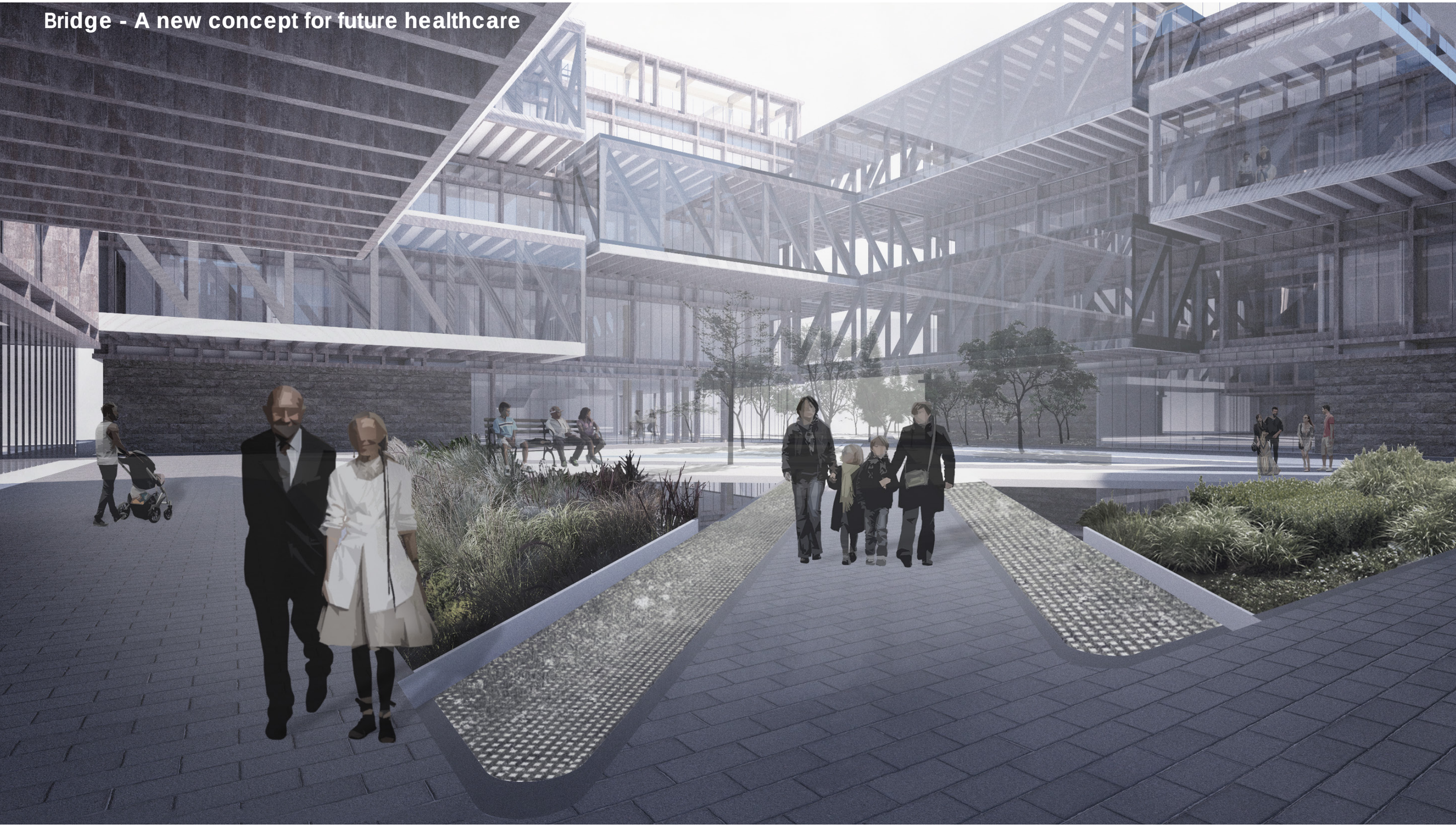
HEALTHCARE CENTER IN ÖREBRO

Bridge - A new concept for future healthcare

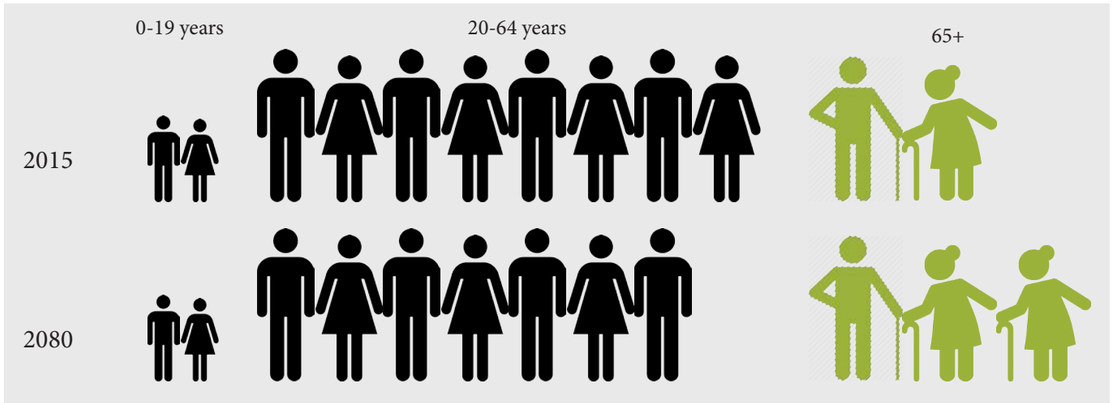


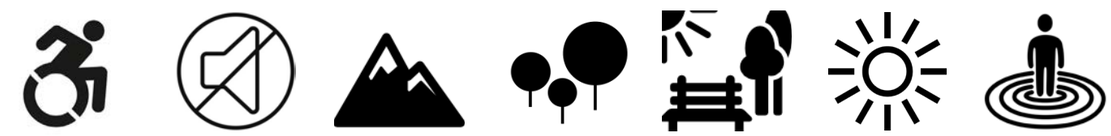
Future Visions for Healthcare, Housing & Work - Healthcare Architecture, ARK263

Xiaojin Liu, Mariam Abdulhalim & Sofia Danaipoor
Chalmers University, Architecture, Autumn 2017

WHAT IS HEALTHCARE AND FOR WHOM?

Healthcare for us is well-being. It is where you get healthy when needed and the place you go to in order to proceed a healthy lifestyle. The healthcare center is a place for everyone in the community, but mostly focused on seniors. There are studies and evidence today that shows us that the population of seniors are increasing and that is the reason why we choose this direction. The increasing seniors in the community is a future challenge and they have needs that has to be fulfilled. Needs like nature, social activity and good healthcare are some examples.

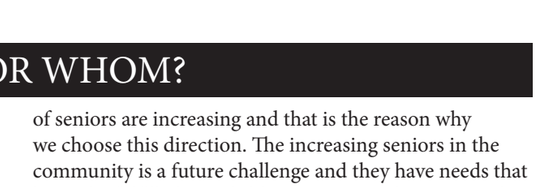




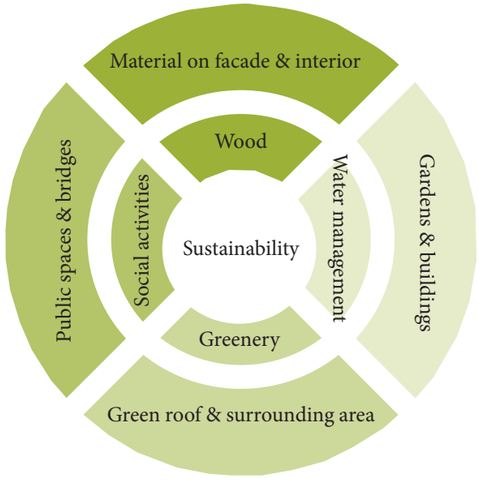
To adapt to the future challenges of the seniors, the project has been focusing on some vision ideas. The ideas are to work with accessibility, nature, daylight, noise and person centeredness.

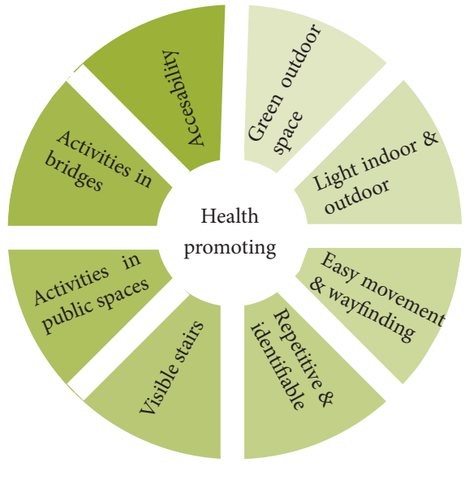
The accessibility is really important especially for elderly, to be able to move around easily. Greenery and nature have shown to affect human beings in positive way, it contributes to feel better and recover faster.

The patient should be in focus and that is what the project wants to accomplish.



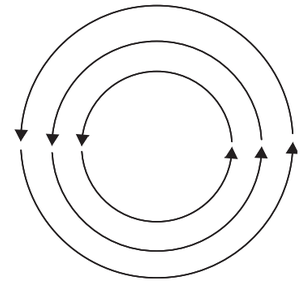
Another main vision in the project is the modularity. The idea is to make the project as flexible and adaptable as possible. It means it will be possible for future physical changes in a small and large scale.





KEYWORDS

Nature

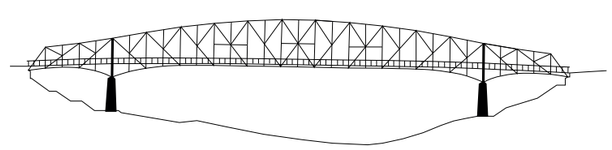


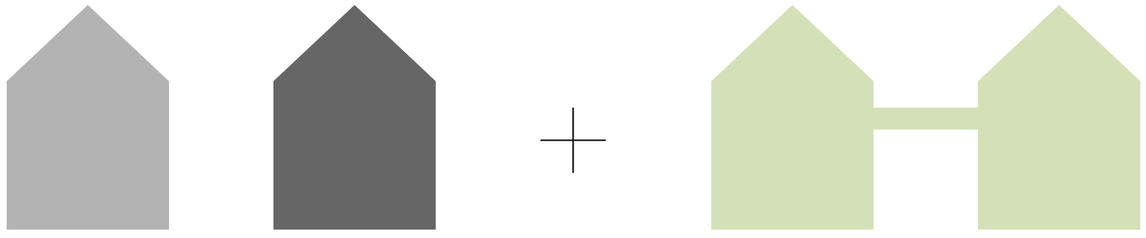
Circular movement

Two keywords are created by the visions as a summarize; nature and circular movement. Nature is to get better health and to recover faster by greenery, sun and no noise.

With the circular movement no dead-ends are supposed to appear. It should be easy to move around in the building.

CONCEPT

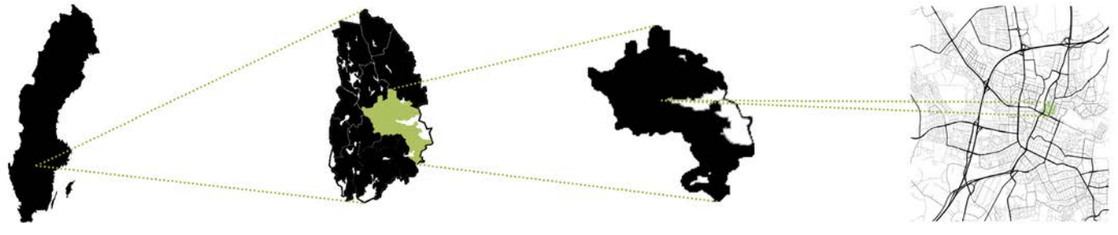




From the keywords circular movement and nature a concept is created, which is bridges. The idea with the bridge is that it connects between two different parts and makes it easier to move around.

A circular movement is possible by a bridge and since nature is important for the seniors, the bridges will consist of element of nature.

SITE



The project's site is in Örebro, in Sweden. The site is located nearby the city center and the central station in Örebro. On the site there is already a primary care, senior housing, other residential buildings and offices. New buildings will be added in the future in the surrounding area. The idea in this project is to merge four already existing healthcare centers in Örebro to one location.

SITE ANALYSIS

Car flow in the morning

- Heavy traffic
- Medium traffic
- Low traffic

Car flow in the noon

- Heavy traffic
- Medium traffic
- Low traffic

Car flow in the afternoon

- Heavy traffic
- Medium traffic
- Low traffic

Entrance placed according to the car flows. The flows above show that the traffic are less on the west side of the site, which makes it easier to reach the healthcare center.

Today the buses are driving on the following direction.

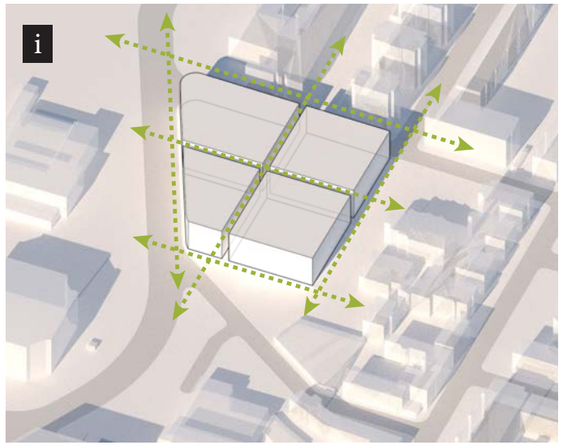
To make it easier to get to the healthcare center, the route of bus five is going to be changed.

On site there are different facilities like residential, public, commercial buildings and offices. Some of these facilities shown on the following diagram are going to be added in the future.

- Residential
- Office
- Public building
- Commercial

Existing streets and pathways on the site are the starting point for how the shape of the volume are created.

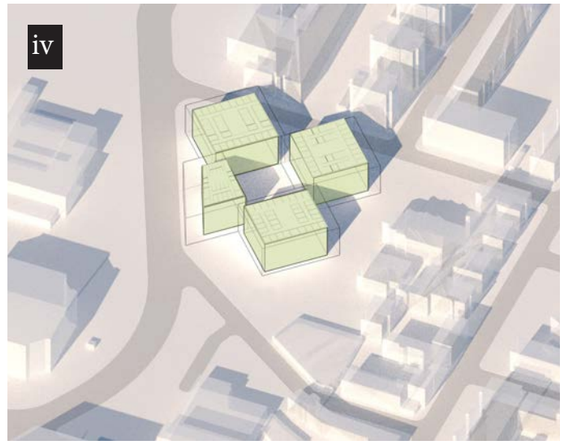
VOLUME



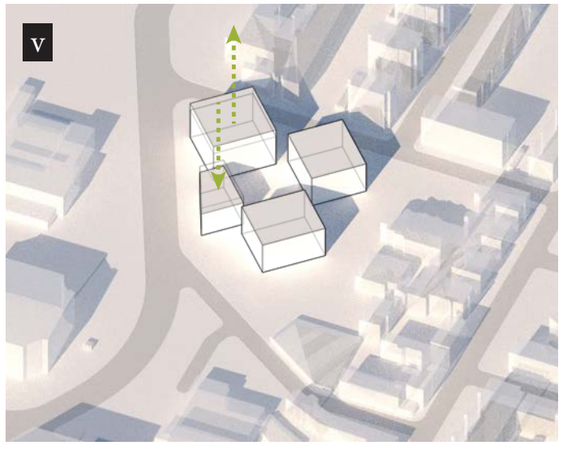
The volumes are created by the already existing paths on the site.

