

Step Up

Wieselgrensplatsen Community Hospital Report

Group 5

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ARK 263 Future visions for healthcare, housing and work: Healthcare Architecture



CHALMERS
UNIVERSITY OF TECHNOLOGY

Introduction

The task

The task for the Healthcare Architecture studio in the fall semester of 2021 was to design a proposal for a Närsjukhus/community hospital located in Gothenburg. With a requested programme of 18,000 sq.m the new hospital will mostly provide primary care, along with some specialist units, day surgery and out-patient wards.

Some specific expectations from the municipality of Gothenburg for the proposal are that it should include a mobility hub with approx. 12,000 sqm, that has at least a minimum of 100 parking lots per floor, increase the proportion of greenery with a factor of 0.25, hold public functions and active frontages on the entrance floor preferably at the intersection of Wieselgrensplatsen.

A crucial aspect for this design has been the opportunity to create a landmark and the importance of the impact of this landmark on the city scape of Gothenburg and how it connects to the urban surrounding in regards to the aesthetics, volumes, color and material as well as physical connection; therefore, the public spaces and buildings must maintain a high architectural quality.

Goals and visions

The aim for this proposal has been to create a human centered environment for both the staff and patients, clear orientation and way finding in and outside the hospital, while articulating an effective connection between the hospital and the urban setting. Maintaining these visions has proven to be challenging and accompanied with sacrifices from one to the other due to different aspects and existing conditions along the way.

Keeping a human scale with the placement of the programme and large mobility hub on the proposed site of around 8,000 sq.m, has been a complex quest, however, the hope here is that this proposal has brought a new outlook to the task.

This booklet is the presentation on the work done for this proposal. The first part introduces the site and current conditions in detail, along with the design strategies that have had an essential role in shaping the concept and form of the building. In the second part, the project is presented on the scale of the master plan and gradually defined in detail using drawings and illustrations.

The site

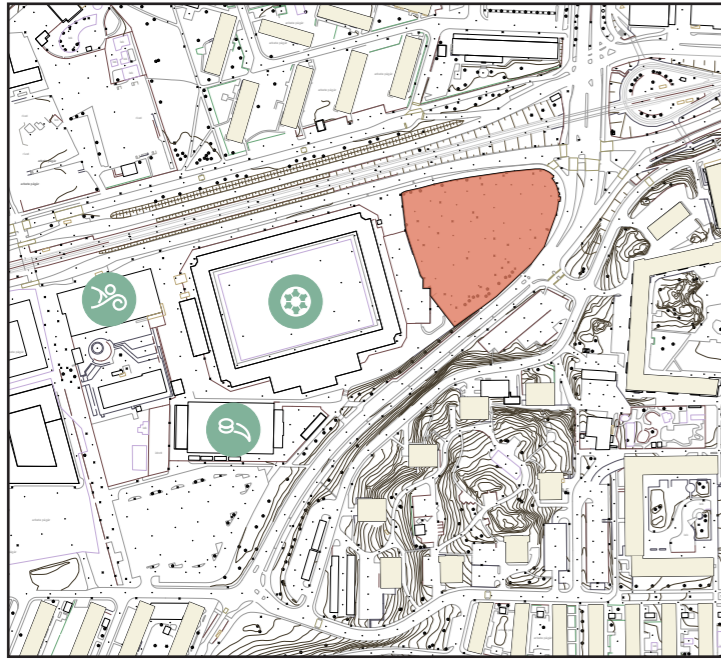
The site is located in Gothenburg on the Island Hisingen. The immediate streets adjacent to the site are Inlandsgatan, Wieselgrensplatsen and Hjalmar Brantingsgatan. Currently the area has a mix of different types of housing from residential blocks to villas, aging back to 1930s. In the detail plan of the city of Gothenburg this areas has deemed to be a strength area, with a future where Hjalmar Brantingsgatan is a busy and lively city street and Inlandsgatan has buildings on both sides of the street. The current hospital needs to be replaced by 2029 in this plan.

Source: 200813 Planeringsförutsättningar för detaljplan för verksamheter söder om Wieselgrensplatsen



Scale 1:50 000

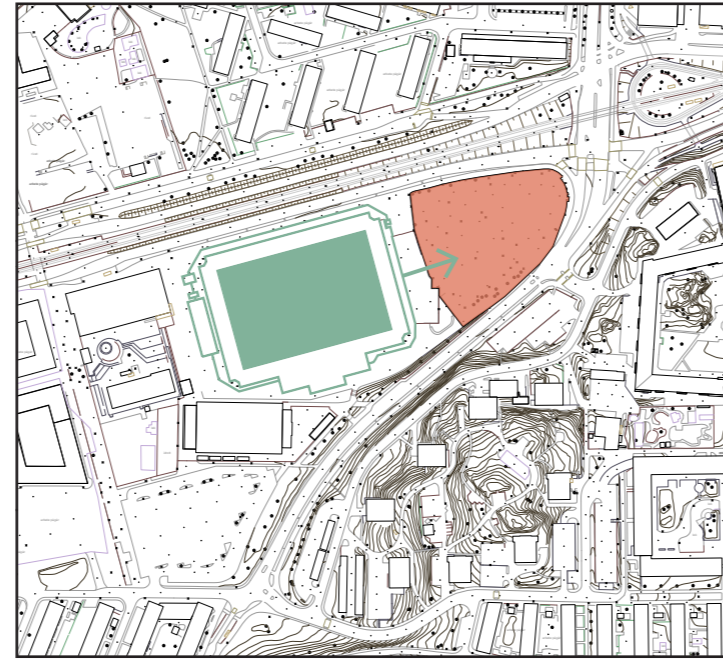
Site Analysis



Surrounding functions

- Plot
- Residentials
- Sport facilities

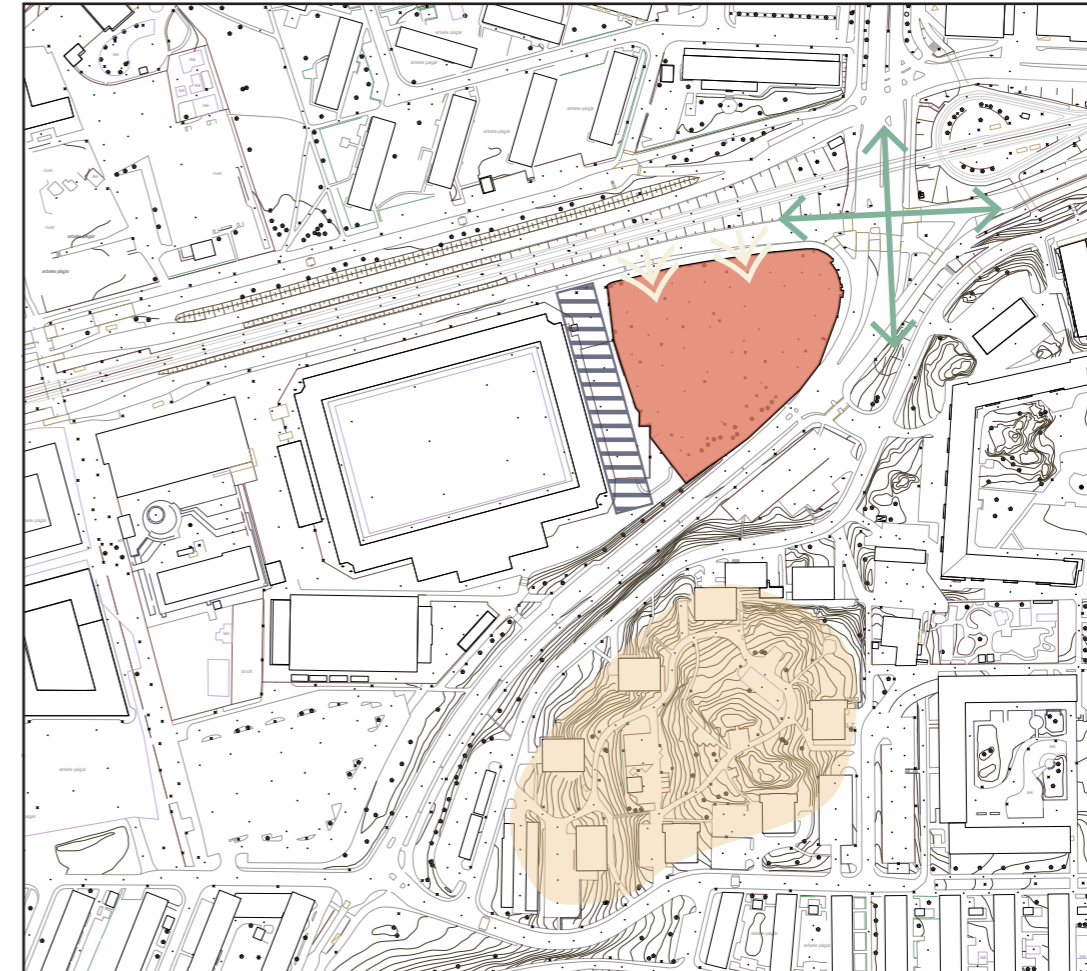
On the west side of the plot, an arena, a swimming pool and an ice rink are placed. Further away on the north and south, residential buildings sit along the streets.



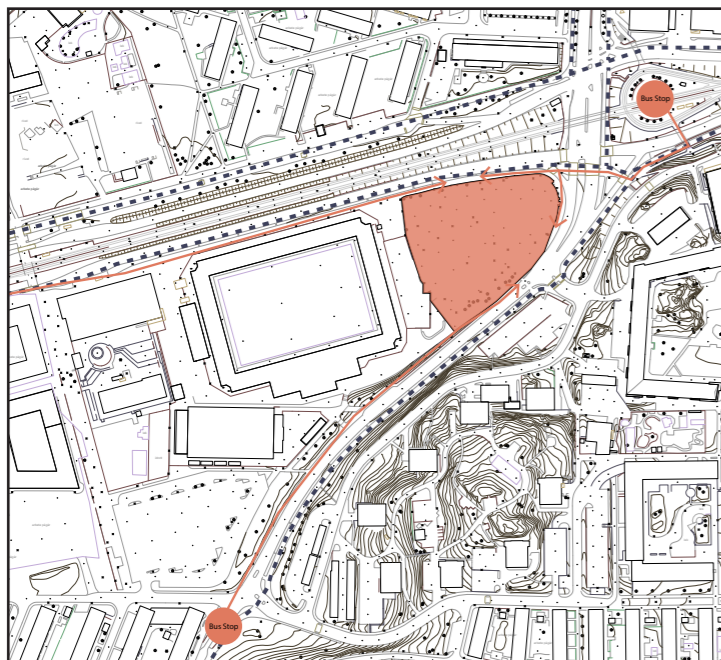
Effective buildings

- Plot
- Sport facilities

The site is open on the sides facing the street, and the residential buildings are placed further away, however the arena is the building that can be most effective on the expression of the building and how it is perceived.



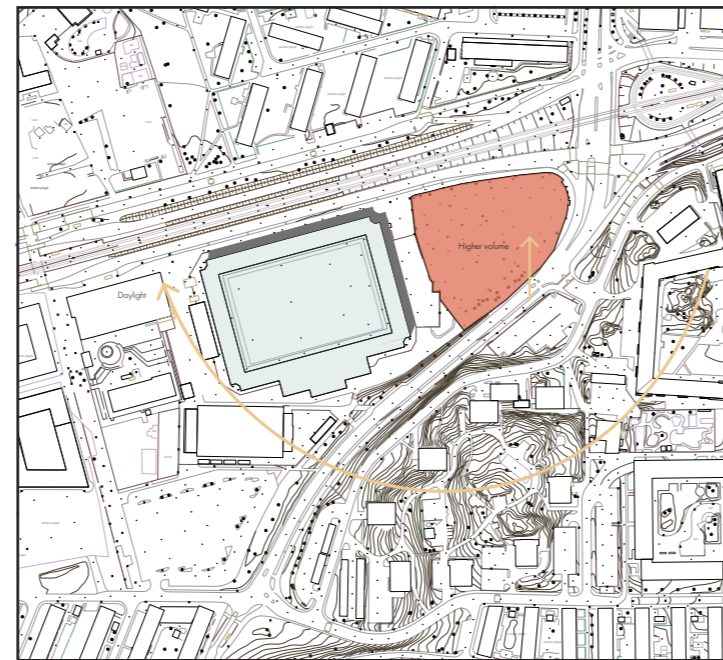
- Plot
- Strengths
- Weaknesses
- Opportunities
- Threats



Flow and traffic

- Plot
- Bikelines
- Pedestrians

The flows around the site go on the sides of the plot.



