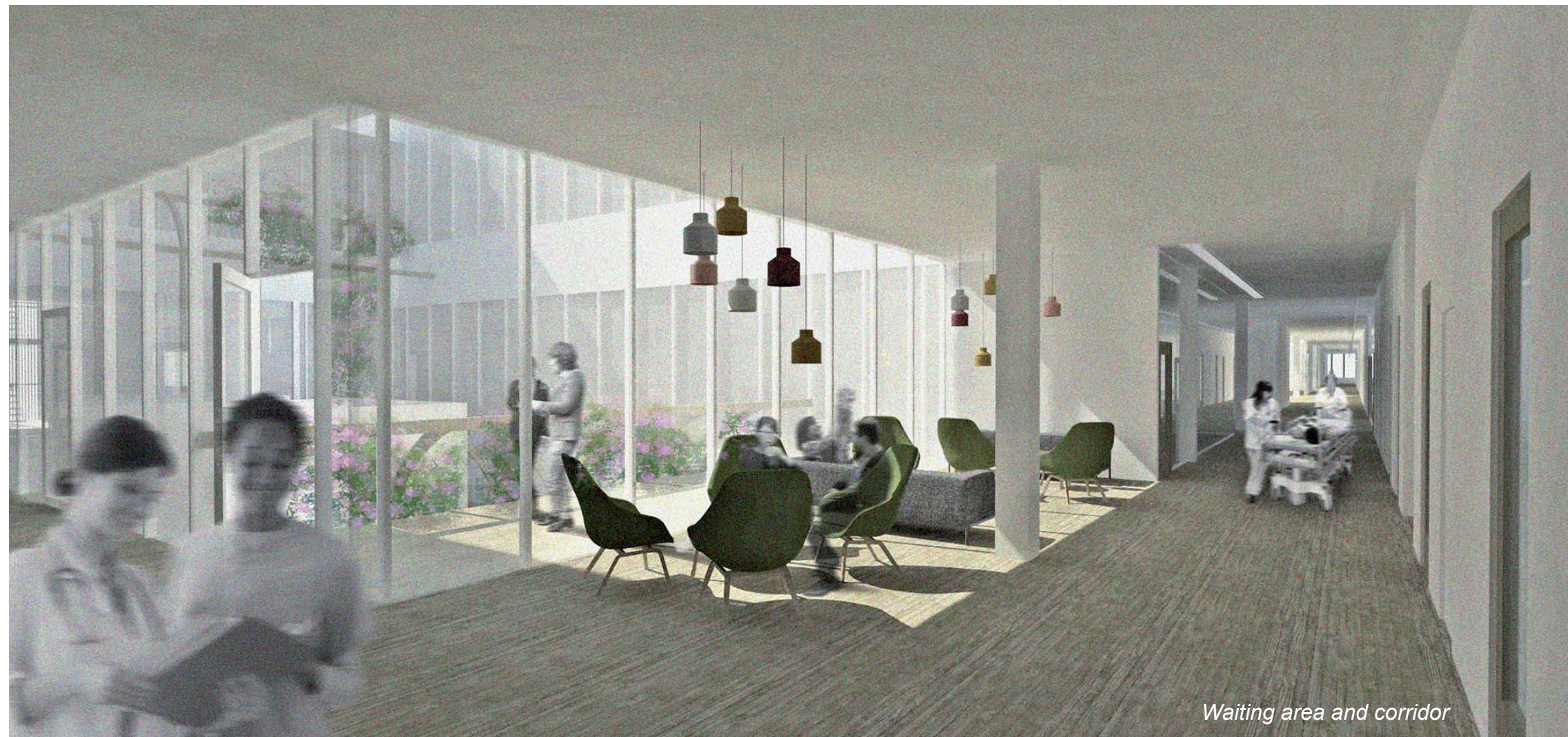
For patients a consultation can be more relaxed in a smaller, cosier environment with close connection to the beautiful gardens.



*Inspiration frosted glass:
Shiba Ryotaro Memorial Museum
Tadao Ando 2001*



Transparent meeting rooms in the middle ribbon



Waiting area and corridor