The volume is rotated according the sun analysis in order to make it more light inside the volume and on the courtyard.

Through the rotation, the unparalleled façades to the street and the openings between the buildings create new spaces that invites people to meet and interact.



The size of the building volume is adjusted to the modular system.



The height of the buildings is configured to the sunlight.

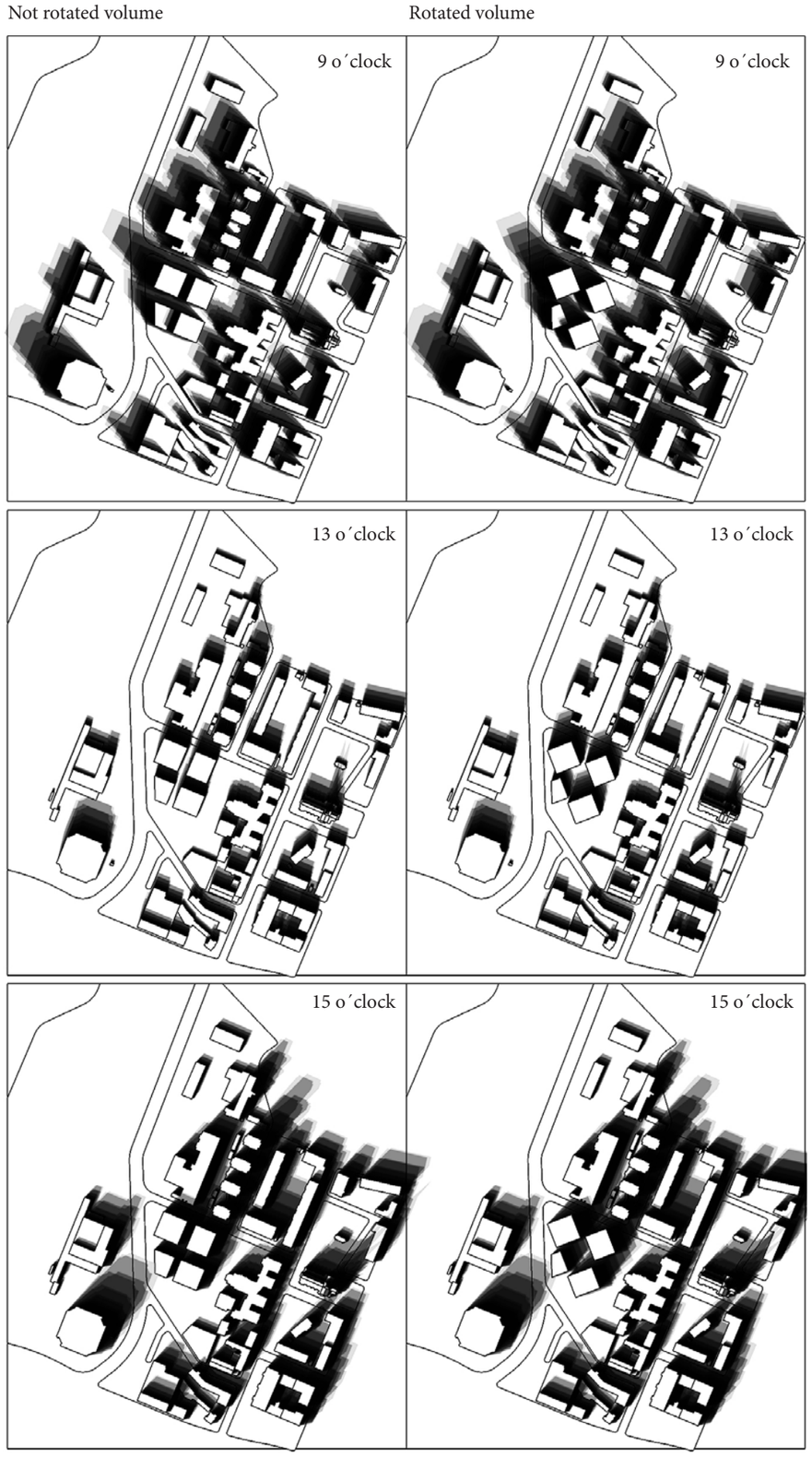
Atriums in the middle are created on each volume for more light inside. The gaps in-between the buildings are filled with bridges.

SUN ANALYSIS

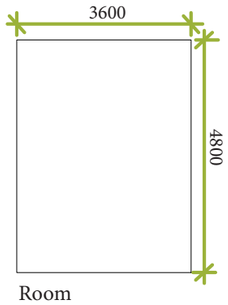
The reason behind the rotation of the blocks are based on the sun analysis. The buildings are no more standing parallel next to each other.

At 9.00 and 13.00 o'clock the volumes get sunlight on two sides of the volumes. When the volume is not rotated it only gets light on one side.

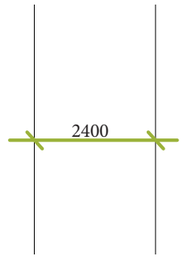
Another advantage when rotating the volumes is lighter courtyard. The rotation also makes it possible to create more privacy by separating façades. This means that it is not possible to have insight from one building to the building beside.



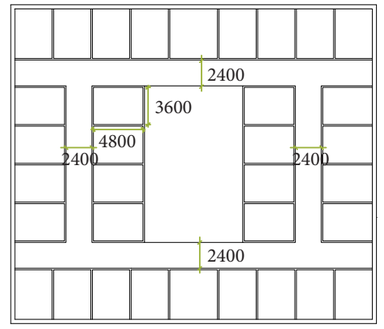
PLANS IN MODULAR SYSTEM



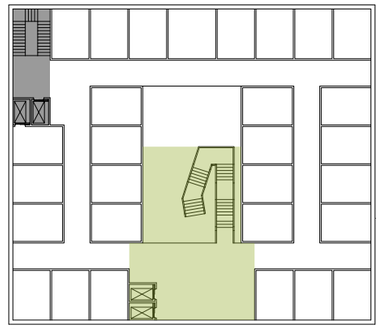
Room

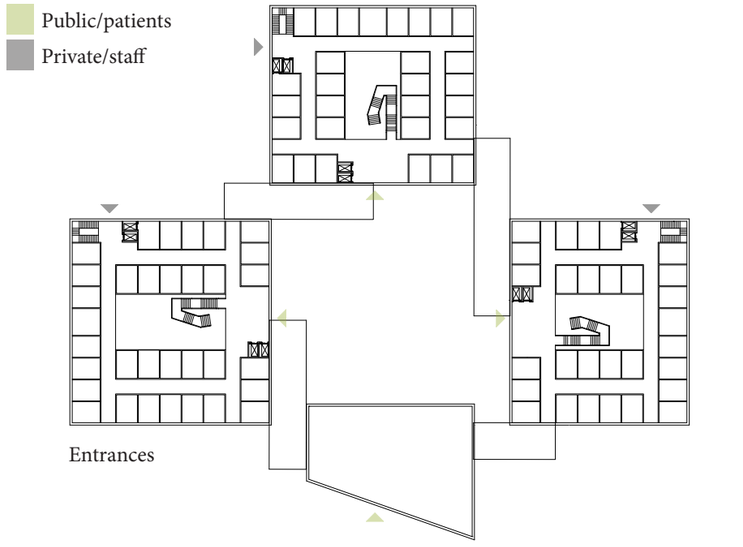


Corridor

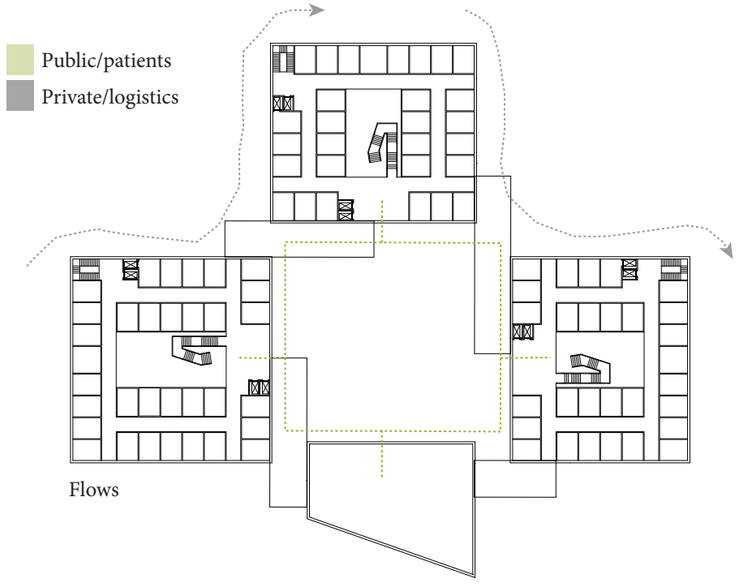


Typical floor framework


Staircases added



Entrances



Flows

The modular system consists of measurements of a typical examination room and corridor. The room is 3.6x4.8 meters and the width of the corridor is 2.4 meters, which is the half size of 4.8 meters. The width of the corridor (2.4 meters) makes it possible to pass with a bunk. The idea of having these measurements are for its adaptability to change its functions in the future. This means for example that rooms can be smaller or larger by tearing or building walls depending on future demands.

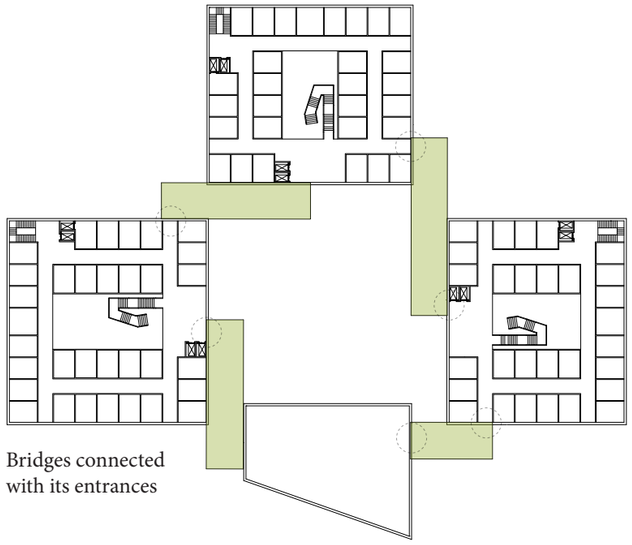
These measurements are put together in a framework. The goal is to let the sunlight reach all the rooms, creating circular movement, connections with the outside for wayfinding and also creating a visual contact from the one corner of the atrium to the other. These functions contribute health promoting.

Similar to the modular system, functions on each floor are set in specific location for easier wayfinding for staff and visitors. There is a private staircase that is only used by the healthcare staff, while the more visible stairs are for the patients and the public. The public stairs are easy to find, and is the first thing you see from the outside and when you enter the building.

The main entrance for the staff and the entrance for the patients/public are placed close to the staircases. The staff have their entrance on the "backside" of the buildings, connected to the private staircase. While the patient and the public have their entrance from the courtyard, connected to the public staircase.

The main reception for the healthcare is in the small conference building, the flow for the patients starts from there. While the flow for the logistics are taking place on the "backside" of the building. It is close to the stair-case in each building to easy transport the different goods, to the different department and levels in the healthcare center.

PLANS IN MODULAR SYSTEM

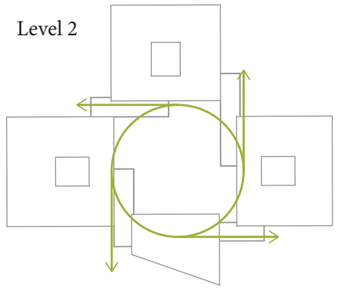


Bridges connected with its entrances

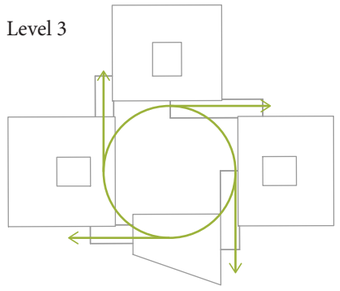
To strengthen the idea of circular movement, bridges are connected to the four buildings. The bridges have different health promoting functions and activities. The entrances for the bridges are in the middle of the volume or in the corner.

The strategy of the placement of the bridges is a circle with directions. The circle with the direction is mirrored on the other floor. This means that the direction of the bridges changes to the opposite. This process continuous on each floor.