Sunlight and shadows

- Plot
- Sport facilities
- Sun path

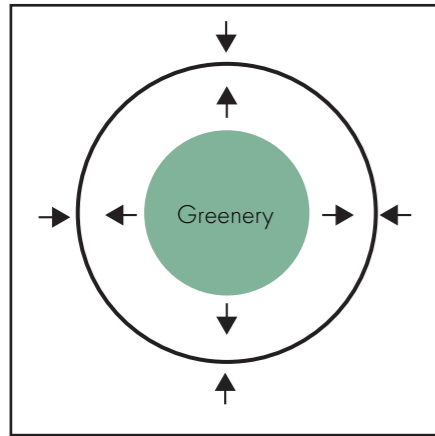
The site is quite open and no adjacent buildings will cast a shadow on the site.

<h3>S</h3> trengths <ul style="list-style-type: none"> The plot is placed in a conjunction that is visible from many directions. 	<h3>W</h3> eaknesses <ul style="list-style-type: none"> The lack of greenery in the area is a disadvantage in terms of views. The site is quite empty as it is and the existing fastfood restaurant is the only attraction for most people.
<h3>O</h3> pportunities <ul style="list-style-type: none"> The community hospital can increase social sustainability and engage the neighborhood. Having functions that are open during the weekend provides a more active area. 	<h3>T</h3> hreats <ul style="list-style-type: none"> The side towards the arena could become a dark and isolated backside.

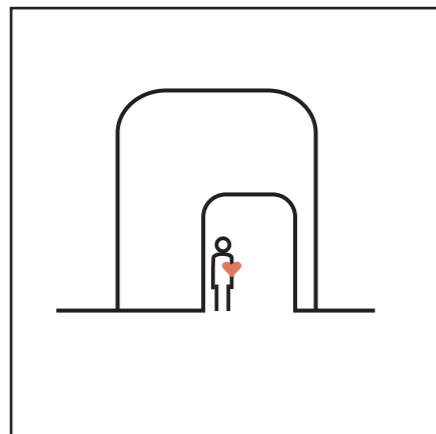
SWOT Analysis

Design Strategies

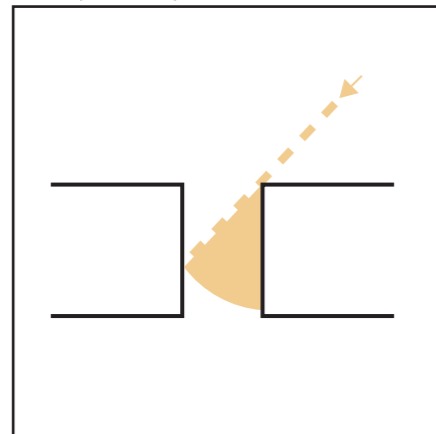
Health Promotion



Diverse levels of contact with greenery

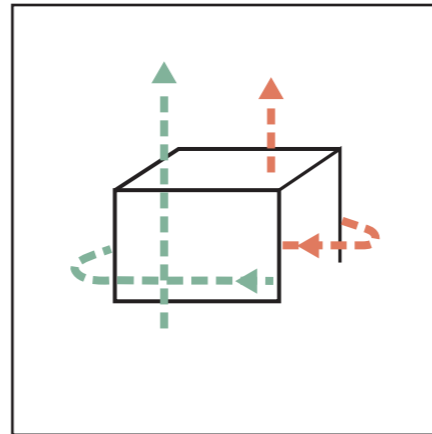


Providing sheltered nooks within open spaces for pause and privacy

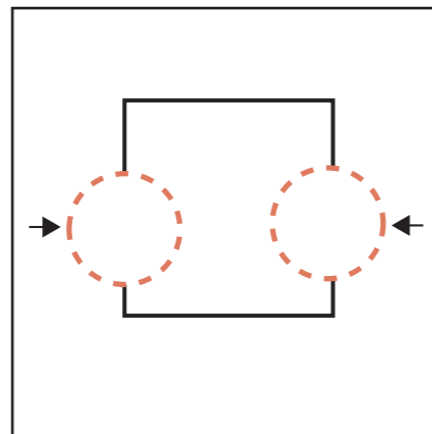


Bringing daylight in through glazed spaces

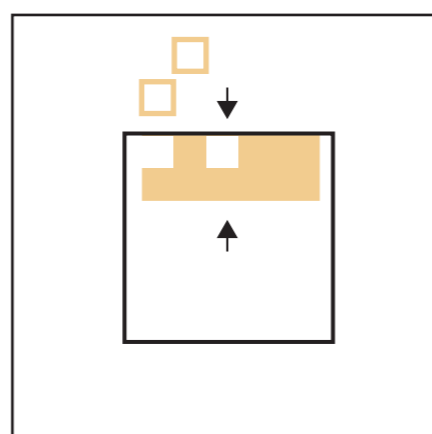
Brief & Logistics



Separating flows with different functions vertically and horizontally

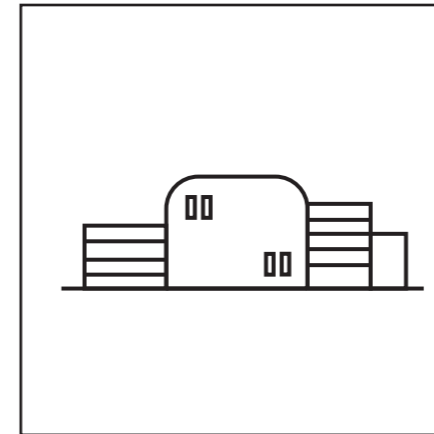


Welcoming and open entry points

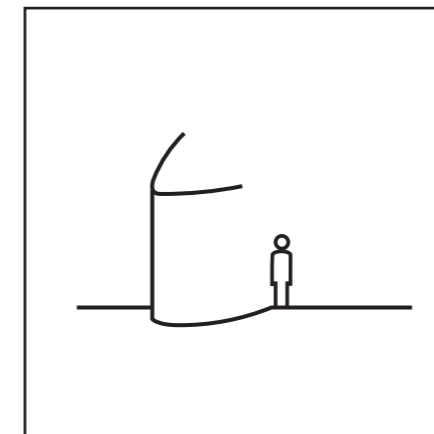


Including public functions for the neighborhood in the building

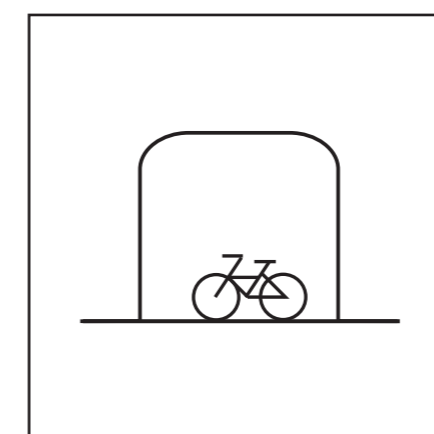
Site & Context



Contrast in material and form in comparison to the surrounding buildings

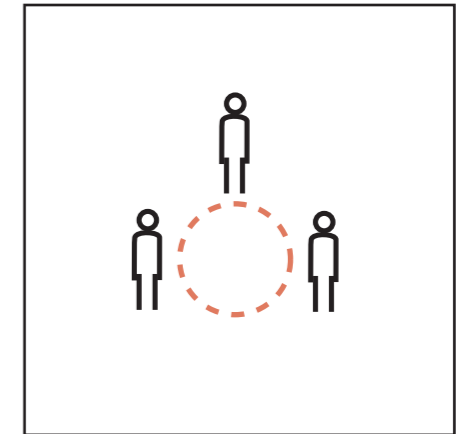


Round corners to soften the expression of the building on site

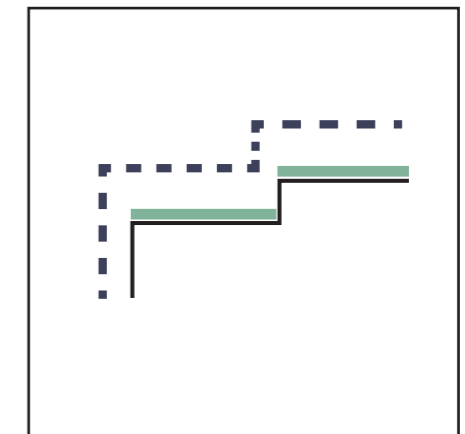


Encouraging use of bikes by providing safe and accessible spaces for them

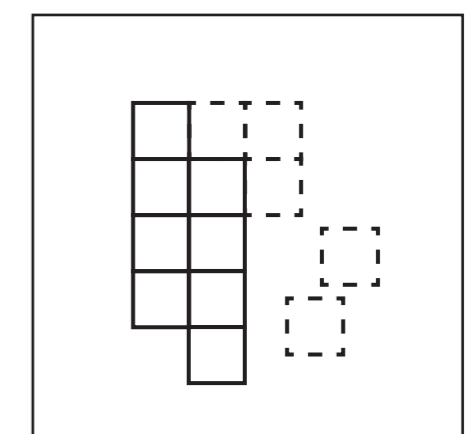
Sustainability & Future proofing



A social node in the area



Taking care of rainwater



General structural grid that caters to elasticity

Challenging the brief

Patient nodes and self guidance

In a node one flow changes to the other, where the patient is no longer on their own and will be guided.

The concept in this project is to reduce the patient nodes down to places where they are necessary, this way the resources and guidance can be dedicated to patients who need it more.

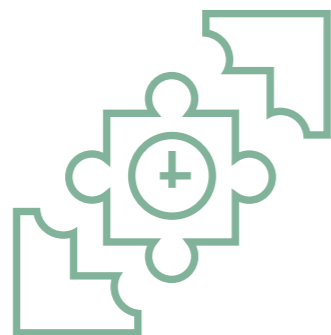
- The patients who are able can **wait in the public areas and waiting area**, until they are called into their appointments to the departments, where they will meet the staff.
- The **reception placed on sight in the entrance** should provide guidance for the patients who choose to get more directions.



Combined waiting areas

As a continuation on patient nodes and self guidance, the waiting areas that are divided in the brief between departments, will be reduced to smaller sitting spaces, and a larger main waiting area.

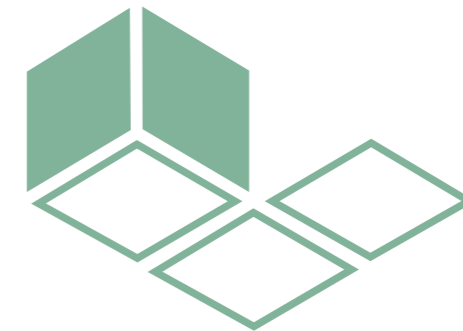
- The **main waiting area** will be on **the ground floor**. It should be an inclusive waiting space, suitable and attractive for diverse age groups such as elderly and children.
- It will also have **private and secluded spaces as well as open** spots with more opportunities to socialize.



Shared spaces in the administrative workplaces

By dividing staff and patient flows and spaces, it is possible to have more flexible and open workspaces within departments that can be shared by all staff.

- Administrative spaces can be **shared among departments**.
- This has reduced the number of the administrative areas to 2/3.
- In this proposal the administrative spaces that **are on the same floor** will share these spaces.



Increasing public spaces in the community hospital within the neighborhood

The community hospital can be an element that brings more social sustainability into the neighborhood, by including spaces in the building that are open to the public. Therefore, in this proposal 400 sq.m will be planned for a public cafe, restaurant and gym. These public facilities will be placed on the intersection.

Cafe and restaurant

The public cafe is **open to the hospital and the neighborhood**.

