

ARCHING HEALTH



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NEW HEALTHCARE CENTER IN KARLSKRONA

THE SITE

In Karlskrona, a new healthcare center is requested to serve for future needs. The building has been given a site with the previous function as a bus terminal positioned at the entrance of Karlskrona. It is considered a main position and has to answer to several requests.

Positioned at this place it has to be a welcoming building that takes care of the different flows coming from several directions. The most important flow is the main axis stretching from the mainland along the site with a final destination at Stortorget (the big square). Another important flow is the one from the train station. Österleden is a major road and “barrier”, cutting the flow between the train station and the site. The road is a big issue and has to be taken in consideration when planning the site and building.

The south direction is, in contrast to the north, facing an appreciated baroque park called Hoglands park.

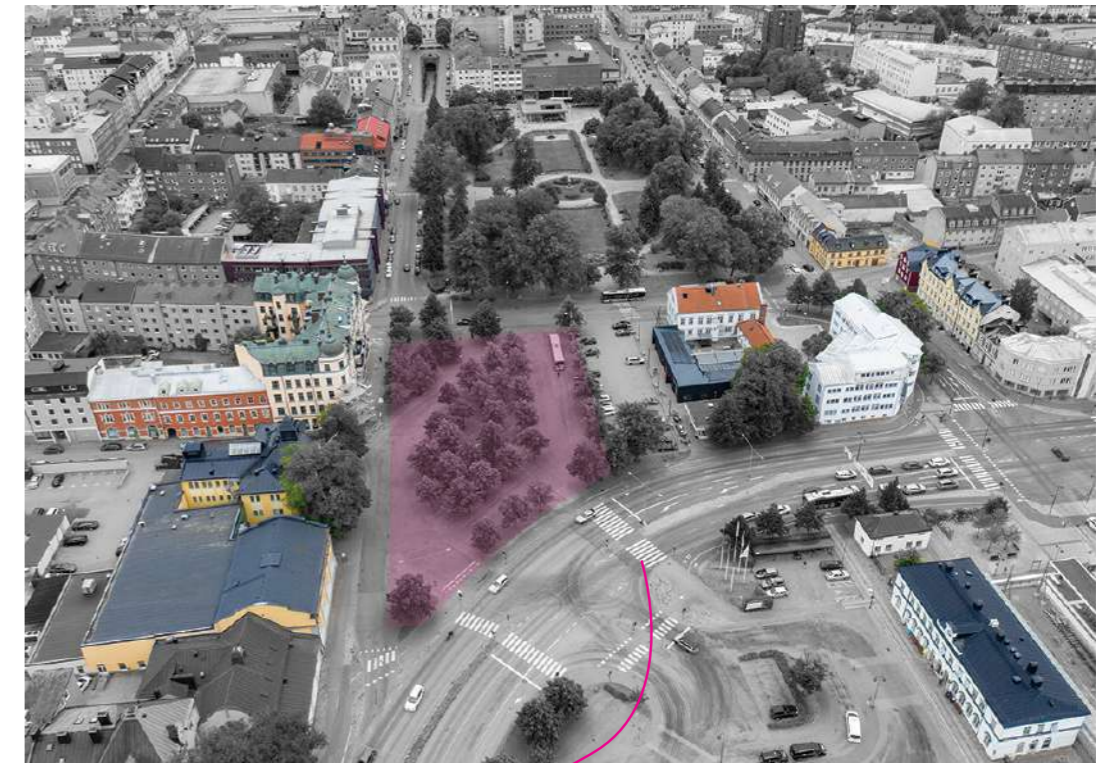
Karlskrona is a world heritage site famous for its baroque style, represented both in the city pattern as well as in several buildings. New additions have to respect this and should be designed with consideration.

Another consideration is an old historical railway cutting the site in diagonal. This has to be preserved as well.

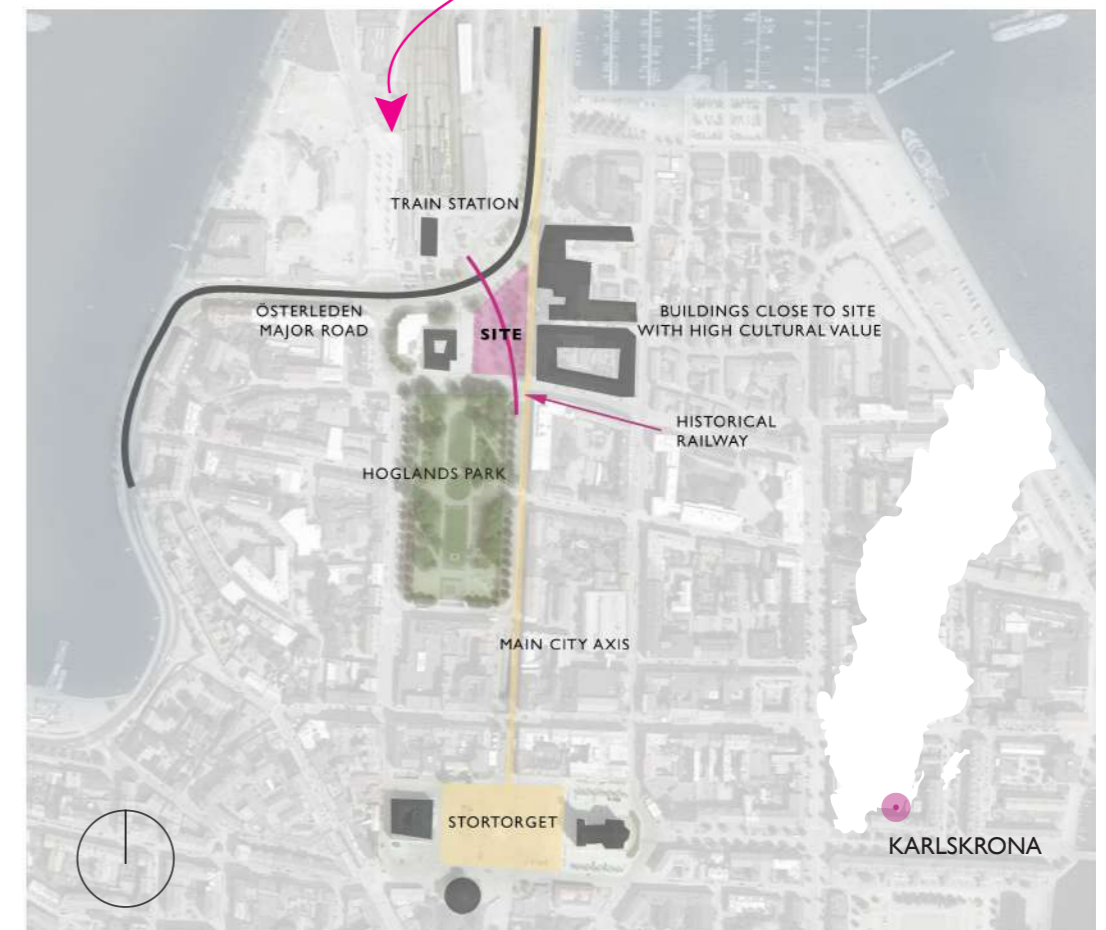
The biggest challenge of the site is the future expectations of flooding incidents. This requires the ground floor to be lifted up by 1,5 meters which contradicts the accessibility and requires a good planning of integrated ramps.

PROGRAM

Requested content of the new healthcare is medical care, children’s care, dental care, womens care, and rehabilitation. Despite this, suggestions on public functions were asked for, to make the building attractive for the public.



view from north



DESIGN STRATEGIES

How can we create a healthcare center that;

blends in to the city of Karlskrona,

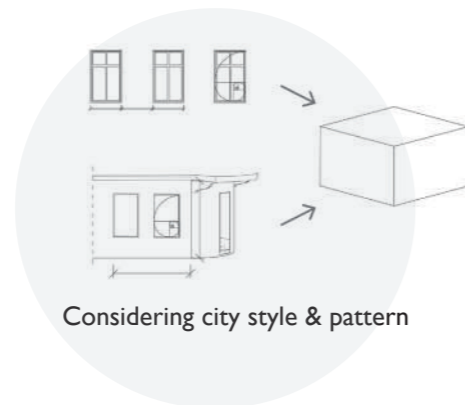
has a natural healing environment

&

contributes as a sustainable building?

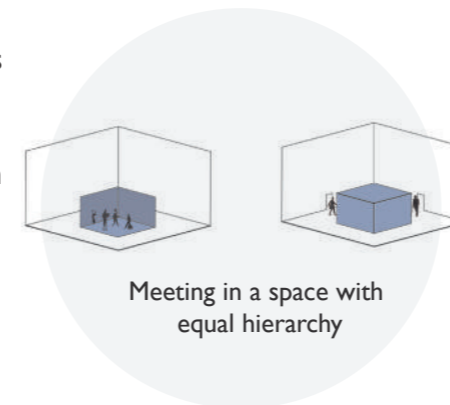
HISTORY AWARENESS

To design a building within a world heritage needs its considerations. The new building should not try to copy or concur with the old buildings. It rather needs to be a contemporary addition that interplays with the old ones.



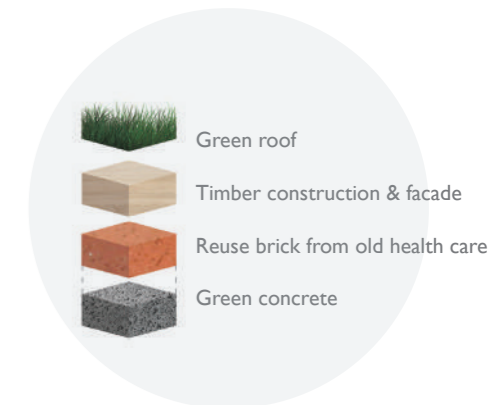
PATIENT CENTERED APPROACH

The examine room will work as a rather neutral space where doctors and patients can meet under equal circumstances. That means the private office space within every exam room will be taken away meaning also that the room can be used more efficiently.



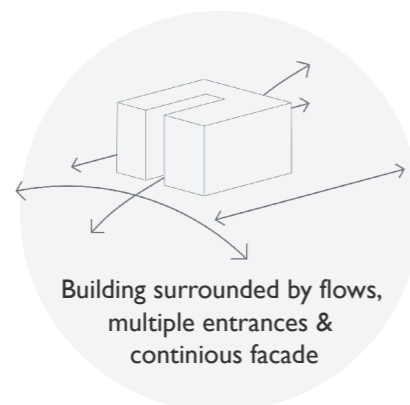
MATERIALS

Sustainable materials in buildings is about choosing the right material for the right purpose. Then to find sustainable options within that material. We are considering the most optional as well as sustainable material for each vertical building layer from basement to roof.



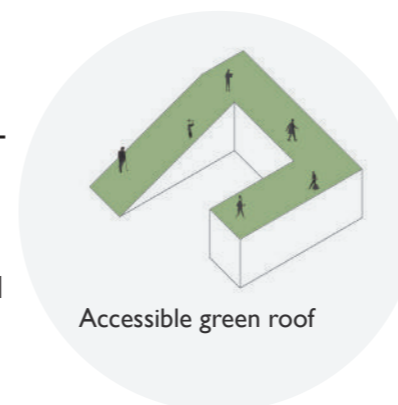
THE NEST OF FLOWS

A building that is located in a nest of different flows needs to take care of all of these in order not to cut them off. To ensure this, the building is shaped after the flows with entrances facing all sides. All the facades look the same so that no side is the obvious back side.



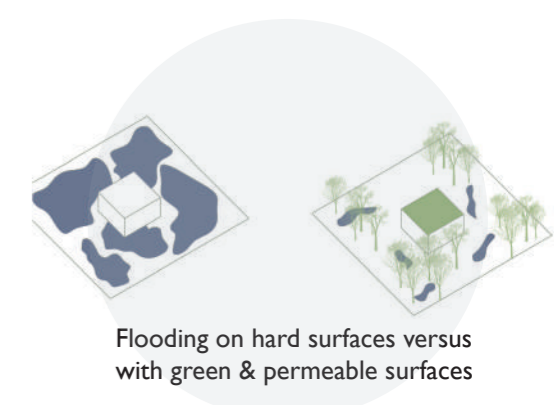
CARING

The building will have an accessible green roof where people should be inspired to walk up to enjoy greenery and view the city panorama. Public health promoting functions such as gym, conference halls and training kitchen will be available and put into positions visible from the outside.