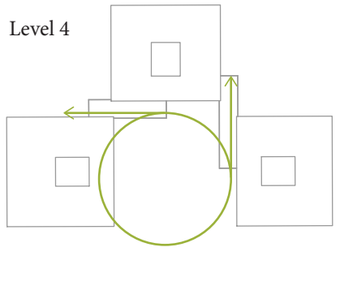
Level 2



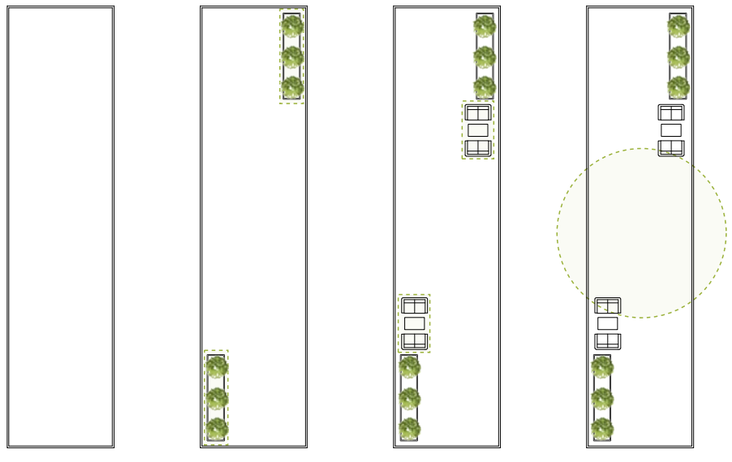
Level 3



Level 4

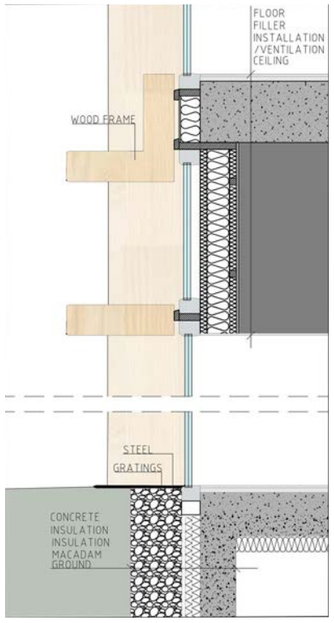


BRIDGES IN MODULAR SYSTEM



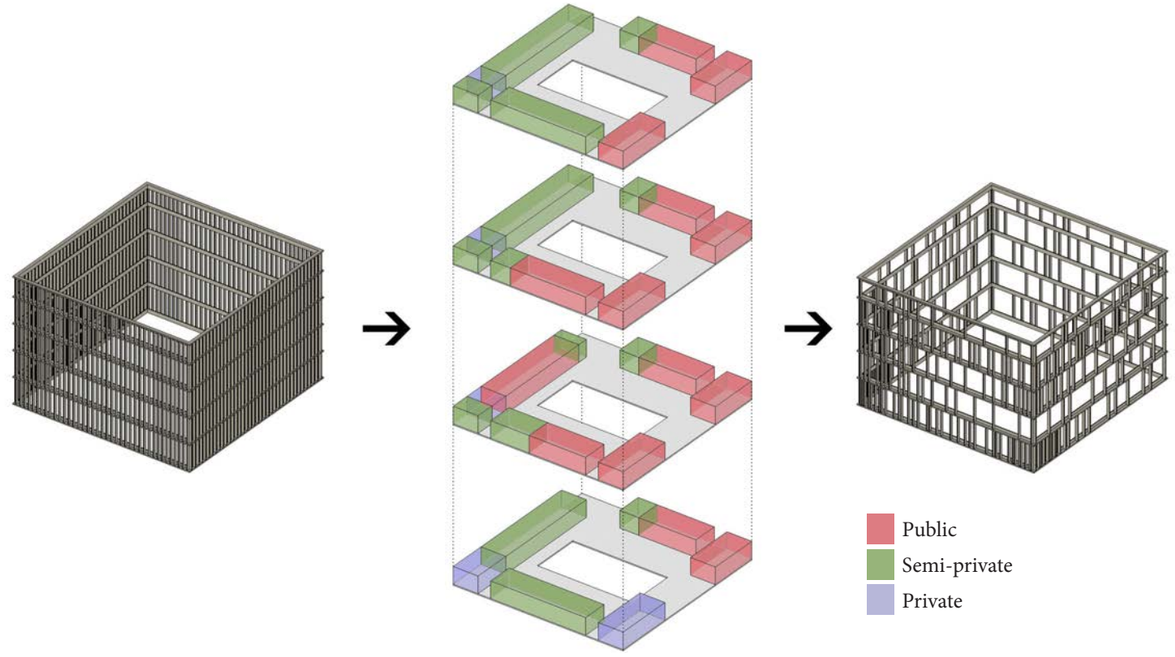
The base of every bridge is that it should consist elements of nature and contain a waiting area. The first strategy of the interior is to furnish with greenery in the corners. Second strategy is to insert furniture for the waiting area, next to the greenery. The space that is left is going to be used as an activity area. The type of the activity depends on what departments that are connected by the bridge. For example, rehab and conference are connected by a bridge, then the associated activity is an exhibition for paintings made in the rehab department by patients.

DETAIL SECTION 1:40



Diagrammatic detail section

FACADE IN MODULAR SYSTEM



The façade is created by frames that are in a modular system. The frames have a specific measurement for the distance between them. The modular system is later changed and adapted depending on the privacy of the rooms inside. The rooms are categorized into private, semi-private and public. This means that if the rooms are more private then its more closed from the outside. If the rooms are more public, then it is more open to the outside.

MATERIAL OUTDOOR

Sedum: roof

Cedar wood: facade

Glass: facade

Brick: facade

MATERIAL INDOOR

Greenery: wall

The public floor on the entrance building and other three buildings will have at least one green wall indoor for a better climate and well-being.

MATERIAL INDOOR

Oak wood: Lists, stairs, walls

Oak wood on lists and on some of the walls on the public areas on the first floor for a more organic feeling indoor. The main entrance stairs in each building is also made in oak.

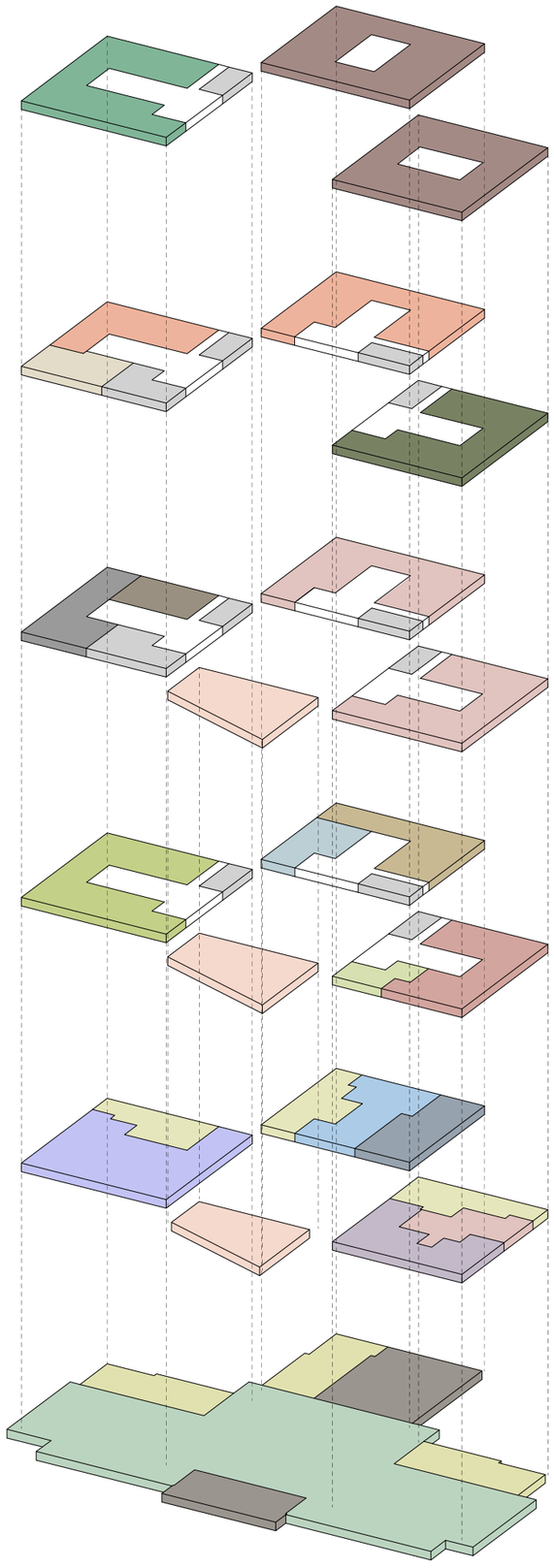
Glass: walls, (frosted on more private rooms)

In some parts of the corridors and rooms the walls are in glass for a more effective way to bring in the light. Rooms that are more private consists instead of shaded/frosted glass.

Marmoleum: floor

The floors in every building are made in marmoleum (4mm). The material reduces noise with 14dB. The grey color is going to be in all corridors and public area on the first floor. The beige color will be in all healthcare room.

PROGRAM



Level 5
- Rooftop
- Gynecology
- Administration

Level 4
- Ears-Nose-Throat clinic
- BUSC
- Adult specialist center
- Administration

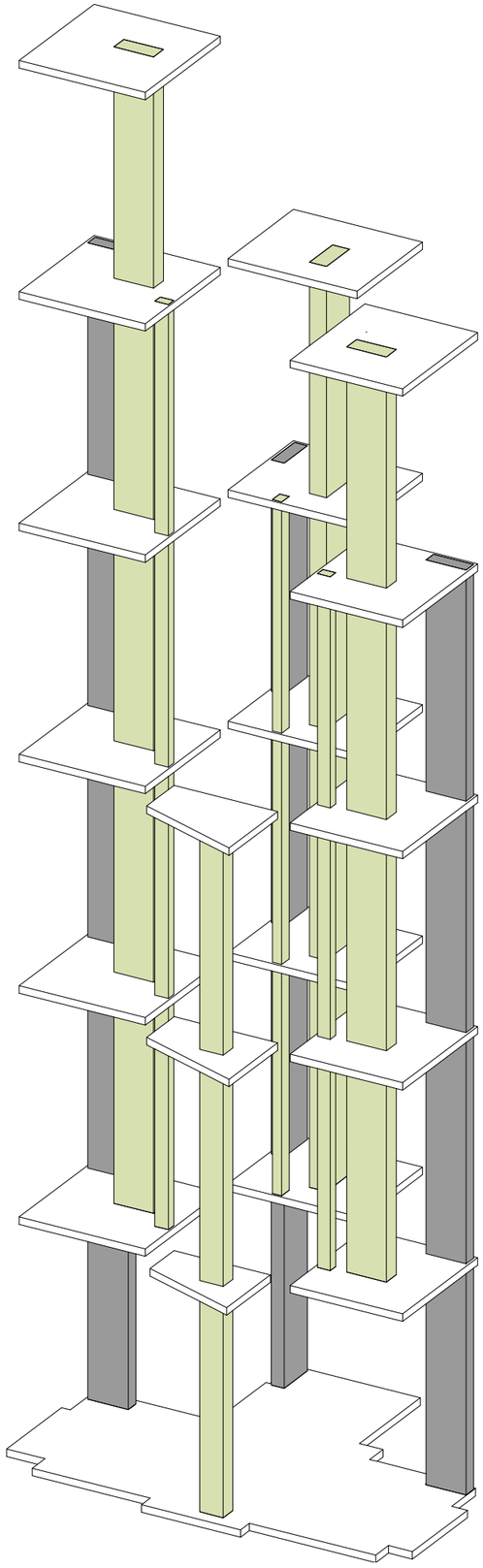
Level 3
- Pain clinic
- Neurologopedic
- Rehab
- Administration
- Public

Level 2
- Orthopedics
- Daycare
- X-RAY
- Surgery
- Sampling
- Administration
- Public

Level 1
- Restaurant
- Logistics, staff space
- Pharmacy
- Library
- Café
- Rehab

Basement
- Technical room
- Staff area
- Parking

VERTICAL FLOWS

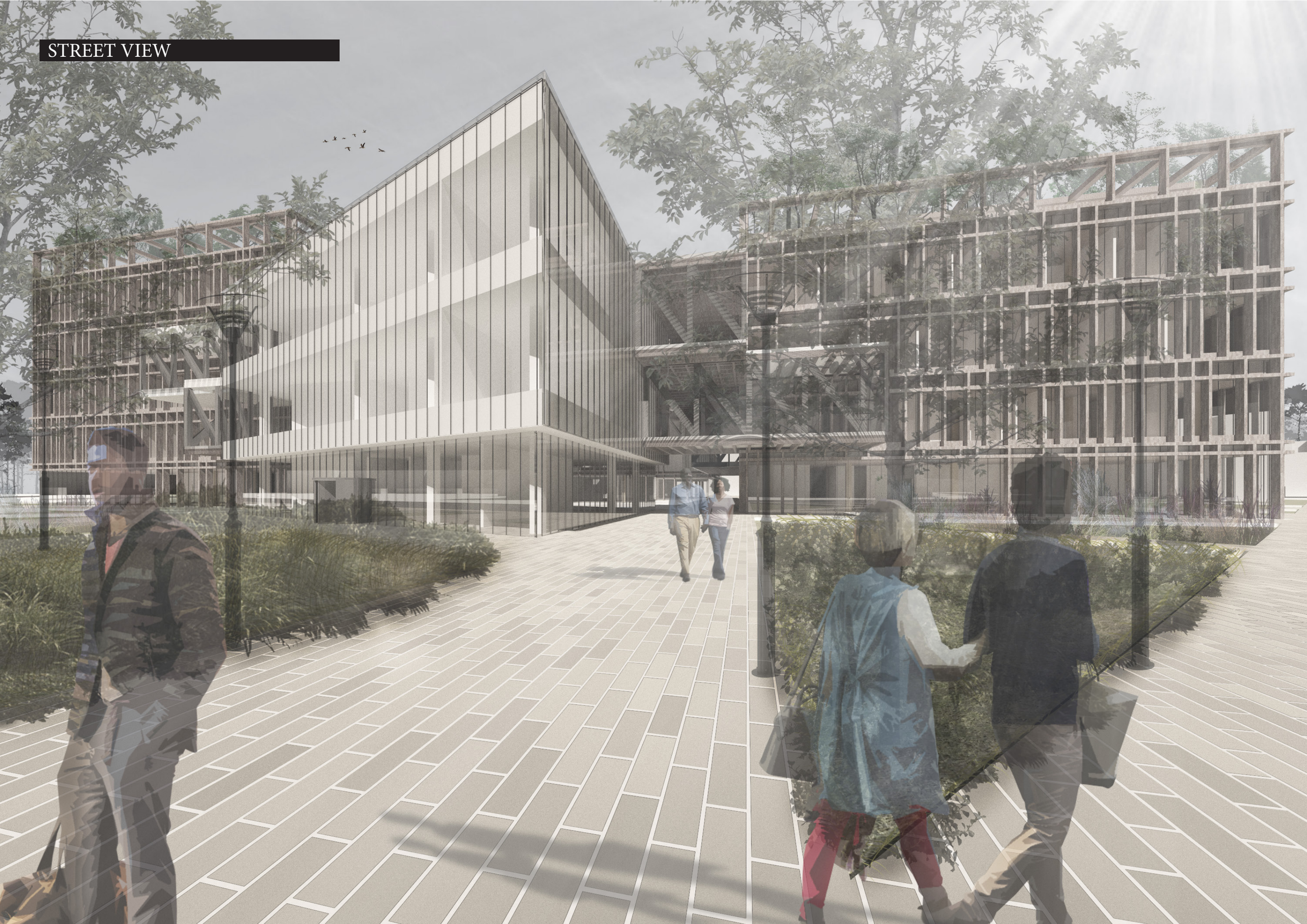


Area (no basement): 13 547 m^2
Basement: 6197 m^2

Total area: 19 744 m^2

- Public/patients
- Private/staff

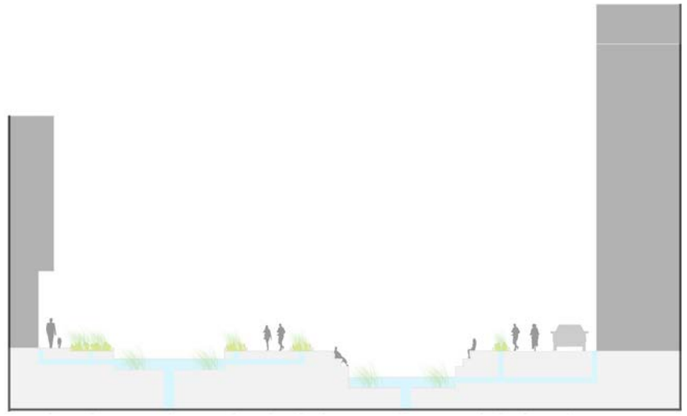
STREET VIEW



MASTER PLAN 1:800

SECTIONS

Section C-C 1:200



Section D-D 1:400

When designing the landscape site, the goal was to encourage sustainability. The environmental sustainability is formed through the water management systems and the greenery. The water is in the middle of the courtyard, where possibilities to sit next to the water have been designed.