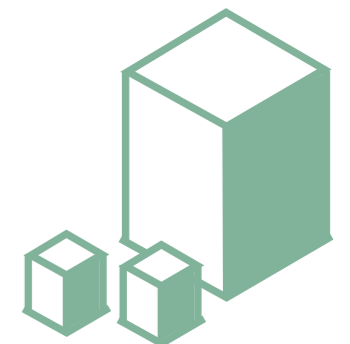
Patients and their relatives can also choose to wait in the cafe.

It can also be a **separate part of the hospital which is open during the weekend**.

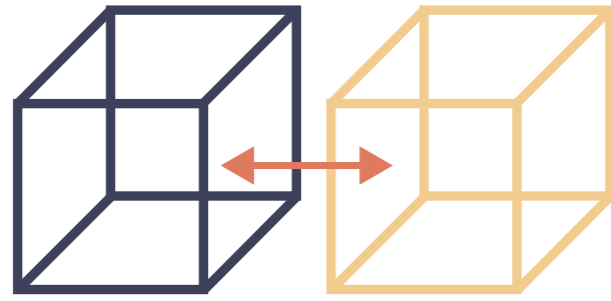
Gym

The public gym can be used in parallel for habilitation and rehab.

It can also be open during the weekend.

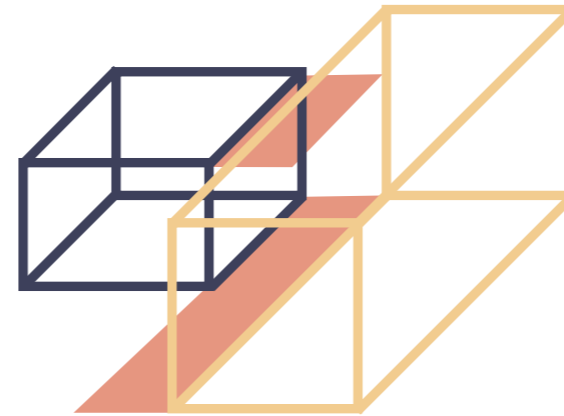


Design Concept



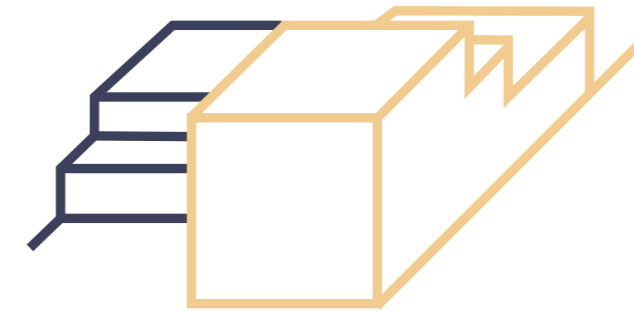
INTEGRATION

- The mobility hub is a visible part of the design.
- There is an integration between the mobility hub and the hospital, and together they form the expression of the design.



INBETWEEN SPACE

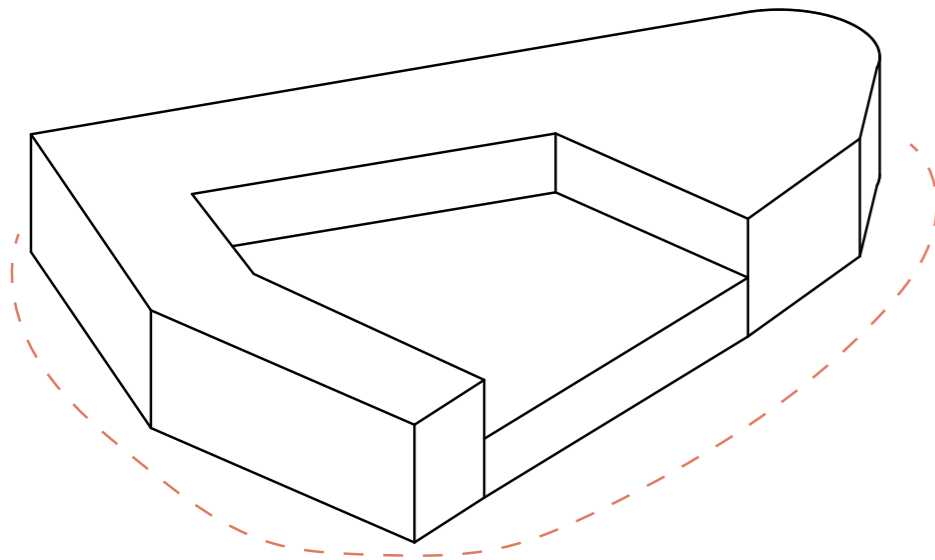
- The connecting edge between the volume of the mobility hub and the hospital is emphasized.
- A welcoming and inviting corridor brings the human scale in.



GRADUAL INCREASE

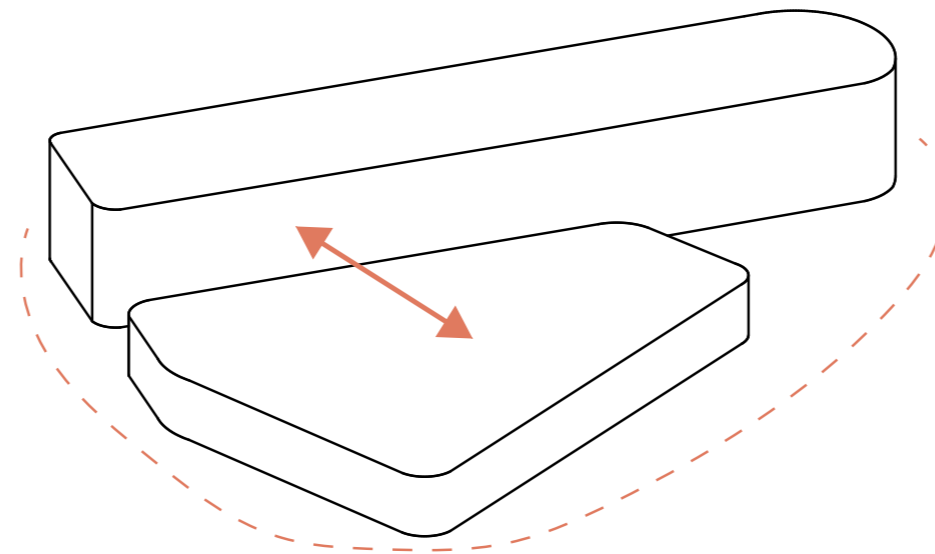
- A gradual transition from the lower mobility hub up to the highest point of the hospital.
- Creates views for the hospital
- Makes connection with the neighborhood

Shaping the building



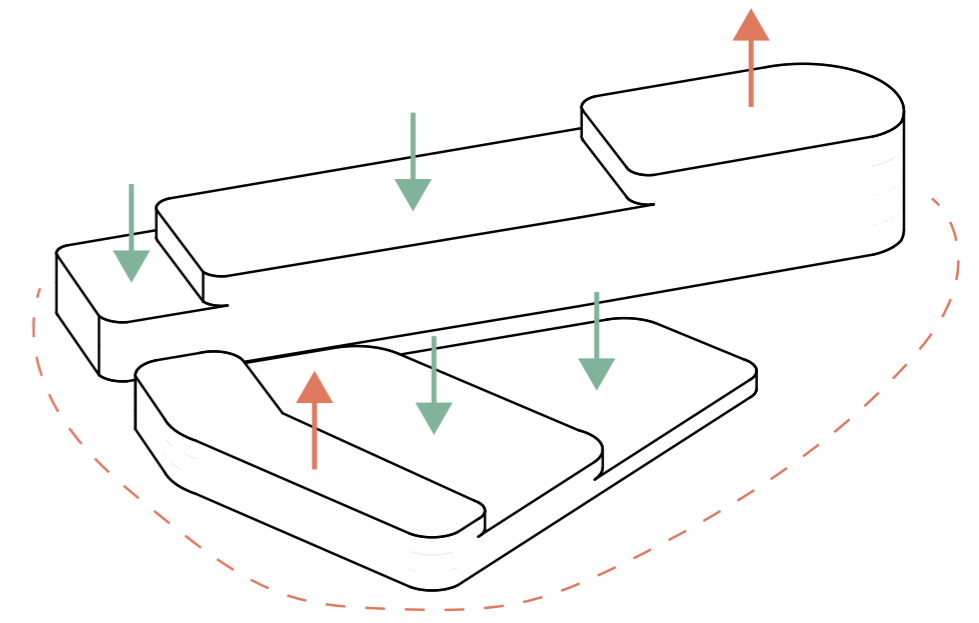
Filling the site

The shape of the building is formed under the influence of the conditions on site and demands of the site on the hospital and on a large extent from the mobility hub. This exterior to interior approach ensures that the program is placed accordingly on the plot.



Separation of volumes

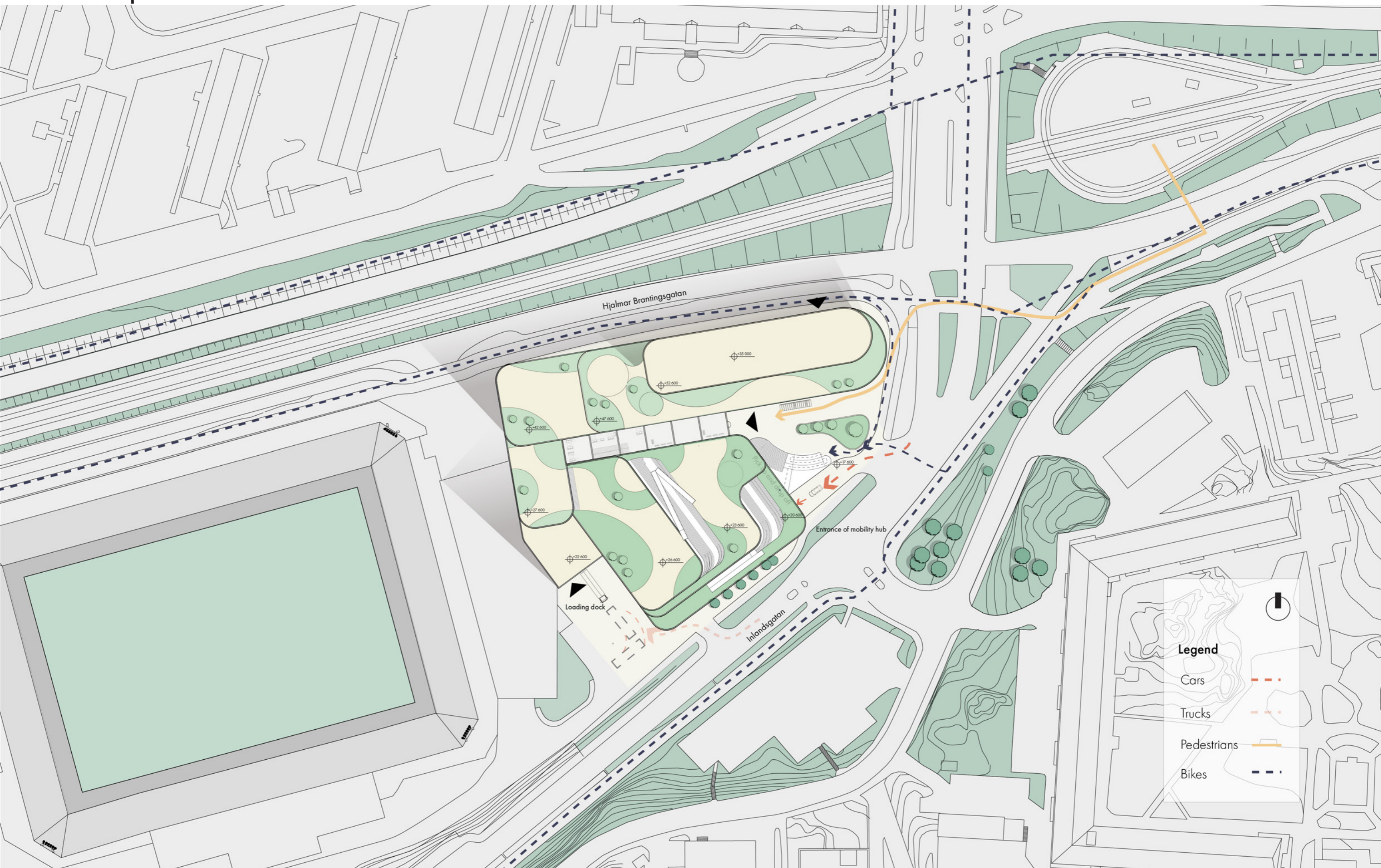
On the next step the volume of the mobility hub and the hospital are divided into two forms. This opens up the volume and adds a plaza on the front before the entrance, adding more space for movement and flow. It also brings more daylight to the lower floors.