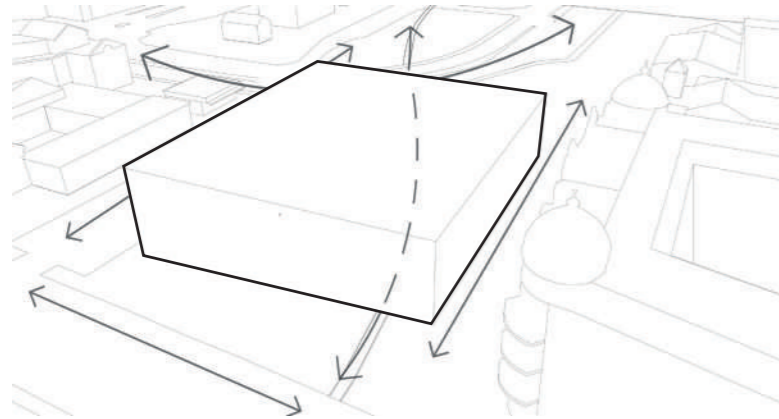


SPONGE CITY

To make the site adapt to the water in a flooding situation, the site is designed with green and blue surfaces, working as a sponge. When flooding happens, the "green sponges" will be able to absorb a large part of the water and store it to release it naturally over time.

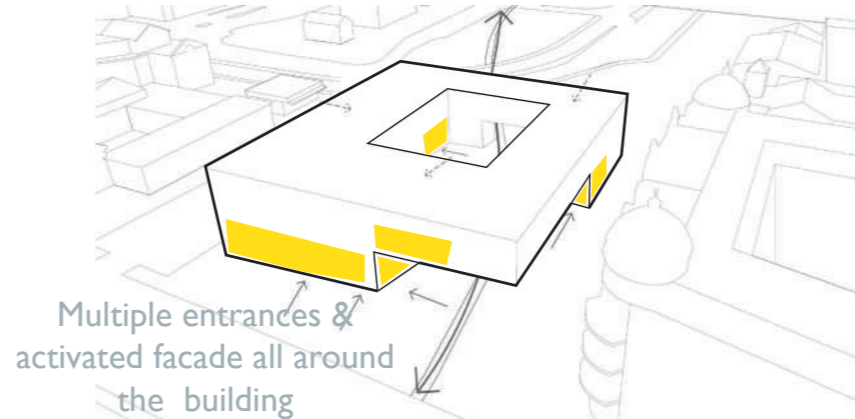


BUILDING CONCEPT



1. EXISTING SITUATION

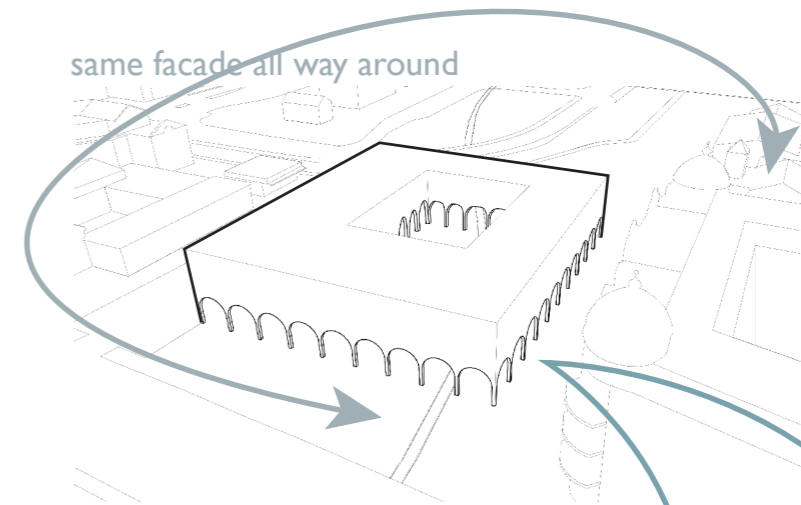
Site & surrounding flows



Multiple entrances & activated facade all around the building

2. CONSIDERING NO BACKSIDE

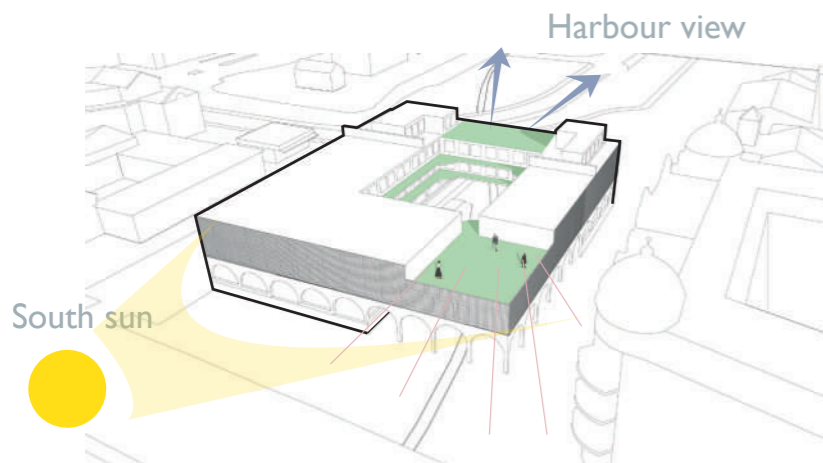
Including railway & consider Karlskronas city pattern with block building



same facade all way around

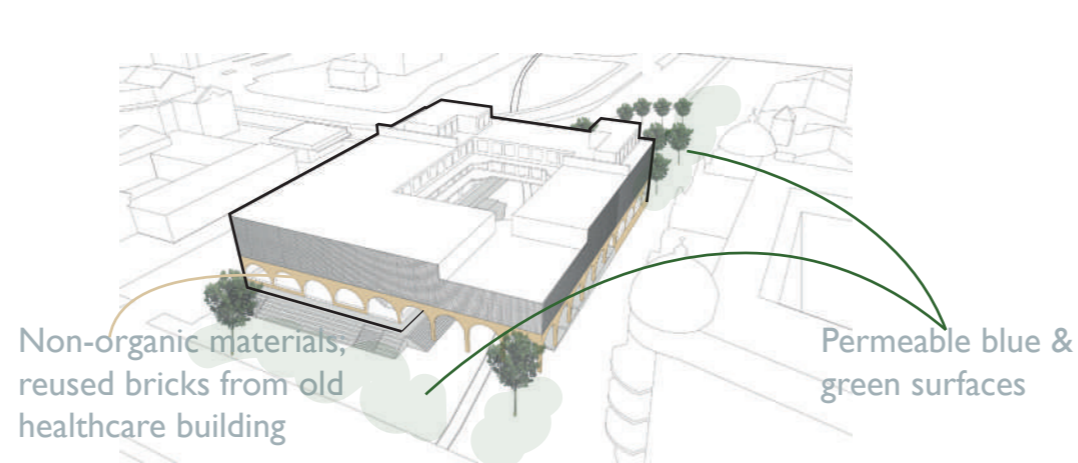
3. INTERPRETATION MODERN BAROQUE

Interpreting the baroque architecture that repeatedly occurs in the buildings in Karlskrona, mixing it with the idea of creating a tunnel for the railway



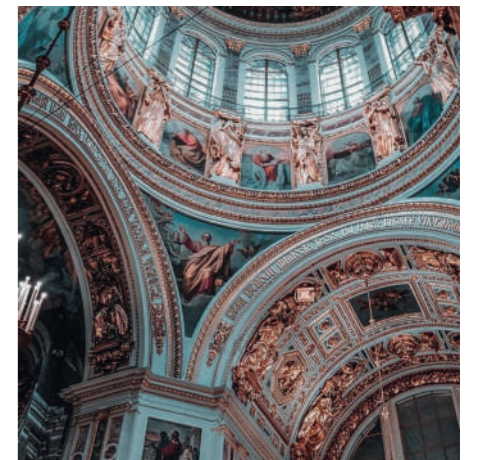
4. EASY ACCESS OUTDOOR

Outside access from all floors through balconies & terraces



5. FLOODING PREVENTION

Height difference solved by stairs & well integrated ramps



SITE PLAN

scale 1:500



There are two types of characters on the site, city character and park character. City character is distributed on the south side of the site and along the main axis. On the square on the south side there is a big stair that serves as a seating with greenery and water elements. On the west side of the site is a ramp for ambulances and delivery vans, parking spaces and the road leading to the underground garage of the hospital.

The main axis is enhanced by a water line going along it and greenery around the water line. The building has a stair facing the main axis to make them interact with each other.

The part of the site with park character is distributed on the north side. This space is used for various activities and it is enriched with as much greenery as possible. Greenery, water and railway serve as guidelines for the pedestrians to walk and enjoy the scenery. Near the water is a space for children to recreate. In front of the gym is a staircase that together with the space in front of it can be used as an element for group exercises or meditations.