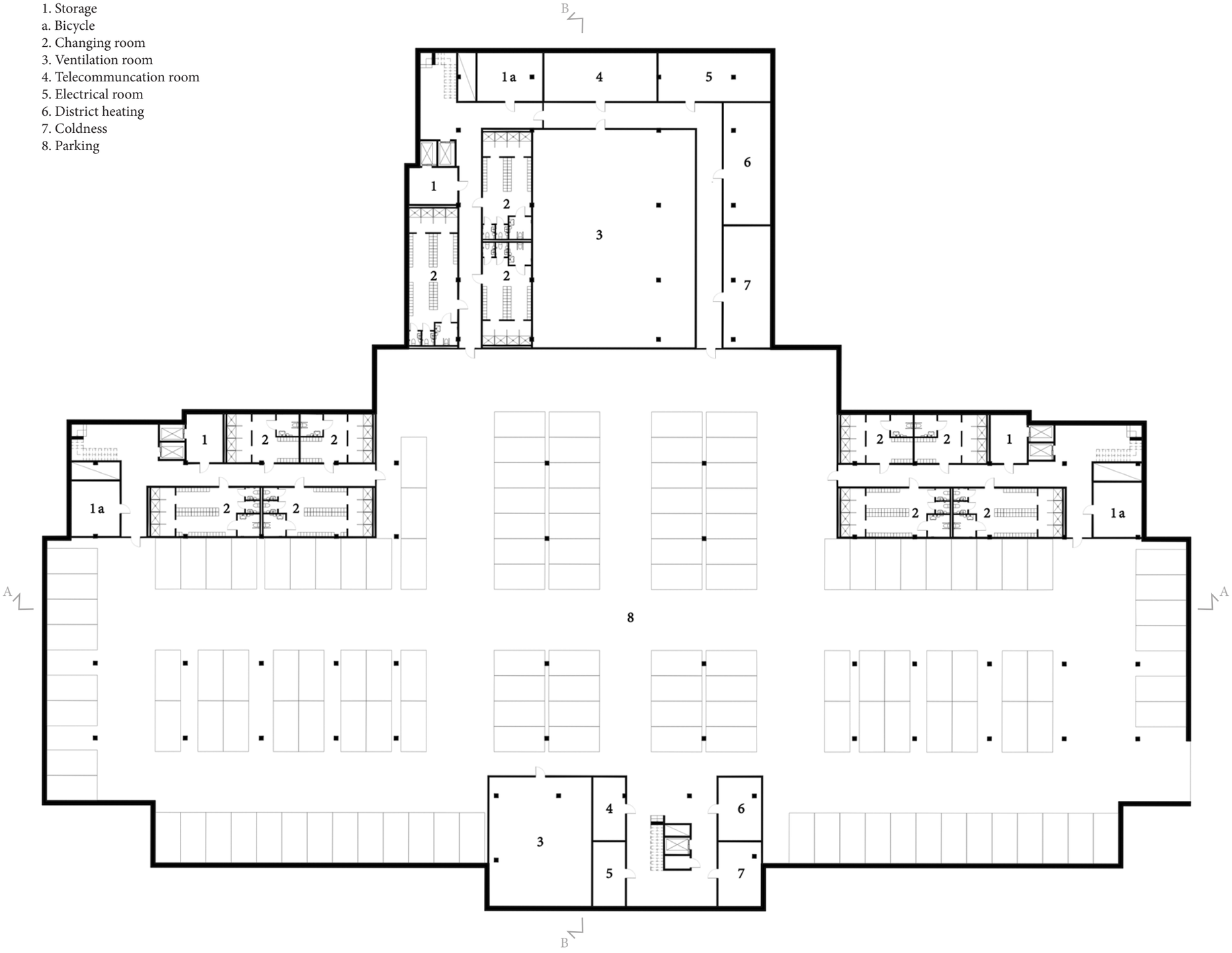
The social sustainability is highly focused on the seniors. Through clear pathways with the closured green spaces it is easy for them to find their way. The green spaces also contribute to better health by giving them a space to exercise, meeting new people, interacting with family and friends. In the program there is also public spaces as the restaurant, café, library and exhibition that contributes interaction between all ages.

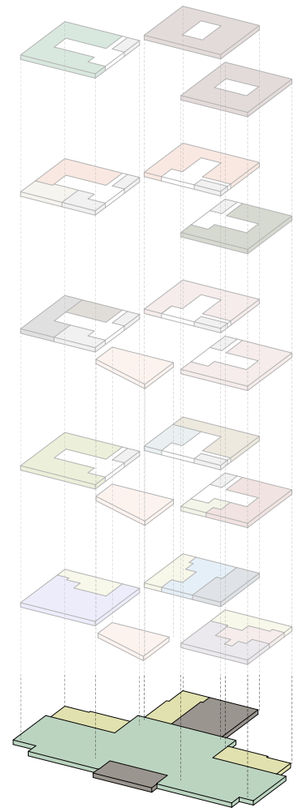
Cars, pedestrians and cyclists have all the same pathways on site. The pathways are in one height level and primarily for the pedestrian and disabled.

There is also outdoor seating for the public spaces as café and restaurant. The parking for the healthcare center is in the basement, with the entrance from the south part of the site. But there are a few parking lots and next to the street for people visiting the healthcare center just for a short moment. Some of the parking lots are available for disabled.

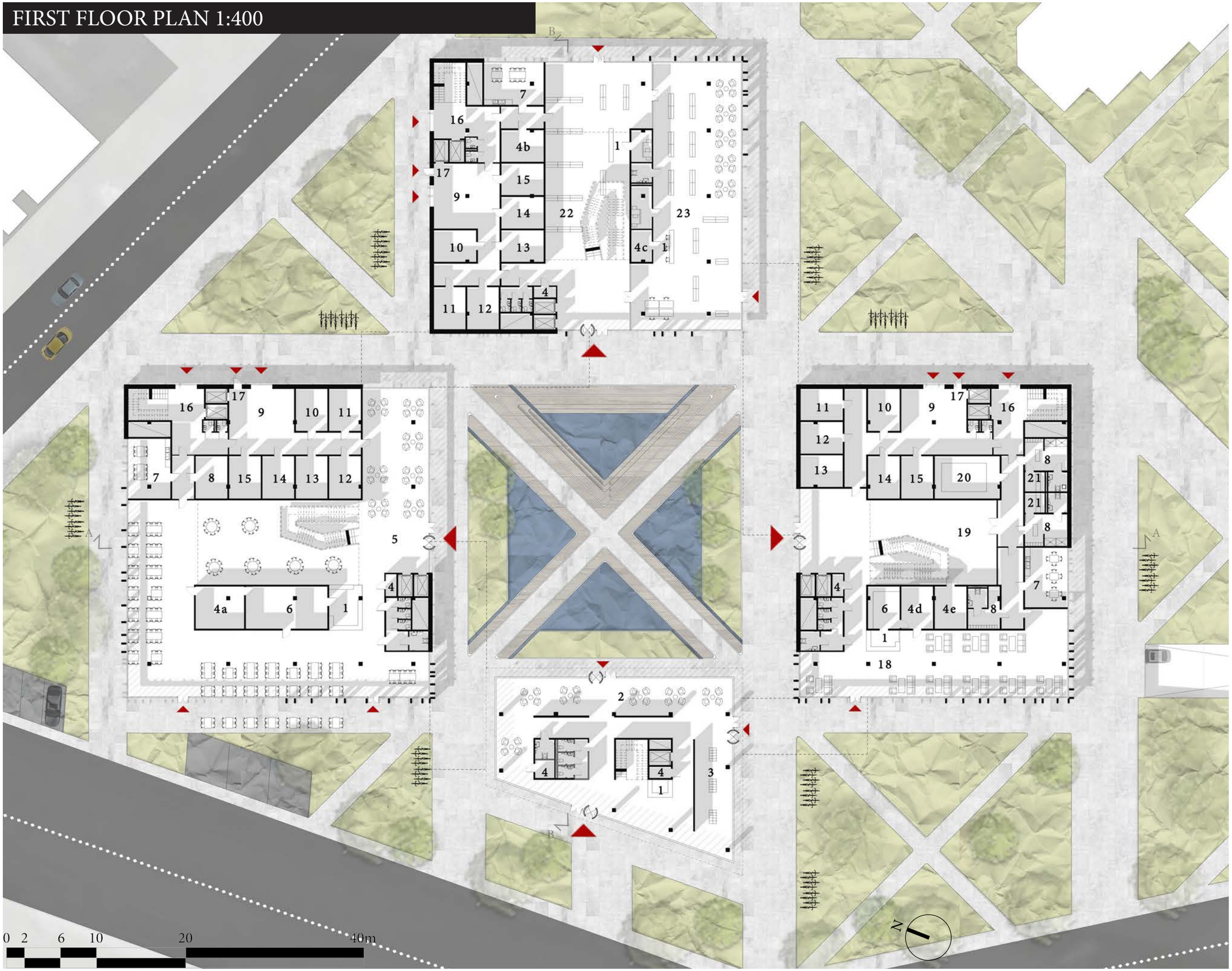
BASEMENT 1:400

1. Storage
a. Bicycle
2. Changing room
3. Ventilation room
4. Telecommuncation room
5. Electrical room
6. District heating
7. Coldness
8. Parking

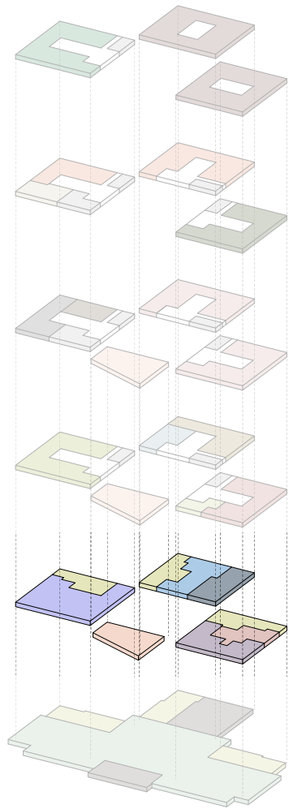




FIRST FLOOR PLAN 1:400



1. Reception disk
2. Lounge/Exhibition
3. Lockers
4. Storage
a. Restaurant
b. Pharmacy
c. Library
d. Gym
e. Café
5. Restaurant
6. Kitchen
7. Staff space
8. Changing room
9. Goods reception
10. Waste central
11. Mail
12. Gas central
13. Receive medical gases
14. Hazardous waste
15. Recycling
16. Emergency entrance
17. Entrance healthcare staff
18. Café
19. Gym
20. Pool
21. Sauna
22. Pharmacy
23. Library

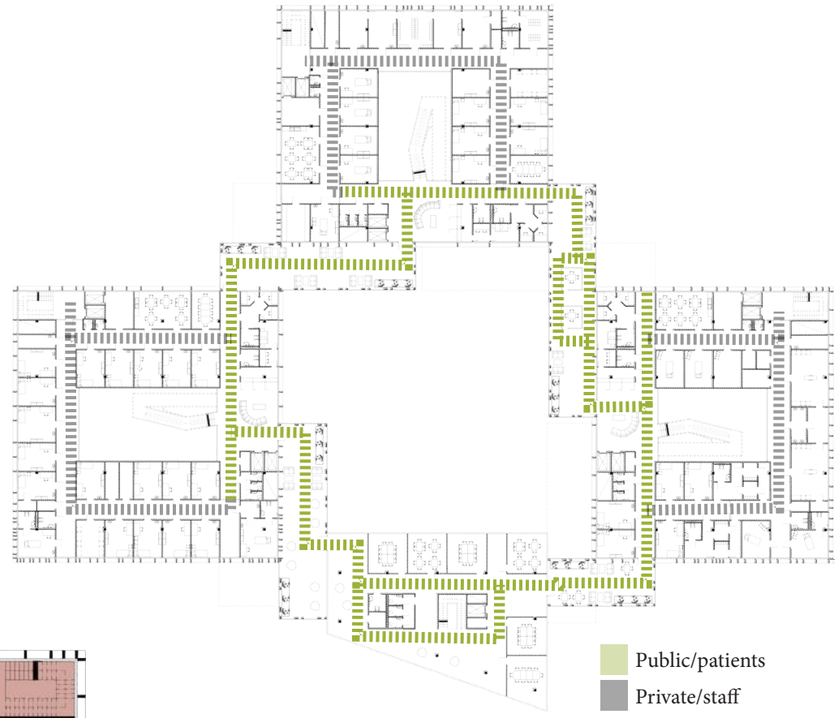


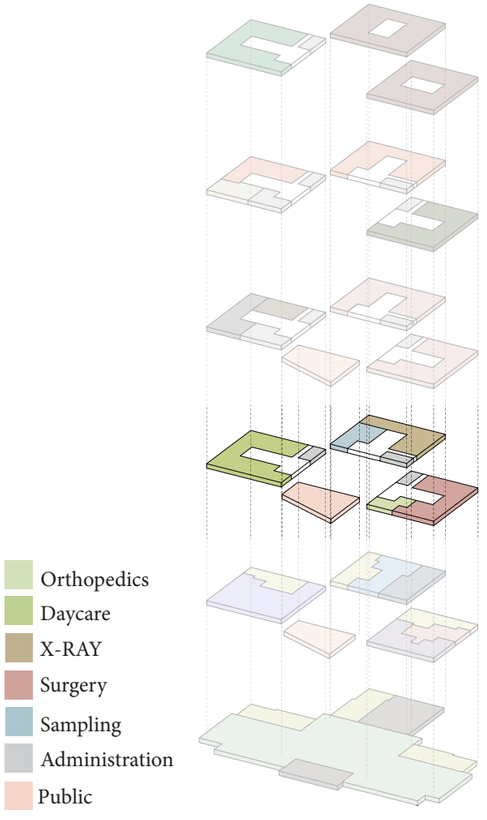
PHARMACY

SECOND FLOOR PLAN 1:400

1. Waiting area
2. Reception
3. Secretary/office
4. Printer room
5. Administration
6. Staff kitchen
7. Conference
8. Staff staircase
9. Storage
a. Linen
b. Medicine
c. Machine
d. Sterile
e. Anaesthetic
f. Medical
10. Cleaning room
11. Examination room
12. Infection
13. Care room
a. Children
14. Desinfection
15. Rectro room
16. Reschedule room
17. Treatment room
18. Emergency room
19. Changing room
20. Ultrasonography
21. CT
a. Control room
22. X-RAY lab
a. Control room
23. Sampling room
a. Children
24. LAB
25. Anteroom
26. Sterile wash
27. Preparation room
28. Surgery
29. Post-Op