Adding steps

The added steps on both of the volumes soften the expression of the building on site and it creates a gradual transition from the lower mobility hub up to the highest point of the hospital, which adds visual connection to the urban setting.

Site plan Sc: 1:1000



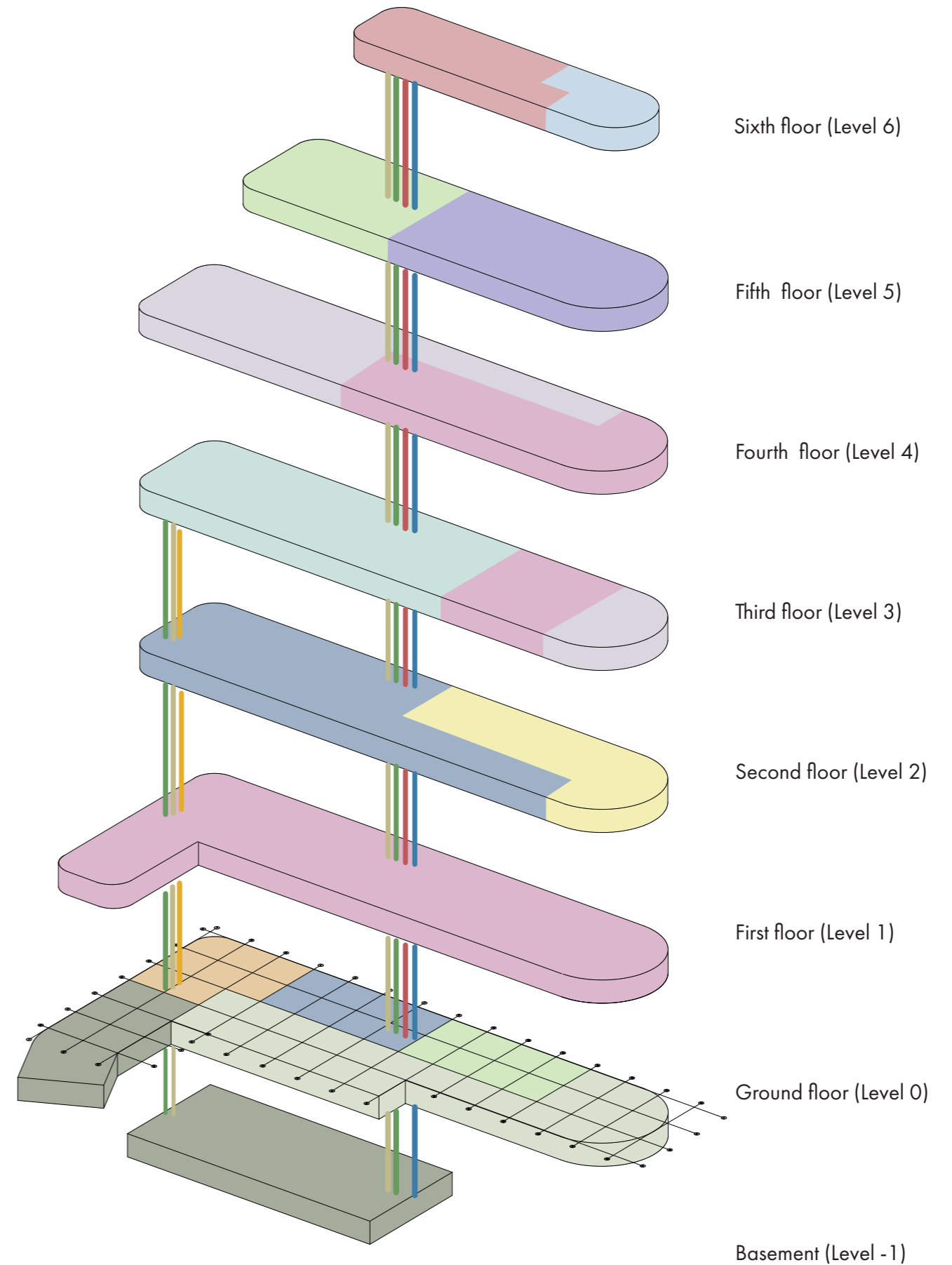
The programme

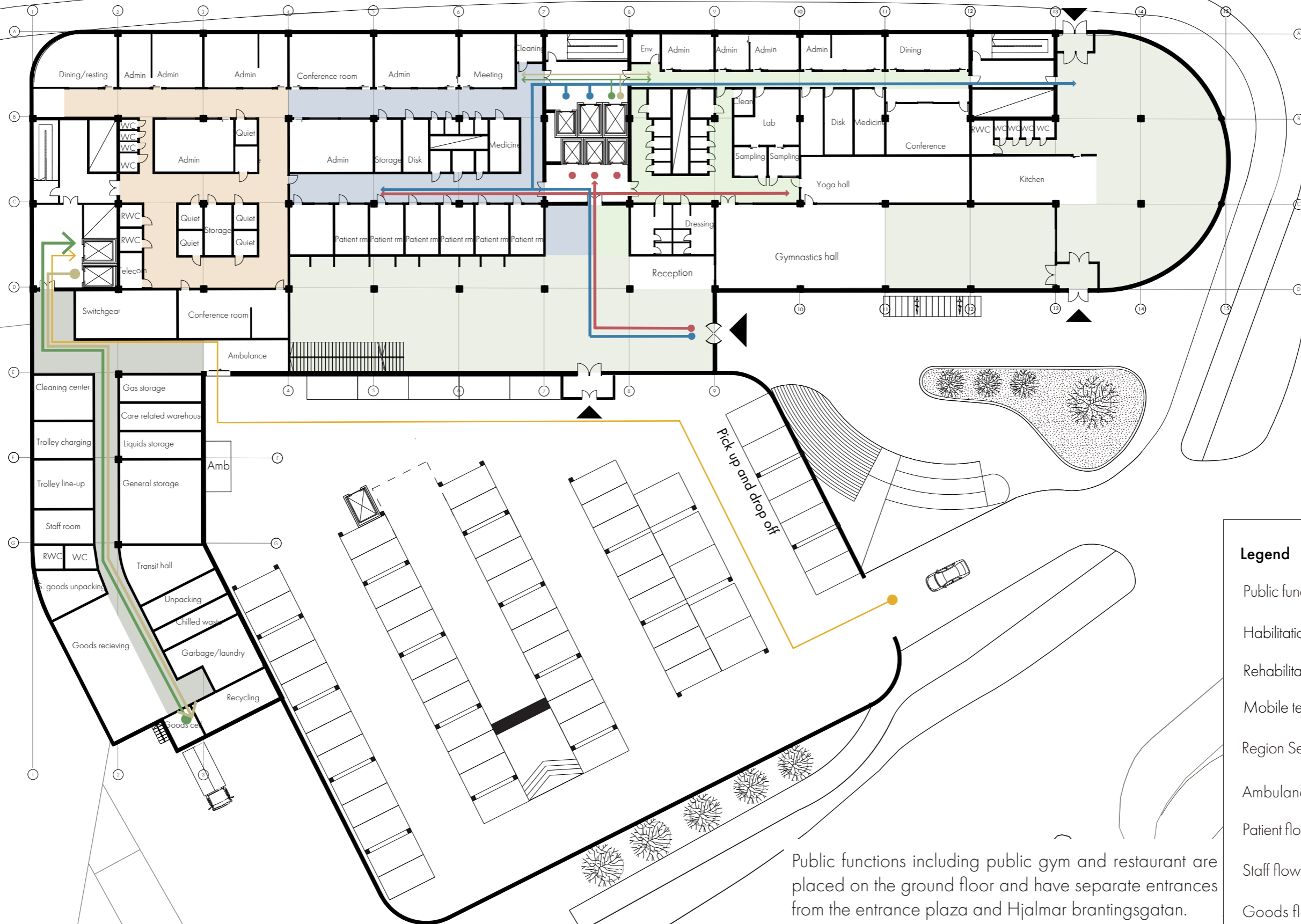
The main changes in the programme have been the addition of the waiting hall and public areas on the ground floor, and reduction of administration spaces by sharing administrative rooms between departments on the same floors. In the program the BTA is estimated at around 18 000 sq.m, our proposal has a total BTA of 20 083 sq.m. We get a larger BTA due to our large common waiting hall and the use of separate flows. The large waiting hall adds great value to our proposal and the site in general.

Department/function	Previous	Current
BUP	652	700
Regionshälsan	490	411
Dentist	918	980
Imaging	1125	1264
Specialist clinics-dialysis	1078	1215
Technical rooms	1801	1801
Specialist clinics-endoscopy	486	635
Day Surgery	1753	1889
Sampling	844	1028
Primary care	1811	1861
Specialist clinics	3058	3300
Habilitation and health	855	770
Rehab	747	666
Mobile team	716	630
Entrances, Public functions	283	1123
Region service	814	1233
Dressing room	559	550
Ambulance	27	27

Total BTA: 20 083 sq.m

- Ambulance
- Patient flow
- Staff flow
- Goods flow
- Returns and waste flow



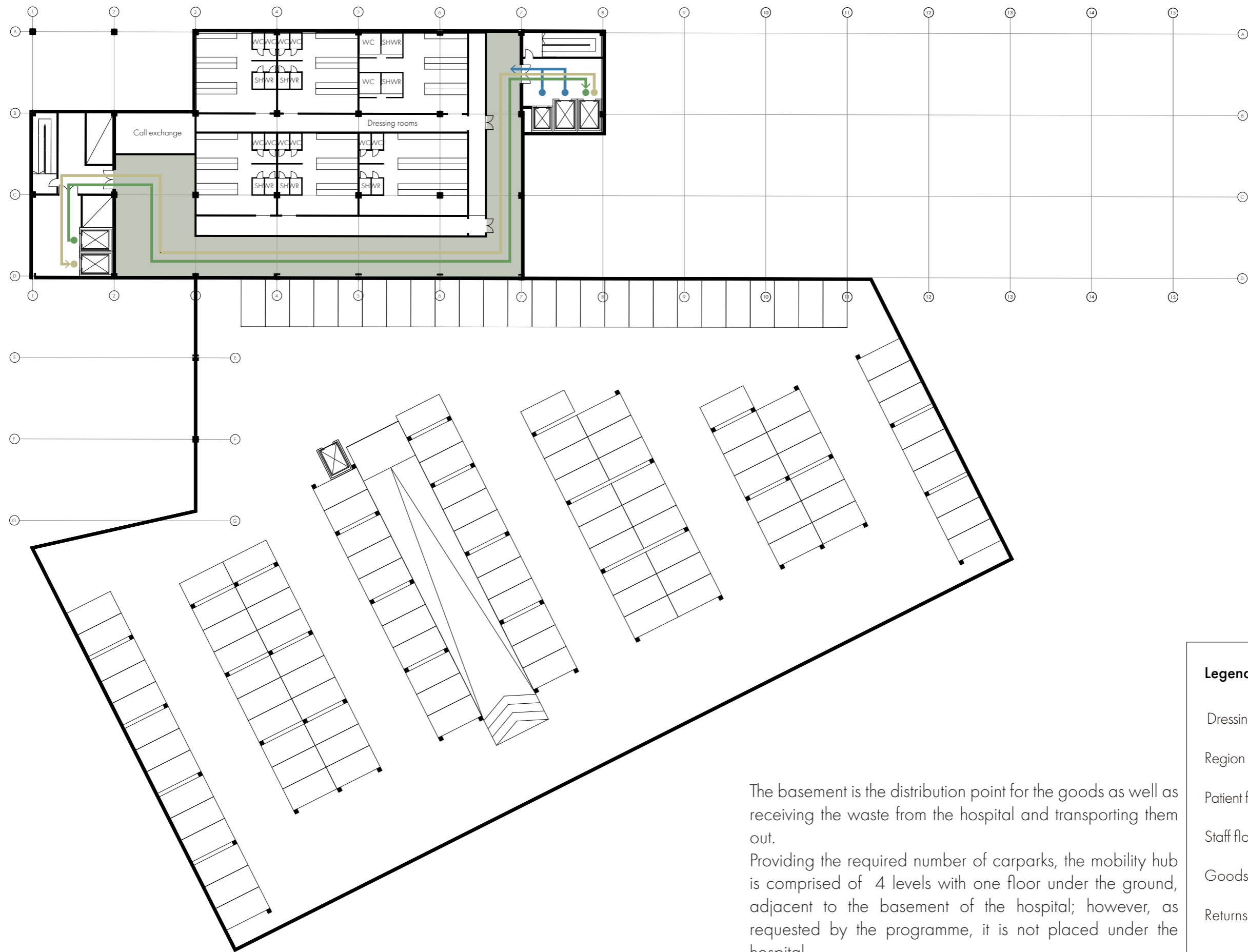


Legend

- Public functions
- Habitation
- Rehabilitation
- Mobile team
- Region Services
- Ambulance →
- Patient flow →
- Staff flow →
- Goods flow →
- Returns & waste flow →

Public functions including public gym and restaurant are placed on the ground floor and have separate entrances from the entrance plaza and Hjalmar brantingsgatan. The main entrance from the plaza opens up to the entrance hall and waiting area, and guides patients towards the elevators.