1. Blue- green area, park character



2. Blue- green area, city character



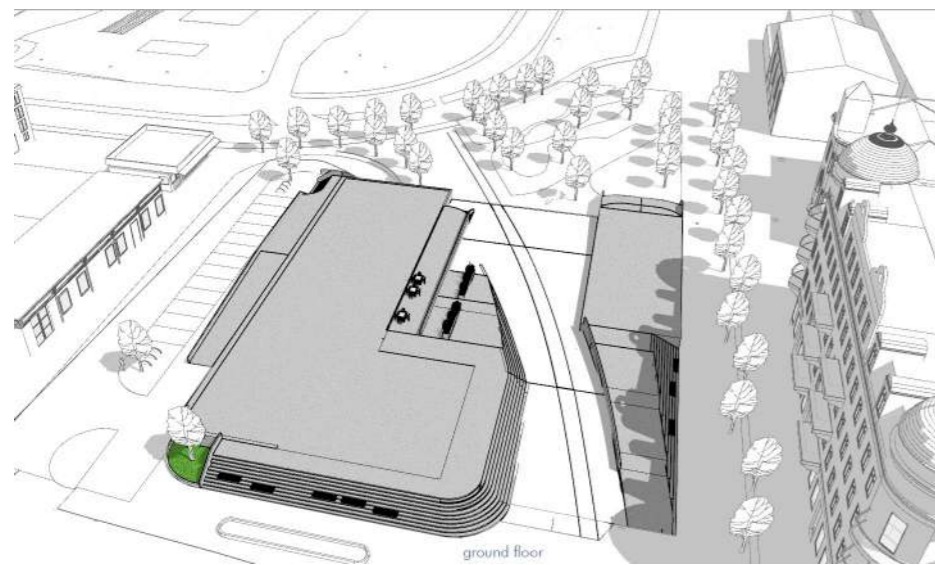
3. Extending gym outdoor



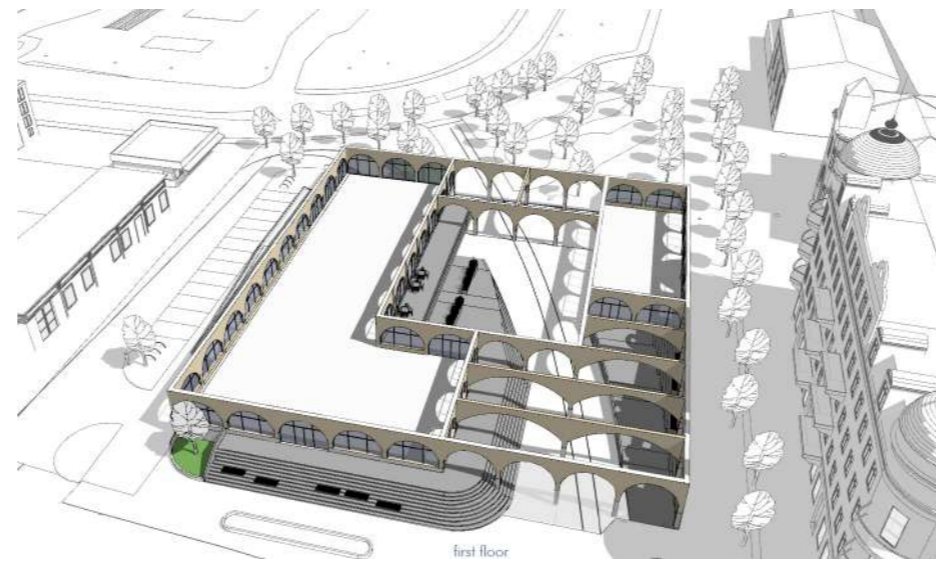
4. Extending gym outdoor open space

VOLUME STRUCTURE

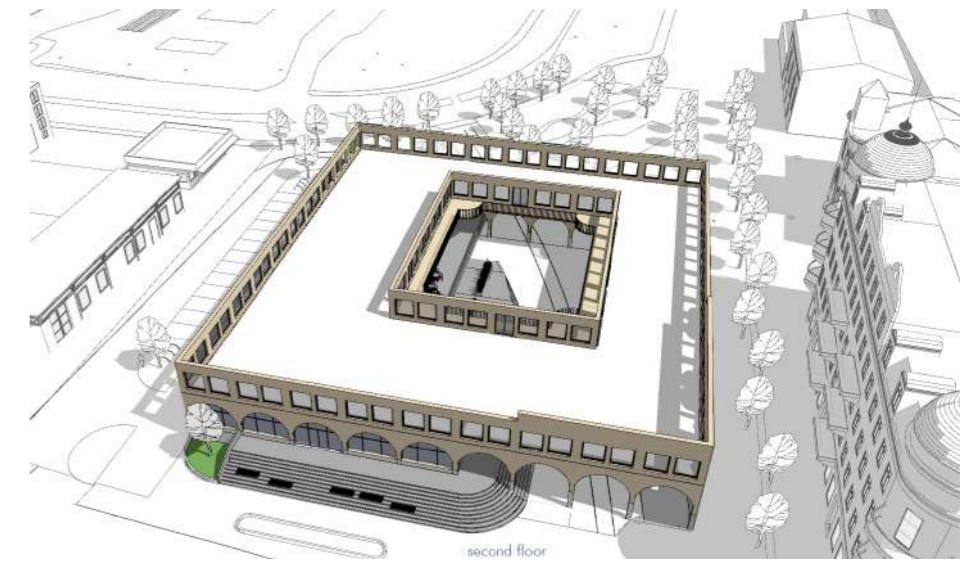
View from south



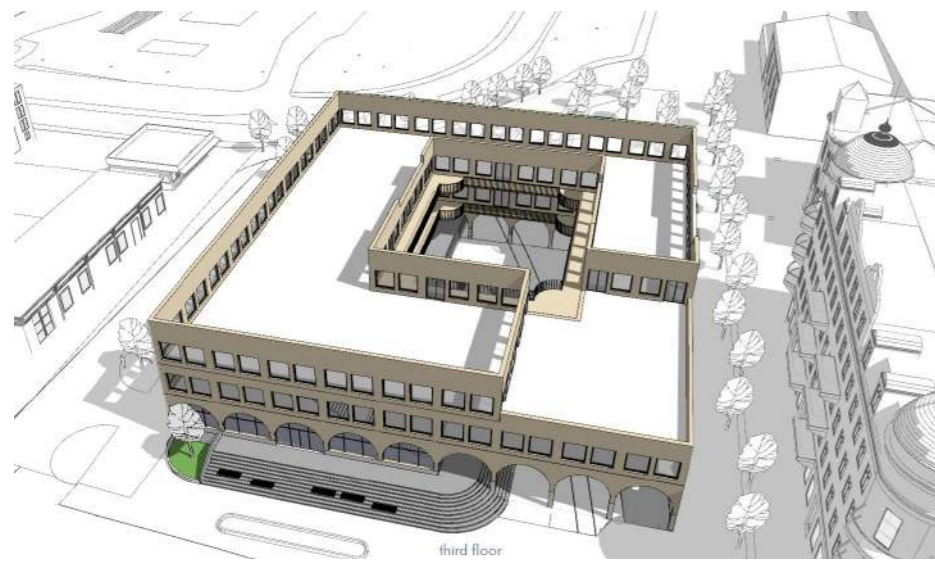
BASE



FIRST FLOOR STRUCTURE



SECOND FLOOR STRUCTURE



THIRD FLOOR STRUCTURE WITH ROOF TERRACE



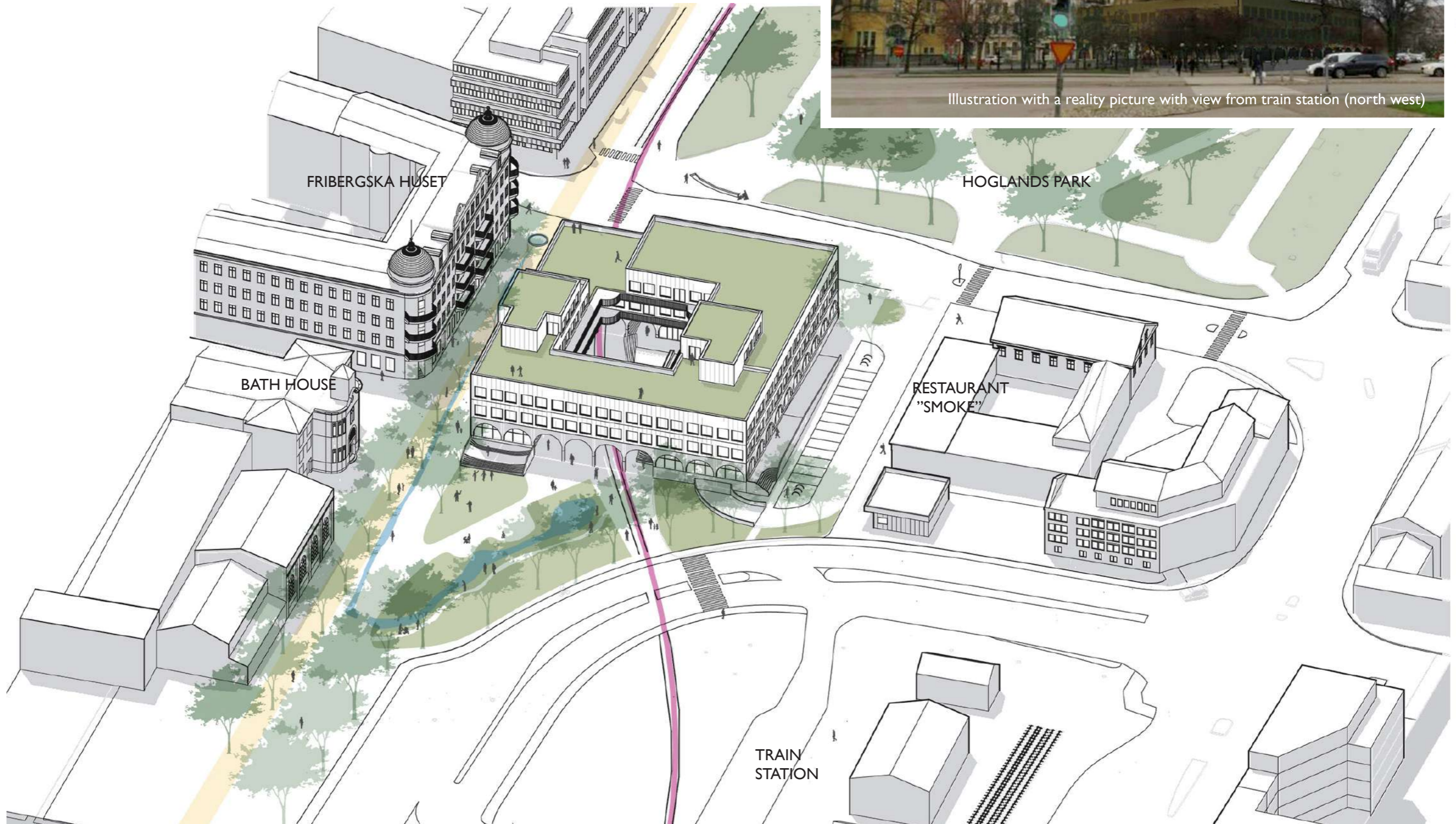
ROOF TOP CONFERENCE ROOMS



WOODEN RIBS FACADE

ISOMETRIC VIEW

Overview of the building and surrounding.
Railway passing the building and main axis in yellow.



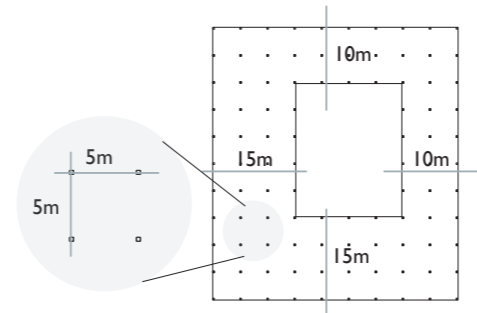
FLOOR PLANS. CONDITIONS & BRIEF ADJUSTMENTS

1. FLEXIBILITY

The building volume has the general shape of a block building. With a maximum width of 15 meters it gets plenty of daylight from two directions. This generality might make it possible for the building to adapt into other uses in the future.

GRID FLEXIBILITY

To facilitate future changes, the structure is a pillar grid that measures 5x5 meters.

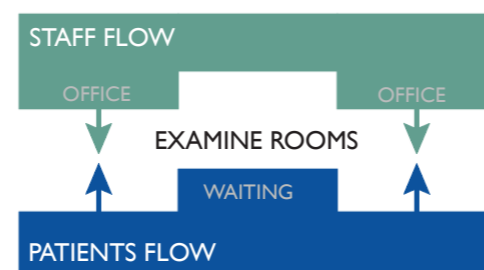


SHARING

The aim has been to create all examine rooms with equal size so they might be able to shift department if needed. The functions for each department has been looked through carefully to see what rooms could be shared between the departments, as well as conference rooms that can have a public function at some times (see shared room functions in floor plans).

2. FLOOR PLAN LAYOUT

The layout of the floor plans follows the principle of separated flows for staff, patients and examination. Smaller divisions of teambased office spaces are distributed around the hole staff flow. No private office spaces in the examine rooms exist which has also lead to a slight reduction in size of the examine rooms.



EXAMIN ROOMS

In a healthcare, the least time spent for each patient is in the examine room. This is the reason why the examine rooms are put in the middle. The strategy is instead to work with indirect light as well as artificial light of high performance considering the feeling of daylight.

POCKETS

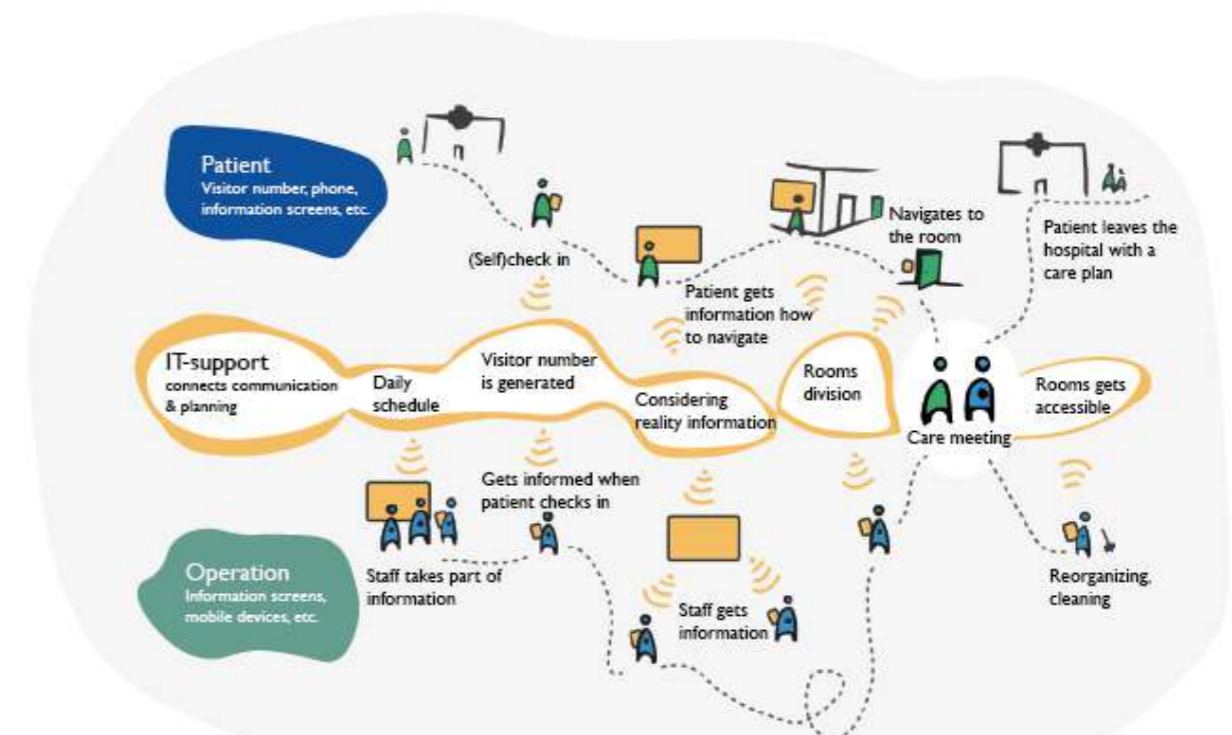
The space between staff and patients flow is shifting, where staff gets less space in their flow, the patients gets a waiting space and where the patients gets less space in their flow, the staff gets an office space.