SECOND FLOOR PLAN HORIZONTAL FLOW 1:800

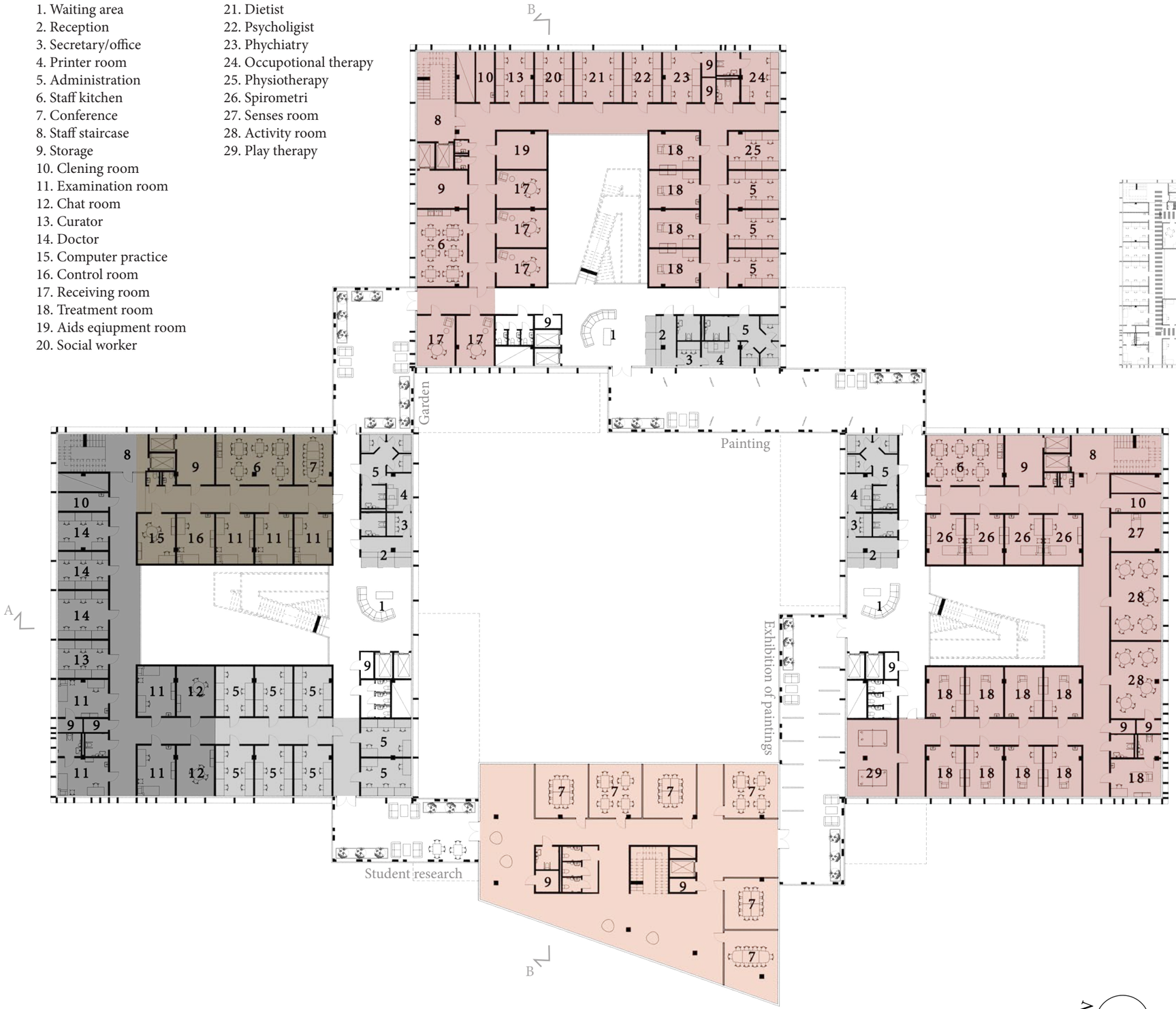




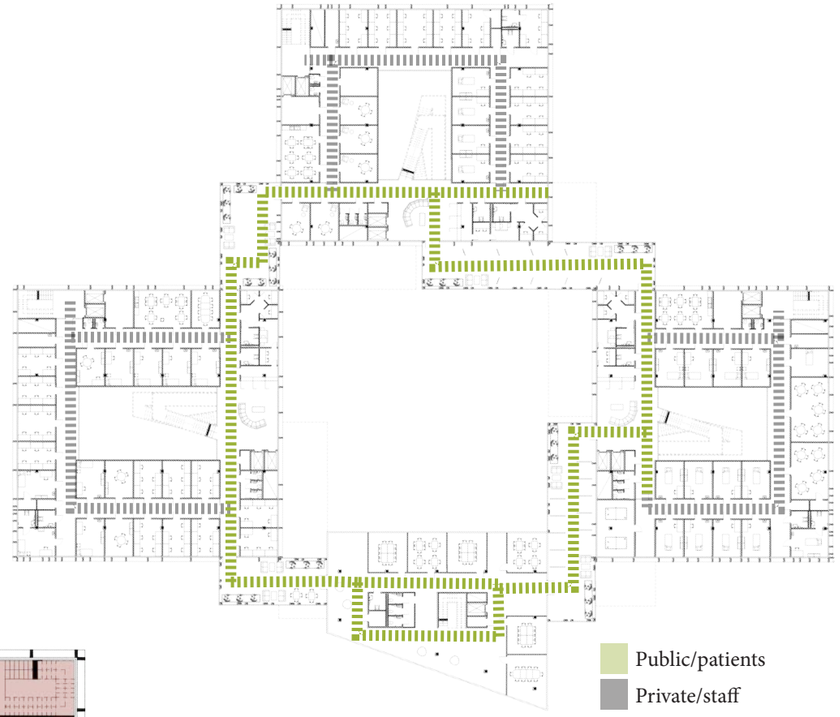
RECEPTION AREA

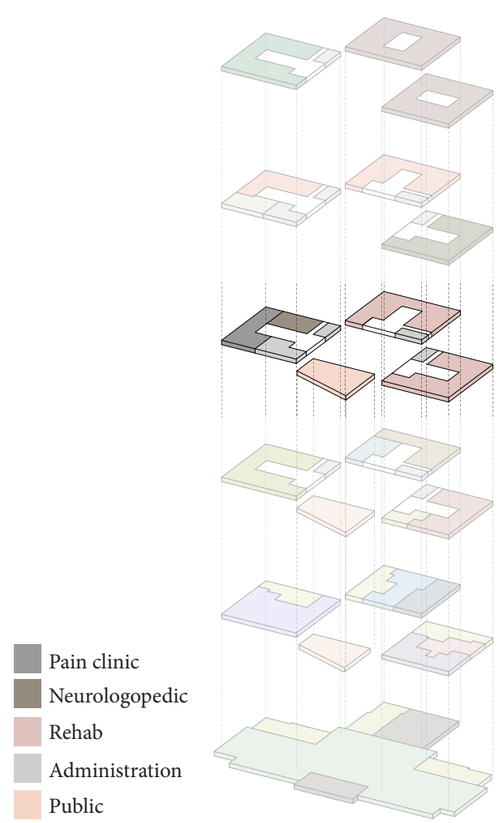
THIRD FLOOR PLAN 1:400

1. Waiting area
2. Reception
3. Secretary/office
4. Printer room
5. Administration
6. Staff kitchen
7. Conference
8. Staff staircase
9. Storage
10. Clening room
11. Examination room
12. Chat room
13. Curator
14. Doctor
15. Computer practice
16. Control room
17. Receiving room
18. Treatment room
19. Aids eqiupment room
20. Social worker
21. Dietist
22. Psycholigist
23. Phychiatry
24. Occupotional therapy
25. Physiotherapy
26. Spirometri
27. Senses room
28. Activity room
29. Play therapy

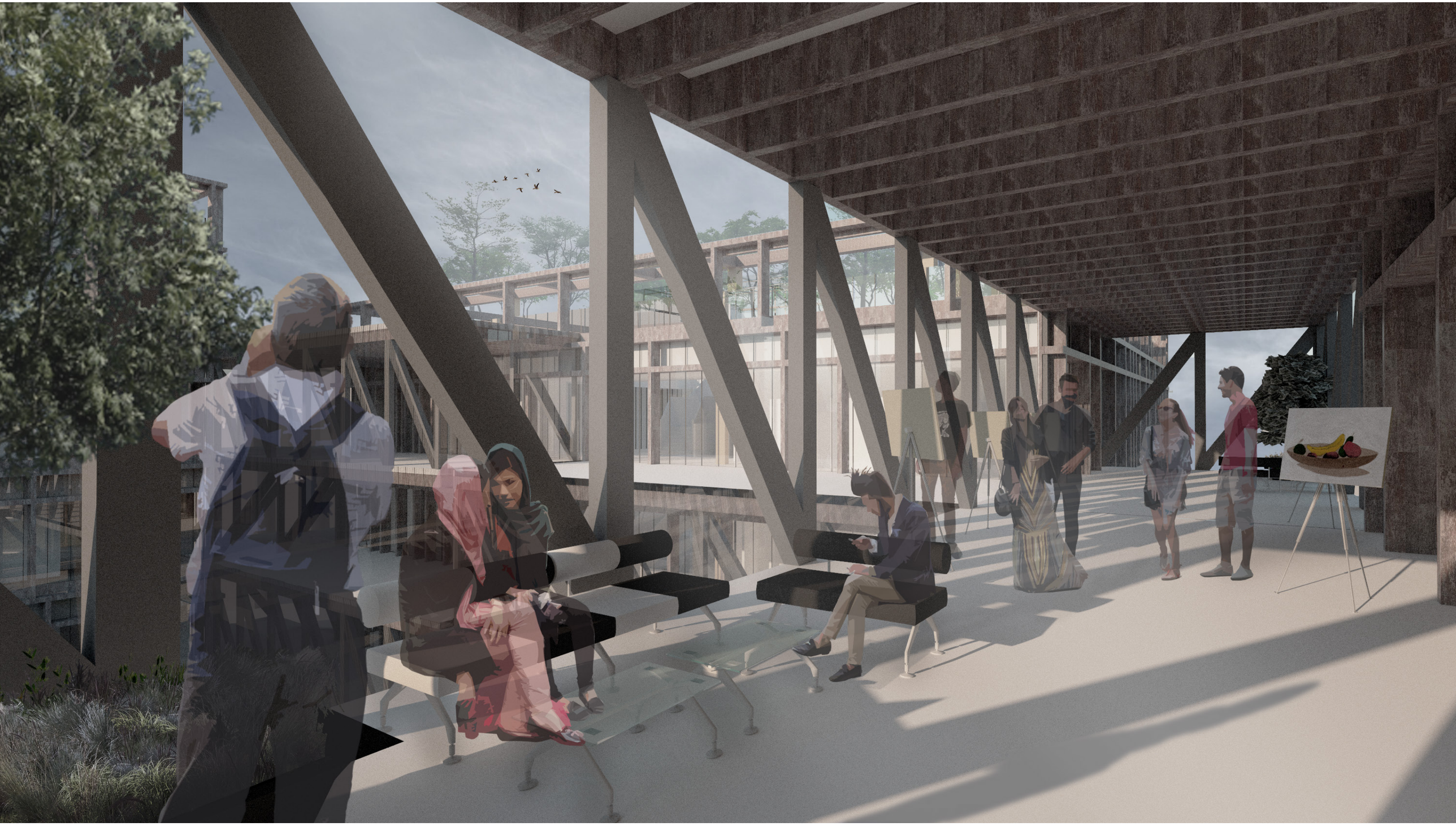


THIRD FLOOR PLAN HORIZONTAL FLOW 1:800





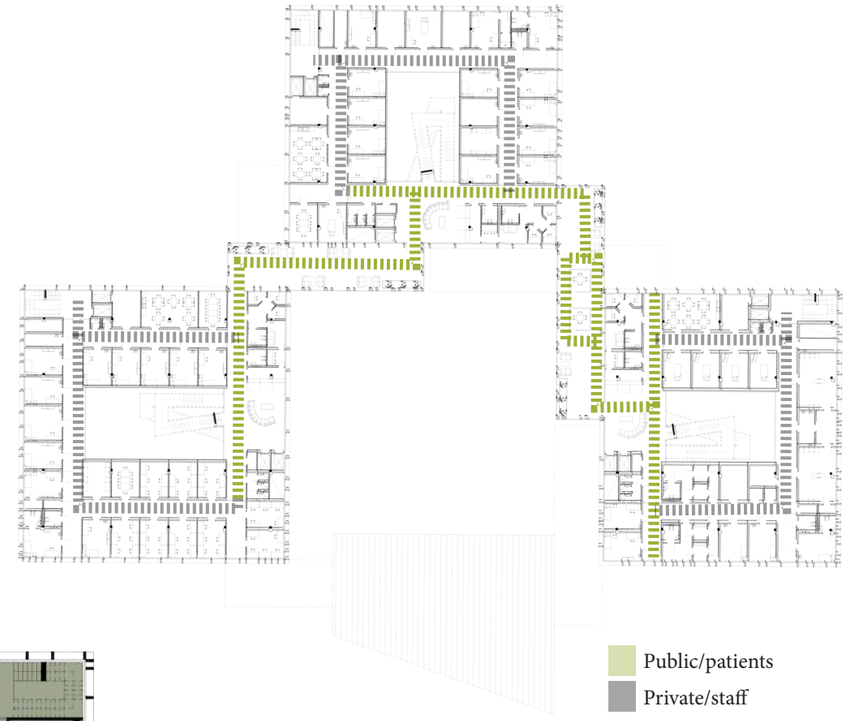
BRIDGE PAINTING ROOM

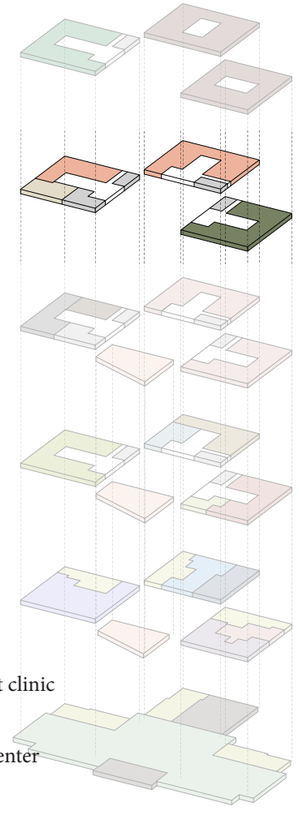


FOURTH FLOOR PLAN 1:400

1. Waiting area
2. Reception
3. Secretary/office
4. Printer room
5. Administration
6. Staff kitchen
7. Conference
8. Staff staircase
9. Storage
a. Machine
b. Medical
c. Sterile
d. Anesthetic
10. Clening room
11. Examination room
a. Diabetes
b. TBC
c. 24h
12. Doctor
13. Desinfection
14. Emergency room
15. Dietist
16. Blood pressure
17. ECG
a. Resting
18. Changing room
19. Shower
20. Ultra bid
21. Eye
22. Podiatrist
23. Receiving room
24. Chat room
25. Sterile wash
26. Preperation room
27. Surgery
28. Post-Op