Basement (Level -1) Sc: 1:400

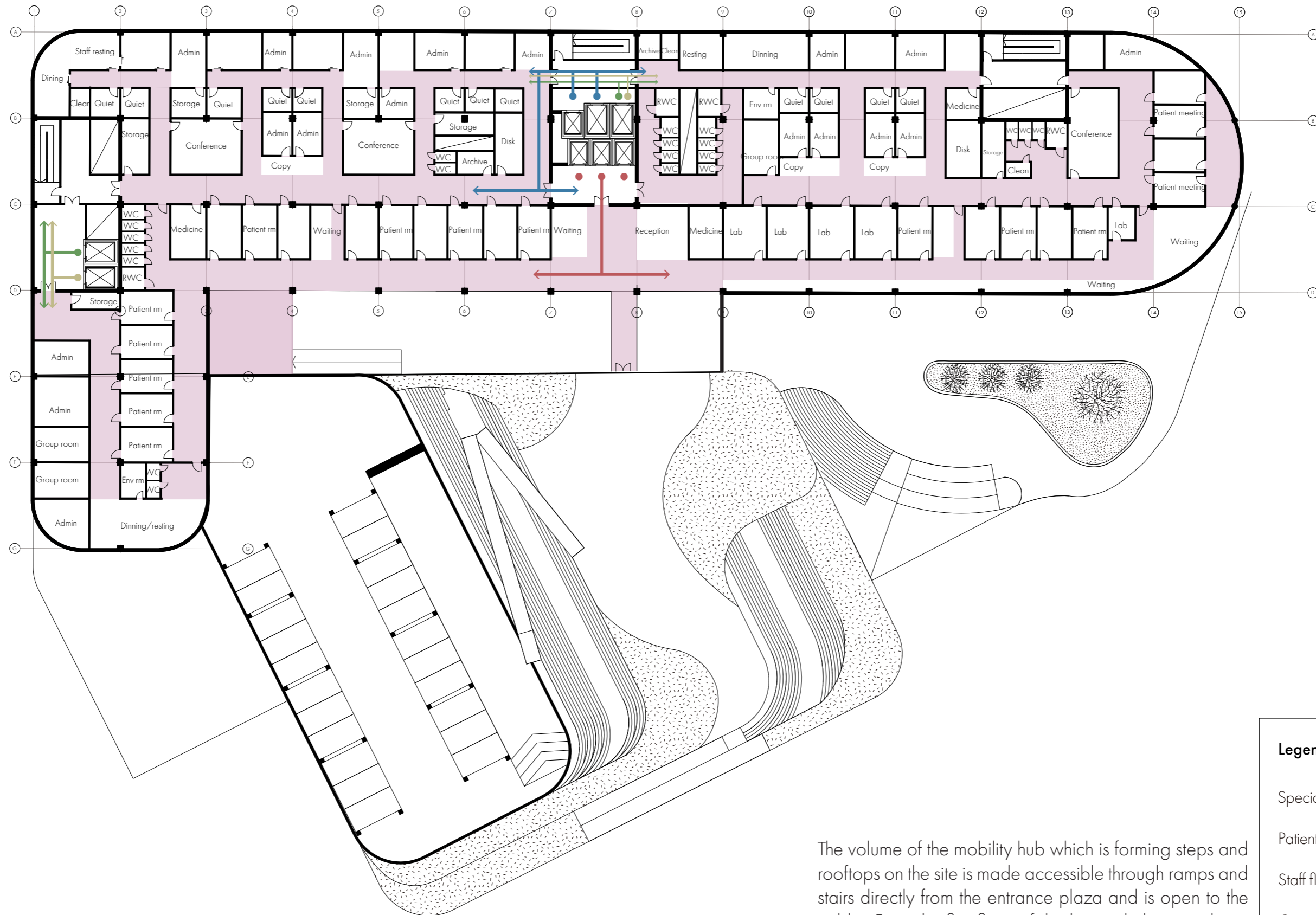


Legend

- Dressing rooms
- Region Services
- Patient flow
- Staff flow
- Goods flow
- Returns & waste flow

The basement is the distribution point for the goods as well as receiving the waste from the hospital and transporting them out. Providing the required number of carparks, the mobility hub is comprised of 4 levels with one floor under the ground, adjacent to the basement of the hospital; however, as requested by the programme, it is not placed under the hospital.

First floor (Level 1) Sc: 1:400

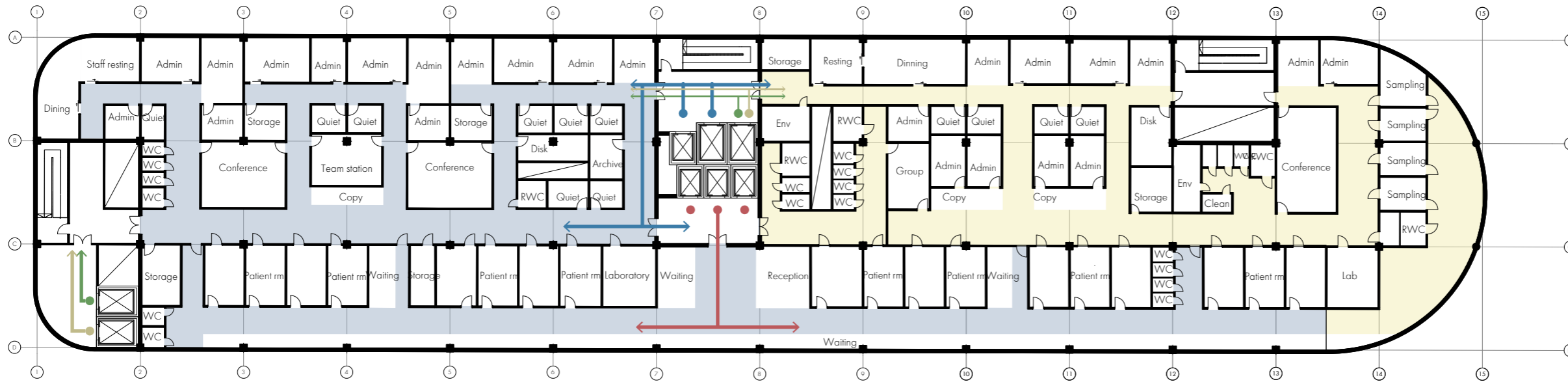


Legend

- Specialist clinics
- Patient flow
- Staff flow
- Goods flow
- Returns & waste flow

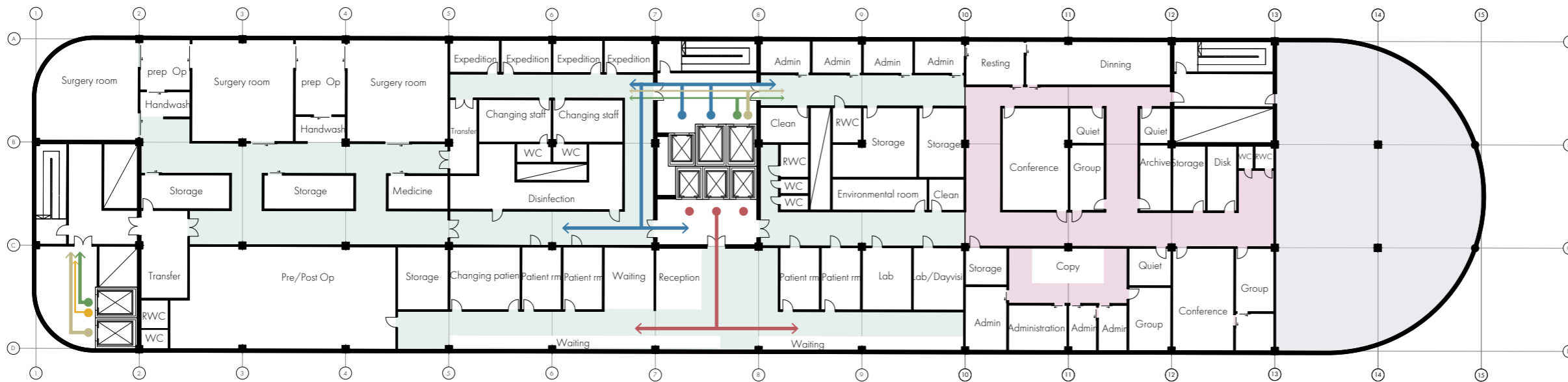
The volume of the mobility hub which is forming steps and rooftops on the site is made accessible through ramps and stairs directly from the entrance plaza and is open to the public. From the first floor of the hospital, there is also a direct connection with a bridge to the roof of the mobility hub. The stepped expression continues up from the mobility hub and extends to the volume of the hospital.

Second floor (Level2) Sc: 1:400



The main vertical connections for staff and patients take place in the central elevators. From there, the patients have access to the patient meeting rooms and sitting spaces along the facade with a view towards the rooftops.