3. SMART HEALTHCARE MEGATREND

The reference picture below shows how a smart healthcare center can function. It is highlighting how the support of information technology (IT) can create a better connection between patients and staff as well as higher efficiency for both parts. More patients per day can get time to meet a doctor. The smart healthcare requires the examine rooms to be neutral (not private for one doctor) so that the efficiency of the space is maximized. For the patients, the efficiency and reality information of the smart healthcare physically means less waiting (less waiting rooms needed), one of the reasons why the waiting spaces are distributed into smaller divisions close to the patients current examine room.

TELECOMMUNICATION ROOMS

The trend is going towards health on distance, a way to make the healthcare accessible for more people and to avoid unnecessary visits due to infectious diseases. The implementation of telecommunication rooms is therefor a matter of course. Each floor is given a number of centrally positioned telecommunication rooms.



Function of an IT-supportive healthcare
Reference picture from Högso specialistsjukhus

FLOOR PLANS. FLOWS & LOGISTICS

Three vertical communication flows exist in the building and are distributed in an equal distance from each other. One of them is for the public and patients, the second only for patients and the third one for staff. In the main entrance hall, a big public staircase with two elevators exists. The one for patients is in the second entrance/reception and the staffs shaft is located in the north-west part of the building.

Main staircase is divided into two directions. One direction leads to the first floor and the other part leads directly to the second floor. This is because of the health library that is on the second floor and the public can access that without going through the healthcare.

All other vertical communications like ER, deliveries, staff and infections are distributed through one private staircase and elevator only accessible from the different entrances on the west side of the building. These entrances are closed both for the public and patients.

LEGEND

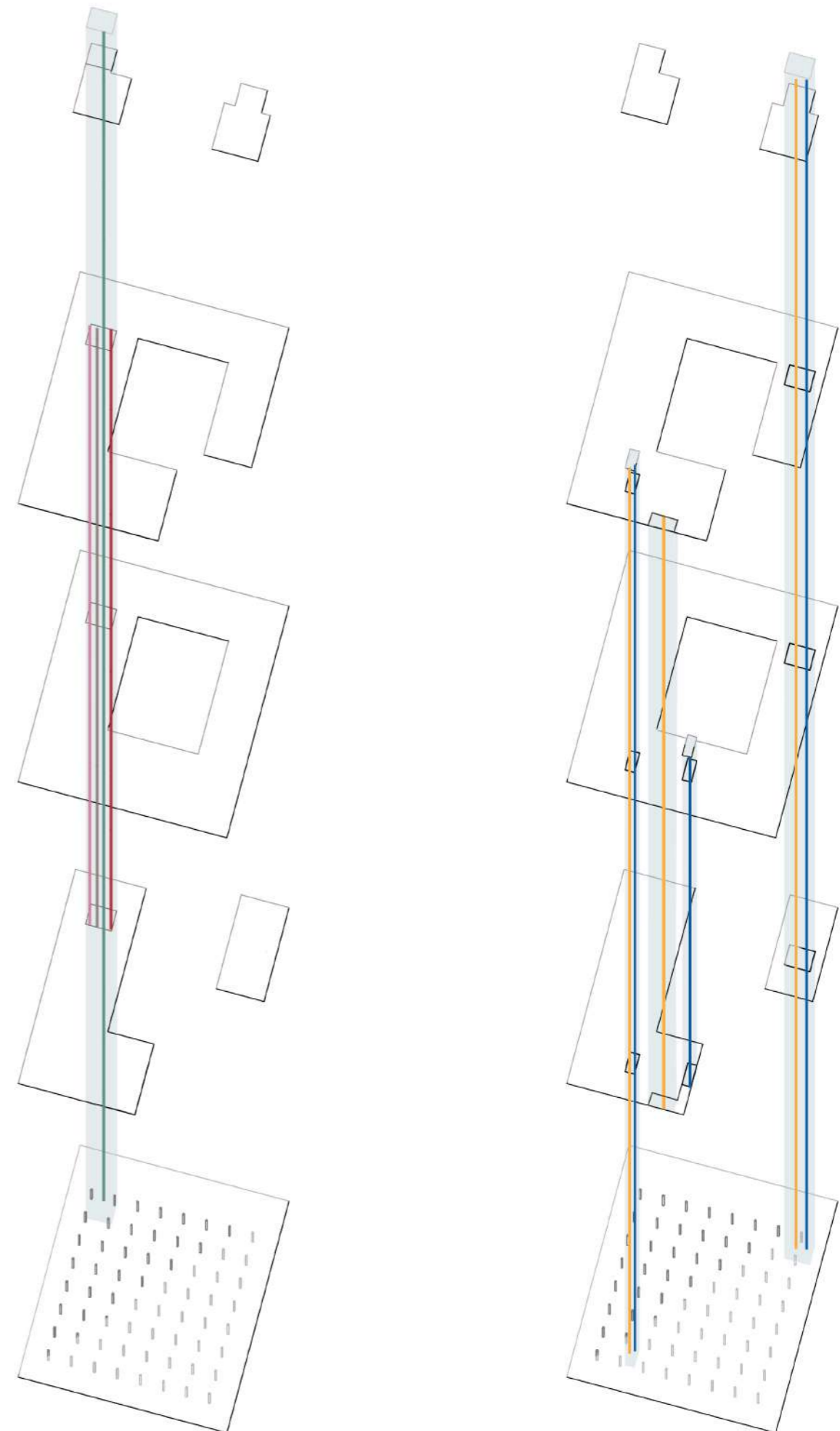
The following colors will be used throughout the whole compendium to represent departments as well as flows for different parts.

DEPARTMENTS:

childrens care	dental care
womens care	Rehab
(technical space)	medical care

FLOWS:

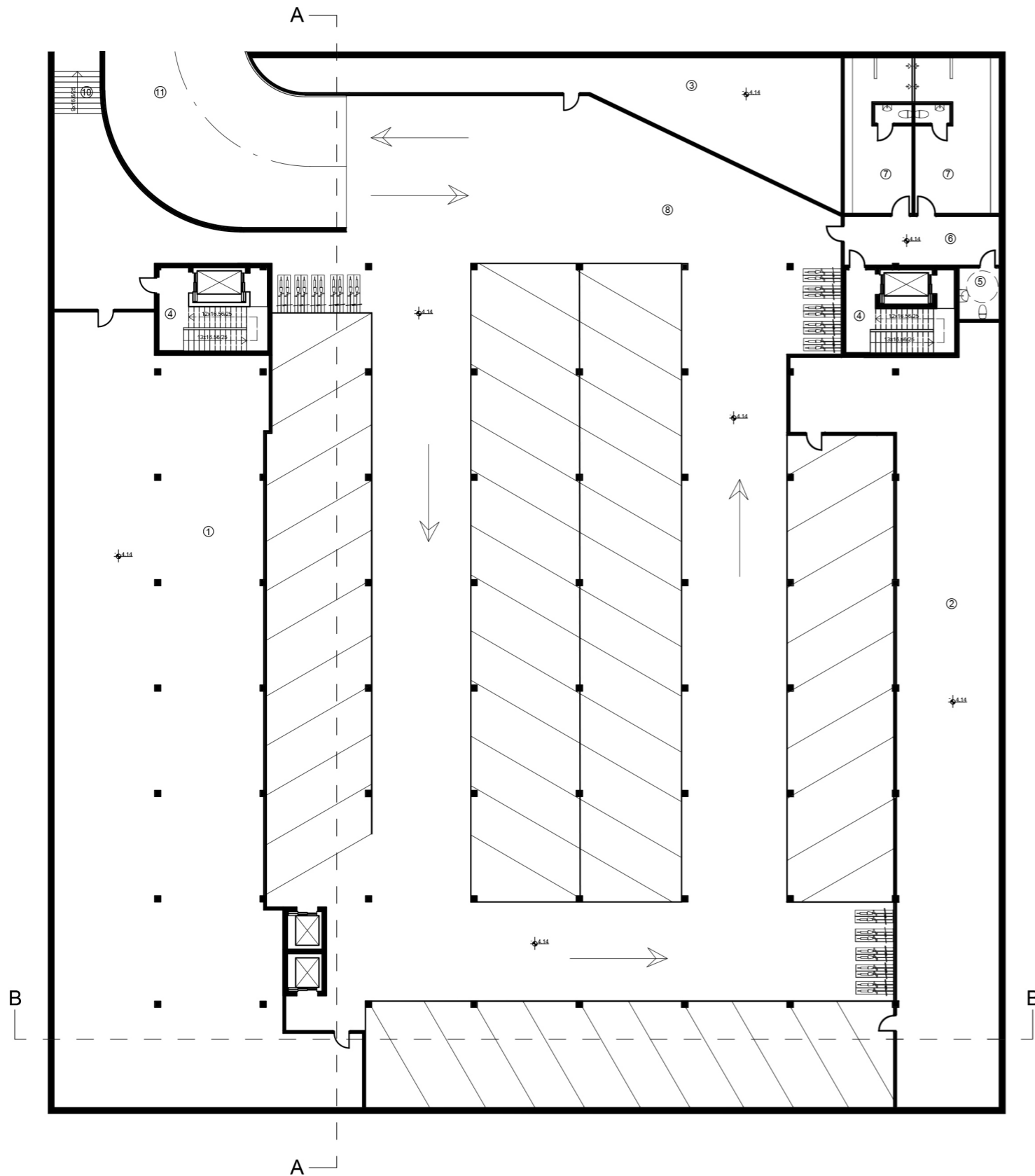
patients
staff
E.R.
deliveries
other activities
infective



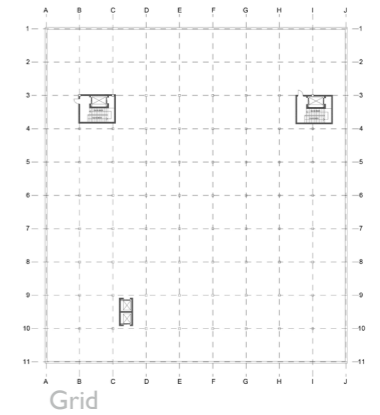
FLOOR PLANS. BASEMENT

scale 1:250

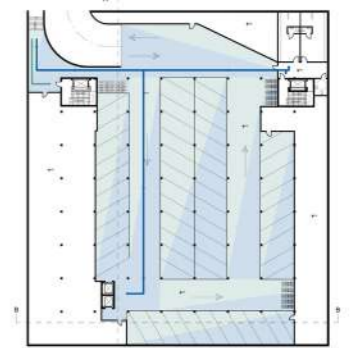
TOTAL BTA 4487 SQM



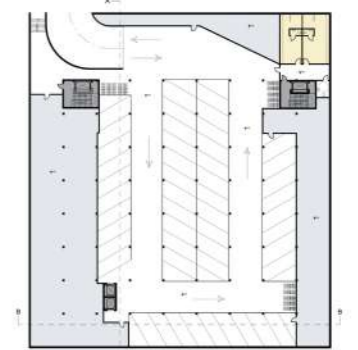
Basement of the building is used not only as a parking space but also as a space for changing rooms for the gym that is stationed on the first floor of the building. The changing rooms are in the direct connection to the gym with elevators and stairs. There is also a public toilet that is accessible to anyone. 80% of the technical rooms needed for the building is located here. The patients can access the basement from 2 different elevators and one stair on the inside of the building and one from the outside. The staff can enter the first floor from the separate stairs and elevator that can only be used by them and it will lead directly into the staff space on the ground floor or any other floor. There are 49 car parking spaces and 30 bike spaces.