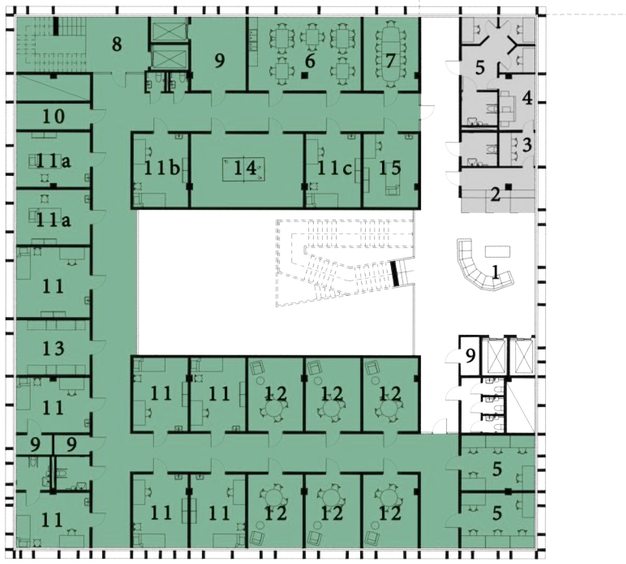
FOURTH FLOOR PLAN HORIZONTAL FLOW 1:800

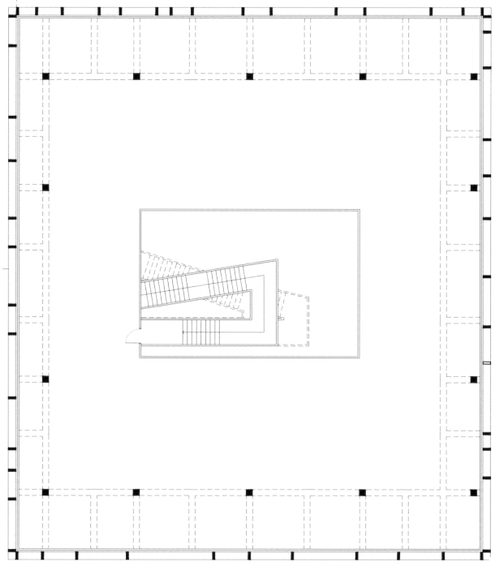


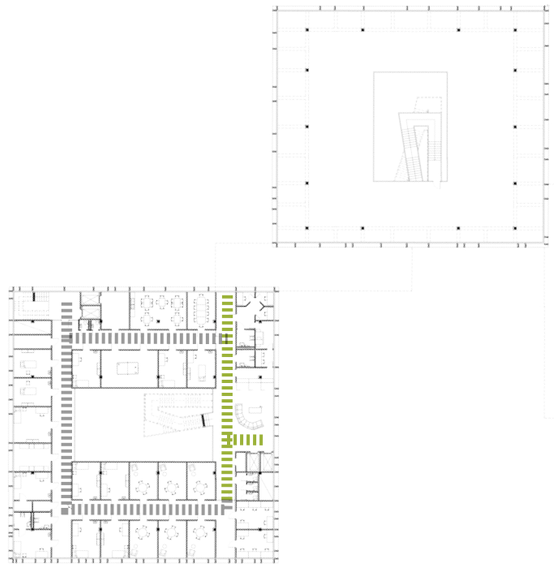


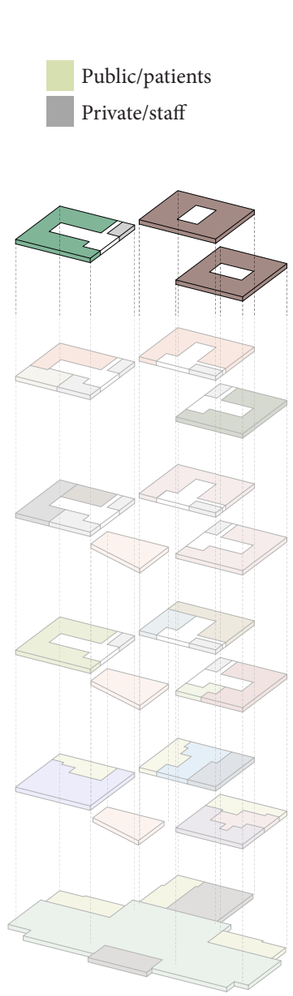
FIFTH FLOOR PLAN 1:400

1. Waiting area
2. Reception
3. Secretary/office
4. Printer room
5. Administration
6. Staff kitchen
7. Conference
8. Staff staircase
9. Storage
10. Clening room
11. Examination room
a. Psychiatry
b. Dietist
c. Curator
12. Receiving room
13. Desinfection
14. Play therapy
15. Inhalation









Public/patients
Private/staff

Gynecology
Administration

0 2 6 10 20 40m

N

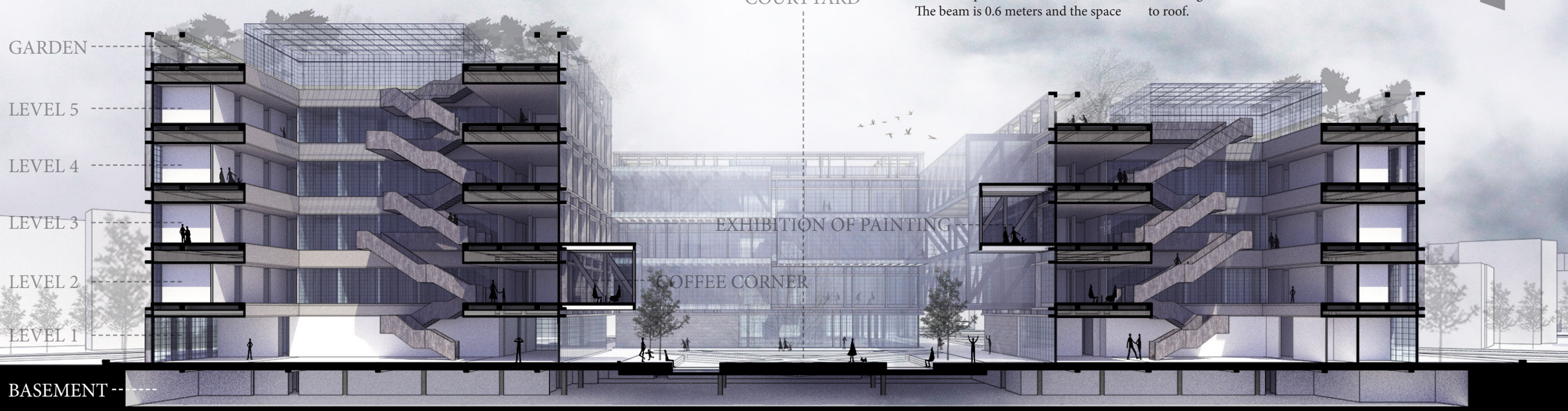
A

A

B

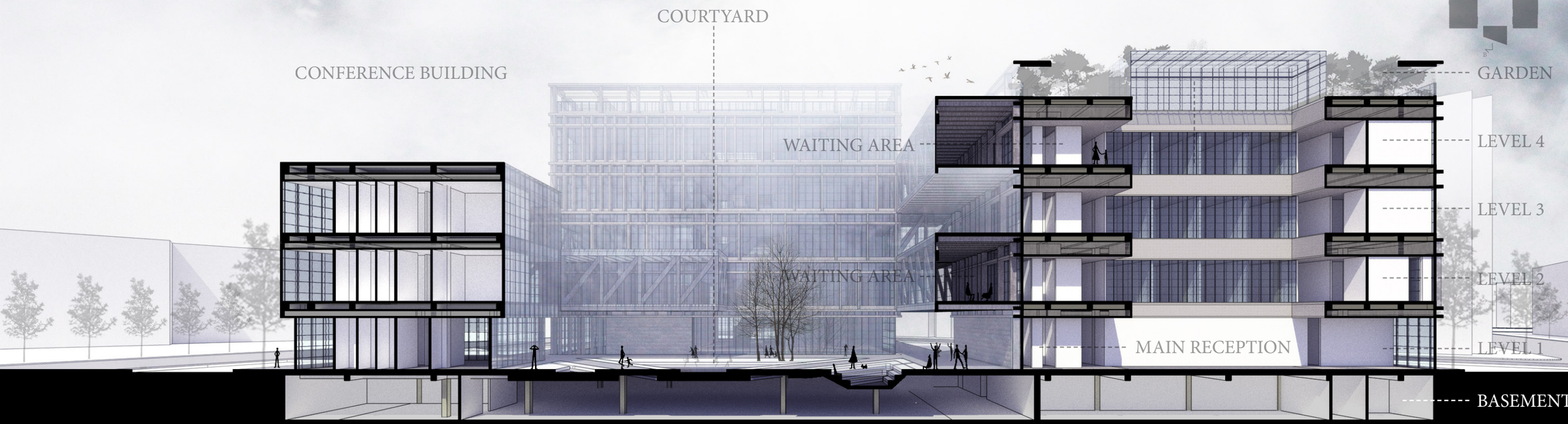
B

SECTION A-A



The heights in the project is in a modular system as well, that is to make it adaptable for different departments if it is needed in the future. The height of each floor plan is five meters in total. The beam is 0.6 meters and the space for the installation and ventilation is 1.1 meters. So the height for each floor from roof to floor is 3.3 meters. The height for the basement differs and has a height of 3.1 meters from floor to roof.

SECTION B-B



SOUTH WEST FACADE 1:400

To encourage the environmental sustainability even more in the project, the main material is wood. Other materials that are appearing in the facade are brick and glass. The brick is to have a similar feeling to the already existing material on site. The brick is used on the solid walls on the first floor level.

The conference building is in all glass to have a different kind of appearance from the other buildings to make it easy to identify the main reception. The bridges have another kind of appearance on its facade than the buildings. The reason is to give the feeling that the bridges are its own unit.

Depending on what height and level you are standing in, wayfinding is possible. The reason is that it is possible to see different levels through the buildings and bridges. For example, if you are standing in one of the highest bridges, you can always look down on the street which gives the feeling of comfort and possibility

to orient yourself. Or if you are standing on the ground floor, you can see people walking on the levels above. This is a good architectural quality because it allows indirect interaction.

0 2 6 10 20 40m

SOUTH EAST FACADE 1:400

CAFÉ

THEME 1:
HEALING ARCHITECTURE, EVIDENCE-IN-FORMED DESIGN AND EVIDENCE-BASED DESIGN.

TARGET GROUP:
Patient, visitor and staff

AIM:
Reduce stress, improve health outcome, able to think/cope, effective

POTENTIAL FOR OUR PROJECT:
Visibility, Quiet, Accessibilty, Familiarity, Positive, Cofort and Quiet

GOOD EXAMPLES:
Trees, Plants, Smells, Sound, Fresh air, Textures, Benches, Private settings areas.

SUMMARY
On this workshop we used different database, websites and books to find reference projects and evidence of designprojects, buildings and spaces that are refered to the positive health effect. We found different evidence based articles based upon on the relation between building design, health and wellbeing.
Through Evidence-based design (EBD) we believe that the process of basing decisions about the built environment on research we can achieve the best possible outcomes for healthcare enviroments.
The healthcare environment is a work environment for the staff, a healing environment for patients and families, a business environment for the provider of healthcare, and a cultural environment for the organization to fulfil its mission and vision.
Through Evidence Based Design our group want to provide high quality architecture with knowledge gathered from different fields for example through effects of sight on nature, light, noise for patients, staff and visitors.

Here is our result from the research and our findings that we also have incorporated in our projects from the beginning to the end, and from the smaller to the larger scale.

However, in judging different floor coverings, it should be kept in mind that carpeting, compared to hard floorings, offers important advantages unrelated to infection control, including noise reduction, greater ease of walking and perceived safety for the elderly, a possible reduction in falls, longer family visits in patient rooms, and more positive evaluations and emotional responses from patients and families.

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H., Choi, Y., Quan, X., Joseph, A., Department of Architecture. (2008). A review of the research literature on evidence-based healthcare design. HERD: Health Environments Research & Design Journal, 1(3), 61-125.

"Many older people in residential facilities suffer from complex health problems. Access to a green outdoor environment may enable psychological distance, engage effortless attention, encourage more frequent visitation and promote resident health."

Dahlkvist E., Hartig T., Nilsson A., Högberg H., Skovdahl K. & Engström M. (2016) Garden greenery and the health of older people in residential care facilities: a multi-level cross-sectional study. Journal of Advanced Nursing 72(9), 2065–2076. doi: 10.1111/jan.12968

"Another study found that staff with more than three hours of daylight exposure during their shift had higher job satisfaction and less stress than staff with less daylight exposure."

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H.,Choi, Y., Quan, X., Joseph, A., Department of Architecture. (2008). A review of the research literatureon evidence-based healthcare design. HERD: Health Environments Research & Design Journal, 1(3), 61-125.doi:10.1177/193758670800100306

"Garden greenery appears to affect health by enhancing a sense of being away, affording possibilities to experience the outdoor environment as interesting and encouraging visitation."