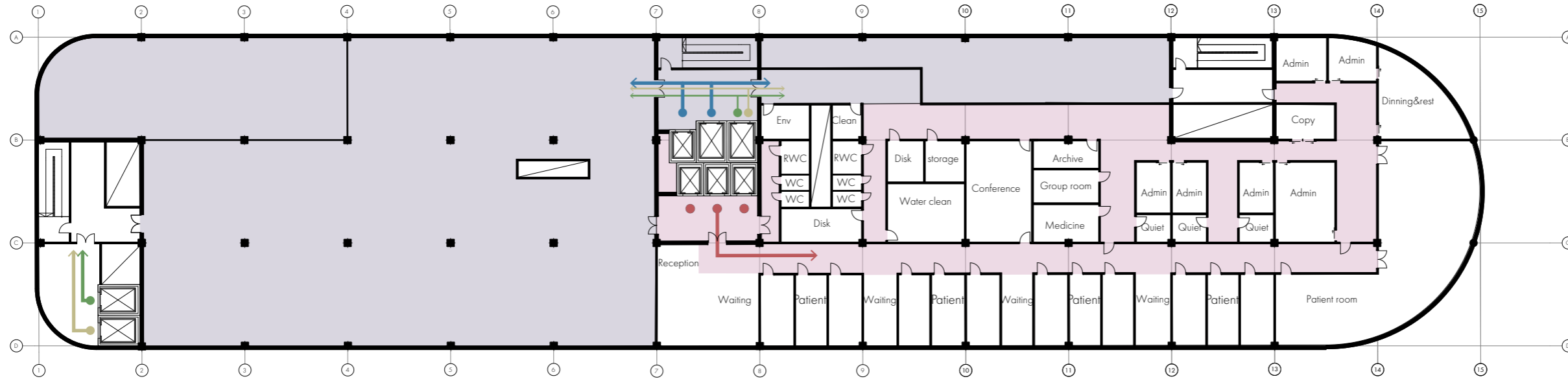
Third floor (Level3) Sc: 1:400



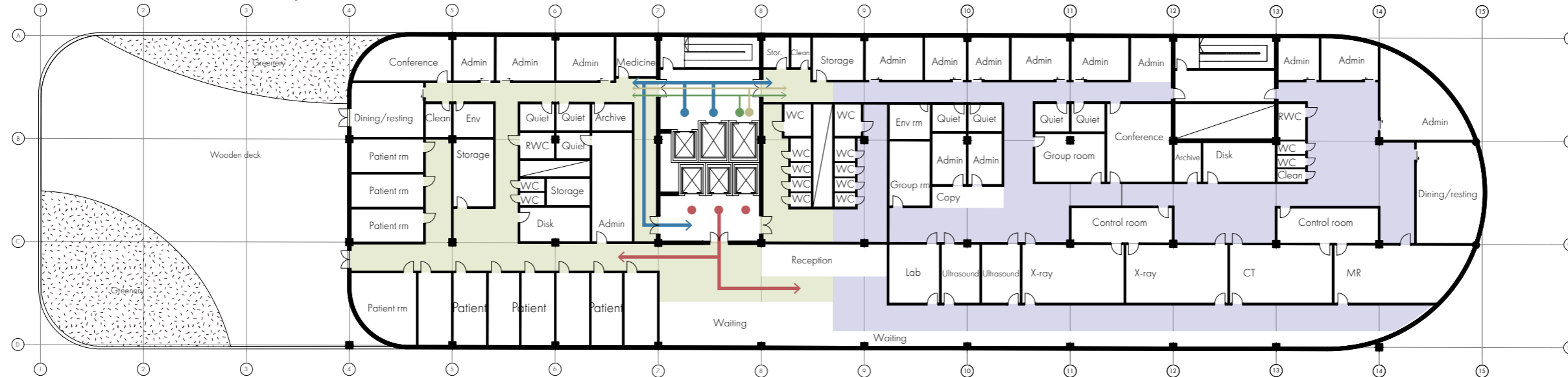
Legend

- Day surgery
- Sampling
- Primary care
- Specialist-Endoscopy
- Technical
- Ambulance →
- Patient flow →
- Staff flow →
- Goods flow →
- Returns & waste flow →

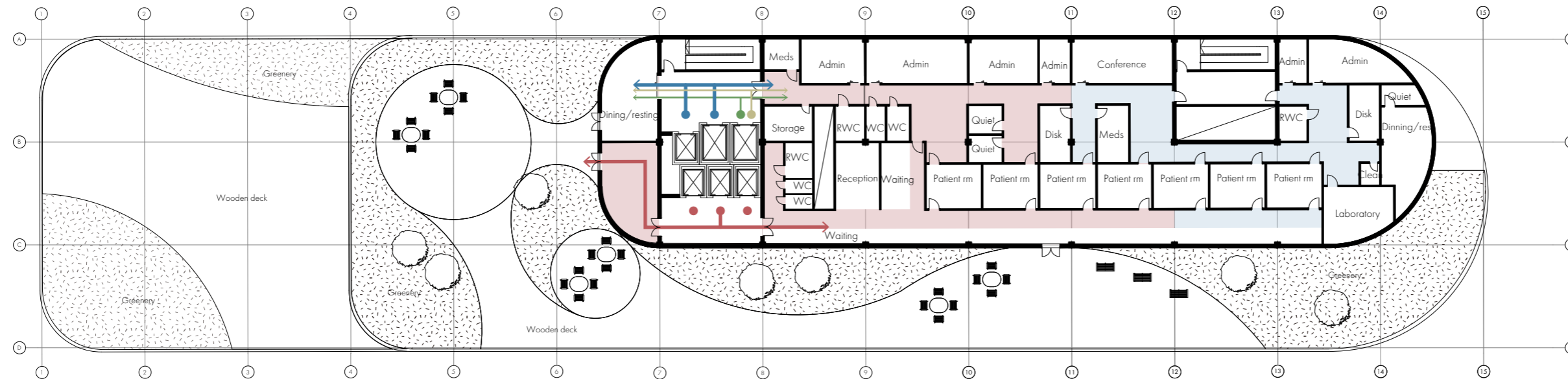
Fourth floor (Level 4) Sc: 1:400



Fifth floor (Level 5) Sc: 1:400



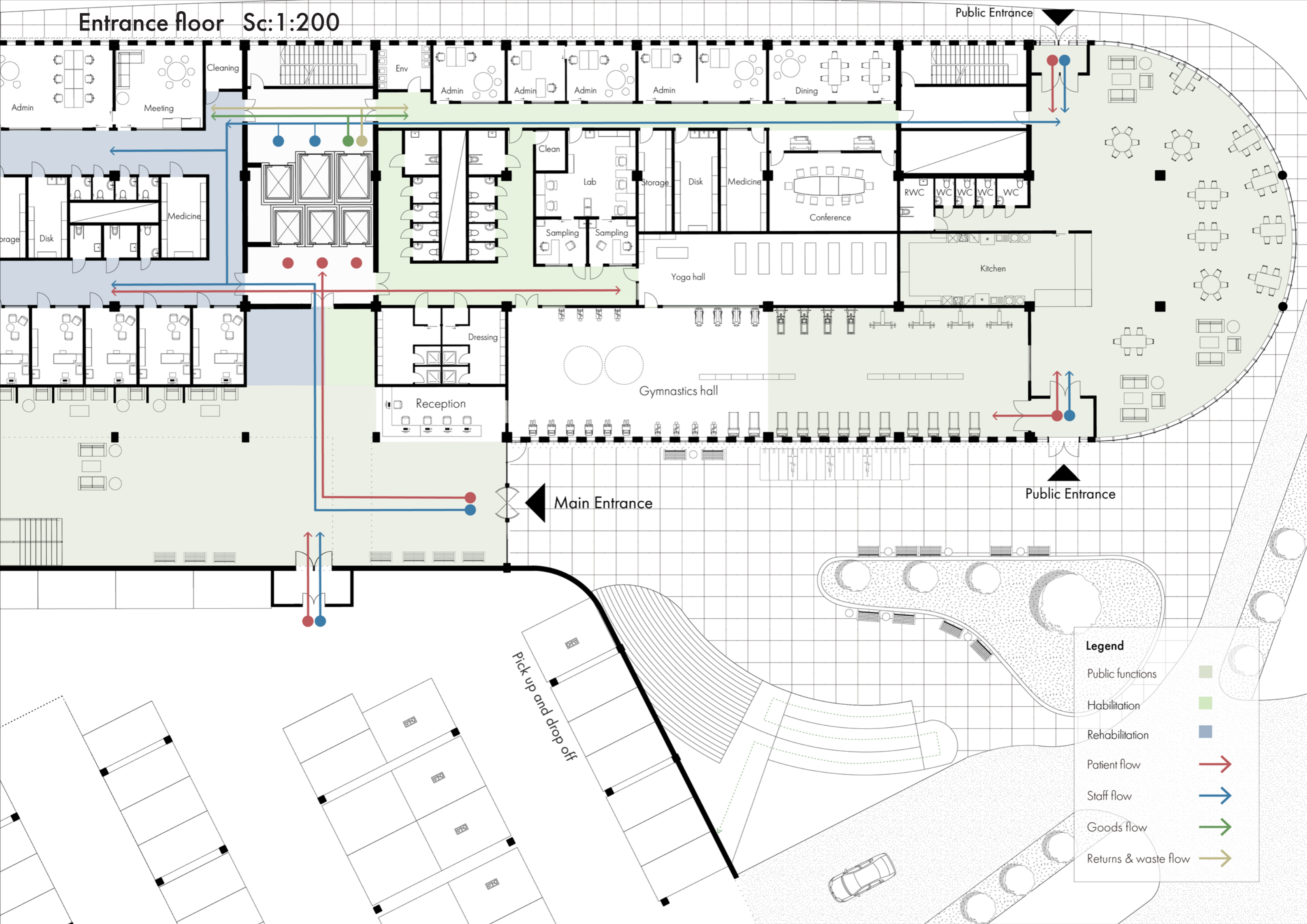
Sixth floor (Level 5) Sc: 1:400



Legend

- Imaging
- Regionshälsan
- BUP
- Dentist
- Dialysis
- Technical
- Patient flow
- Staff flow
- Goods flow
- Returns & waste flow

Entrance floor Sc:1:200



Legend

- Public functions
- Habilitation
- Rehabilitation
- Patient flow
- Staff flow
- Goods flow
- Returns & waste flow

Primary care and Sampling (Second floor) Sc:1:200



Flows

The flows on the floor plans have been designed on the principle of separating patients flows and staff flows, where staff have direct access to all floors from the dressing rooms in the basement to the staff zones, and patient meeting rooms are accessible to them with a separate door.

Through the patient elevators the patients are guided to the receptions and waiting areas on all floors, and the patient corridors extend along the patient meeting rooms.

The patient corridor along the facade is wider to provide more sitting and waiting spaces to enjoy the view towards the greenery.

Legend

Primary Care



Patient flow



Staff flow



Goods flow



Returns & waste flow



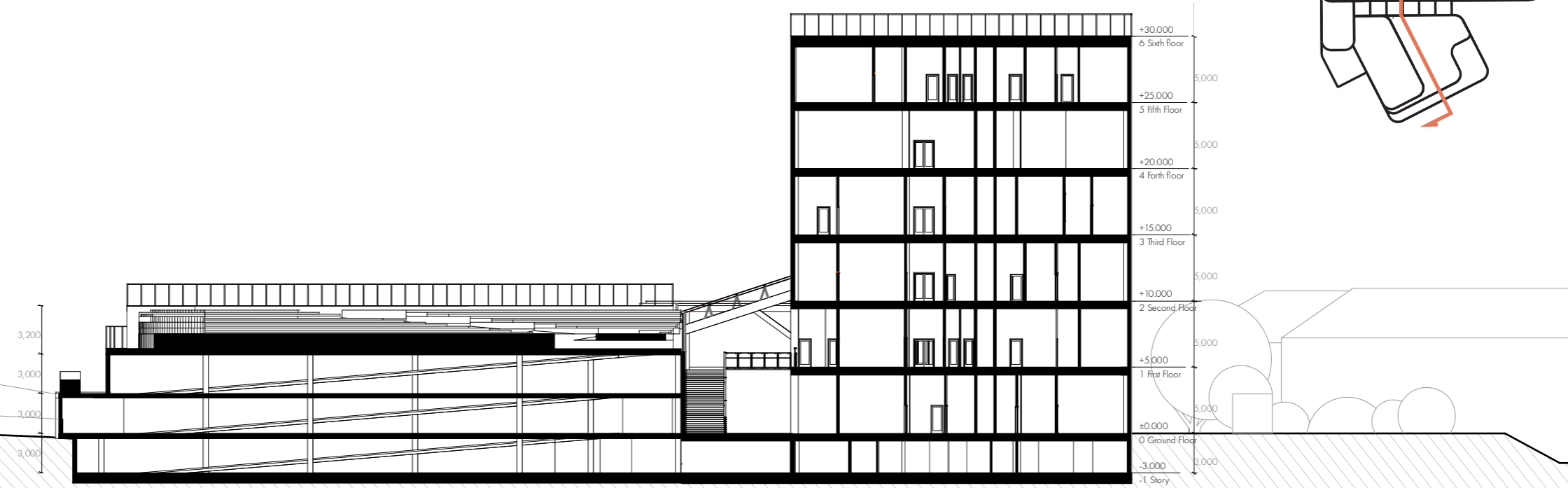
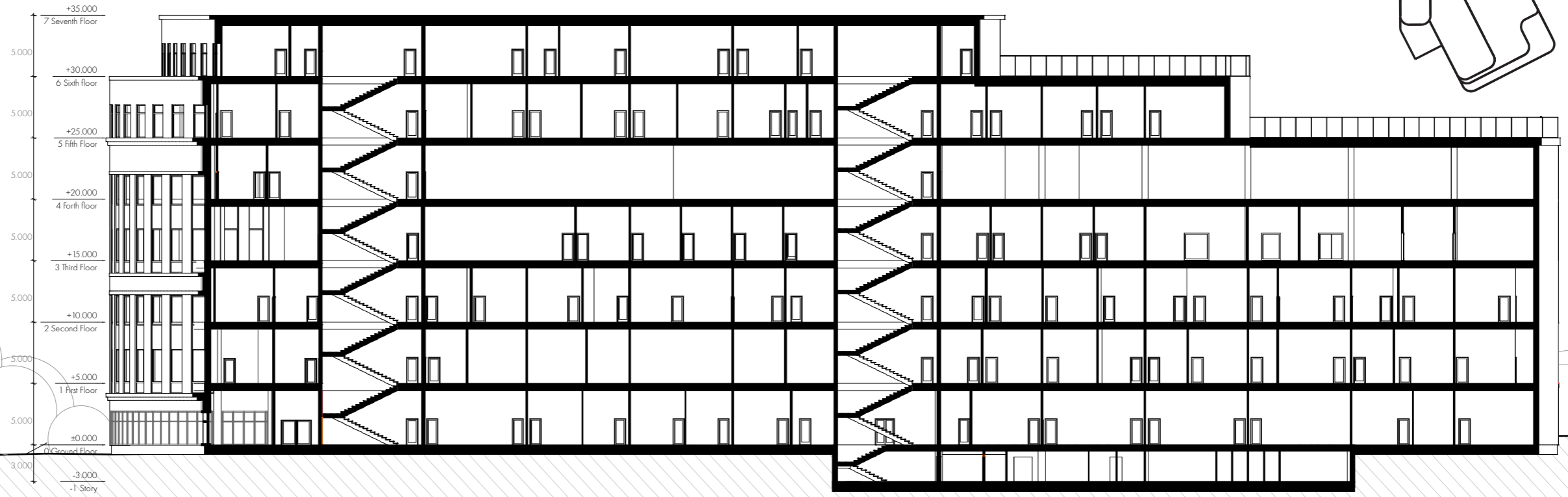
Primary care and Sampling (Second floor) Sc:1:200