Grid



Staff flow (green) & patient flows

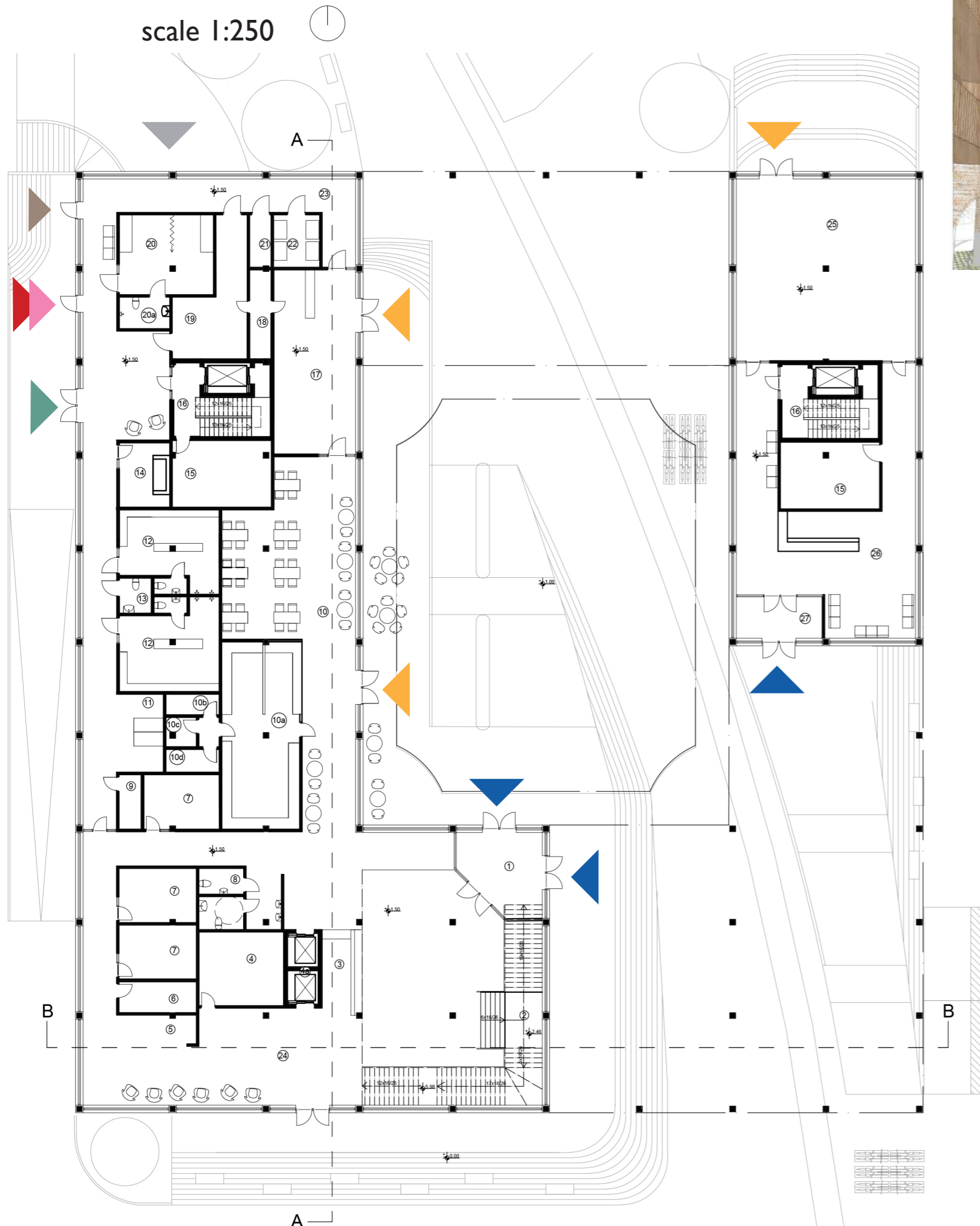


Departments

common space			
no.	room	x	sqm
1	technical room	1	390
2	technical room	1	195
3	technical room	1	80
4	staircase	2	20
5	toilet	1	4.7
6	hallway	1	17.1
8	communication	1	1334
9	elevators	2	3
10	stairs	1	4.4
11	ramp	1	78
rehab			
7	changing rooms	2	24

FLOOR PLANS. FIRST FLOOR

scale 1:250



View from north inside the courtyard with main entrance in the corner

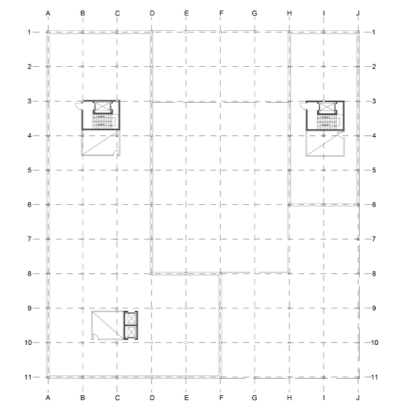
First floor is divided into two volumes. The bigger volume is the “main building” with the main entrance with public functions like pharmacy and cafe. Apart from public functions children care is placed on the ground floor due to easy accessibility for mothers with children.

ER has a separate entrance into the building and a ramp for ambulance cars. The ramp can also be used by delivery vans as the entrance to the deliveries is next to the ER entrance. The third entrance on the west side of the facade is the entrance for the staff. Staff have their own vertical communication throughout the building and they have changing rooms and rest room shared in connection to this.

The smaller volume is used for a second reception for women’s care with a small waiting space and the other part is a gym that is accessible to the public in the evenings.

children care			
no.	room	x	sqm
5	strollers storage	1	6.6
6	storage	1	7
7	examine room	3	12
9	storage	1	3.5
11	office	1	10.5
13	toilet	1	3.3
new brief sqm			67
old brief sqm			109
rehab			
25	gym	1	93.5
medical care			
20	er	1	22
20a	toilet	1	4.6

common space			
no.	room	x	sqm
1	main entrance	1	15.4
2	main staircase	1	41.5
3	reception	1	9.7
4	technical room	1	18
4a	elevator	2	3
8	toilet	1	14.5
10	cafe-restaurant	1	92
10a	kitchen	1	42.6
10b	fridge	1	3.2
10c	larder	1	2.6
10d	refrigerator	1	3.5
12	dressing staff	2	25
14	staff rest	1	9.4
15	technical space	2	19.1
16	staircase	2	20.4
17	pharmacy	1	43.3
18	storage	1	5.5
19	unpacking and delivery	1	21
21	clothes shaft	1	3.3
22	waste	1	7
23	communication for staff	1	108.1
24	communication for patients	1	302.1
26	reception	1	86.2
27	entrance space	1	10.2



Grid



Sightlines



Function boxes



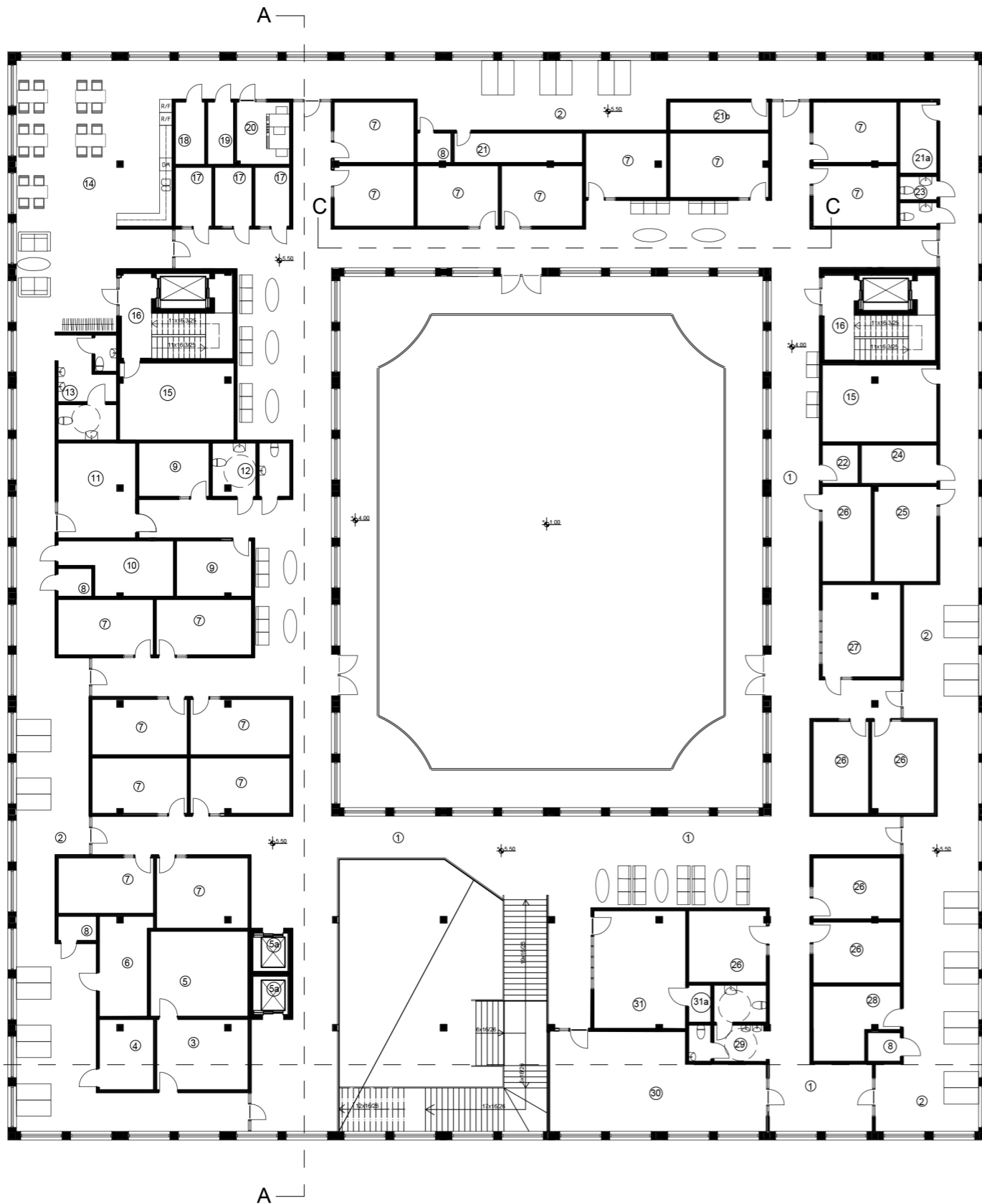
Staff flow (green) & patient flows



Departments

FLOOR PLANS. SECOND FLOOR

scale 1:250



Second floor is one volume from where you can reach the balcony.

On this floor there is a medical center and rehab. These two departments are divided on different sides of the floor plan and are accessible from the main staircase or the elevators and second staircase. Waiting rooms are expanded on the balcony and it creates a welcoming and light space for patients.

For detail of the doors below: Since the examination rooms are in the middle of the floors therefore have no direct sunlight, the glass partition next to the doors allows indirect daylight to come into the rooms. Glass is sandblasted due to privacy.

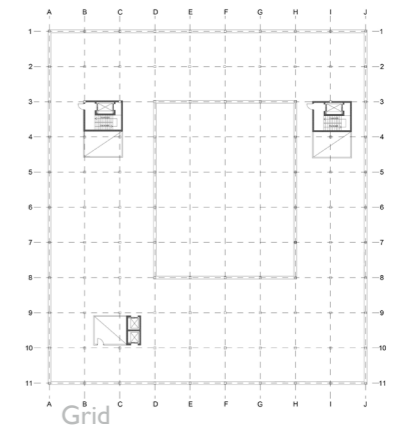


C-C

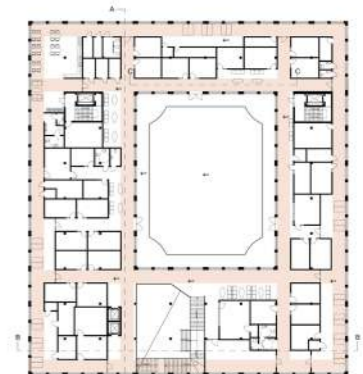
medical care			
no.	room	x	sqm
3	medicine storage	1	12
4	sterile storage	1	12
6	disinfection room	1	12.4
7	examine rooms	16	11.5
8	phone hut	1	2
9	sampling	2	9
10	storage	1	11.5
11	analyzing	1	16
13	toilet staff	1	13.3
14	kitchen	1	55.5
21	storage	1	8.3
21a	storage	1	5.8
21b	storage	1	6
22	cleaning	1	3
23	toilet staff	2	2
new brief sqm			391
old brief sqm			792

rehab			
no.	room	x	sqm
8	phone hut	1	2
24	sterile storage	1	6.6
25	disinfection room	1	13
26	examine rooms	6	11.5
27	gym	1	17
28	storage	1	12
30	conference	1	41
31	exercise kitchen	1	23.4
31a	storage	1	2
new brief sqm			280
old brief sqm			359