Dahlkvist E., Hartig T., Nilsson A., Högberg H., Skovdahl K. & Engström M. (2016) Garden greenery and the health of older people in residential care facilities: a multi-level cross-sectional study. Journal of Advanced Nursing 72(9), 2065–2076. doi: 10.1111/jan.12968

"In an experimental study, researchers found that patients who had the benefit of an information system (including welcome sign, hospital information booklet, patient letter, and orientation aids) upon reaching the admitting area were more self-reliant and made fewer demands on staff. In contrast, uninformed patients rated the hospital less favorably and had elevated heart rates."

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H., Choi, Y., Quan, X., Joseph, A., Department of Architecture. (2008). A review of the research literature on evidence-based healthcare design. HERD: Health Environments Research & Design Journal, 1(3), 61-125. doi:10.1177/193758670800100306

"Life-giving elements are important both visually and sensually, especially as nourishment and support for our biological space, - the body. Such elements include daylight, a view of nature, pictures depicting nature, flowers and green plants, fish, birds, running water, and the use of natural materials."

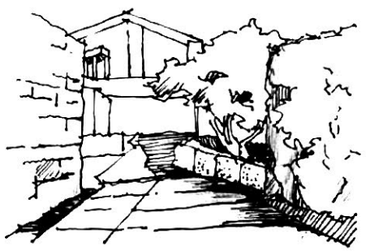
Helsebygg Midt-Norge (2001). Formveileder St.Olavs Hospital: Space for Health.

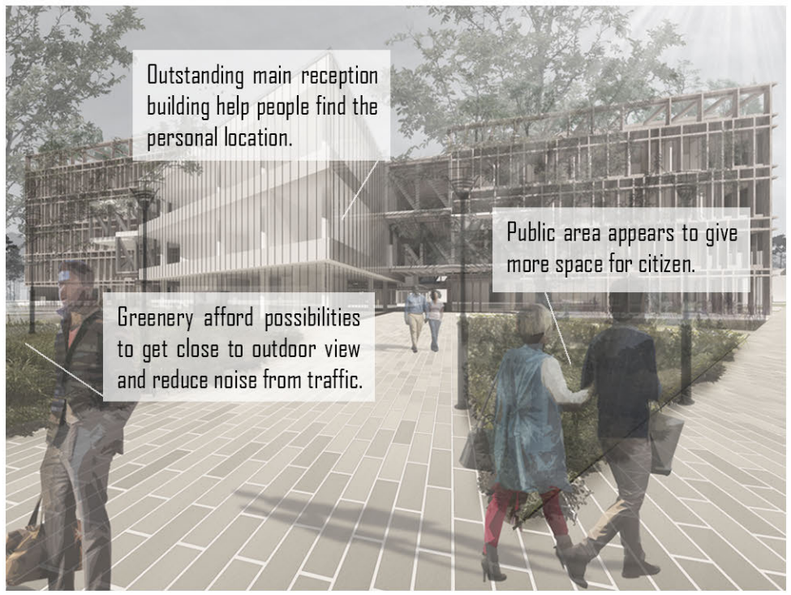
An advantage of the design, in addition to providing an interesting space experience and external shape, is to have opposite walls in the rooms create a good indoor acoustics. In addition to the room shape, acoustics are regulated with perforated plywood panels on walls that absorb the sound, as well as wooden panels in various dimensions in ceiling ceilings that break the sound.

Reference from interior of Landamäreskolan in Gothenburg,Sweden, by Wahlström & Steijner architects.

"Another study found that staff with more than three hours of daylight during their shift had higher job satisfaction and less stress than staff with less daylight."

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H., Choi, Y., Quan, X., Joseph, A., Department of Architecture. (2008). A review of the research literature on evidence-based healthcare design. HERD: Health Environments Research & Design Journal, 1(3).





GROUP 9: XIAOJIN LIU, SOFIA DANAIPOOR, MARIAM HALIM

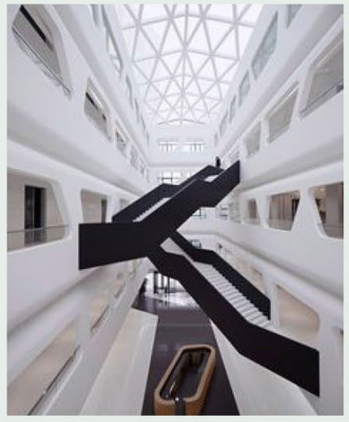
THEME 2:
HEALTHCARE ARCHITECTURE

SUMMARY
On this theme-workshop our group learned to visualize the ideas that we had for the project. By searching for examples on the website Pinterest we found referencepictures of healthcare facilities similiar to what we wanted to accomplish in our project. We established common design ideas through reference pictures and words.

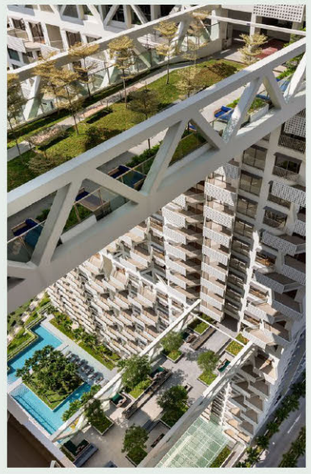
On this theme workshop our concept idea came from our keywords wich was circular movement, visible blocks and greenary (but this chang ed later). Through the keywords we came to the main concept idea Bridged which led us to new reference searching.
Here are some of our main reference pictures of healthcare typologies, materials and detailing that we have been inspired by and used in our project.

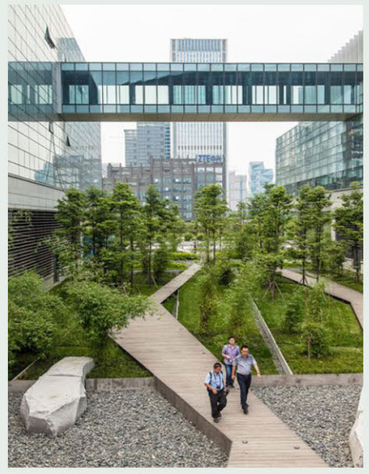
THESE ARE THE PICTURES THAT WE WERE LOOKING FOR IN ORDER TO BETTER DESCRIBE HOW WE WANTED THE ENTRNCE BUILDING TO LOOK LIKE AND WHAT FEELING WE WANTED TO GIVE VISITORS WHEN THEY ENTERED INSIDE. FOR EXAMPLE THE ATRIUM ARE NOW CREATED IN ALL OF OUR VOLUMES TOGETHER WITH THE STAIRS THAT ARE MORE DECORATIVE.
THERE ARE IN TOTAL THREE SIMILIAR BLOCK BUT THE ENTRANE BUILDING HAS A DIFFERENT APPEARANCE SO THAT THE VISITORS CAN UNDERSTAND THAT IT IS A NOTHER TYPE A FUNCTION INSIDE IT COMPARED TO THE OTHER THREE BUILDINGS.



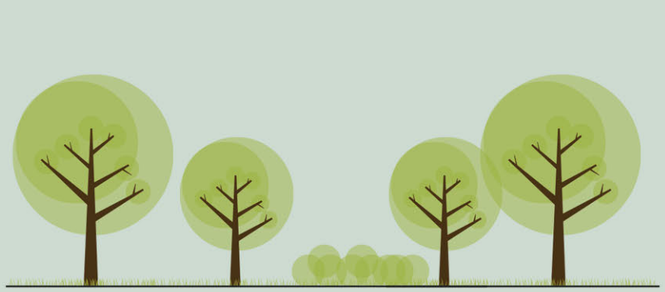


DIFFERENT TYPES OF BRIDGES; HERE WE ASKED OURSELVES WHAT A BRIDGE IS AND HOW IT LOOKS? WHAT FUNCTIONS DOES A BRIDGE HAVE? WE WANTED TO CREATE SPACES AND CONNECTION BETWEEN VOLUMES. IN EACH BRIDGE BETWEEN THE VOLUMES WE ALSO WANTED TO CREATE ROOM FOR DIFFERENT FUNCTIONS.

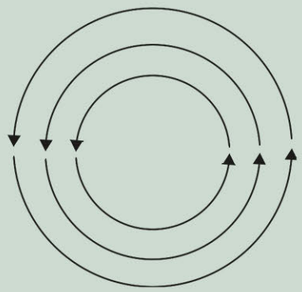




KEYWORDS



Nature
Two keywords are created by the visions as a summarize; nature and circular movement. Nature is to get better health and to recover faster by greenery, sun and no noise.



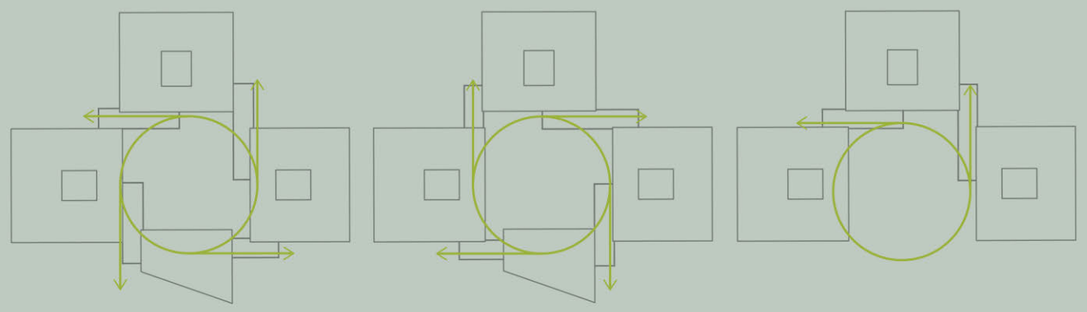
Circular Movement
With the circular movement no dead-ends are supposed to appear. It should be easy to move around in the building.

CONCEPT

From the keywords circular movement and nature a concept is created, which is bridges. The idea with the bridge is that it connects between two different parts and makes it easier to move around.

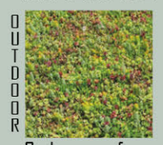
A circular movement is possible by a bridge and since nature is important for the seniors, the bridges will consist of element of nature.

CONCEPT ORIENTATION



The base of every bridge is that it should consist elements of nature and contain a waiting area. The first strategy of the interior is to furnish with greenery in the corners. Second strategy is to insert furniture for the waiting area, next to the greenery. The space that is left is going to be used as an activity area. The type of the activity depends on what departments that are connected by the bridge. For example, rehab and conference are connected by a bridge, then the associated activity is an exhibition for paintings made in the rehab department by patients.

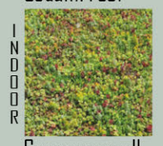
MATERIALS


OUTDOOR
Sedum: roof


Cedar wood: facade


Glass: facade


Brick: facade


INDOOR
Greenery: wall


Oak wood: Lists, stairs


Glass: walls


Marmoleum: floor

The public floor on the entrance building and other three buildings will have at least one green wall indoor for a better climate and well-being.

Oak wood on lists and on some of the walls on the public areas on the first floor for a more organic feeling indoor. The main entrance stairs in each building is also made in oak.

In some parts of the corridors and rooms the walls are in glass for a more effective way to bring in the light. Rooms that are more private consists instead of shaded/frosted glass.

The floors in every building are made in marmoleum (4mm). The material reduces noise with 14dB. The grey color is going to be in all corridors and public area on the first floor. The beige color will be in all healthcare room.

THEME 3:
HEALTH PROMOTING
BUILDING DESIGN

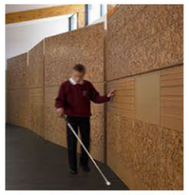
SUMMARY
On this theme workshop we got the chance to think more deep into a persons life and reflect about how illness can be prevented, how to support behavioural risk factors, how to treat diseases when they occurs. We did this by identifying people at risk of sickness trough different periods thoughout a lifetime and in different enviroments.
Out group focused on how patient centred care facilities can develope and cope with diffirent persons need, values and worries through different design ideas/ambitions and solutions. We reflected about how archtectural desig, buidlings and enviroments can enhance walkability and mobility, perceived control and how to provide facilities that supports patient participation and person-centred care. We focused on a example of one patient with dementia and on how the persons life can be when having this disease. We reflected about what obsticales that can occur and how architectural design can compensate that. By identiying the target group and their values, need and worries you can also identify what kind of architectural design is needed. We made drawings and found reference pictures according to the patient that we made up about how different architectural solutions can be used when we are designing our project.

VISIBLE

SMART DESIGN

PARTICIPATION

THERAPETIC



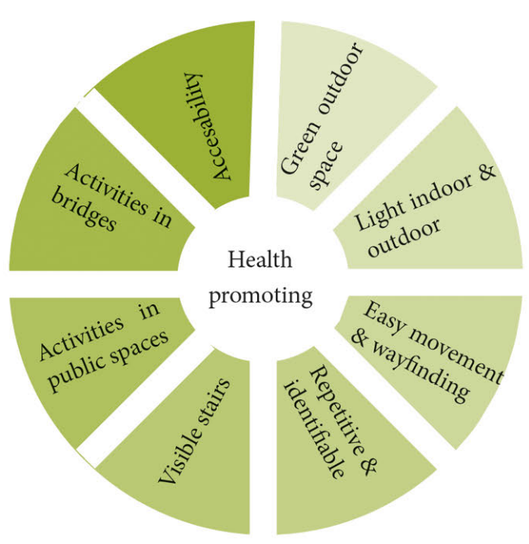
ACCESSIBLE

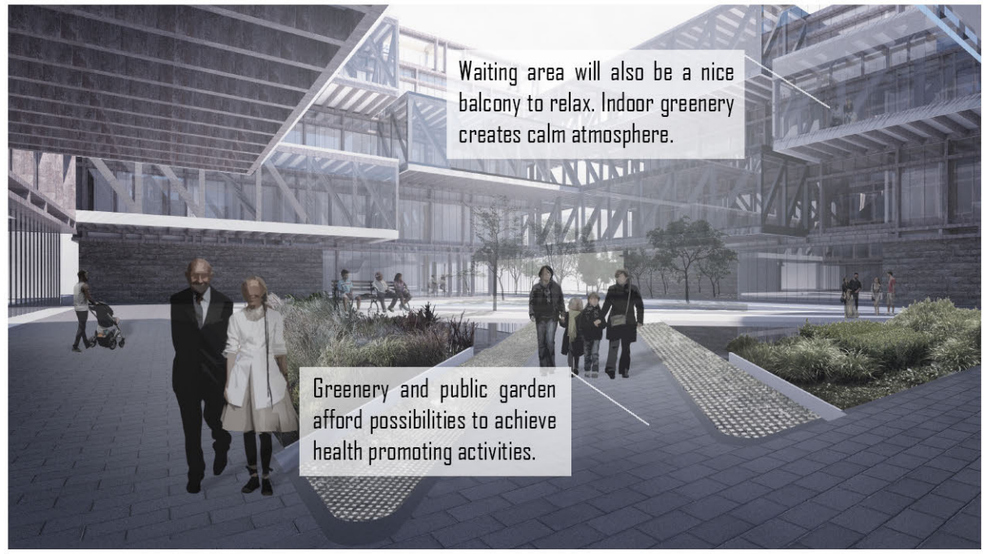
A MADE UP PERSON
Husband of one of the patients, His name Is John and he visits his wife with dementia; Alzeimers twotimes a week. Johan has also problem with his health. He has for example breathing problem (coal cough) and gets dizzy very easy because of the lack of oxygen. He is 75 years old and used to live with his wife at the senior housing but 5 years ago his wife became worse because of her sickness (dementia) and had to leave for the senior center permanently. When John visit his wife at the senior center he always brings her favorite flowers because he hopes that it will remind her of the romantic walks they took at the botanical park.
The botanical park is one of their favorite places because they also used to bring their children, their dog and grandchildren their. John often brings her to the botanical park together with a nurse and a psychical therapist so that she can practice her memory and psychical strength. John usually also brings with him their old dog but it gets tired very fast.
Sometimes the doctor also visits her at the park instead of the senior center. The believes that patients feel more comfortable in a familiar space. John often visits the library on his free time to study more about dementia. He discovered that people with dementia get amnesia, insomnia, mood swings, hallucinations, memory problems, decrease in motivation and emotional problems in language.
But sometimes johns wife get worse and she can forget about him and cognitive problems. Taking on clothes or taking a bath can be a big challenge at bad times. The symptoms can be disorientation, withdraw from family and society, bodily functions lost gradually, not managing self care, mood swings, behavioral issues.
Speed of progression can vary; the average life expectancy is three to nine years. John used to work at the library and his wife was a housewife. Their hobbies was gardening when they were younger and feel that they want to do more of it but lack the energy. They value the positive energy and the relaxed environment when they used to be outside gardening. These days john worries a lot about his wife and her health. He really values the visits and the relaxing walk at the botanical park.