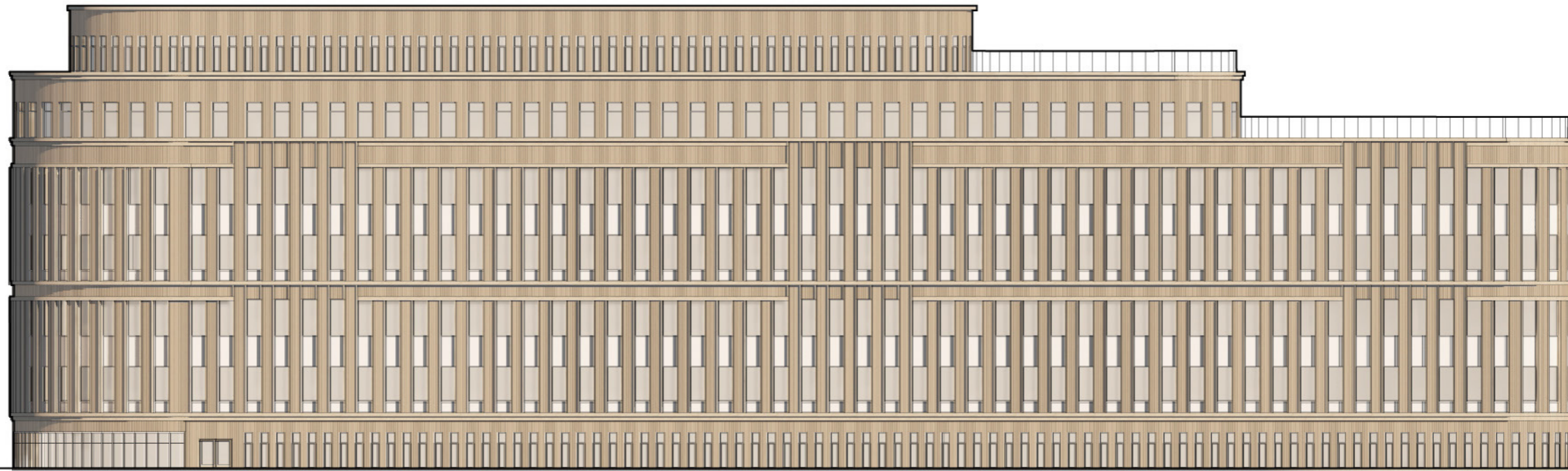
Legend

- Primary Care
- Sampling
- Patient flow
- Staff flow
- Goods flow
- Returns & waste flow

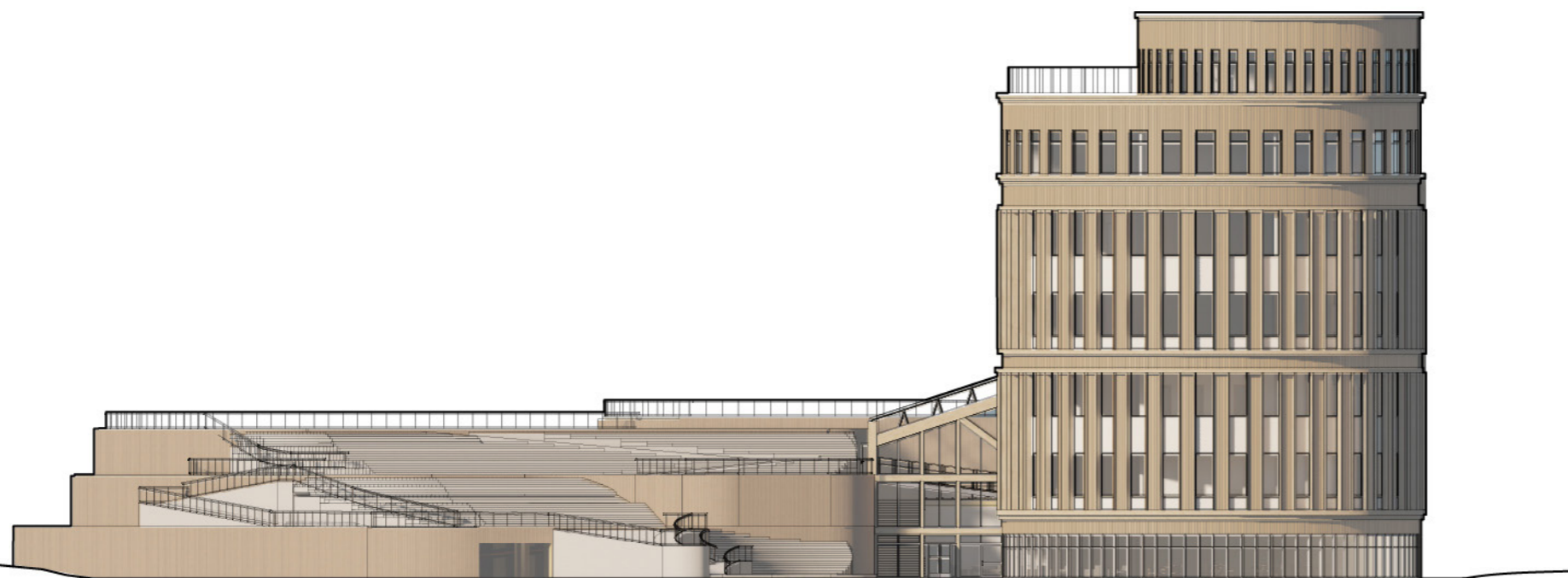
Sections Sc: 1:400



Elevations Sc: 1:400



Elevation from Hjalmarbrantingsgatan



Elevation from Wieselgrensplatsen

Facade concept

The principle of the placement of the openings on the hospital is providing views to the green rooftops and also surroundings:

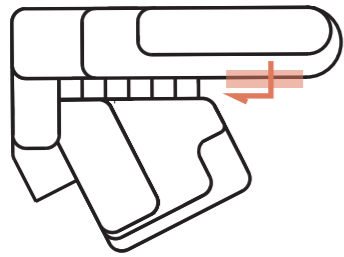
- Elongated windows to provide maximum views
- Warm and welcoming feeling with the choice of material
- Flexibility in using the openings and have them close/open according to the interior

Materials

Following the design strategy of creating contrast with the surrounding in order to create a warm and welcoming feeling wood is the main material used as cladding in the facade. The material covering the mobility hub is only wooden cladding, but the building also has white reflective cladding. For the interior bright colors have been chosen to reflect more light.



Detail section and elevation Sc: 1:50



With a grid of 8400 by 8400 a system of timber beams and rib panels which are made of CLT on low tech floors and concrete/timber composite slab on high tech floors is used.

Basement, Ground, first, second, and third floor: Concrete columns of 500 by 500 . Fourth, fifth, sixth, seventh floor: Timber column 400*400

Light frame timber exterior walls sit on the concrete foundation.

The facade on the ground floor which houses public functions aims to have a human scale composition on the street. On the higher floors the windows are elongated on the building to maximize the views. The modules of 900 and 1200 have been used on the facade to enable efficient use of space and flexibility on the inside.