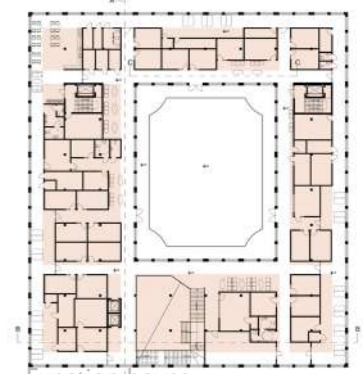
common space			
no.	room	x	sqm
1	communication for patients and waiting rooms	1	455
2	communication for staff and offices	1	346
5	technical space	1	18
5a	elevators	2	3
12	toilet sampling	1	9
15	technical space	2	19.1
16	staircase	2	20
17	telecommunication room	3	5
18	waste	1	3.5
19	clothes shaft	1	3.5
20	copying room	1	7.2
29	public toilet	1	11



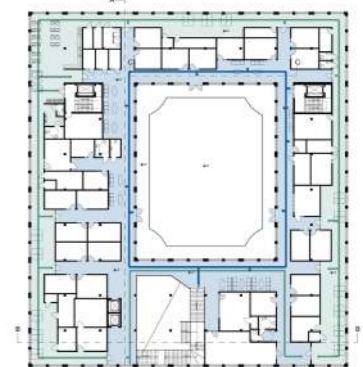
Grid



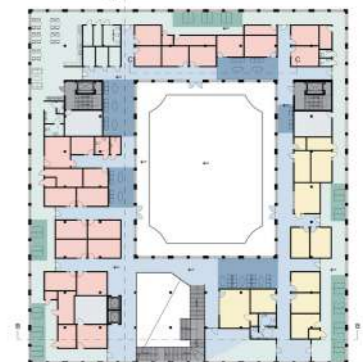
Sightlines



Function boxes



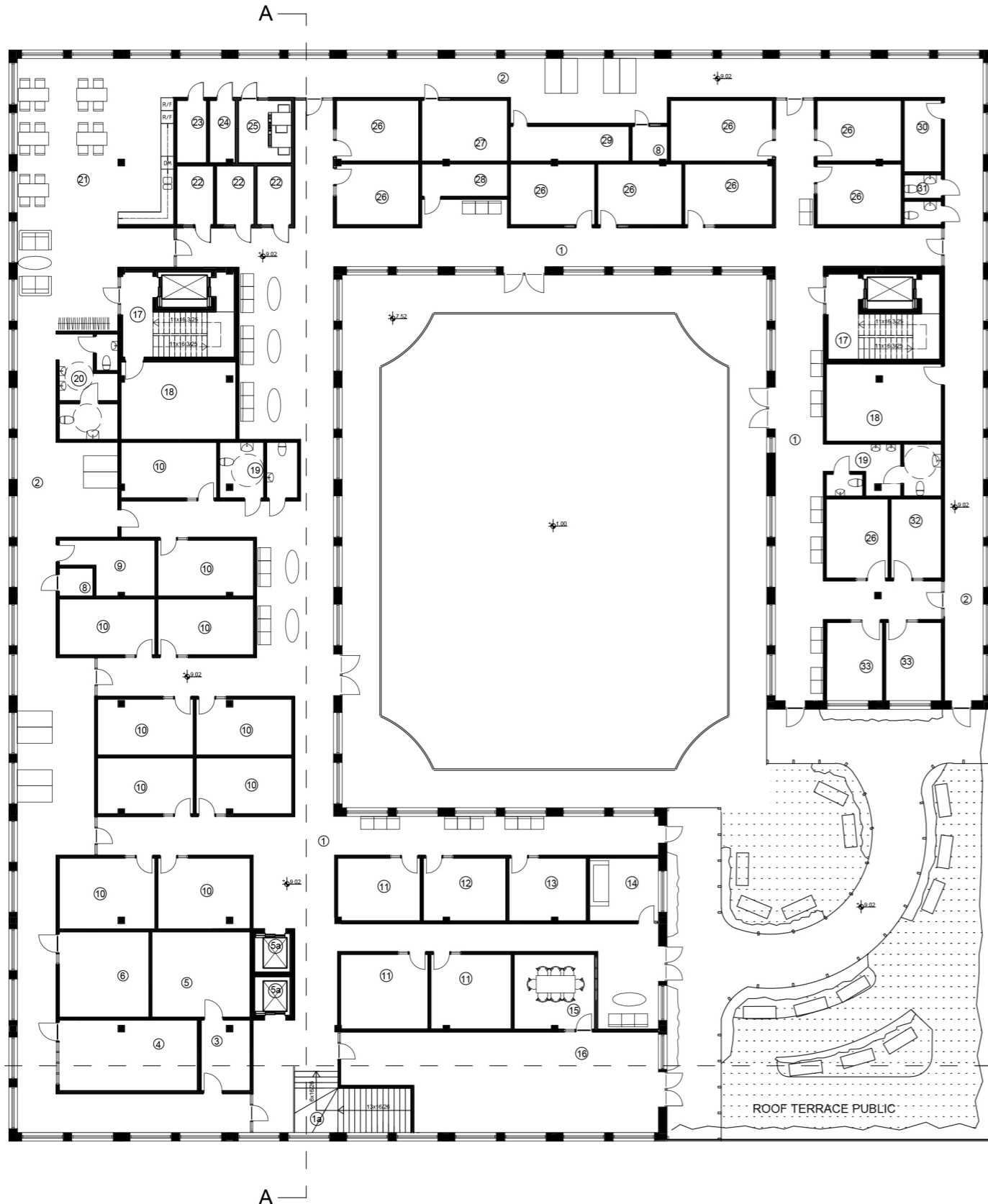
Staff flow (green) & patient flows



Departments

FLOOR PLANS. THIRD FLOOR

scale 1:250

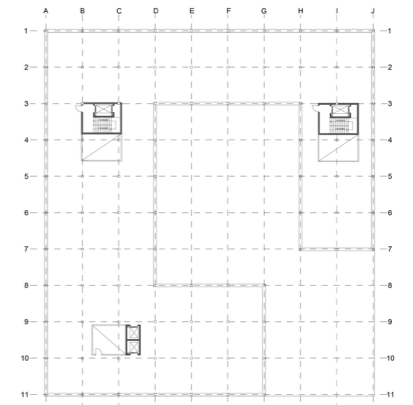


The third floor is a place for dental care and women's health. Like on the first floor departments are separated on each side and are accessible from the main staircase or the elevators and second staircase. There is also one public function on this floor. Health library is on the south side of the building and it is accessible from the main staircase that is connected only to the ground floor so that the public doesn't go through the hospital in order to reach the health library. This floor has a roof access as part of the health promotion. This roof can also be accessed from the health library. Also in this floor you have the balcony access from around the patients corridor.

dental care			
no.	room	x	sqm
3	storage	1	7.5
4	lab	1	21
6	disinfection room	1	16.4
7	examine rooms	9	11.5
8	phone hut	2	2
9	storage	1	9
10	treatment A	1	11.5
11	treatment B	3	13
12	photo	1	11.1
13	panoramic x-ray	1	10.5
20	toilet staff	1	13.3
new brief sqm			247
old brief sqm			527

womens health			
no.	room	x	sqm
15	chat room	1	13
26	examine room	9	11.5
27	disinfection room	1	11.2
28	cleaning	1	6
29	storage sterile	1	9
30	storage	1	5.8
31	toilet staff	2	2
32	sampling room	1	8.6
33	therapy room	2	9.7
new brief sqm			181
old brief sqm			301

common space			
no.	room	x	sqm
1	communication for patients and waiting rooms	1	355
2	communication for staff and offices	1	271
5	technical space	1	18
5a	elevators	2	3
14	rest space	1	9.3
16	health library	1	61
17	staircase	2	20
18	technical space	2	19.1
19	toilet	2	9.4
21	kitchen	1	55.5
22	telecommunication rooms	3	5
23	waste	1	3.5
24	clothes shaft	1	3.5
25	copying room	1	7.2



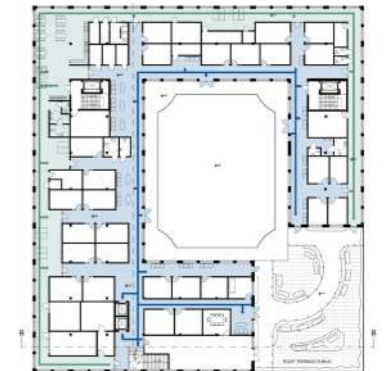
Grid



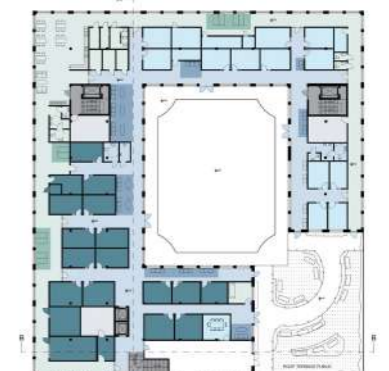
Sightlines



Function boxes



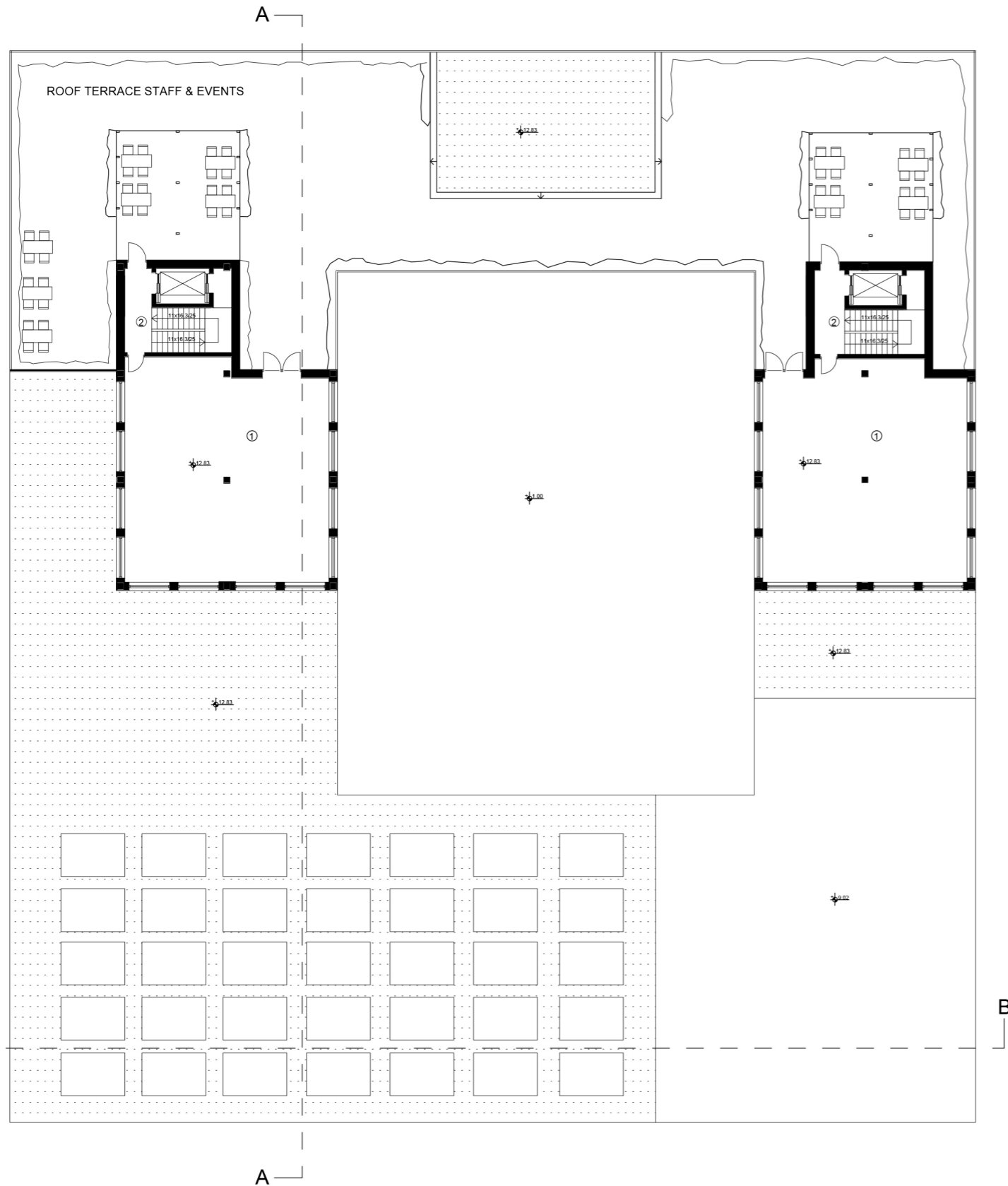
Staff flow (green) & patient flows



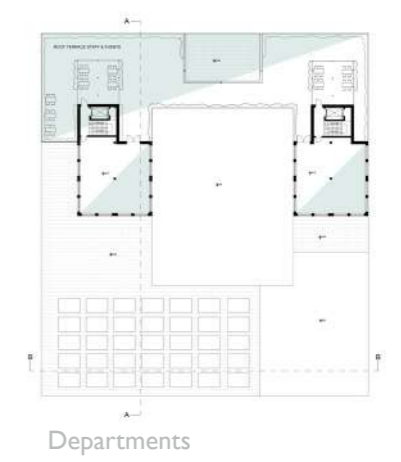
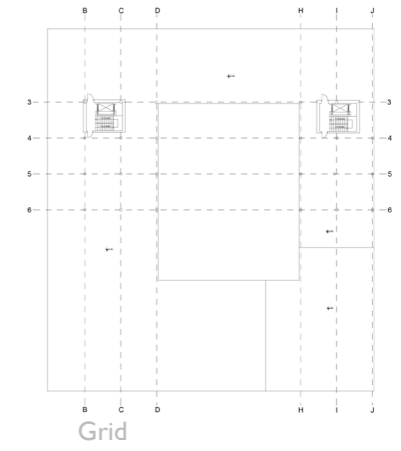
Departments