WHO WILL BE AFFECTED?
Dementia (high percentage in senior people), Children & baby, Neighborhood for example students, children, diabetic people, parents, lecturer or professors, doctors, physiotherapist, occupational therapist, nurses, dietist, chefs, teachers, injured patient, Immigrants, Tourists, disabled for example
Blind, Deaf or non verbal also psychical and psychological disability, Obese people,
Patients group: Dementia, blind , non verbal, deaf, diabetic people, obese, psychical and psychological disability,
Community:Students, Immigrants, Lecturer, professors, pedestrian, bike, car
Staff: Nurses, doctor, physiotherapist, occupational therapist, nurses, dietist, chefs
Visitors: Parents, children, relatives, family, friends, researchers
Users of the future park: dementia, sick people, children, seniors, disabled, psychiatric patients,

TRANSPORTATION:
Bus, bike, taxi, car, walking, ambulance
Family members: Husband, children, grandchildren,
Last Vacation: They went to the same place they had their honeymoon in Australia

THE PERSONS NEED, WORRIES AND VALUES
Building recariment: accesability for example marking exits, openings, doors, staires and ect with contrast colours. Safety windows and doors. Comfortable and cozy interios enviroments. Vertical transportation (elevator), Anti slip floors, cognitive relieving environment for example highlight signs, less impressions in the environment for example less objects in a room for a more relaxed feeling, prevent using dark colours in the interior, rehabilitation room that work with light, music or exercise.

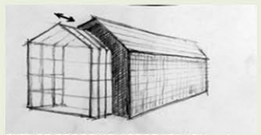




THEME 4:
FUTURE PROOFING- DESIGNING FOR THE UNKNOWN FUTURE

SUMMARY

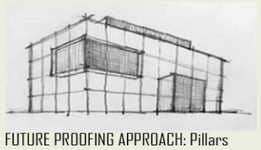
On this theme workshop we discussed and found refrences of different future proofing projects to make a so called toolbox that we can use during the developement of our project. For a better effectiveness for the life of the facility a range of factors was considered in different settings for a better and appropiate building shape. Our goal was to make a facility that also works in the future when change need to occur. For example our main strategy is to use modularity in construction, logistics and appearance. Here are some of the main "tools" or concepts that we have integrated in our project. We have used moduler units in our project by making the the volume, corridors, rooms and facade flexible for changes in the future renovation. By using the modular unit system we managed to also have a structured approach by a general pillar system trough the entire building. Other stratetgies that we wanted to incorporate in our projects was enviromental sustainability through solarpanels integrated in the facade. We succeded our goal by integrating solarcells in the glassfacade mostly on the south side of the buildings. The solarcells cant be seen by the eye because its a part of the glass. A nother strategy for the future healthcare that we also have integrated in our project is the possibility to give healthcare through new technical devices. Its can be for example healthcare through the phone and camera. We have in our plans made special rooms for the staff to be able to have conversations with patient that are somewhere else.



FUTURE PROOFING APPROACH: Glass box
BILDING LEVEL/ OPERATIONAL: Site

PROJECT NAME: My Micro NY
FUTURE PROOFING APPROACH: Modular units

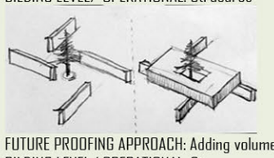
FUTURE APPROACH: Green area
BILDING LEVEL/ OPERATIONAL: Site



FUTURE PROOFING APPROACH: Pillars
BILDING LEVEL/ OPERATIONAL: Strucures

PROJECT NAME: NAKAGIN CAPSULE TOWER
FUTURE PROOFING APPROACH: Modular units

FUTURE APPROACH: General rooms
OPERATIONAL: Space plan

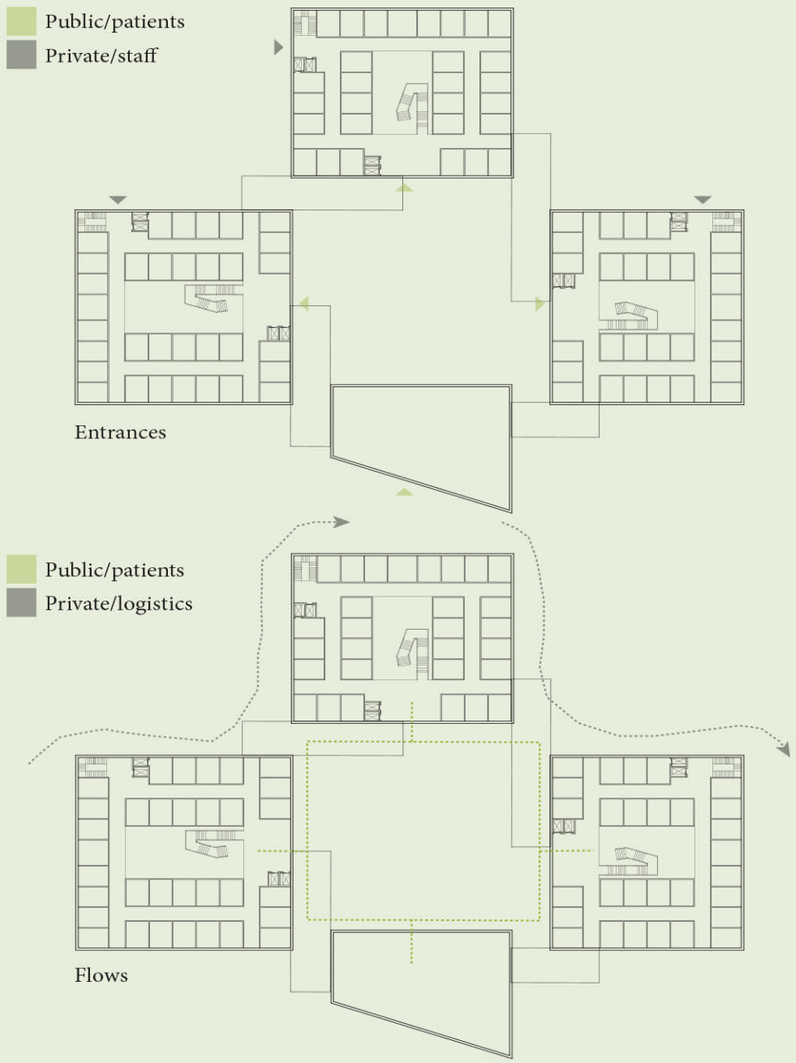


FUTURE PROOFING APPROACH: Adding volume
BILDING LEVEL/ OPERATIONAL: Strucures

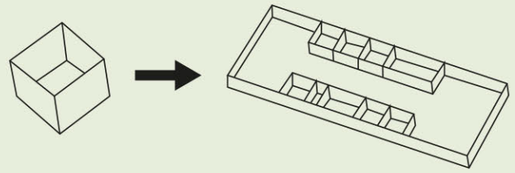
PROJECT NAME: Nya Karolinska Solna
FUTURE APPROACH: General pillar

FUTURE APPROACH: Easier access.
OPERATIONAL: Service

MODULAR SYSTEM IN VOLUME



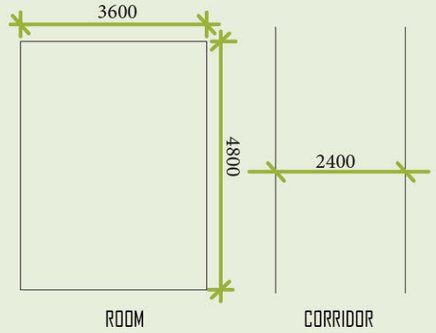
MODULAR SYSTEM IN PLAN



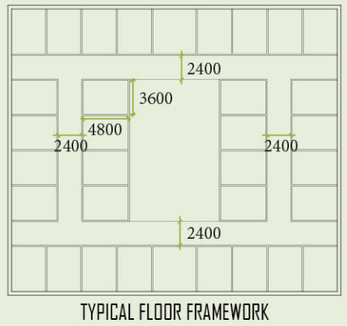
Another main vision in the project is the modularity. The idea is to make the project as flexible and adaptable as possible. It means it will be possible for future physical changes in a small and large scale.

The modular system consists of measurements of a typical examination room and corridor. The room is 3.6x4.8 meters and the width of the corridor is 2.4 meters, which is the half size of 4.8 meters. The width of the corridor (2.4 meters) makes it possible to pass with a bunk. The idea of having these measurements are for its adaptability to change its functions in the future. This means for example that rooms can be smaller or larger by tearing or building walls depending on future demands.

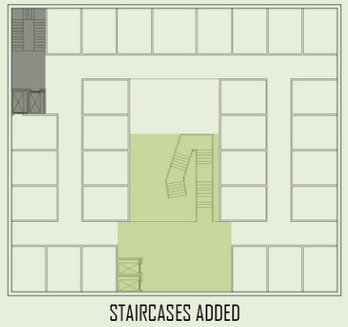
These measurements are put together in a framework. The goal is to let the sunlight reach all the rooms, creating circular movement, connections with the outside for wayfinding and also creating a visual contact from the one corner of the atrium to the other. These functions contribute health promoting.



ROOM CORRIDOR



TYPICAL FLOOR FRAMEWORK

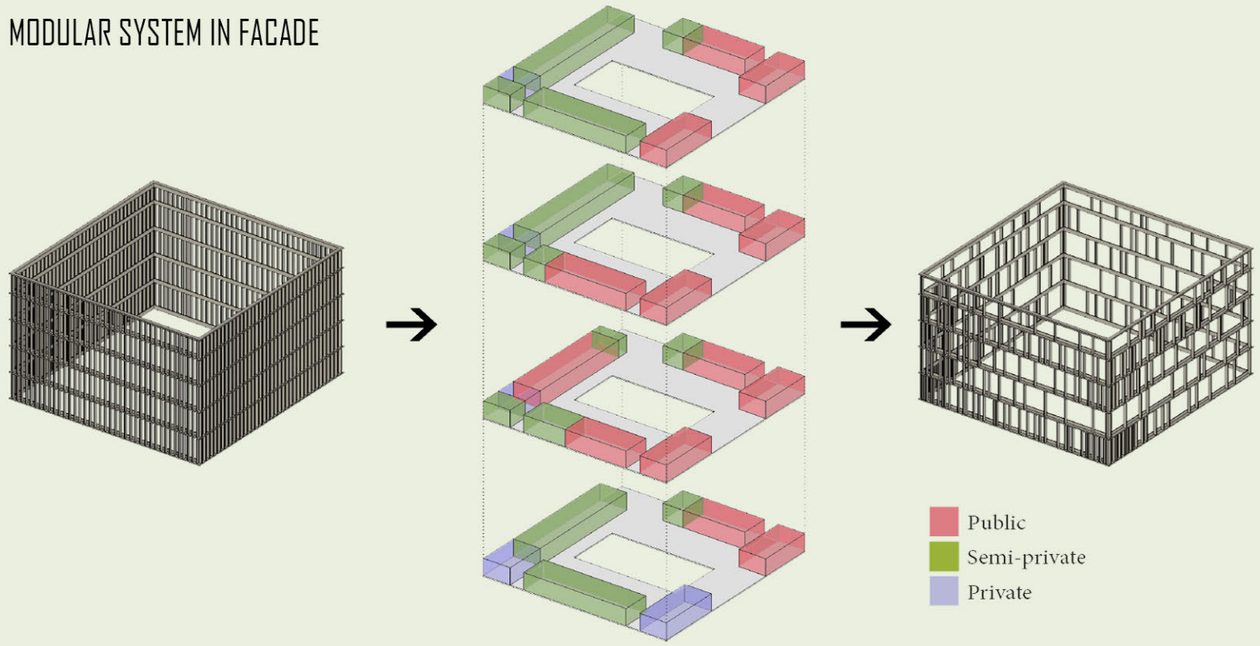


STAIRCASES ADDED

Similar to the modular system, functions on each floor are set in specific location for easier wayfinding for staff and visitors. There is a private staircase that is only used by the healthcare staff, while the more visible stairs is for the patients and the public. The public stairs are easy to find, and is the first thing you see from the outside and when you enter the building.

The main entrance for the staff and the entrance for the patients/public are placed close to the staircases. The staff have their entrance on the "backside" of the buildings, connected to the private staircase. While the patient and the public have their entrance from the courtyard, connected to the public staircase. The main reception for the healthcare is in the small conference building, the flow for the patients starts from there. While the flow for the logistics are taking place on the "backside" of the building. It is close to the stair-case in each building to easy transport the different goods, to the different department and levels in the healthcare center.

MODULAR SYSTEM IN FACADE



The façade is created by frames that are in a modular system. The frames have a specific measurement for the distance between them. The modular system is later changed and adapted depending on the privacy of the rooms inside. The rooms are categorized into private, semi-private and public. This means that if the rooms are more private then its more closed from the outside. If the rooms are more public, then it is more open to the outside.