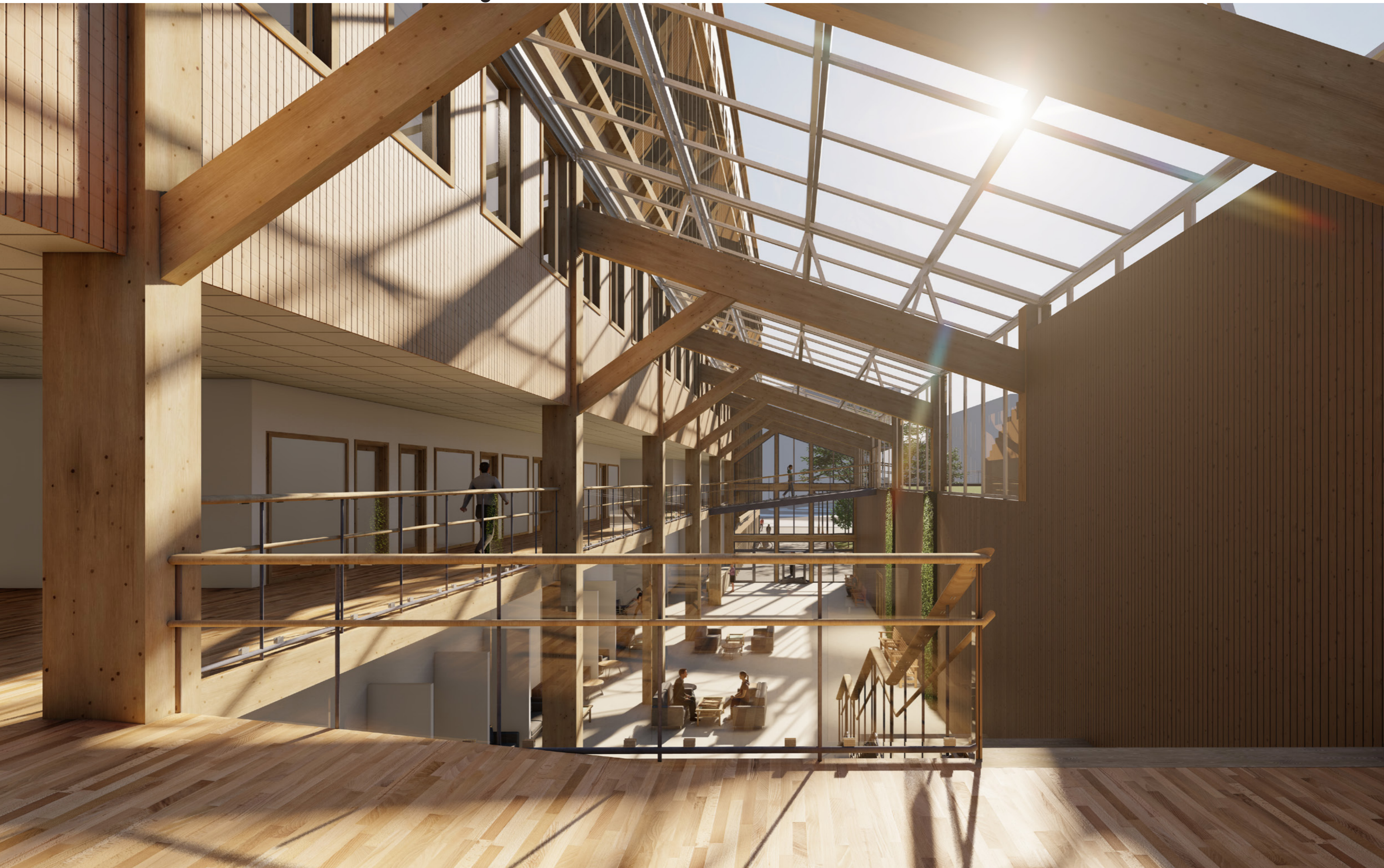
View from Wieselgrensplatsen



View of the entrance plaza



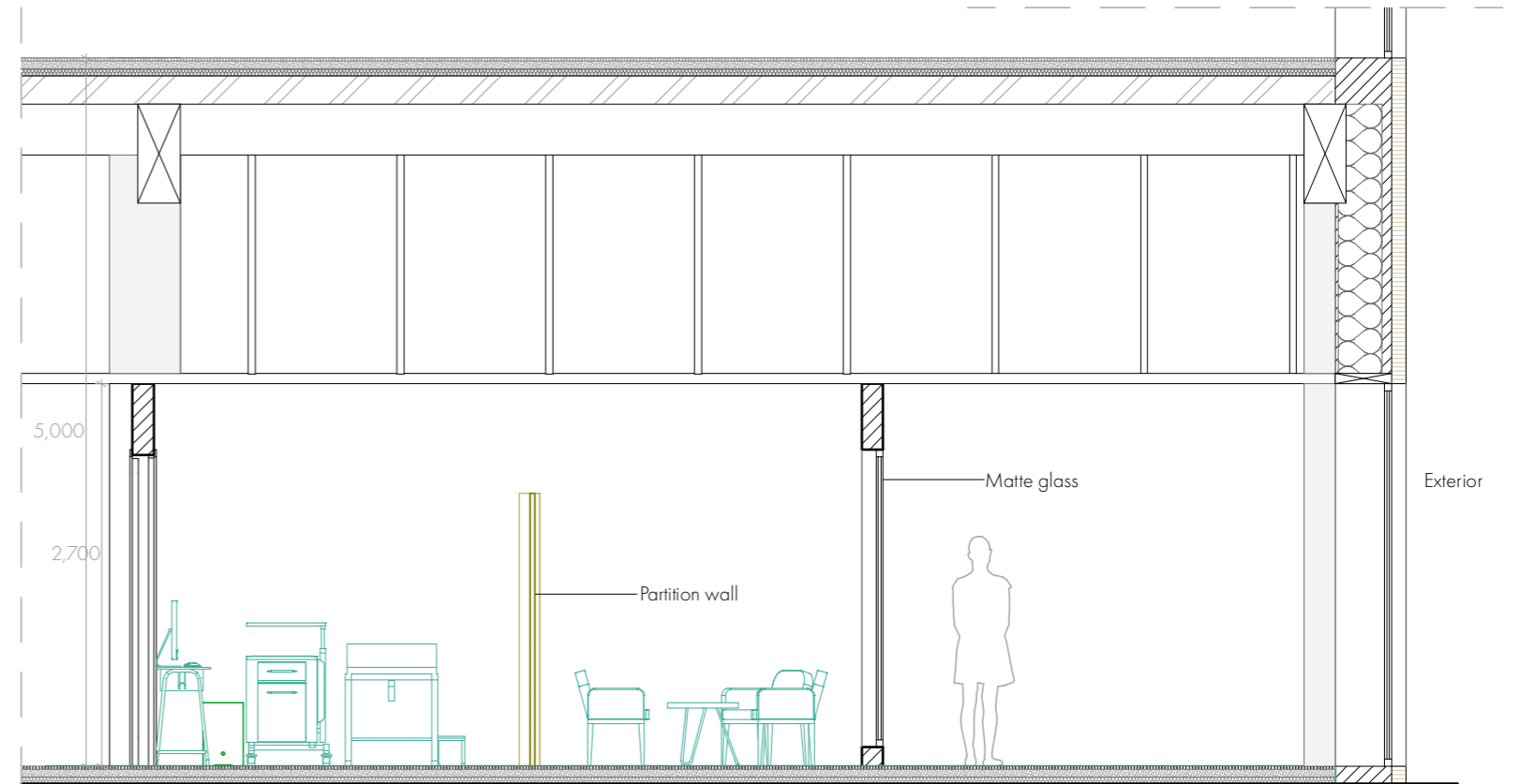
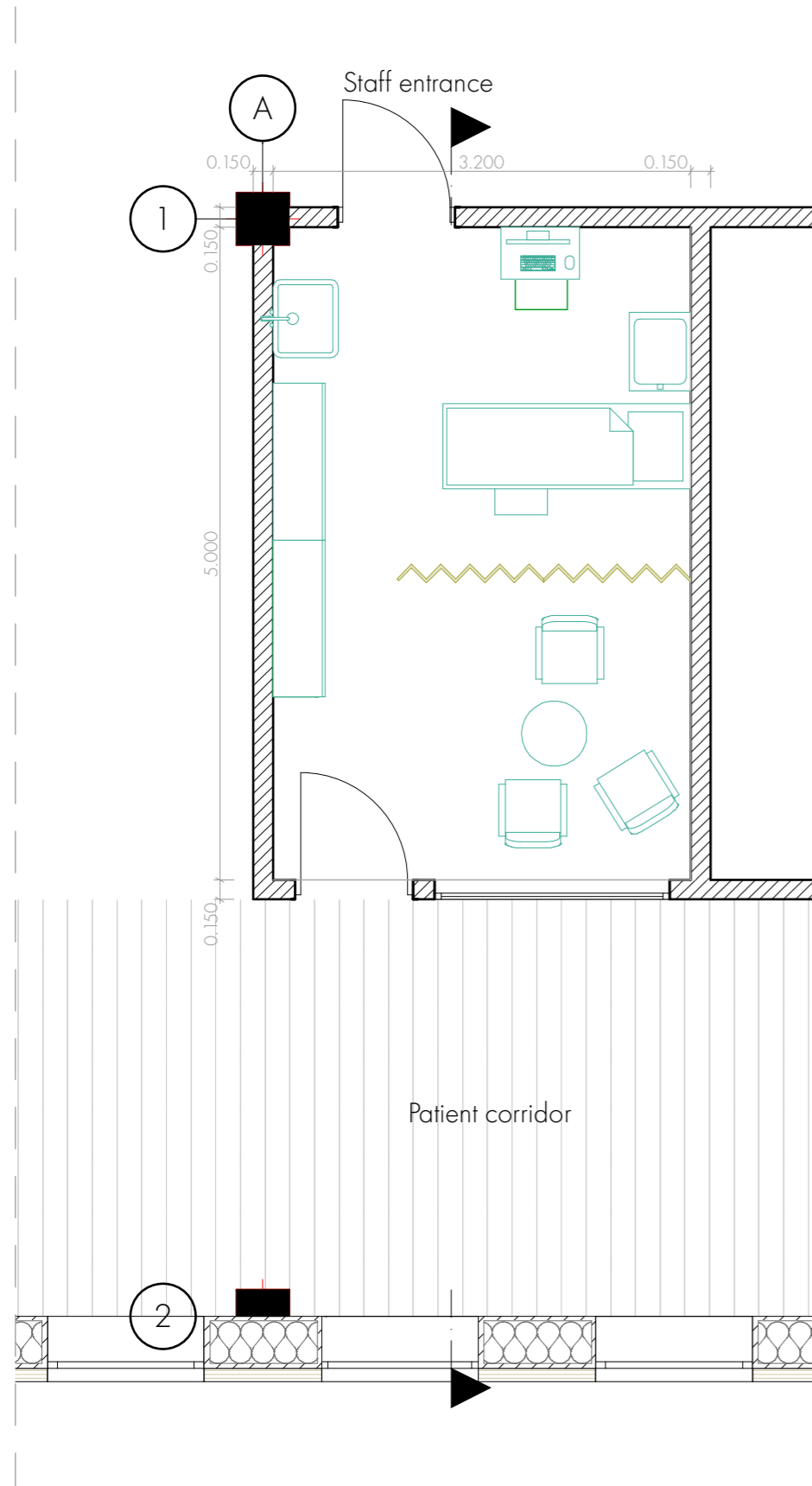
View of the entrance hall and waiting area



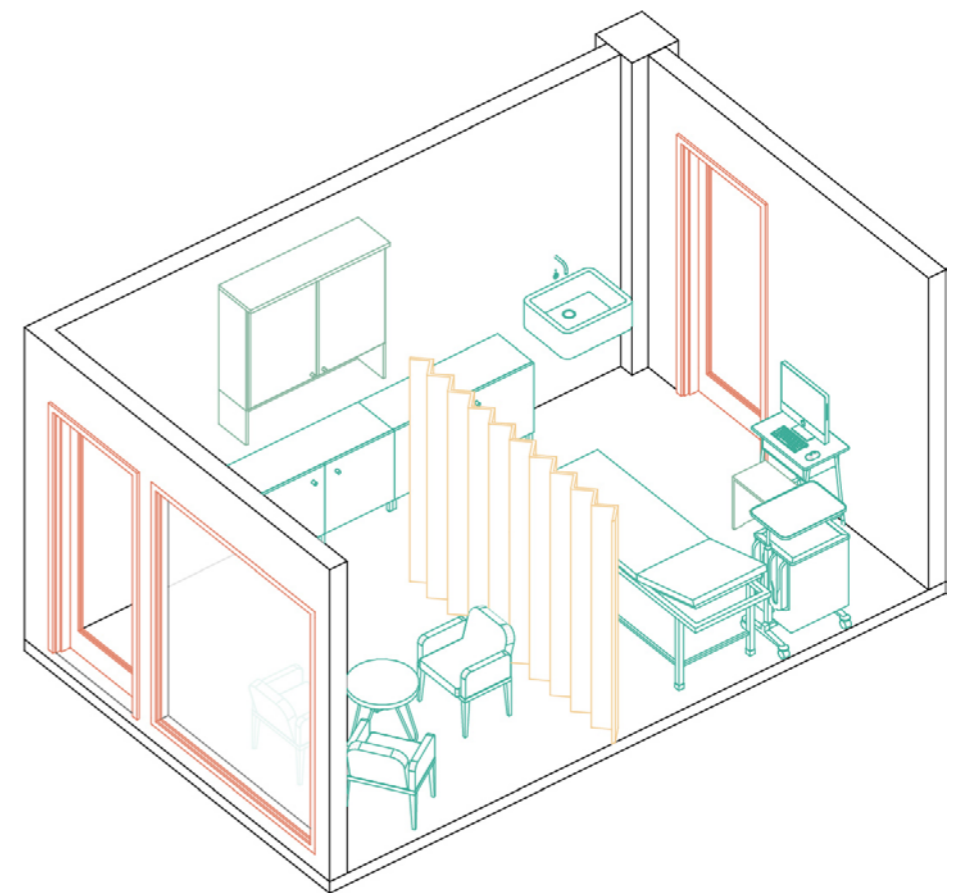
View of the bridge to the roof of mobility hub



Consultation room Sc:1:50



The normal consultation rooms in the hospital are accessed through two separate doors on each side for staff and patients. On the side facing the exterior walls the rooms have large windows made out of matte glass to bring more daylight in. In the rooms the focus is on dividing the space to ease the patient and give them the opportunity to have a face to face conversation with the healthcare workers about their condition.



A look into the future

Flexibility in the volume of the mobility hub

Through designating a space on the plot for the mobility hub which is very present and visible, this proposal enables different types of scenarios for the future usage of the volume of the mobility hub, in a time when it is no longer needed to house 230 carparks.

The mobility hub is built with sustainability in mind, using standard dimensions and modular building parts it can easily be disassembled and re-built in other areas or re-used. Removing the mobility hub will create a nice and open space on the plot that is very flexible for a wide variety of buildings.

Some other scenarios are:

- The hospital can be extended.
- Further developing the area and it's focus on sports a sporting hall and/or an extension of the existing gym suits the area well.
- Restaurants and cafés will in the future be of great value to the area as Hjalmar Brantingsgatan will be a boulevard. Building the cafés/restaurants with the terraced typography of the mobility hub in mind this can be used to create beautiful outdoor servings.