FLOOR PLANS. FOURTH FLOOR

scale 1:250



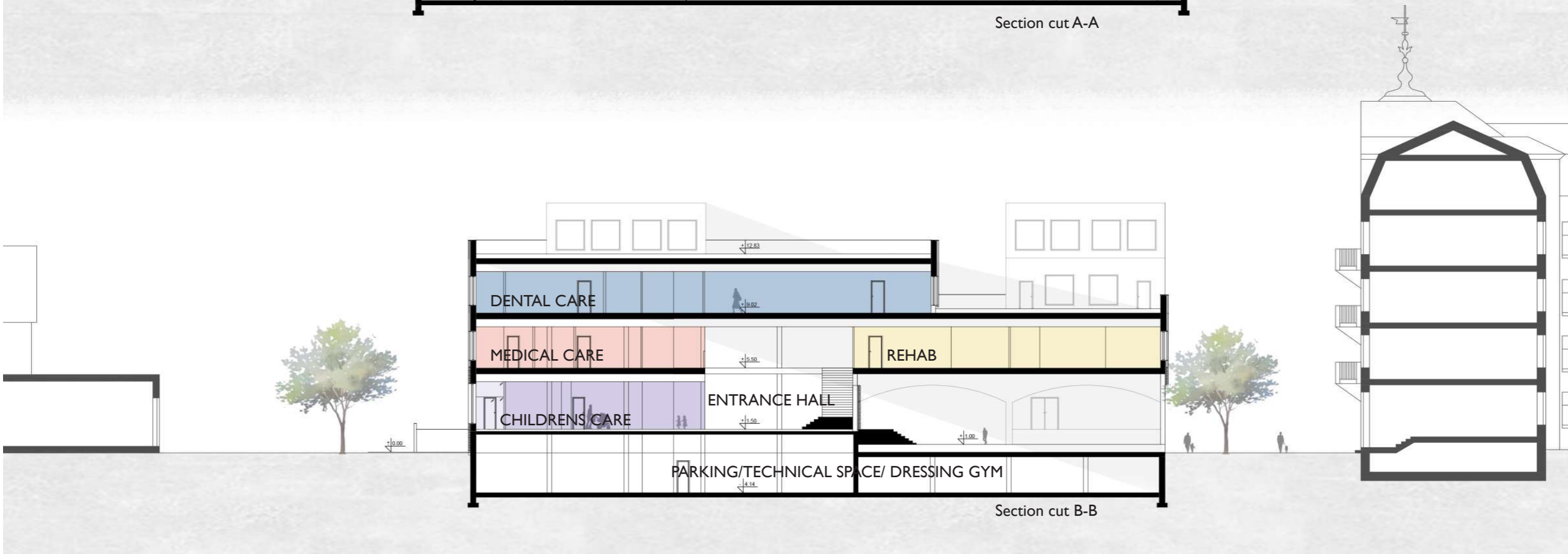
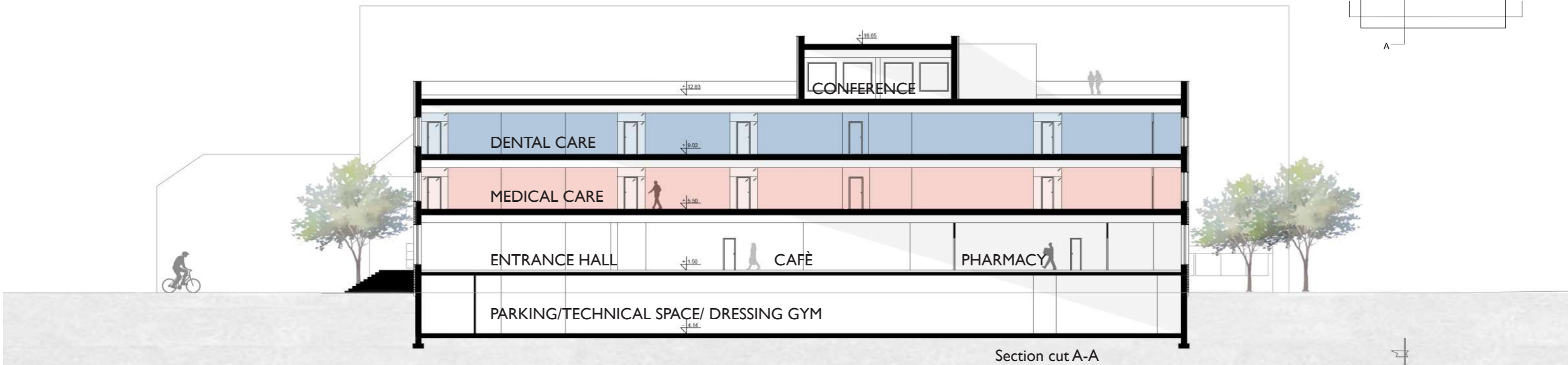
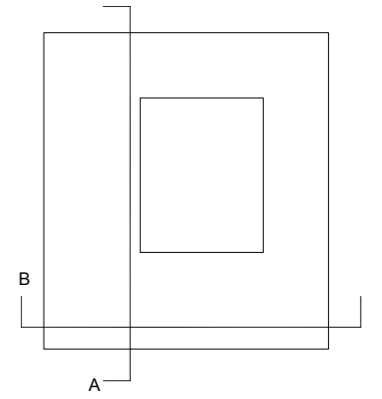
Two conference rooms are positioned on the roof that can also hold events for the public. The conference room on the west side is accessible from the staff staircase and elevator. This conference is mostly used by staff and their conference. Staff can also access the roof without going through the conference room and enjoy the view of the city, harbour and park. The conference space on the east side of the building is accessible from the public staircase and elevator.



common space			
no.	room	x	sqm
1	conference room	2	97
2	staircase	2	20

SECTIONS

scale 1:250



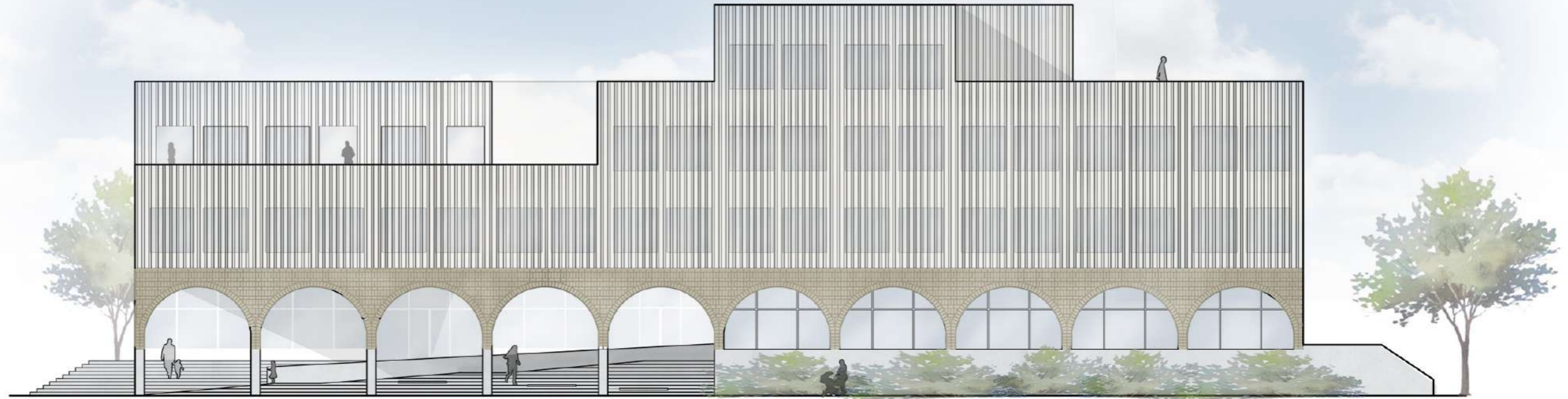
MAIN ENTRANCE

View walking down the stairs from third floor. The stair leading to the third floor (the one to the left) is a neutral communication leading to the health library and public roof terrace. Wood is used as the main material in the interior to create a warm and calming feeling.



FACADES

Eastern facades
scale 1:200



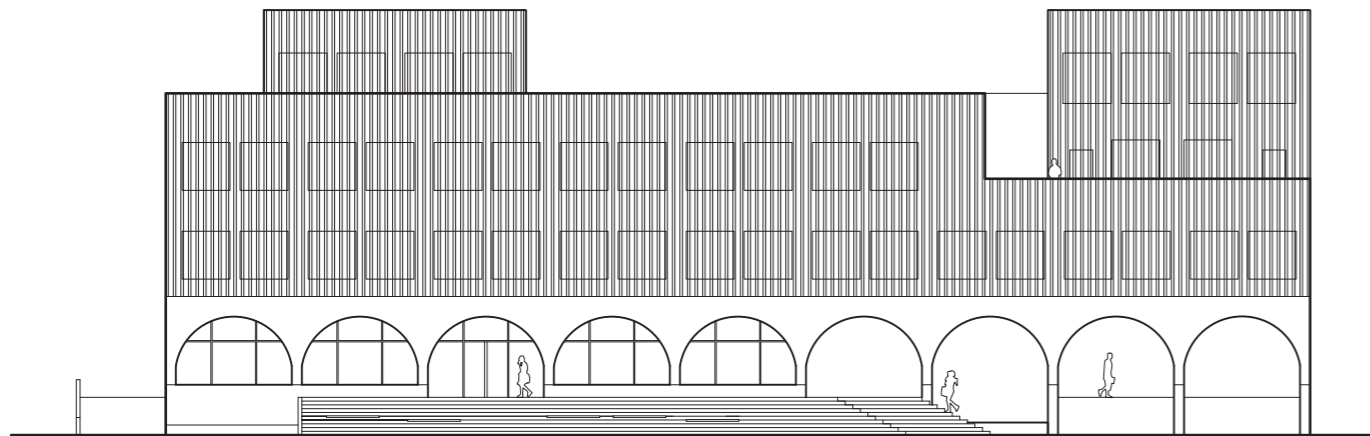
Eastern facade, along main axis



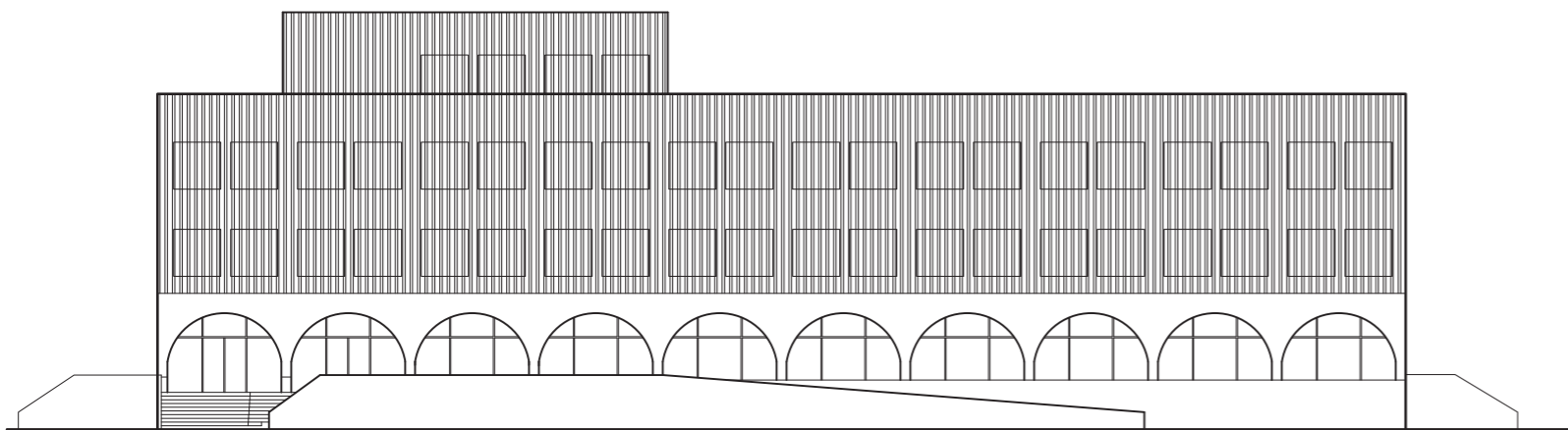
Eastern facade in the courtyard
with main entrance in the left inner corner.
Note that on the inner facades some of the windows are
partially cleared from the raster in order to let in
more light to the waiting rooms.

FACADES, MATERIALS & REFERENCES

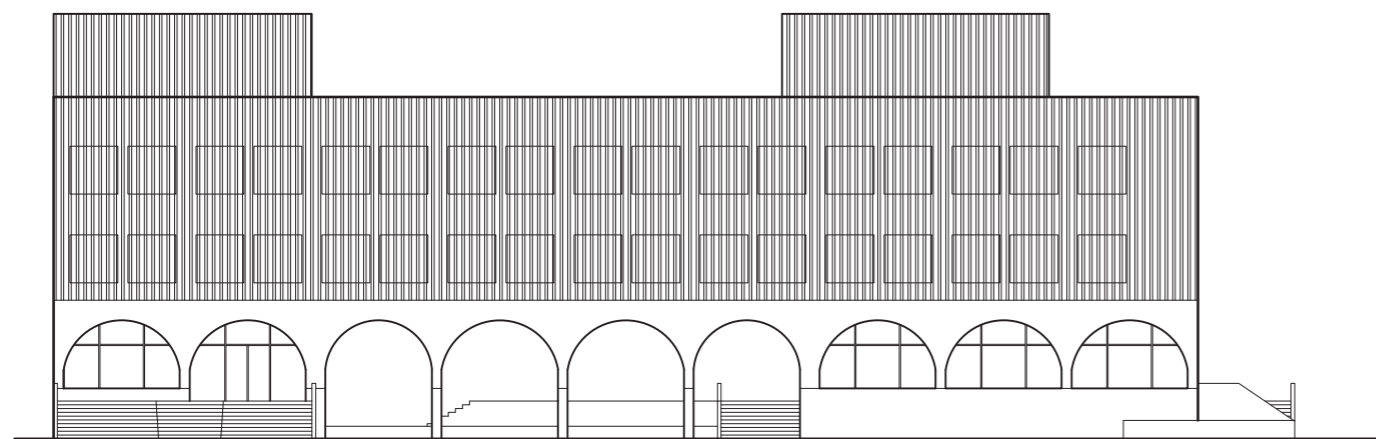
scale 1:300



South facade



West facade



North facade

The facades are divided into three parts with three different materials. The base is in granite stone and it goes from the ground up to 2m on the facade. The surrounding staircases and ramps are also in granite so this way the site volumes are integrated with the building. The granite is chosen partially because of the flooding problem.

The middle part is the arches, with a facade material of recycled brick. The brick could be brought from the building that is being demolished. Since the first floor has big openings

a strong material is needed as a statement which makes the brick material a good choice, The top part is wooden ribs. The floors have window openings that are totally covered with wooden ribs on the whole outer facade. These wooden ribs do not open so the window is opened on the inside of the building. The ribs give an interesting shadow display (see reference pictures below).



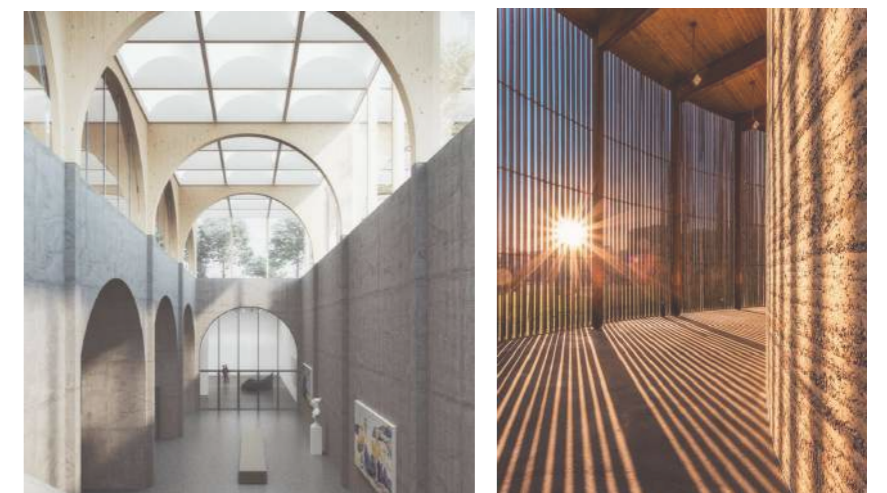
TOP.
Wooden ribs



ARCHES.
Reused light yellow bricks

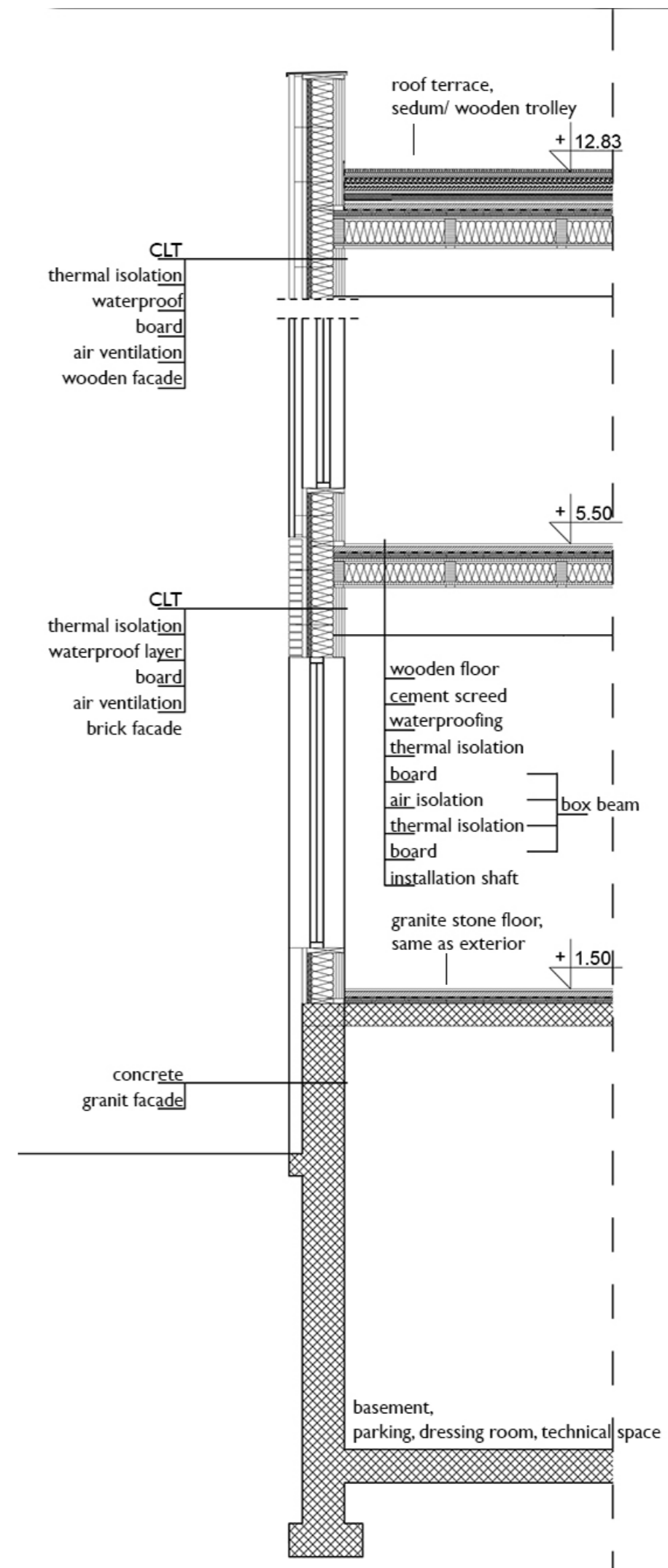
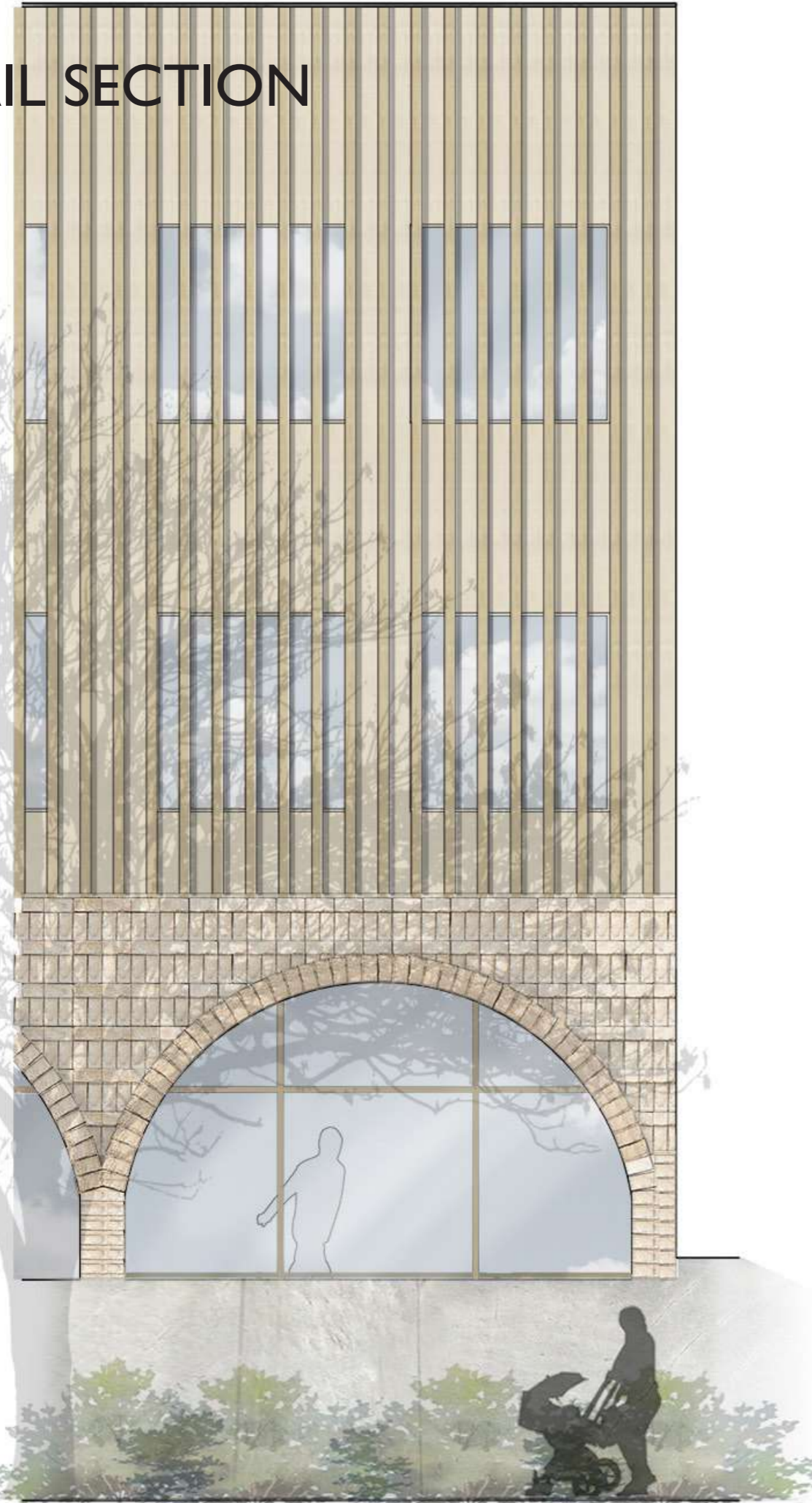


BASE.
Granite stone blocks



DETAIL SECTION

scale 1:50



The distribution of the bricks on the arches is drawn on the ground floor. Wooden construction is used in all parts except the basement where there is concrete.

